

## ARCHIVE OF EMAILS re: Assisted Migration and Torreyia Taxifolia emails from Connie Barlow's computer sent to Patrick Shirey and to Josh Donlan June 2010

Note: I organized my email archive by NAME email was from, so it is not at all in any chronological order. It goes back to the year that my computer 2 generations back died and I lost everything prior to that.

----- Forwarded Message

From: Bill Alexander <[Baalexander@biltmore.com](mailto:Baalexander@biltmore.com)>  
Date: Mon, 30 Nov 2009 15:31:10 -0500  
To: Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>  
Cc: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Subject: Biltmore Torreyia Seed

Lee,

I hope all is well with you. I just wanted to let you know that we collected 300 (more or less) seeds from our Torreyia trees this fall. Are you still handling seed distribution for the Torreyia Guardians?

It was pretty exciting to hear about the existence of an old Torreyia in Clinton, NC? Do you know if there are any images of it available?

Bill

Bill Alexander  
Landscape and Forest Historian  
The Biltmore Company  
One North Pack Square  
Asheville, NC 28801  
828.225.6347-Phone  
828.225.6383-Fax  
[baalexander@biltmore.com](mailto:baalexander@biltmore.com)

Visit [www.biltmore.com](http://www.biltmore.com) <<http://www.biltmore.com>> today!

pass size

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On 10/17/08 7:24 AM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

From: Bill Alexander [<mailto:Baalexander@biltmore.com>]  
Sent: Thursday, October 16, 2008 3:32 PM  
To: 'Lee Barnes'  
Subject: RE: Torreyia seed crop this year?

Lee,

I hope you are doing well. Sorry for my long silence, but it has been one of the busiest seasons of my life along with experiencing the loss of a new grandson in September.

I hate to be the bearer of bad news, but there will not be any available seed from the Torreyas this year. Any seed formed were either aborted due to the drought or squirrels got to them before we could. Some of the trees are looking very weak and experiencing some dieback and loss of limbs. I hope it is a temporary condition, but they seem a little weaker each year. I am working with our arborist to see if we can do something to help them. He also reported finding no seed on the trees when he checked a month or so ago. That may have been a good thing for the trees in that they needed to reserve their energy to order to survive the drought. I have seen years in the past with few or no seeds followed by a bumper crop the next season. Let's keep our fingers crossed for a good 2009 season!

Bill

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828.225.6347-Phone  
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[balexander@biltmore.com](mailto:balexander@biltmore.com)  
Visit [www.biltmore.com](http://www.biltmore.com) today!

—

Bill -

Thank you for your response and clarification. I deeply apologize for not having kept your previous emails accessible (or added your phone number to my email address book, which I will do now). My husband and I live entirely on the road, no home, so I keep no paper records. In fact, I was able to come to the Biltmore last minute only when I scored a car from some friends in Brevard while my husband used our van for business (scheduled talks).

I made the changes you mentioned about Chauncy Beadle (at the beginning of the web page) and I added verbatim (without attribution) the para you wrote about WHY the specimens appear in worse condition now than they did 4 years ago. Very good to know that it was caused by hurricane damage to the overstory, etc. That para now appears at the very end of the web page, where I discussed the two original specimens that appear most stressed.

Your point about how the photos and map could assist SEED THIEVES is well taken. So I have created a short version of the page that removes the map and all photos except for just the close-ups of fruit and branches. You can access it now by going directly to this temporary web-page name:

<http://www.torreyaguardians.org/biltmore-2006-new.html>

I will assume that this fully takes care of the problem, unless I hear back from you.

I plan to make that short version the official web page of that field trip in two weeks — after I give Torrey Guardians (about 30 people on my email list) a chance to view the full report, with photos and map. I had been delaying reporting the two field trips to the full list until I heard back from you. So what I am going to do now is to put out an email to the Torrey list telling them that they have 2 weeks in which to view the long version of the page with full photographs and commentary. After that time, the short version will be up, and people will simply have to contact me on an individual basis if they want to view the long version.

ONE QUESTION FOR YOU:

Because 7 of the 10 specimens that are clearly not the originals have girths of 7 or 8 inches, it would be interesting to know whether these represent a single year's crop of seedlings that Biltmore staff planted or transplanted all at once — and when that year would have been. Do you have records on that? Or a memory? I am really curious.

Together for Torrey,  
Connie Barlow

On 9/5/06 10:42 AM, "Bill Alexander" <[balexander@biltmore.com](mailto:balexander@biltmore.com)> wrote:

> Hello Connie,  
>  
> You did quite a report on the Biltmore Torreyas! Please make a note that  
> Chauncey Beadle was not Biltmore Estate's forester, but botanist and nursery  
> superintendent, and for many years he was also the estate superintendent.  
>  
> I am somewhat concerned about posting a map on the website with locations  
> and all the details of which trees have seeds and wished that we had  
> discussed it first. I have suspected that folks have harvested Torrey seed  
> without permission in the past and this just brings attention to the fact  
> that they are there. Since visitors can linger in the gardens until dusk,  
> there are not always watchful eyes on what is going on. We have actually  
> found where people have dug up plants of various kinds!  
>  
> The broken stems and otherwise weakened and degraded condition of some of  
> the original trees is due to the devastation by hurricane's Francis and Ivan  
> in September 2004. The estate lost hundreds, if not thousands of large trees  
> due to the saturated ground and high winds. Dozens of large pines in the  
> adjacent groves were either uprooted and/or broken. Our arborists had to  
> remove additional ones that had become safety hazards. After having grown  
> under the pines for decades, the Torreyas have experienced sun scald and  
> stress from drier soil since the canopy was opened.  
>  
> My phone number has always been attached with my e-mail messages.  
>  
> Bill  
>  
> Bill Alexander  
> Landscape and Forest Historian  
> The Biltmore Company  
> One North Pack Square  
> Asheville, NC 28801  
> 828.225.6347-Phone  
> 828.225.6383-Fax  
> [balexander@biltmore.com](mailto:balexander@biltmore.com)

---

Good morning, everyone:

Connie, thank you for your "guardianship" on behalf of Torreyal!

Jack Johnston and I have been corresponding for the past couple of weeks, and he's mailed me some Torrey seedlings due to arrive tomorrow (Thursday). Jack has been incredibly resourceful, providing me detailed notes on preparing and rooting the cuttings. I'm anxious to start that process upon their arrival.

That said, I'd also enjoy having a "go" at some of the Torrey seeds for comparative purposes. If anyone can spare a handful, please send to me at this address:

Dr. H. Bruce Rinker  
Science Department Chairman  
North Cross School  
4254 Colonial Avenue  
Roanoke, VA 24018  
540-989-6641 ext. 255

Please give me heads-up before you mail them so that I know they're coming my way.

By the way, we're about to get involved too in the American Chestnut Foundation's work on those chestnut hybrids that seem immune to the blight. Any thoughts about this from our group?

Happy December, all.

Bruce

Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> writes:

>Hello Bill and Lee and Jack and Bruce -

>

>This is Connie Barlow

>

>Wow! 300 seeds at the Biltmore from 2009 harvest! Great to hear

>those trees produced again. I am also sending this to Bruce Rinker,

>as he now chairs science at a prep school in Virginia and he would

>love some seeds or seedlings to be able to have the students do

>long-term study on site with growing *T. taxifolia* in that bioregion.

> So Bruce, get in touch with Lee directly, and Lee, know that Bruce

>would be terrific doing this.

>

>Bill: What is your experience at the Biltmore on sexing the *Torreya*

>specimens? Do you have each tree identified as male or female? What

>do you think about Bullard's comments on the Clinton trees: "Perhaps

>the most surprising fact Bullard provided was that, contrary to botany

>textbooks, *Torreya* is not dioecious — that is, having male and female

>reproductive structures on separate plants. Rather, it is monoecious,

>because both the Norlina and Clinton trees are producing viable seeds

>with no other *Torreya* around. Bullard knows this firsthand because he

>ha two *Torreya* trees on his own property — both bearing fruit."

>

>I asked Sidney Cruze for contact info on getting in touch with H.J.

>Bullard, so I am pasting that in here:

>

>H. J. Bullard: 919-658-4424

>[ [email@ajbullard.com](mailto:email@ajbullard.com) ][email@ajbullard.com](mailto:email@ajbullard.com) <[

>"mailto:[email@ajbullard.com](mailto:email@ajbullard.com) ]"mailto:[email@ajbullard.com](mailto:email@ajbullard.com)>

>

>Ideally Bill or Lee or Jack would get in touch with him directly to

>find out where those trees are. I may be in Waynesville NC next fall

>and could easily do a field trip to visit him and the trees and take

>photos, but if somebody wants to follow up on that sooner that would

>be great!! Please let me know if any of you contact him. Otherwise,

>I will eventually follow up as one of us surely needs to make contact.

> The fact that those trees exist is just too important and needs to be

>connected somehow to our own database and concerns.

>

>Also, I am passing on to you all this new email I got. Lee would be

>the best person to respond:

>

>On 11/28/09 5:17 PM, "Claire Williams" <[

>[claire-williams@fulbrightmail.org](mailto:claire-williams@fulbrightmail.org)

>][claire-williams@fulbrightmail.org](mailto:claire-williams@fulbrightmail.org)> wrote:

>

>> Dear Connie,

>> I work on conifer reproductive biology and have watched your

>>group's

>> effort to save this *Torreya* with great interest. The failure to

>> reproduce is disturbing.

>>

>> But I have a question: have you tried any methods for stimulating

>> female and male strobili using gibberellins and other

>>"stimulation"

>> methods that work well with other conifers?  
>>  
>> If this holds interest, then Prof. Michael Greenwood at the  
>University  
>> of Maine would be a good contact. He is the world's expert on  
>>when<  
>> and >how< to "stimulate" strobili on any number  
>of conifers.  
>>  
>> Best wishes,  
>>  
>> Claire Williams  
>>-----  
>  
>On 12/1/09 1:42 PM, "Lee Barnes" <[  
>[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)]lbarnes2@earthlink.net> wrote:  
>  
>  
>  
>Bill,  
>       It would be great to get some seeds for distribution-  
>we do have new requests. I've had the busiest Oct. and November ever  
>and have been out-of-town and forgot to check with you about seeds.  
>Let me know a good time to get up with you.  
>I have not seen images of the Clinton, NC tree but maybe Connie knows  
>more... It sounds like it has produced lots of seeds! Thanks and Happy  
>Trails, Lee  
>  
>  
>From: Bill Alexander [[ <mailto:Balexander@biltmore.com>  
>]"mailto:[Balexander@biltmore.com](mailto:Balexander@biltmore.com)]  
>Sent: Monday, November 30, 2009 3:31 PM  
>To: [ '[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)' ]'[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)'  
>Cc: [ '[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)' ]'[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)'  
>Subject: Biltmore Torreyia Seed  
>  
>Lee,  
>>  
>I hope all is well with you. I just wanted to let you know that we  
>collected 300 (more or less) seeds from our Torreyia trees this fall.  
>Are you still handling seed distribution for the Torreyia Guardians?  
>  
>  
>  
>It was pretty exciting to hear about the existence of an old Torreyia  
>in Clinton, NC? Do you know if there are any images of it available?  
>>Bill  
>  
>Bill Alexander  
>Landscape and Forest Historian  
>The Biltmore Company  
>One North Pack Square  
>Asheville, NC 28801  
>828.225.6347-Phone  
>828.225.6383-Fax  
>[ [balexander@biltmore.com](mailto:balexander@biltmore.com)] [balexander@biltmore.com](mailto:balexander@biltmore.com)

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Hello Frank -

Thank you for your interest in helping this endangered species. Torreya Guardians has received one other offer of private lands for growing *Torreya taxifolia* along the Pacific (that was in California) and, while we appreciate the offers to help, we are careful to work with landowners only east of the Mississippi or on a separate continent. The reason is that *Torreya californica* is the *Torreya* species on your side of the continent, and we don't want to encourage any mixing of pollen types. Its northernmost outpost in the Coast Range is not far from the Oregon border, so in the decades and centuries ahead, California *torreya* may be looking up in your direction.

Together in the Great Work,

Connie Barlow  
Torreya Guardians

P.S.

In a couple months I'll have up online a broader website, [www.plantguardians.org](http://www.plantguardians.org), in which anyone can post interest in a particular genus and species and see who shows up to trade information and ideas.

On 11/21/08 2:28 PM, "[Callahanseeds@gmail.com](mailto:Callahanseeds@gmail.com)" <[Callahanseeds@gmail.com](mailto:Callahanseeds@gmail.com)> wrote:

I need to link with you folks for seeds of *T. taxifolia*. We are presently growing these trees in Oregon and have limited seed production. We have land to grow this species. Contact us at Callahan Seeds POB 5531 Central Pt. OR 97502 - 541-855-1164 [callahanseeds@gmail.com](mailto:callahanseeds@gmail.com) Frank Callahan

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Camille -

Thanks for the clarification. And please do add me to your email list of folks you inform about the butterfly efforts.

Connie Barlow  
Torreya Guardians

On 10/17/08 1:15 PM, "Camille Parmesan" <[parmesan@uts.cc.utexas.edu](mailto:parmesan@uts.cc.utexas.edu)> wrote:

> Hi connie,  
>  
> I'm double-teaching right now and won't get to updating my website  
> until the end of semester, but will keep you posted when I do.  
>  
> As for quino - this is something I argued for during a recent meeting  
> of USFWS Regions 2 & 8 focused on climate change. I gave a plenary  
> talk on the subject, and spoke with USFWS recovery staff that are  
> actively working on quino recovery. I have not submitted a formal  
> application.  
>  
> cheers,  
> camille  
>  
>  
>> Hello Chris and Hugh and Camille -  
>>  
>> This is Connie Barlow of [www.TorreyaGuardians.org](http://www.TorreyaGuardians.org). I am trying to keep up  
>> to date my key webpage that lists ALL THE PAPERS AND REPORTS ON THE ASSISTED  
>> MIGRATION issue (as it is consistently near the top on Google for "assisted  
>> migration"):  
>>  
>> <http://www.torreyaguardians.org/assisted-migration.html>  
>>  
>> Most recently, I posted a link on that page to the Boston Globe article on  
>> assisted migration of October 12. Two questions:

>>  
>> 1. Notice when you scan down the above page on my website that your 2008  
>> Science paper is not easily available to anyone to be read in full. Please  
>> notice that for the 2007 key paper in Conservation Biology (further down the  
>> page) I am able to give readers a direct link to the full article in pdf.  
>> So, will any of you post the full article in pdf on your website, so that I  
>> can link directly to it? (I have a copy of the pdf myself, but since I am  
>> not an author, I cannot post it on my own website.)  
>>  
>> 2. Q for Camille: Where can I see a copy of the request you filed with USFWS  
>> for authorization to engage in assisted migration for the Quino checkerspot?  
>> And, especially, is there a pdf I can link to or post on my own website so  
>> that anyone can easily peruse this historic conservation filing?  
>>  
>> For Torreya,  
>> Connie Barlow, founder  
>> Torreya Guardians  
>

---

Chuck and Sara -

Waynesville would be terrific too! Thank you for volunteering to steward immigrant *T. taxifolia* on your land! As it turns out, Michael and I need to drive from Highlands NC to Charlottesville VA, so Waynesville could be on our way. We need to be in Charlottesville by Aug 2, so we could be in Waynesville July 31 or Aug 1 -- a day or two after the planting in Highlands area.

Jack Johnston will be picking up at the S. Carolina nursery 30 potted seedlings of *T. taxifolia*. Plus, I have one that Atlanta Botanical Garden gave me last December that I've been carrying in our van for a year, waiting to get back to North Carolina.

I would imagine that it makes sense to allocate no less than six specimens for planting on your land, as we need to ensure a male/female mix for future seed production. But we need to get a better sense of the site conditions.

QUESTION: Could you explain more about your landscape? How much acreage, what are the slope and aspect options, what kind of forest subhabitats? What are the adjacent lands like--that is, assuming that in the next half century the squirrels are capable of moving seeds from your trees to wider area. That is, would your land be a good place to launch immigrants to continue spreading on their own as the centuries go by?

Important: Here is what you need to do to assess your land and begin to scope out where best to plant:

1. Read this entire page to get a sense of how Torreya's cousin grows in the wild in California:

<http://www.torreyaguardians.org/california.html>

2. Then click on the 4 site visit internal links on that same page above, so you can see the photo essays on where the trees actually grow. Note, one modification I have in my views since visiting California is that, *T. taxifolia* seedlings might do very well beneath a semi-open deciduous canopy, as its evergreen status enables it to photosynthesize in warm conditions when deciduous leaves are gone.

3. Then read this page on propagation advice, and especially notice the information about liming. I did some liming on private Torreya plants in northern Florida -- plants that looked to be dying, and the landowner wrote me an enthusiastic email about how they recovered well. Also, one thing I need to add to that page is the importance of not trimming off the stump sprouts. Even young trees will grow stump sprouts--crucial for taking over if the main stem is crushed or otherwise killed for some reason.

<http://www.torreyaguardians.org/propagate.html>

4. Overall, my sense is the steeper the better, especially if there is some good upslope area from which water can seep down even in dry spells. East or west facing would be better than south-facing probably. Ideally, you could plant the specimens within pollination distance of one another, mixed in with forest, so that it resembles something natural, but each seedling in a recent treefall area or some place that can get partial sunlight. You might need to intervene somewhat as they grow to ensure that they don't lose their sunlight.

5. Spread the word, and let me know if other private landowners are interested. The main thing we need right now is at least one dedicated, enthusiastic landowner of forested lands in western NC. Highlands, apparently, we don't really have one yet. Jack Johnston in northern Georgia already has seedlings planted on his land, and he just reported to me that the 2007 Biltmore seeds he received, 7 just sprouted within the last few days! So he has even more on the way.

OVERALL, I'm very exciting about the prospect of your invitation assist *T. taxifolia* in moving north via your land, especially since you two have been on our Torreyia Guardians email list for some time now.

Do keep in touch as you start contemplating whether and where the plantings might actually go.

Together for Torreyia,  
Connie

On 6/18/08 2:32 PM, "Charles Dayton" <[cdayton@goldengate.net](mailto:cdayton@goldengate.net)> wrote:

> I meant OUR private land.  
>  
> How would interested landowners know about this? I'm sure we know some who  
> would be more than willing.  
>  
> Just let us know what we need to do,  
>  
> Chuck Dayton/ Sara Evans  
>  
>

> On 6/18/08 8:57 AM, "Connie Barlow" <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:

>  
>> Hello Chuck and Sara -  
>>  
>> I am cc-ing Lee Barnes, who is in charge of distributing seeds we get from  
>> the Biltmore. Lee lives in Waynesville himself, and does a lot of landscape  
>> consulting there. So I suspect that if there were private lands  
>> possibilities there, he would already have heard from interested landowners.  
>>  
>> Thank you for your interest and suggestion.  
>>  
>> Together for Torreyia,  
>> Connie  
>>  
>>

>> On 6/14/08 8:18 AM, "Charles Dayton" <[cdayton@goldengate.net](mailto:cdayton@goldengate.net)> wrote:

>>  
>>> Connie.  
>>> We live near Waynesville and have followed this project. Any chance of  
>>> getting seedlings at the Cornille Bryant native garden in Junaluska, or on  
>>> private lands in the mountains near Waynesville, at elevation 3,500? There  
>>> is less rainfall than at Highlands. Is that critical?  
>>>

>>> Chuck Dayton  
>>> Sara Evans.  
>>>  
>>>

>>> On 6/13/08 11:53 AM, "Connie Barlow" <[cibtanager@bigplanet.com](mailto:cibtanager@bigplanet.com)> wrote:

>>>  
>>>> Hello Torreyia Guardians  
>>>>  
>>>> 1. FREE DOWNLOAD the article featuring Torreyia Guardians, "Taking Wildness  
>>>> in Hand: Rescuing Species" (in May/June 2008 issue of Orion Magazine). It  
>>>> is a superb look at the human side of the controversy over assisted  
>>>> migration of species, featuring *Torreyia taxifolia*. (it is an interactive



>>>> site, so you can add your comment if you wish.) Go to:  
>>>>  
>>>> <http://www.orionmagazine.org/index.php/articles/article/2966/>  
>>>>  
>>>> 2. JULY 30 T. Taxifolia TREE PLANTING IN HIGHLANDS NC. If any of you have  
>>>> friends who live near Highlands, NC, please let them know about our  
>>>> scheduled planting of 31 seedlings on private lands on July 30 in the  
>>>> Highlands/Cashiers area of NC. Exact sites for planting still being  
>>>> discussed. A photographer for Audubon Magazine will be there, as Audubon  
>>>> will be doing a story on assisted migration. Watch this page on our  
>>>> website, as I post more details as the time approaches:  
>>>>  
>>>> <http://www.torreyguardians.org/rewilding.html>  
>>>>  
>>>> Together for Torreya,  
>>>> Connie Barlow  
>>>>

---

From: Chris Berdik <[rcberdik@yahoo.com](mailto:rcberdik@yahoo.com)>  
Reply-To: <[rcberdik@yahoo.com](mailto:rcberdik@yahoo.com)>  
Date: Thu, 16 Oct 2008 10:00:48 -0700 (PDT)  
To: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Subject: Re: assisted colonization term usage and ESA and Boston Globe

Thanks, Connie.

It's always a balancing act in terms of exact scientific accuracy and readability for the lay audience. I try to push for the former when I can, but so it goes. Your correspondent below has it right -- keep it simple is the order of the hour with scientific stories in newspapers and most general readership magazines.

I toyed with using the term "assisted colonization" but there were too many quotes from my sources, grants, and previous research articles, using assisted migration to mix it up. I think readers will understand the concept nonetheless and if a preponderance of conservationists start using "assisted colonization" in their conversations it will trickle down to lay publications such as the Globe.

regards and all the best,

Chris

--- On Thu, 10/16/08, Connie Barlow <[cibtanager@bigplanet.com](mailto:cibtanager@bigplanet.com)> wrote:  
From: Connie Barlow <[cibtanager@bigplanet.com](mailto:cibtanager@bigplanet.com)>  
Subject: Re: assisted colonization term usage and ESA and Boston Globe  
To: "Mac Hunter" <[Hunter@apollo.umenfa.maine.edu](mailto:Hunter@apollo.umenfa.maine.edu)>  
Cc: "Chris Berdik" <[rcberdik@yahoo.com](mailto:rcberdik@yahoo.com)>, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>, "Jessica Hellmann" <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>  
Date: Thursday, October 16, 2008, 11:46 AM

P.S. To Chris Berdik - Great job on the Boston Globe article. I'm especially grateful for the way you attended to the history of the idea, while showing all the current items going on. A great piece to help others into the future to track the vital history of the development of this idea. (And your article helped me learn more too: about the rat and coral reefs and checkerspot!) I don't mind at all being portrayed as a highly subjective radical on this issue (though, of course, I regard myself as being highly objective too in my sense of deep-time understanding of the tree), as the way you portrayed our work is good copy for attracting readers to be interested in your article -- and we Torreya Guardians have indeed played an instrumental role in forcing the professionals to get going on debate and policy on this issue, lest citizens simply move ahead themselves.

Dear Mac -

You asked whether the ESA committee had made any decision on assisted colonization v assisted migration as the preferred term. Good question! I suspect the ESA committee didn't formalize anything on terminology, as they'll have a chance to do that in the outcome paper they are planning to have completed by autumn 2009. (Note I am cc-ing Jessica Helman, so she can respond to you directly.)

However, I did a little research to see how the discussion is going. I notice (see immediately below) that the Nature report on the July paper in Science used "assisted colonization" prominently:

"Camille Parmesan, an expert on the ecological effects of climate change at the University of Texas at Austin and a co-author of the Science paper, is raring to get started. "I'm going to propose to the US Fish and Wildlife Service that assisted COLONIZATION should be considered for the endangered quino checkerspot butterfly," she says. . . "

"Whether called 'assisted migration', 'assisted COLONIZATION' or 'managed relocation', the idea of manually relocating species is decidedly controversial, and some in the Milwaukee working group feel it would most likely be a disaster. . . ."

The Boston Globe article and sidebar of this past weekend (I added the url to my <http://www.torreyaguards.org/assisted-migration.html> webpage) never used "assisted colonization". But that is not surprising. They have to keep terminology uncomplicated. For example, in the very first para of that article, either the writer or the editor chose to say "Torreya pine" to help the reader understand the tree, rather than "the conifer/evergreen tree Torreya" or "the Torreya species of tall yew tree", I imagine to keep it simple. But it is also very confusing, as "Torrey Pine" actually exists, and it is the "rarest pine in North America." (I remember that when I first visited Torreya in Florida I was confused myself, because I had heard of the very local Torrey Pine when I went to a conference in San Diego, and Torrey Pine State Park is near there.) Both trees are named after the botanist, John Torrey.

In fact, when I put in the Boston Globe name, "Torreya pine" into google, the first thing up was google asking: "Did you mean: torrey pine?" (As an aside, I remember 15 years or so ago when *Wollemi nobilis* was discovered in Australia, a living fossil, that it was colloquially called "Wollemi pine" -- but it is not a pine at all. Calling it pine makes it seem less taxonomically significant than it really is. Ditto with *Liriodendron tulipifera* being called "Tulip poplar" -- for years I really thought it was related to cottonwoods; then I actually looked at the flower and was confused, so looked it up and discovered it was closely related to magnolia!

Back to whether "assisted colonization" will get a hearing, or whether the original terminology, assisted migration, will simply be used hereafter. As

you know, I prefer the latter, but if you want to help your cause, I suggest you do what Jessica Hellman did for the paper she was coauthor of in Conservation Biology in 2007: she posted it in pdf on her own university website: 2007

McLachlan et al Conservation Biology is at:

[http://www.nd.edu/~tmarsico/McLachlan\\_et\\_al\\_2007\\_Conservation\\_Biology.pdf](http://www.nd.edu/~tmarsico/McLachlan_et_al_2007_Conservation_Biology.pdf)

If you post your Conservation Biology piece, "Climate Change and Moving Species: Furthering the Debate on Assisted Colonization" in pdf on your (or another) website, I'll be happy to put that direct link onto my assisted-migration web page. Right now, I have no hotlink to anything for that paper, even though I list it, so if someone is scanning my webpage of all the papers and news reports on this topic, they have no way to see yours, so will likely just skip to the next.

My webpage,

<http://www.torreyaguardians.org/assisted-migration.html>

is a great way to get the word out on this topic, because when you type in "assisted migration" on google, it is consistently number 2 or 3, and if you type in "assisted colonization" it is number 1. I posted this webpage to ensure

that, as conversation and reports about the topic accumulate, newbies to the idea will easily be able to access the full list of key papers and reports -- rather than having to ferret through google, which is a real mix of useful and useless entries. I wanted to do my best to ensure high-quality discussion and news reportage, and with the history this webpage has, it will be very hard for anything new to unseat it (for very long) from near the top of the list. (For some reason, ever since the New York Times piece came out, reporting on the Conservation magazine Jan 2007 cover story on assisted migration, that one news report has stayed as Number 1 on google. Maybe NYT gets an automatic number 1 standing . . .)

Together for Torreya,  
Connie Barlow

On 10/14/08 1:50 PM, "Mac Hunter"  
<[Hunter@apollo.umenfa.maine.edu](mailto:Hunter@apollo.umenfa.maine.edu)> wrote:

>  
> Thanks for sharing this. Do you know what  
> the outcome of the ESA  
> discussion  
> on  
> terminology (migration vs colonization vs ??) was? ....mac  
>  
>  
>>  
>> Chris -  
>>  
>> Great to hear! We'll all look for the article. Thanks!  
>>  
>> Connie Barlow  
>> Torreya Guardians  
>>

>>  
>> On 10/8/08 7:46 AM, "Chris Berdik"  
<[rcberdik@yahoo.com](mailto:rcberdik@yahoo.com)>wrote:  
>>  
>> Hi, Connie,  
>>  
>> After bouncing around a bit, the assisted migration story is finally  
>> set for publication in this Sunday's Globe, It will be available  
>> online here: [www.boston.com](http://www.boston.com) (click on "Today's Globe"  
and along the  
>> left-hand side will be a menu of "weekly sections" -- click  
on  
>> "Ideas.")  
>>  
>> thanks again for all your help.  
>>  
>> regards,  
>> Chris  
>>  
>>  
>  
>

>  
> -----  
> Malcolm Hunter, Jr.  
> Dept. of Wildlife Ecology  
> University of Maine  
> Orono, Maine 04469-5755 USA  
>  
> Tel: 207/581-2865  
> Fax: 207/581-2858  
> Direct e-mail: [Hunter@umenfa.maine.edu](mailto:Hunter@umenfa.maine.edu)

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Chris -

I enjoyed the ramblings on pronghorns and cucurbits! I haven't entered the blogging world yet -- only when google happens to take me there, as it did in the case of Joshua Trees and sloths, so please send me an email if you post more on assisted migration. And what about starting a joshuatreeguardians effort?

Evolutionarily yours,  
Connie

On 2/16/07 11:16 PM, "Chris Clarke" <[coyotl@faultline.org](mailto:coyotl@faultline.org)> wrote:

> Connie;  
>  
> I'm quite pleased to hear from you, having been a fan of Ghosts of  
> Evolution since, honestly, before it came out. (I was lucky enough to  
> receive a set of pre-pub proofs.) There are few books that have  
> affected my thinking so profoundly, and I thank you for that.  
>  
> You may find this old post of mine of some interest:  
>  
> [http://faultline.org/index.php/site/comments/  
whats\\_owed\\_to\\_those\\_who\\_have\\_gone\\_before/](http://faultline.org/index.php/site/comments/whats_owed_to_those_who_have_gone_before/)  
>  
> I am beginning to dig in to your Torreya materials, and am quite  
> interested. I've found the whole "laissez-faire/intervention"  
> dialectic rather compelling for some years, and look forward to  
> learning more. Seems to me that the issues of invasive exotics

> provides some precedent: once we took on the role of weeding the  
> "wild," thus admitting that the line between garden and wilderness is  
> not at all distinct, discussing taking on the role of transplanter  
> was almost inevitable.  
>  
> I'd be interested to see what you've put together on the issue of the  
> Joshua tree. Of course, the tree is doomed to extinction without its  
> symbiote the yucca moth, and so any assisted migration would  
> necessarily include the moth. "The moth" is a bit of a reification,  
> in fact: two species are responsible for Joshua tree pollination, one  
> per main form. The moths are somewhat occult, living most of their  
> lives as subterranean pupae. Challenges!  
>  
> I expect I'll be doing a little writing about assisted migration at  
> Creek Running North, and possibly — if I get a sense that the much  
> larger audience there is interested in matters ecological past the  
> dolphin-saving level — at Pandagon, where I've recently joined the team.  
>  
> On Feb 14, 2007, at 11:20 AM, Connie Barlow wrote:  
>  
>> Chris -  
>>  
>> Hello, this is Connie Barlow, author of "Ghosts of Evolution:  
>> Nonsensical  
>> Fruit, Missing Partners, and Other Ecological Anachronisms." I am the  
>> initiator and webmaster of <<http://www.torreyguardians.org>> and, as a  
>> result, was interviewed for the Jan 2007 issue of Conservation  
>> magazine that  
>> opened up the topic of assisted migration for plants in a time of  
>> global  
>> warming. Our Torreya Guardians have already been doing that for  
>> our beloved  
>> tree. Check us out. Torreya taxifolia is the poster child for  
>> assisted  
>> migration in the eastern U.S., Joshua tree certainly in the north.  
>> I've  
>> been doing powerpoint programs around the country advocated assisted  
>> migration for Torreya, and now that I learned about Joshua Tree,  
>> for that  
>> too.  
>>  
>> Check out this page I put up on the website for direct hotlink  
>> access to the  
>> key articles on this issue:  
>>  
>> <<http://www.torreyguardians.org/assisted-migration.html>>  
>>  
>> For Torreya,  
>> Connie  
>> --

---

Dear Connie,

Whilst I do not know anything specific about the Torreya species, I think that your initial response is appropriate. One of the key questions in Hoegh-Guldberg et al. 2008 Science paper is

"Do benefits of translocation outweigh the biological and socioeconomic costs and constraints?"

When translocation would increase the potential for future (given future climate change range shifts) genetic introgression and competition

between related species, and translocation would involve movement between biogeographic regions (E and W USA count as separate in this case), the answer will in almost all cases be no.

Given that there are other opportunities in the East, the answer to this question should be no with respect to transfer to the western USA.

Chris Thomas

Connie Barlow wrote:

> TO: those professionally working with *Torreya taxifolia* and *T. californica*  
> AND TO: people published on the assisted migration controversy  
>  
> FR: Connie Barlow, Torreya Guardians  
>  
> RE: Question about how we should handle citizen/propagator questions  
> like the one below  
>  
> Hello all. Please read the emails from the bottom up. This is  
> absolutely something you must address in the policy work on assisted  
> colonization/migration going on now. I tend to be very conservative  
> about the prospects of mixing pollen from sister species. What can be  
> done to enlist nurseries — not just citizen groups, like Torreya  
> Guardians — to try to participate responsibly in helping imperiled  
> plants? Or am I just being too paranoid about pollen mixing?  
>  
> Together for Torreya,  
> Connie Barlow  
> --  
>  
>  
> ----- Forwarded Message  
> \*From: \*Frank Callahan <[callahanseeds@gmail.com](mailto:callahanseeds@gmail.com)>  
> \*Date: \*Tue, 25 Nov 2008 11:46:22 -0800  
> \*To: \*Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
> \*Subject: \*Re: Torreya taxifolia in Oregon  
>  
> Hi Connie, Thanks for sharing your concerns regarding pollen  
> contamination. We do not have *Torreya cal.* growing in the Rogue Valley  
> but do have *T. grandis* (from China) and *T. taxifolia* which does  
> excellent here the latter two sp. have no chance of pollen  
> contamination. I planted two TOTA's at my mothers place in Medford a  
> male and a female with good seed production this year. These trees are  
> ca. 10+ years old. Anyway was just trying to create a western refugia  
> for the species. Thanks, [\\_callahanseeds@gmail.com](mailto:_callahanseeds@gmail.com) mailto:  
> [\\_cbtanager@bigplanet.com](mailto:_cbtanager@bigplanet.com) 11:44AM 25NOV2008  
>  
> On Tue, Nov 25, 2008 at 9:45 AM, Connie Barlow  
> <[\\_cbtanager@bigplanet.com](mailto:_cbtanager@bigplanet.com)> wrote:  
>  
> Hello Frank -  
>  
> Thank you for your interest in helping this endangered species.  
> Torreya Guardians has received one other offer of private lands for  
> growing *Torreya taxifolia* along the Pacific (that was in California)  
> and, while we appreciate the offers to help, we are careful to work  
> with landowners only east of the Mississippi or on a separate  
> continent. The reason is that *Torreya californica* is the Torreya  
> species on your side of the continent, and we don't want to  
> encourage any mixing of pollen types. Its northernmost outpost in  
> the Coast Range is not far from the Oregon border, so in the decades  
> and centuries ahead, California *torreya* may be looking up in your  
> direction.  
>

> Together in the Great Work,  
>  
> Connie Barlow  
> Torreya Guardians  
>  
> P.S.  
>  
> In a couple months I'll have up online a broader website,  
> [www.plantguardians.org](http://www.plantguardians.org) <[\\_http://www.plantguardians.org/\\_](http://www.plantguardians.org/)> , in which  
> anyone can post interest in a particular genus and species and see  
> who shows up to trade information and ideas.  
>  
>  
>  
> On 11/21/08 2:28 PM, "Callahanseeds@gmail.com"  
> <[\\_Callahanseeds@gmail.com](mailto:Callahanseeds@gmail.com)> wrote:  
>  
> I need to link with you folks for seeds of T. taxifolia. We are  
> presently growing these trees in Oregon and have limited seed  
> production. We have land to grow this species. Contact us at  
> Callahan Seeds POB 5531 Central Pt. OR 97502 - 541-855-1164  
> [\\_callahanseeds@gmail.com](mailto:callahanseeds@gmail.com) Frank Callahan  
>  
> ----- End of Forwarded Message  
>

--  
Chris D Thomas (Professor of Conservation Biology)  
Department of Biology (Area 18)  
University of York  
PO Box 373  
York, YO10 5YW  
UK

tel: 01904 328646 international +44 1904 328646  
email: [cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)

---

On Aug 27, 2006, at 6:43 PM, Connie Barlow wrote:

> Hello!  
>  
> This is Connie Barlow, writing to the Torreya Guardians folks who  
> in some  
> way participated in or facilitated the visit I (and others) made to  
> the  
> private grove of Torreya sp. (begun in 1920s) in Highlands NC and  
> the visit  
> I made by myself to the Torreya grove (begun in 1939) at the Biltmore  
> Gardens.  
>  
> 1. To the HIGHLANDS folks: Check out my Highlands web page and let  
> me know  
> if you have any changes to suggest before I alert my entire Torreya  
> Guardians list to the existence of this page. Especially, notice  
> my sad  
> conclusion that I think the trees are definitely not T. taxifolia.  
> The  
> fruits look just like California Torreya. Click on this page:  
>  
> <http://www.torreyaguardians.org/highlands.html>  
>  
> 2. To BILL ALEXANDER at the BILTMORE: Thank you for last-minute

> making it  
> possible for me to visit the garden for free. I spent 6 hours  
> entirely with  
> the Torreyas and would like to talk with you about my observations  
> (notably,  
> just 55 seeds seem to be growing this year, on a total of 4 trees)  
> and learn  
> about your future plans for these trees. So please reply when a  
> good time  
> would be for me to call you, and give me your phone number, since  
> it is  
> impossible to find that on the Biltmore website. And please check  
> out the  
> photo-rich and lengthy web-page I have posted on that field visit:  
>  
> <http://www.torreyaguardians.org/biltmore-2006.html>  
>  
> 3. To Christa Frangiamore and Bob Zahner: I don't have Jeff  
> Zahner's email  
> address, so could you please forward this email to him. Then,  
> Jeff, send me  
> your email address.  
>  
> 4. To Jack Johnston: I'd like to hear your detailed thoughts after  
> you view  
> both the Highlands and the Biltmore pages.  
>  
> Together for Torreyas,  
> Connie Barlow  
> --  
>

---

Claire -

Thank you for the initiative you took in sending us advice. The 3 people cc'd here are the Torreyas Guardians who actually work with the seeds and seedlings, so perhaps they will find it useful. I have also posted as the November 28 entry on our comments page, url below. When you get there, notice that the most recent posted comment shows that we just received 300 T. taxifolia seeds from the Biltmore Gardens for distribution. Their orchard produces seed maybe only once every 3 years. We are very excited not only about the numbers of seeds now available, but also that we will have some new genetic diversity to add to our original plantings. Here is the url:

<http://www.torreyaguardians.org/comments.html>

Again, thank you!

Together for Torreyas,  
Connie Barlow

On 11/28/09 5:17 PM, "Claire Williams" <[claire-williams@fulbrightmail.org](mailto:claire-williams@fulbrightmail.org)> wrote:

> Dear Connie,  
> I work on conifer reproductive biology and have watched your group's  
> effort to save this Torreyas with great interest. The failure to  
> reproduce is disturbing.  
>  
> But I have a question: have you tried any methods for stimulating  
> female and male strobili using gibberellins and other "stimulation"  
> methods that work well with other conifers?  
>  
> If this holds interest, then Prof. Michael Greenwood at the University  
> of Maine would be a good contact. He is the world's expert on >when<



> and >how< to "stimulate" strobili on any number of conifers.  
>  
> Best wishes,  
>  
> Claire Williams

---

Sara -

Linda McFarland was one the one who suggested Maxilla's name, and then I remembered how you had told me in several emails how much your mom had loved the land and helped the native plants (it was great to have Linda point out to me along the trail the Shortia cluster near the rock waterfall).

Michael and I just landed a vacation home near Black Mountain for us to live in during a 7 week writing retreat beginning in early November. During that time I would love to walk the land with you and hear about her work there, assuming you will be at your Mom's Waynesville home then.

Meanwhile, consider whether you'd like to contribute a "reflection" note or essay when you do arrive back there and visit the little Torreyas for the first time. Unlike a book, a website allows me to keep making changes and additions to any page at any time. I plan to begin writing my version today.

Together for Torreya,  
Connie

On 8/1/08 1:31 PM, "Sara M. Evans" <[s-ewan@umn.edu](mailto:s-ewan@umn.edu)> wrote:

> Wow, Connie. I teared up when I saw that you had named one of the seedlings  
> for my mother. She would have loved this so much. Her spirit is in every  
> inch of the land you planted - both at my place and at the Bryan Garden.  
> Thanks, Sara

>

>

> On 8/1/08 11:44 AM, "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:

>

>> Hi all -

>>

>> Check this page again and see all the cool stuff I've added:

>>

>> <http://www.torreyaguards.org/waynesville-rewilding.html>

>>

>> QUESTION: I will be creating a separate page, linked to the main Torreya  
>> Waynesville Rewilding page, that is dedicated to COMMENTARIES by any of the  
>> participants in this action. I am looking forward to writing one myself, as  
>> I tried to be half-way reporterly in my writing of the main overview. A  
>> commentary allows me to express personal reflections. I encourage any of  
>> you who wish, short or long, to contribute something to this historic event.

>>

>> Send it to me in MS Word. If it is long, I will convert to pdf and link  
>> that pdf to the commentaries page, which will be in html code and mainly  
>> serve as an annotated table of contents to entice people to sample the pdfs.  
>> If it is short, I will transcribe it into code compatible with html and put  
>> it right up on the page.

>>

>> Together for Torreya,

>> Connie

>

>

---

Janet -

Josh Donlan is lead author of the important rewilding papers, one published in Nature, the second in American Naturalist. Go to my assisted migration page and scroll down to find hotlinks to them:

<http://www.torreyaguardians.org/assisted-migration.html>

Connie  
--

----- Forwarded Message

From: Josh Donlan <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org)>  
Date: Fri, 1 Aug 2008 13:46:34 -0700  
To: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Subject: Re: Torreya Rewilding action and assisted migration

Thanks Connie.

What a great story. I will be sure to spread the news.

Cheers,  
Josh  
On Aug 1, 2008, at 9:34 AM, Connie Barlow wrote:

Hi Josh -

Yep, I had already seen Brandon's blog in Wired, and in fact we've just been in touch and he's asked to be added to my Torreya Guardians list for my occasional email alerts. I have just finished the draft of the full overview of the Torreya Rewilding action. Yet to be linked (I hope) are personal commentaries from participants reflecting on the action (I will certainly write one myself and post it). Other than that, it is probably mostly done. The photodocumentary pages of each of the two sites will be supplemented with maps and notations of exact plantings, and which ones received soil amendments, but those will not be linked for public access. But I will note on the public pages that interested parties can contact me and request the code for access.

Here is the direct, updated link, not yet posted with the rest:

<http://www.torreyaguardians.org/waynesville-rewilding.html>

For Torreya,  
Connie Barlow

On 7/31/08 2:17 PM, "Josh Donlan" <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org)> wrote:

Hi Connie et al.

I timely article in Wired just came out focused on the subject as well. Link is below

Cheers,  
Josh

\*\*\*\*\*  
Josh,

Sorry the deadline carousel made it hard to connect, but if you've got a few free moments from the ESA meeting this week, I'd still be glad to talk -- about the Great Plains rewilding concept, and anything else interesting happening in the field. Will you be around?

Brandon

p.s. Here's my article:

[http://www.wired.com/science/planetearth/news/2008/07/species\\_relocation?currentPage=all](http://www.wired.com/science/planetearth/news/2008/07/species_relocation?currentPage=all)

On Jul 31, 2008, at 8:16 AM, Connie Barlow wrote:

RE: Assisted migration/colonization + rewilding terminology discussion

Hello all -

Below is Mac's email to me which I honored by eliminating the second para of his comment that was in the test document. So I have now posted the publicly accessible document at:

<http://www.torreyaguardians.org/assistedmigrationdebate.html>

1. Notice that I have also added my own July 31 posted comment, following all of yours. I title it "acceptance of terminology; advocacy of "rewilding" as a correlative term. I go on to give a brief overview of the "first rewilding of *Torrey taxifolia*", undertaken for 31 seedlings yesterday by Torrey Guardians at 2 private sites in the Waynesville NC area. More will be posted on the website in the next 2 days on this historic undertaking, including lots of photos. I'll let y'all know when it is up for view.

2. Mac's email directly below lays out an interesting panoply of terms with short definitions. I sense that the "assisted colonization" meeting pre-ESA will be lively and useful in this regard. So, again, after the meeting, Jessica let me know what written results I can hotlink to or post in pdf on our website (at least temporarily, until you get something official up and running, but I know how long that can take. When you do get something officially posted after the meeting, I'd be happy to remove anything you give us on a temporary basis for posting on the Torrey Guardians website, and simply hotlink it to the official site.) I do things instantly because I am webmaster.

Connie Barlow

On 7/29/08 2:54 PM, "Mac Hunter" <[Hunter@apollo.umenfa.maine.edu](mailto:Hunter@apollo.umenfa.maine.edu)> wrote:

Dear Connie

I am comfortable with you quoting the first paragraph of my email. I am not sure about the second paragraph which diverges strongly from the focus on terminology and might slightly ruffle the feathers of some Minnesotans and Mainers who don't consider themselves farmers or conservatives respectively. Does it really need to be included here?

I have since had further exchanges on this issue in which we considered "assisted dispersal" (does not confuse the animal ecologists but still fails to recognize that much of the work required will come in establishing a population) "assisted translocation" (internally redundant) and "assisted range shifts" (awkward language). "Assisted colonization" may remind some people of invasive species but it makes me think about disturbance and the first stage of succession.

With the prominence of the issue in Science I expect there will be considerable inertia around

"assisted colonization."  
.....mac

Date sent: Tue, 29 Jul 2008 08:31:02 -0500  
Subject: Re: Assisted colonization naming comments posted  
From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: Chris Thomas <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)>  
Copies to: Hugh Possingham <[h.possingham@uq.edu.au](mailto:h.possingham@uq.edu.au)>, Jessica Hellmann <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>, <[hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)>

Chris -

Excellent! I've already heard back affirmatively from Hugh Possinger, as well. So just 2 more to hear from before I open the link. The main place the page will be linked from will be this key page:

<http://www.torreyaguardians.org/assisted-migration.html>

It is the page I began back when the NYT reported on the initial popular article in Conservation, that was in anticipation of the subject in the April 2007 paper in Conservation Biology. (Wow, I just see that McLachlan and Jessica Hellmann were coauthors of that paper.) Anyway, my goal was to create a page that (a) would stay current on the core papers, public reports, and commentary, and (b) would work its way up to being (and staying) high on Google, so that anyone entering into the subject would easily be able to trace the important history and access the core papers.

Try this: type in "assisted colonization" into Google. You will see that this page on Torreya Guardians is number 5. Then type in "assisted migration" and you will see the page is number 3. It is an important page, so please help me keep it current by letting me know what important additional on-line available stuff happens. (You will note that when you click on the McLachlan, Hellman, Schwartz paper, it actually brings up the real pdf. I hope that someday soon one of you will send me a link for the pdf of the forum paper in Science -- although I do sympathize with the journal needing to collect some revenue for awhile on folks paying online for access to that one paper.)

Onward for Torreya taxifolia,  
Connie Barlow

On 7/29/08 3:19 AM, "Chris Thomas" <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)> wrote:

Dear Connie,  
I am happy for my comments to be made available on your webpage (could polish the English, of course, but not too bad!). Chris

Connie Barlow wrote:

Hello Jessica and Chris and Malcolm and Hugh:

This is Connie Barlow of Torreya Guardians. I thank all 4 of you for responding to my request a week ago for reconsidering the

terminology: assisted colonization or migration. After hearing from all 4 of you, I am much less concerned about the term assisted colonization.

I apologize for taking so long to get back to you. I have posted a test-page on our website that lists all 4 of your comments, drawn from the emails you either sent me directly or cc-d me on. As none of you expressly authorized me to post your comments, I have it only available as a test page at the moment, not linked to the rest of the Torreya Guardians website. You can access it here:

<http://www.torreyaguardsians.org/assistedmigrationdebate-test.html>

REQUEST: Please let me know, each of you, whether or not I may post your comment as shown on this test page < and I am happy to make any changes you may wish.

I would like to get this full-comment page posted in advance of the ESA pre-meeting on this issue, which I understand begins August 3. On July 30, 3 of us Torreya Guardians will be planting 31 *Torreya taxifolia* on two different private properties south of the Smokies in North Carolina (elevations 3400 and 2600 feet, mountainous terrain). An Audubon reporter and photographer will be there to film this effort in "assisted migration", or colonization, which I also enjoy referring to as "rewilding", if one comes to the matter (as I do), from a deep-time perspective. Again, only from a deep-time perspective is it clear that moving *Torreya taxifolia* north is truly help with its own long-established migratory patterns of movement south and north to track the waxing and waning of glaciations--glacial /interglacial migrations, rather than merely seasonal migrations. (On July 29, Audubon will be reporting/photographing the official Endangered Species Act propagation work at the Atlanta Botanical Garden.)

Jessica: When the "Assisted Colonization" working group has finished meeting, please either (a) give me a hotlink to connect our own webpage with whatever website will post the results (especially on the naming issue) or that will continue the effort, or (b) send me a pdf of any report(s) that you'd like to have posted on the web and I'll be happy to do it from the TorreyaGuardians website (and also I will make sure to hotlink them into wikipedia).

Thanks!

Connie Barlow

--

-----  
Malcolm Hunter, Jr.  
Dept. of Wildlife Ecology  
University of Maine

Orono, Maine 04469-5755 USA

Tel: 207/581-2865

Fax: 207/581-2858

Direct e-mail: [Hunter@umenfa.maine.edu](mailto:Hunter@umenfa.maine.edu)

--

C. Josh Donlan MA PhD

Director, Advanced Conservation Strategies, <http://www.advancedconservation.org>

Visiting Fellow, Cornell University, <http://www.eeb.cornell.edu/donlan>

Shifting Baselines, <http://scienceblogs.com/shiftingbaselines>

Contact Info:

Voice: +1 607.227.9768

Email: [donlan@cornell.edu](mailto:donlan@cornell.edu)

Post: P.O. Box 1444

Driggs, Idaho 83422-1444 USA

—

Russ -

I made the excellent changes you suggested — and I totally agree on the “landowner” distinction. When my mother died, my sister and I decided to have the 120 acres of “Up North” property that my father had bought in Michigan go entirely to my brother, as he was such a fabulous steward of it (and still is!). I love the way he says, “I don’t regard myself as owning this land. I’m simply the caretaker of it during my lifetime.”

Make sure you visit the photographic essays I wrote after my visits to 5 different locations in California where our Torreya’s cousin lives: *Torreya californica* — in the mountains, of course! It is a “threatened” plant — rare, but locally abundant. In other words, wherever you find one wild *Torreya* you will find quite a few more nearby — and then the pocket ends. I was remembering my California experience when I chose to plant “Celia Hunter” (#31) where I did. Consider the photos and my reflections on my experience as you walk the land you steward, considering where to rewild *Torreya taxifolia* seedlings.

Here is the page to begin at: follow the links to see the full experience in California:

<http://www.torreyguardians.org/california.html>

Together for Torreya,  
Connie

On 8/1/08 7:57 PM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)> wrote:

Dear Connie,

It was interesting to share the experience of setting out the Waynesville *T. taxifolia* and learn from others with more experience with this interesting and threatened. Thanks for letting me tag along!

Re my short bio I will make a couple of minor suggestions below (I guess I like to down-play the 'ownership' concept and emphasize the 'stewardship' aspect of private land holdings).

Cheers, Russ

Russell Regnery helps look after a small tract of forested property at 4,000 feet elevation between Franklin and Highlands, NC. He plans to plant *T. taxifolia* seedlings from Woodlanders Nursery and hopefully establish another mountain refuge for the species on private land in western North Carolina.

On Aug 1, 2008, at 12:44 PM, Connie Barlow wrote:

Hi all -

Check this page again and see all the cool stuff I've added:

<http://www.torreyaguardians.org/waynesville-rewilding.html>

QUESTION: I will be creating a separate page, linked to the main Torreya Waynesville Rewilding page, that is dedicated to COMMENTARIES by any of the participants in this action. I am looking forward to writing one myself, as I tried to be half-way reporterly in my writing of the main overview. A commentary allows me to express personal reflections. I encourage any of you who wish, short or long, to contribute something to this historic event.

Send it to me in MS Word. If it is long, I will convert to pdf and link that pdf to the commentaries page, which will be in html code and mainly serve as an annotated table of contents to entice people to sample the pdfs. If it is short, I will transcribe it into code compatible with html and put it right up on the page.

Together for Torrey,  
Connie

--

—

Hi all -

Check out the updated link, which I will probably connect to the main page and thus open up for the public tomorrow or so. Lots of photos!

<http://www.torreyaguardians.org/waynesville-rewilding.html>

The only things yet to be added as a result of this action are:

1. COMMENTARIES by any of the participants who want to post their personal reflections. I will certainly be posting mine, as I tried to be mostly reporterly in the main overview itself.
2. MAPS AND DIRECTIONS FOR FINDING EACH OF THE 31 SPECIMENS, along with notations of which received "soil amendments" (sand and lime). These will not be posted for public viewing, but anyone may contact me and request the access code.

A thought: It occurs to me that terminology might be parsed in this way:

"Assisted migration" is what we did for all 31 seedlings this week.

"Assisted colonization" is what we did for those who were given soil amendments. (Okay, we did throw a bucket of water on all of them, too, but it rained the next day, so they would have done fine without that.) Depending on the weather, the seedlings may or may not receive any more supplemental watering.

"Rewilding" is what happened to the species *Torreya taxifolia* -- IF you agree with Paul S. Martin and me (and others) that surely *Torreya taxifolia* lived in the southern Appalachians (and maybe much farther north too) during previous interglacials.

I look forward to hearing how the terminology (and general) discussion goes at the special pre-ESA meeting you are holding.

Best wishes for a productive event!

Connie Barlow

-

—

RE: Assisted migration/colonization + rewilding terminology discussion

Hello all -

Below is Mac's email to me which I honored by eliminating the second para of his comment that was in the test document. So I have now posted the publicly accessible document at:

<http://www.torreyaguardians.org/assistedmigrationdebate.html>

1. Notice that I have also added my own July 31 posted comment, following all of yours. I title it "acceptance of terminology; advocacy of "rewilding" as a correlative term. I go on to give a brief overview of the "first rewilding of *Torreya taxifolia*", undertaken for 31 seedlings yesterday by Torreya Guardians at 2 private sites in the Waynesville NC area. More will be posted on the website in the next 2 days on this historic undertaking, including lots of photos. I'll let y'all know when it is up for view.

2. Mac's email directly below lays out an interesting panoply of terms with short definitions. I sense that the "assisted colonization" meeting pre-ESA will be lively and useful in this regard. So, again, after the meeting, Jessica let me know what written results I can hotlink to or post in pdf on our website (at least temporarily, until you get something official up and running, but I know how long that can take. When you do get something officially posted after the meeting, I'd be happy to remove anything you give us on a temporary basis for posting on the Torreya Guardians website, and simply hotlink it to the official site.) I do things instantly because I am webmaster.

Connie Barlow

On 7/29/08 2:54 PM, "Mac Hunter" <[Hunter@apollo.umenfa.maine.edu](mailto:Hunter@apollo.umenfa.maine.edu)> wrote:

> Dear Connie  
>  
> I am comfortable with you quoting the first paragraph of my email. I am not  
> sure about the  
> second paragraph which diverges strongly from the focus on terminology and  
> might slightly  
> ruffle the feathers of some Minnesotans and Mainers who don't consider  
> themselves farmers  
> or conservatives respectively. Does it really need to be included here?  
>  
> I have since had further exchanges on this issue in which we considered  
> "assisted dispersal" (does not confuse the animal ecologists but still fails  
> to recognize that  
> much of the work required will come in establishing a population)  
> "assisted translocation" (internally redundant) and  
> "assisted range shifts" (awkward language).  
> "Assisted colonization" may remind some people of invasive species but it  
> makes me think  
> about disturbance and the first stage of succession.  
>  
> With the prominence of the issue in Science I expect there will be  
> considerable inertia around  
> "assisted colonization."  
> .....mac  
>  
>  
>  
>  
>  
>  
>  
> Date sent: Tue, 29 Jul 2008 08:31:02 -0500  
> Subject: Re: Assisted colonization naming comments posted  
> From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
> To: Chris Thomas <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)>  
> Copies to: Hugh Possingham <[h.possingham@uq.edu.au](mailto:h.possingham@uq.edu.au)>,  
> Jessica Hellmann <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>,  
> <[hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)>  
>



>> Chris -  
>>  
>> Excellent! I've already heard back affirmatively from Hugh Possinger,  
>> as well. So just 2 more to hear from before I open the link. The  
>> main place the page will be linked from will be this key page:  
>>  
>> <http://www.torreyaguardians.org/assisted-migration.html>  
>>  
>> It is the page I began back when the NYT reported on the initial  
>> popular article in Conservation, that was in anticipation of the  
>> subject in the April 2007 paper in Conservation Biology. (Wow, I just  
>> see that McLachlan and Jessica Hellmann were coauthors of that paper.)  
>> Anyway, my goal was to create a page that (a) would stay current on  
>> the core papers, public reports, and commentary, and (b) would work  
>> its way up to being (and staying) high on Google, so that anyone  
>> entering into the subject would easily be able to trace the important  
>> history and access the core papers.  
>>  
>> Try this: type in "assisted colonization" into Google. You will see  
>> that this page on Torreya Guardians is number 5. Then type in  
>> "assisted migration" and you will see the page is number 3. It is an  
>> important page, so please help me keep it current by letting me know  
>> what important additional on-line available stuff happens. (You will  
>> note that when you click on the McLachlan, Hellman, Schwartz paper, it  
>> actually brings up the real pdf. I hope that someday soon one of you  
>> will send me a link for the pdf of the forum paper in Science --  
>> although I do sympathize with the journal needing to collect some  
>> revenue for awhile on folks paying online for access to that one  
>> paper.)  
>>  
>> Onward for Torreya taxifolia,  
>> Connie Barlow  
>>  
>>  
>> On 7/29/08 3:19 AM, "Chris Thomas" <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)> wrote:  
>>  
>>> Dear Connie,  
>>> I am happy for my comments to be made available on your webpage  
>>> (could polish the English, of course, but not too bad!). Chris  
>>>  
>>> Connie Barlow wrote:  
>>>> Hello Jessica and Chris and Malcolm and Hugh:  
>>>>  
>>>> This is Connie Barlow of Torreya Guardians. I thank all 4 of you  
>>>> for responding to my request a week ago for reconsidering the  
>>>> terminology: assisted colonization or migration. After hearing  
>>>> from all 4 of you, I am much less concerned about the term assisted  
>>>> colonization.  
>>>>  
>>>> I apologize for taking so long to get back to you. I have posted a  
>>>> test-page on our website that lists all 4 of your comments, drawn  
>>>> from the emails you either sent me directly or cc-d me on. As none  
>>>> of you expressly authorized me to post your comments, I have it  
>>>> only available as a test page at the moment, not linked to the rest  
>>>> of the Torreya Guardians website. You can access it here:  
>>>>  
>>>> <http://www.torreyaguardians.org/assistedmigrationdebate-test.html>  
>>>>  
>>>> REQUEST: Please let me know, each of you, whether or not I may post  
>>>> your comment as shown on this test page < and I am happy to make  
>>>> any changes you may wish.  
>>>>  
>>>> I would like to get this full-comment page posted in advance of the  
>>>> ESA pre-meeting on this issue, which I understand begins August 3.

>>>> On July 30, 3 of us Torrey Guardians will be planting 31 Torrey taxifolia on two different private properties south of the Smokies in North Carolina (elevations 3400 and 2600 feet, mountainous terrain). An Audubon reporter and photographer will be there to film this effort in "assisted migration", or colonization, which I also enjoy referring to as "rewilding", if one comes to the matter (as I do), from a deep-time perspective. Again, only from a deep-time perspective is it clear that moving Torrey taxifolia north is truly help with its own long-established migratory patterns of movement south and north to track the waxing and waning of glaciations--glacial /interglacial migrations, rather than merely seasonal migrations. (On July 29, Audubon will be reporting/photographing the official Endangered Species Act propagation work at the Atlanta Botanical Garden.)

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>>>> Thanks!

>>>> Connie Barlow

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> Malcolm Hunter, Jr.  
> Dept. of Wildlife Ecology  
> University of Maine  
> Orono, Maine 04469-5755 USA

>  
> Tel: 207/581-2865  
> Fax: 207/581-2858  
> Direct e-mail: [Hunter@umenfa.maine.edu](mailto:Hunter@umenfa.maine.edu)  
>

Chris -

Excellent! I've already heard back affirmatively from Hugh Possinger, as well. So just 2 more to hear from before I open the link. The main place the page will be linked from will be this key page:

<http://www.torreyguardians.org/assisted-migration.html>

It is the page I began back when the NYT reported on the initial popular article in Conservation, that was in anticipation of the subject in the April 2007 paper in Conservation Biology. (Wow, I just see that McLachlan and Jessica Hellmann were coauthors of that paper.) Anyway, my goal was to create a page that (a) would stay current on the core papers, public reports, and commentary, and (b) would work its way up to being (and staying) high on Google, so that anyone entering into the subject would easily be able to trace the important history and access the core papers.

Try this: type in "assisted colonization" into Google. You will see that this page on Torreya Guardians is number 5. Then type in "assisted migration" and you will see the page is number 3. It is an important page, so please help me keep it current by letting me know what important additional on-line available stuff happens. (You will note that when you click on the McLachlan, Hellman, Schwartz paper, it actually brings up the real pdf. I hope that someday soon one of you will send me a link for the pdf of the forum paper in Science -- although I do sympathize with the journal needing to collect some revenue for awhile on folks paying online for access to that one paper.)

Onward for Torreya taxifolia,  
Connie Barlow

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> Dear Connie,  
> I am happy for my comments to be made available on your webpage (could  
> polish the English, of course, but not too bad!).  
> Chris

—

Lee -

Okay, we'll call your cell when we leave Jack's and again when our caravan approaches Bryan Gardens. Glad you took the photos on a sunny day, as the sites with dappled sunlight look especially attractive. Good point on walnut toxicity. Janet may have some ideas on that, as I just went to her website today and she's written a lot on gardening, plants, and gardening native and endangered plants. Check her out at:

<http://janetmarinelli.com/>

Note to Jack: We've got an 8 hour drive from where we are now (memphisTN) to your home tomorrow. Not sure when we will leave. But Michael needs to make a call on your home phone tomorrow at 10:35 pm, as he has a live radio interview scheduled for that time, and they require a land line (must be a West Coast station).

See y'all soon!

Connie

On 7/28/08 4:18 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Torreya Guardians,

I met with Janet at Corneille Bryan Gardens and we looked at multiple sites that did not interfere with their rare plants. The Gardens are best used as a public educational site and I'm not so concerned about maximizing pollination by clump planting...

The Gardens are narrow and there is not any great location for a clump of plantings more than 3-5 plants at a site. The sunniest site is where some oaks were cut at the upper end of the gardens but there is only room for a couple of trees. We have marked several sites including a more shaded area at the lower western side (see attached map) where there is room for a clump planting.

Has anyone commented on or noted any problems with Black Walnut toxicity on any Torreya plantings? We have an area just uphill of several huge walnuts on "Walnut Hill." We're make final planting sites with Jack and Connie's eyeballing of the sites.

I'm expecting we'll get together at the gardens at 12:30- 1 pm-ish if you are leaving Georgia at 10 am and plan to grab a little lunch on the road...best to call my cell 828-646-1593 when you are on the road so I can double check times with Linda and whoever can meet at the gardens. I'll have planting supplies and tools and we can plant some or all of the plants prior to going to second site (esp. if photographer wants shots at both sites). I'm willing to some back and do final plantings at both sites and follow up with watering for establishment at Evans planting site...

Janet will make sure transplants are watered until establishment if we remain droughty.

So I'm planning on meeting everyone at Lake Junaluska just down the creek from the gardens and leading folks to parking areas. Thanks and Happy Trails, Lee

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

—

Euan -

That's great news! I bet the plant loves the weather in the U.K. What kind of habitat did you plant it in? Tomorrow my husband and I drive to Jack Johnstone's home in the SE USA, where he has sprouted seedlings from seeds he collected last fall; about 17 have sprouted thus far. Then a reporter and photographer working for Audubon magazine will all caravan with us northward into the Appalachian Mountains, where we will be rewilding onto forested habitat 31 potted seedlings, each several years old. Exciting!

Together for Torreya,  
Connie

On 7/20/08 4:13 PM, "Bill or Euan Roxsburgh" <[Bill@roxburghw.freeseerve.co.uk](mailto:Bill@roxburghw.freeseerve.co.uk)> wrote:

Hi Connie

My specimen of *Torreya taxifolia* planted out has grown 7.2 inches this year I think its still growing.

Euan

—  
Sara -

I apologize for taking so long to respond. I am very happy that Lee Barnes had a chance to coordinate this effort with you on your property. Thank you immensely for participating!

I am cc-ing Janet Marinelli, who will be writing the story for Audubon magazine. She is a writer and publisher specializing in plants — and the role that home gardeners can play in helping endangered species. You can see her website and publications at:

<http://janetmarinelli.com/>

In just two days we will be bringing *Torreya taxifolia* to your property! And thank you for the history on your mother's commitment to the regional plants. It is exactly the sort of thing that Janet Marinelli promotes in gardening.

Together for Torreya,  
Connie

On 7/20/08 4:59 PM, "Sara M. Evans" <[s-evan@umn.edu](mailto:s-evan@umn.edu)> wrote:

Hi Connie,

Unfortunately Chuck and I will not be here when you arrive on the 30th. We leave for Minnesota a week earlier. I'm very sorry to miss this momentous and historic moment, but I am thrilled that you will do the planting. I walked my paths today thinking how much you will enjoy this space and wishing that you and my mother could have known each other. There are several beds of *shortia galactifolia* (Occonee Bells) all planted by my mother who had a passion to save it that matches your commitment to *torreya*. She made many trips to the small area where *shortia* is native to gather as much as possible before 80% of its habitat was flooded by Duke Power and she spend years learning to propagate it. I do hope you have fun when you are here and return sometime when we can host you appropriately. Our phone numbers are: Sara (651-341-1968) and Chuck (651-341-2049). Wherever we are, however, e-mail is usually the most dependable way to be in touch.

Best,  
Sara

On 7/18/08 10:10 AM, "Connie Barlow" <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:

> Jerry -  
>

> Schedule for July 30 should read something like:

>

> JULY 30 early morning: Audubon folks (Janet and Ken) begin drive on Rte 23  
> from Atlanta toward Waynesville, NC.

>

> STOP #1: HOME OF JACK JOHNSTON, Torreya Guardian, 422 Neptune Lane,  
> Lakemont, GA 30552. (706) 782-7393 (home). Jack lives about 3 miles off  
> of Rte 23, so it is right enroute. Photographic interest there: Jack has  
> seedlings planted on his property from a previous year, and the seeds he  
> planted last fall from collection he made of seeds at Smithgall Woods began  
> spouting outdoors about 2 months ago. Connie Barlow (with her husband,  
> Michael Dowd) will have arrived at Jack Johnston's home on the afternoon of  
> July 29, so this is where Jack and Connie will join the Audubon folks in  
> proceeding to Waynesville.

>

> STOP #2, FIRST REWILDING PLANTING: CORNEILLE BRYAN NATIVE GARDEN, Lake  
> Junaluska NC, which is on the outskirts of Waynesville. Note: Connie  
> googled and could find no website for the garden, nor an address, but lots  
> of other webpages reference it and a book on the Garden is on Amazon.com.  
> Lee Barnes has walked the site (see below) and will be the leader for this  
> site too, and will have worked out with the Garden owners allowable places  
> to plant Torreya.

>

> STOP #3, SECOND REWILDING PLANTING: PROPERTY OF CHUCK DAYTON AND SARA EVANS.  
> 1833 Eagle's Nest Road, Waynesville NC, right across from when Rambling  
> Ridge Road intersects with Eagles Nest on the slope of Eagle's Nest  
> Mountain. LEE BARNES will join us there, as he has walked the land and will  
> determine exact locations for the plantings. Note: Lee Barnes lives in  
> Waynesville. 828-452-5716 home office/fax 828-646-1593 cell QUESTION FOR  
> LEE: Will Chuck and Sara be on the property at the time? If so, what is  
> their phone number?

>

> Following are more detailed notes by LEE BARNES:

>

> 1) EVANS PROPERTY: 3400 foot elevation. Cove Hardwood forest type.  
> We are thinking of planting in three microclimates as "clumps" of 6-10  
> plants- we're thinking 15-20 ft. spacings for light and canopy spacing but  
> also close enough for pollination. At one site (deciduous maple, tulip  
> popular, rich herbaceous layer, trillium, flame azalea, transplanted  
> shortia, etc.) we have three microclimates to choose from- 1) diffuse sun  
> 10-50 ft. from forest edge above cut bank, 2) mid-slope planting, well  
> drained in 50 yr. old canopy gaps, and 3) or lower site, morning diffuse  
> sun, western shade due to side ridge but more mesic site/higher humidity. We  
> will be able to water this season for establishment.

>

> 2) CORNEILLE BRYAN NATIVE GARDEN. 2600 foot elevation. A deciduous  
> shaded narrow north-south oriented ravine, where we have choice of deciduous  
> shade and new canopy gap due to tree removal. The jewel weed etc. has been  
> released in the gaps but plantings can be controlled by volunteers as well  
> as available water.

>

> Together for Torreya,  
> Connie Barlow

>

>

> On 7/17/08 3:53 PM, "GOODBODY, Jerry" <JGOODBODY@audubon.org> wrote:

>

>> Hi, Everyone,

>>

>> Since the days of the shoot are drawing near, I thought I'd send out an  
>> email reviewing the plan and providing all the pertinent contact info again.

>>

>> The first day, in the Atlanta Botanical Garden, should be easy enough. The  
>> second day might require you guys to contact one another for directions and

>> other specifics.  
>>  
>> Schedule:  
>> July 29: Atlanta Botanical Garden's torreya propagation work  
>>  
>> July 30: Waynesville, NC for the actual torreya planting, at the home of  
>> Chuck and Sara Evans (don't have phone or email for them, but their address  
>> is 1833 Eagles Nest Road).  
>>  
>>  
>> Here is contact info.  
>>  
>> Janet Marinelli (writer): [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net); 212-724-6351  
>>  
>> Jenny Cruse-Sanders (scientist at ABG): 404-591-1590;  
>> [jsanders@atlantabotanicalgarden.org](mailto:jsanders@atlantabotanicalgarden.org)  
>>  
>> Danny Flanders (public relations contact at ABG): 404-591-1550;  
>> [dflanders@atlantabotanicalgarden.org](mailto:dflanders@atlantabotanicalgarden.org)  
>>  
>> Connie Barlow (leader of Torreya Guardians): 850-420-8002 (cell);  
>> [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
>>  
>> Jack Johnston (Torreya Guardian): (706) 782-7393; [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)  
>>  
>> Mia Van Meter (works with Connie): [mia\\_tgs@yahoo.com](mailto:mia_tgs@yahoo.com)  
>>  
>> Ken Gehle (photographer): 404-377-5160 (work), 404-966-6907 (cell)  
>> [ken@kengehle.com](mailto:ken@kengehle.com)  
>>  
>> I'm sure the shoots will go great. Thanks to all of you, and let me know if  
>> there's are any problems or if there's anything else I can do.  
>>  
>> Best,  
>> Jerry  
>>  
>> Jerry Goodbody  
>> Managing Editor  
>> Audubon Magazine  
>> [jgoodbody@audubon.org](mailto:jgoodbody@audubon.org)  
>> 212-979-3130  
>>

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Saturday, July 19, 2008 1:01 PM

Subj: Assisted colonization response fr Torreya Guardians

TO: <[oveh@uq.edu.au](mailto:oveh@uq.edu.au)>, <[lhughes@rna.bio.mq.edu.au](mailto:lhughes@rna.bio.mq.edu.au)>, <[Sue.McIntyre@csiro.au](mailto:Sue.McIntyre@csiro.au)>, <[david.lindenmayer@anu.edu.au](mailto:david.lindenmayer@anu.edu.au)>, <[parmesan@uts.cc.utexas.edu](mailto:parmesan@uts.cc.utexas.edu)>, <[h.possingham@uq.edu.au](mailto:h.possingham@uq.edu.au)>, <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)>, <[hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)>, <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>

CC: Ron Determann <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)>

BCC: Dave Foreman <[eltigredave@comcast.net](mailto:eltigredave@comcast.net)>, "\"Rinker, Bruce\"" <[brinker@co.pinellas.fl.us](mailto:brinker@co.pinellas.fl.us)>, Robbin Moran <[rmoran@nybg.org](mailto:rmoran@nybg.org)>, "pswhite@unc.edu" <[pswhite@unc.edu](mailto:pswhite@unc.edu)>, Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>, "\"GOODBODY, Jerry\"" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)>, Michelle Nijhuis <[michelle@nasw.org](mailto:michelle@nasw.org)>, Lauren Morello <[lmorello@eenews.net](mailto:lmorello@eenews.net)>

To: Torreya Guardians and others

Fr: Connie Barlow, TorreyaGuardians webmaster

Re: latest news on assisted migration: new paper in Science, ESA meeting August 5

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A 2-page paper on assisted migration appeared in this week's issue of Science journal. (A pdf is attached for your personal use, as I have not yet found a hotlink to the full article available freely online.)

This paper is important because (a) it appears in the top science publication in the world, (b) it is probably the turning point for institutions to begin undertaking assisted migration, (c) it is getting a lot of media attention.

Meanwhile, on July 30 Torrey Guardians (me, Lee Barnes, and Jack Johnston) will be planting/"rewilding" 31 *Torreya taxifolia* seedlings in forested (natural) settings, on 2 sets of private properties near Waynesville NC. An Audubon reporter and photographer will be there to capture this action.

Two requests here:

1. FIRST REQUEST: Are any of you attending the August 8 meeting of the Ecological Society of America in Milwaukee? If so, could you go early, on August 5, to capture a last-minute session scheduled on "assisted colonization" and then send me your comments/report on it that I could add to our TorreyGuardians website? It will likely be a historic showdown, possibly marking the paradigm shift. I learned about that special session via this report in Wired News online:

[http://www.wired.com/science/planetearth/news/2008/07/species\\_relocation?currentPage=1](http://www.wired.com/science/planetearth/news/2008/07/species_relocation?currentPage=1)

Brandon Keim wrote:

"Adding to the momentum, the Ecological Society of America's annual meeting in August will be preceded by a three-day discussion of assisted colonization, by ecologists, policy wonks and lawyers."

I found this synopsis of the session online:

Tuesday, August 5, 2008: 11:30 AM-1:15 PM

Wright C, Hilton

WK 26 - Conservation in the 21st Century: Saving Species and Ecosystems from Climate Change by Translocation to New, More Climatically Suitable Regions "Assisted migration" or "assisted colonization" is the policy of deliberately translocating species beyond their native ranges as a tool for conserving biodiversity under climate change (McLachlan et al. 2007). As a conservation strategy, it has promise, but also many risks. For instance, we may save species from extinction, but inadvertently introduce species that become invasive and cause extinctions in turn. This workshop will present the first results of an NSF-sponsored working group charged with evaluating the pros and cons of assisted migration. (The working group will have met for three days immediately preceding ESA.) The workshop also will feature open discussion and completion of a survey regarding scientific and ethical issues of assisted migration that will guide future research by the working group. McLachlan et al. 2007. Conservation Biology 21: 297-302.

Organizer: Jessica J. Hellmann, University of Notre Dame

Co-organizers: Jason McLachlan, University of Notre Dame

Mark W. Schwartz, University of California - Davis

Dov F. Sax, Brown University

2. SECOND REQUEST. With this new article in Science, Google results are scrambled. If you type into Google "assisted migration", the number 2 item is still a page from the TorreyGuardians website. But the Science paper used the term "assisted colonization" in its title, and some news reports of it don't mention "assisted migration" as an alternative term. If you type into Google "assisted colonization", a TorreyGuardians page is listed on the second page of Google finds. I personally dislike the term "assisted

colonization" and am trying to find ways to urge the academics that are now leading the charge on this to shift back to the original "assisted migration." Toward this end, I have created a new web page on TorreyGuardians to foster dialogue on choice of terminology. I begin with my own 4-item argument in favor of the term "assisted migration." PLEASE CONTRIBUTE YOUR COMMENTS, TOO. Email me and I will post them at this link:

<<http://www.torreyguardians.org/assistedmigrationdebate.html>>

Meanwhile, I continue to update the page that keeps a running list of links with short descriptions to the papers and news articles on the assisted migration debate. The advantage of my page over google is that the classic old stuff doesn't get lost in the heady immediacy of what happens to be hot in the moment. Please alert me if I am missing something important from this list. Note: this is the page that google brings up for the term "assisted colonization."

<http://www.torreyguardians.org/assisted-migration.html>

Together for Torrey,  
Connie Barlow  
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To: authors of the Science paper on "assisted colonization"

Fr: Connie Barlow, of Torrey Guardians, the citizen's group advocating assisted migration of *Torreya taxifolia* from Florida to the Appalachians

Re: Concerns about the shift in terminology from "assisted migration" to "assisted colonization"

Hello all. I am the founder and webmaster of the citizen's group that is actually undertaking assisted migration of a highly endangered conifer, *Torreya taxifolia*. I applaud your paper in Science journal in not only advocating this bold new move in conservation but in offering a decision tree to help conservation managers in moving forward in ways that can be regarded more broadly as objective and rational.

I have two suggestions for future discussion:

1. Paul S. Martin and I, when we published our original paper on this topic in Wild Earth (2004), stressed the deep-time perspective in perceiving not only the need for but naturalness of climate-induced migration. Thus, for our focal species, the endangered conifer *Torreya taxifolia*, we stress that the proposed translocation from northern Florida (actually, the "pocket glacial reserve") to the southern Appalachian Mountains is mimicking what would almost certainly have been the tree's natural migratory movements during previous episodes of interglacial warming. I think it would help conservationists and others "warm" to the idea of assisted migration if the populace became better educated about the massive movements species have made during previous episodes of massive climate change. See, for example, Hazel Delcourt's excellent book, "Forests in Peril", which stimulated the initial debate that led to the formation of TorreyGuardians.org

<[http://www.amazon.com/Forests-Peril-Tracking-Deciduous-Greenhouse/dp/0939923890/ref=sr\\_1\\_1?ie=UTF8&s=books&qid=1216489789&sr=8-1](http://www.amazon.com/Forests-Peril-Tracking-Deciduous-Greenhouse/dp/0939923890/ref=sr_1_1?ie=UTF8&s=books&qid=1216489789&sr=8-1)>

2. I would urge you to reconsider adopting the term "assisted colonization" as a replacement for the term we and others have been accustomed to using, "assisted migration." I have created a new page on the [www.TorreyGuardians.org](http://www.TorreyGuardians.org) website in which I post 4 reasons why "assisted migration" is preferable as the term of choice. I also invite further comments, and will post those on the web page too, so that discussion can spread. Click here to visit that webpage:

<<http://torreyguardians.org/assistedmigrationdebate.html>>

Overall, my experience has been that "Assisted Migration" is a very controversial topic. My sense is that "Assisted Colonization" unnecessarily evokes additional wariness, and that a return to the term "assisted migration" would be very helpful for moving the paradigm shift beyond academia and into institutional conservation actions and advocacy.



In addition, please make sure you are aware of the initial articles that began this debate, both occurring in a "Forum" in the Fall 2004/Winter 2005 issue of Wild Earth. You can access them by visiting a webpage I have created that lists all the significant online papers and reports on the "assisted migration" and related "rewilding" issues:

<<http://torreyaguardians.org/assisted-migration.html>>

On that page, do click on the first link, too. This article on assisted migration features the work of Torreya Guardians. Although it is not academic, it is beautifully written (for Orion magazine) and highlights the human/subjective sides of the debate.

Evolutionarily yours,  
Connie Barlow

BTW: You will note that I cannot directly link to the July 18 multi-author paper in Science because it is available only by purchase. I personally have a pdf of the 2-page forum piece and would love to be able to either post it directly on my website or hotlink to somewhere where it is posted. I know that not uncommonly, authors of such papers have them posted in pdf on their own academic websites. If any of you know how I can hotlink to the pdf, or know who I can talk to at Science journal to get permission to post it on mine, please let me know.

P.S. I am the author of the 2001 book, "The Ghosts of Evolution", in which one section proposed translocation of *Torreya taxifolia*, upon the assumption that human extinction or extirpation of its seed disperser was at the root of its inability to head north from its pocket refuge in northern Florida.

[http://www.amazon.com/Ghosts-Evolution-Nonsensical-Ecological-Anachronisms/dp/0465005527/ref=pd\\_bbs\\_sr\\_1?ie=UTF8&s=books&qid=1216490466&sr=8-1](http://www.amazon.com/Ghosts-Evolution-Nonsensical-Ecological-Anachronisms/dp/0465005527/ref=pd_bbs_sr_1?ie=UTF8&s=books&qid=1216490466&sr=8-1)

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7/18/08  
Hello all -

This is Connie Barlow of Torreya Guardians. Yesterday I was interviewed by

Lauren Morello  
Reporter, ClimateWire  
Lauren Morello <[lmorello@eenews.net](mailto:lmorello@eenews.net)>  
[www.climatewire.net](http://www.climatewire.net)  
Desk: 202.737.4340 x248  
Cell: 202. 419.9122

She was writing an internet article on an article in the journal Science that was going to be released today. (Her deadline was 5pm yesterday.) As usual, Torreya Guardians seems to be the only group that is already doing assisted migration, so I was contacted. She seemed to be happy with the results of the interview, which can be found as the #2 article for today at the website above (right after Al Gore's speech). One has to have a paid subscription or subscribe for a trial to see it, so if any of you can actually access it, please copy it and email it to me so I can see how she depicted the work of Torreya guardians.

Attached here is the pdf of the Science journal article itself. A couple of interesting points strike me from just now getting a chance to read the actual article:

1. Notice that C. Parmesan is one of the coauthors. She is rather famous for having catalogued the actual climate-induced changes in butterfly species ranges, arrival times, etc.
2. Notice the shift to the term "assisted colonization", rather than the original "assisted migration." I remember when this was first proposed in Conservation Biology. Here is how I wrote that up on the assisted migration page of Torreya Guardians: <http://www.torreyaguardians.org/assisted-migration.html>

"Climate Change and Moving Species: Furthering the Debate on Assisted Colonization" by Malcolm L. Hunter, 2007, Conservation Biology Vol 21: 1356-58.

Content: Makes case for using the term "assisted colonization" rather than "assisted migration"; proposes three features for testing advisability of any particular species for such intervention: (1) their probability of extinction due to climate change, (2) their vagility, (3) and their ecological roles.

Connie continues: I remember disliking the term "assisted colonization" for several reasons. First was a gut-level "ugh", as it reeks of Euro-colonization of the world with all the negative historical sense that that calls up. Second, were a couple rational reasons: "Migration" has the emphasis on a species is in trouble and needs to be moved FROM the troubled spot (one can focus on the emigration side of it just as much as the immigration side). But "colonization" has the emphasis on the landing location and one immediately wonders what the effects will be on the "natives" already there. Also, with "migration", the word is open to the possibility that "migration" has happened naturally in the past, as we allege for *Torreya taxifolia* during previous interglacial episodes, though now it needs "assistance" in order to be able to migrate again. With "colonization" one doesn't get the same openness, unless one were to say "recolonization". Which brings me to another important item (actually an omission) that I sensed in the the Science article.

3. Granted, that in a top journal like Science, they force the writers to be brief, but nonetheless, I would have hoped for some mention of the deep-time perspective -- that is, that when climate has naturally shifted in the prehistoric past, plants and animals have in fact moved around a lot, and on their own. Thus, there is nothing unusual about the need for species to migrate when climate shifts; indeed the mainstream paradigm now is that during the past times of shifts from glacial to interglacial and back in North America, radically different species found themselves in association with one another--individual species migrate at vastly different rates; biotic "communities" include very odd companions. What is unusual today is if it is determined that human action has in some way limited the ability of species to do on their own what had been achievable for them in the past -- as in, the speed of human-induced climate change, the destruction of habitat by humans along vital segments of what would have been the "corridors" for movement in the past, or the extirpation or extinction of seed dispersers.

Overall, the shift from "assisted migration" to "assisted colonization" as the terminology of choice, and the authors' having failed to ground the issue within a deep-time (thus, naturalistic) frame, may make citizen conservationists even more wary of this radical move in conservation values and actions.

One more comment on the possible down-side of "colonization" as the term of choice. If one uses that term, the focus is on the end-result: colonization. That would suggest that interventionist measures to ensure successful colonization would be part and parcel of assisting the species in landing in a new site. Whereas, with the term "migration", the question is far more open.

See, for example, Lee Barnes' question in the pasted-in email below. "Are we going to use soil amendments (like lime, greensand, etc.) or are we going for the more re-wilding concept of little human input as if squirrels were doing the plantings?" For *Torreya* Guardians, that is an important question to discuss. In my experience, when a *Torreya* starts to show a yellowing of the leaves, a dose of lime can bring it back to health -- but one needn't get paranoid about it and lime them in advance. Thus, my own suggestion would be to give the trees a chance to "show their stuff" -- to show that they are delighted to be "home" again to their previous interglacial range and don't really need our help once they get there. Thus, put the trees into the ground with no soil amendments (I would note that Jack Johnston has already written that in his experience, one needs to remove as much of the potting soil from the roots as possible, otherwise the threat of drying out in a dry spell is heightened.) Then, if the trees really can do everything else they need to do on their own, we are in a far better position to conclude the long-term efficacy of the effort--and with minimal or no time or monetary costs for the species to continue on its own, if need be. And if the trees begin to yellow, like they do in Florida, and thus require liming, then it indicates that perhaps we need to pay attention to the rock type underlying the soil, or maybe we need to move the tree even farther north. That is, an inability to thrive on its own would be a key indicator that we have not yet intuited where, in truth, *T. taxifolia* "wants" to be at this stage of an interglacial.

Overall, "assisted migration" is far more appealing for its minimalist, organic tone than is "assisted colonization" -- which rings as interventionist, even "engineering" style. Lee Barnes is one of the leaders in permaculture, which is precisely the mindset for undertaking assisted migration in ways that focus on location, microclimates, plant associations, and thus minimizing the human need to intervene any farther. Thus I hope that the Audubon article will be able to highlight these distinctions and maybe make a difference in how this effort takes off -- engineering style, or permaculture style. Right now, with the Science article just having been published, a minimalist/permaculture style for assisting plants may have an uphill battle among the institutions who will very likely soon take over the effort, leaving the work of citizen-naturalists, like *Torreya* Guardians, as mere sideshows.

Finally, I am very happy to see the article, despite the problems with it I noted above. Getting into Science is big-time. And the fact that they came up with a simple "decision tree" will help conservation and species managers be able to show that a decision to begin such assistance is not just subjective. As I told Lauren yesterday in the interview, it is not surprising that a small group of individuals, who formed a loose sort of group for this one purpose, would be the first group able to act. Groups as large as Audubon and The Nature Conservancy are just too large to be able to swiftly move to a new paradigm without wrenching internal conflict. I mentioned how even the local Audubon group in Highlands couldn't act as a "group" because of internal disagreements about how to

react to the idea of assisting in the migration of *T. taxifolia*. Nonetheless, the person I was communicating with was able to give me the names of individual landowners who were, in fact, interested in participating. So, overall, this a very interesting example of how a few individuals, by undertaking radical action upon which it is easy for them to agree, can be instrumental in motivating the establishment (science, conservation organizations) to get moving on shifting the paradigm within the groups and figuring out guidelines that will help the resisters feel somewhat comfortable about the safety of how the new paradigm begins to play out in action.

Together for Torreya,  
Connie

EMAIL FROM LEE BARNES, July 17.

Friends,

I just met with Sara Evans and Linda MacFarland to walk Sara's property for possible Torreya plantings. I'm hoping to get up with Janet Manning to review the planting sites at Bryan Native Plant Gardens... I hear they have over 500 species/cultivars!

My photos do not show much detail (yellow surveyor flags kinda hide in the herbaceous layer...) I placed flags in three areas and also eye-balled a 4th site. Basically I selected a sunnier site, a more shaded, and a more moist/humid area- I placed out flags at +/-10-20 ft. spacings... ideally we'll plant +/-20 plants at the Evans and 10-ish at the Bryan Native Gardens at Lake Junaluska. The two locations give us variance in elevation (3400 ft. and 2600 ft.) and the Junaluska site will have more TLC with easier watering and great public exposure. At Junaluska we can probably get sunnier planting sites also.

Some questions come to mind:

- 1) Is Jack coming to Waynesville for the plantings?- I wanted to query his and Connie's thoughts on planting sites since you both have seen more Torreya plantings than I...
- 2) Are we going to use soil amendments (like lime, greensand, etc.) or are we going for the more re-wilding concept of little human input as if squirrels were doing the plantings?
- 3) We need to figure a way to map and mark the plantings... Sara may be able to find a survey that we can use as a base map or I can photo-enlarge county property maps. I'm trying to think of an aesthetic way to mark the plantings- we may just use wooden stakes since we only need to mark them for the first few years so we can check up on them... I'm willing to watch them this summer and make sure they get water if our drought continues...
- 4) We need to think of text that we can use on a small sign at Bryan Gardens... I'm willing to pay for some educational info/ small signage for use in the public gardens than match what they are already using....
- 5) Do we know about when folks will be in Waynesville... late morning or early afternoon, etc. - Janet manages the Bryan Garden usually on Mondays and Wednesday - at first I thought you all were coming on Tuesday but I see that July 30th is Wednesday... we might want to go to the Gardens first since it will be easier for the photographer (wider trails, more open, etc.) I'm also thinking about getting the local paper to cover the Bryan Native Garden plantings but be more "low key" with Evan's plantings so that those plantings are a little more private...

Thanks and Happy Trails, Lee

\_\_\_\_\_

Jerry -

Schedule for July 30 should read something like:

JULY 30 early morning: Audubon folks (Janet and Ken) begin drive on Rte 23 from Atlanta toward Waynesville, NC.

STOP #1: HOME OF JACK JOHNSTON, Torreya Guardian, 422 Neptune Lane, Lakemont, GA 30552. (706) 782-7393 (home). Jack lives about 3 miles off of Rte 23, so it is right enroute. Photographic interest there: Jack has seedlings planted on his property from a previous year, and the seeds he planted last fall from collection he made of seeds at Smithgall Woods began spouting outdoors about 2 months ago. Connie Barlow (with her husband, Michael Dowd) will have arrived at Jack Johnston's home on the afternoon of July 29, so this is where Jack and Connie will join the Audubon folks in proceeding to Waynesville.

STOP #2, FIRST REWILDING PLANTING: CORNEILLE BRYAN NATIVE GARDEN, Lake Junaluska NC, which is on the outskirts of Waynesville. Note: Connie googled and could find no website for the garden, nor an address, but lots of other webpages reference it and a book on the Garden is on Amazon.com. Lee Barnes has walked the site (see

below) and will be the leader for this site too, and will have worked out with the Garden owners allowable places to plant Torreya.

STOP #3, SECOND REWILDING PLANTING: PROPERTY OF CHUCK DAYTON AND SARA EVANS. 1833 Eagle's Nest Road, Waynesville NC, right across from when Rambling Ridge Road intersects with Eagles Nest on the slope of Eagle's Nest Mountain. LEE BARNES will join us there, as he has walked the land and will determine exact locations for the plantings. Note: Lee Barnes lives in Waynesville. 828-452-5716 home office/fax 828-646-1593 cell QUESTION FOR LEE: Will Chuck and Sara be on the property at the time? If so, what is their phone number?

Following are more detailed notes by LEE BARNES:

1) EVANS PROPERTY: 3400 foot elevation. Cove Hardwood forest type. We are thinking of planting in three microclimates as "clumps" of 6-10 plants- we're thinking 15-20 ft. spacings for light and canopy spacing but also close enough for pollination. At one site (deciduous maple, tulip poplar, rich herbaceous layer, trillium, flame azalea, transplanted shortia, etc.) we have three microclimates to choose from- 1) diffuse sun 10-50 ft. from forest edge above cut bank, 2) mid-slope planting, well drained in 50 yr. old canopy gaps, and 3) or lower site, morning diffuse sun, western shade due to side ridge but more mesic site/higher humidity. We will be able to water this season for establishment.

2) CORNEILLE BRYAN NATIVE GARDEN. 2600 foot elevation. A deciduous shaded narrow north-south oriented ravine, where we have choice of deciduous shade and new canopy gap due to tree removal. The jewel weed etc. has been released in the gaps but plantings can be controlled by volunteers as well as available water.

Together for Torreya,  
Connie Barlow

On 7/17/08 3:53 PM, "GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)> wrote:

> Hi, Everyone,  
>  
> Since the days of the shoot are drawing near, I thought I'd send out an  
> email reviewing the plan and providing all the pertinent contact info again.  
>  
> The first day, in the Atlanta Botanical Garden, should be easy enough. The  
> second day might require you guys to contact one another for directions and  
> other specifics.  
>  
> Schedule:  
> July 29: Atlanta Botanical Garden's torreya propagation work  
>  
> July 30: Waynesville, NC for the actual torreya planting, at the home of  
> Chuck and Sara Evans (don't have phone or email for them, but their address  
> is 1833 Eagles Nest Road).  
>  
>  
> Here is contact info.  
>  
> Janet Marinelli (writer): [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net); 212-724-6351  
>  
> Jenny Cruse-Sanders (scientist at ABG): 404-591-1590;  
> [jsanders@atlantabotanicalgarden.org](mailto:jsanders@atlantabotanicalgarden.org)  
>  
> Danny Flanders (public relations contact at ABG): 404-591-1550;  
> [dflanders@atlantabotanicalgarden.org](mailto:dflanders@atlantabotanicalgarden.org)  
>  
> Connie Barlow (leader of Torreya Guardians): 850-420-8002 (cell);  
> [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
>  
> Jack Johnston (Torreya Guardian): (706) 782-7393; [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)  
>  
> Mia Van Meter (works with Connie): [mia\\_tgs@yahoo.com](mailto:mia_tgs@yahoo.com)  
>  
> Ken Gehle (photographer): 404-377-5160 (work), 404-966-6907 (cell)

> [ken@kengehle.com](mailto:ken@kengehle.com)

>

> I'm sure the shoots will go great. Thanks to all of you, and let me know if  
> there's are any problems or if there's anything else I can do.

>

> Best,

> Jerry

>

> Jerry Goodbody

> Managing Editor

> Audubon Magazine

> [jgoodbody@audubon.org](mailto:jgoodbody@audubon.org)

> 212-979-3130

>

—

Lee -

Lee you are a gem! Great idea to ask Ron for advice on this.

Connie

On 7/17/08 6:09 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Ron,

Connie Barlow has obtained 30 - 1 gal. *Torreya taxifolia* (from Woodlanders) and *Torreya Guardians* are planting them near Waynesville and Bryan Native Plant Garden at Lake Junaluska. Would you please share any thoughts on planting site- we'll be planting at 3400 ft. cove hardwood site and a deciduous ravine at Lake Junaluska. My basic questions:

1) We are thinking of planting in three microclimates as "clumps" of 6-10 plants- we're thinking 15-20 ft. spacings for light and canopy spacing but also close enough for pollination. At one site (deciduous maple, tulip popular, rich herbaceous layer, trillium, flame azalea, transplanted shortia, etc.) we have three microclimates to choose from- 1) diffuse sun 10-50 ft. from forest edge above cut bank, 2) mid-slope planting, well drained in 50 yr. old canopy gaps, and 3) or lower site, morning diffuse sun, western shade due to side ridge but more mesic site/ higher humidity. Do any of these sites sound more desirable? We will be able to water this season for establishment.

2) The 2nd location is a deciduous shaded narrow north-south oriented ravine (Bryan Native plant garden at Lake Junaluska 2600 ft.) where we have choice of deciduous shade and new canopy gap due to tree removal. The jewel weed etc. has been released in the gaps but plantings can be controlled by volunteers as well as available water.

I appreciate any comments you can supply... we'll be planting at the end of July...Thanks and Happy Trails, Lee

Lee Barnes

Ph.D. Environmental Horticulture

Land Stewardship Consulting/ Stewardship Dowsing

Unique Mountain Properties- <http://www.uniquemountainproperties.com>

PO Box 1303, Waynesville NC 28786

828-452-5716 home office/fax

828-646-1593 cell

—

LATER NOTE BY CONNIE, JUNE 2010: George Mustoe is the coauthor of the in press 2010 paper with Estella Leopold (daughter of Aldo) on the *Torreya* macrofossil found in WA state.

Note: I mis-sent the original of this, but I cc-d three people involved in this area:

Paul Martin <[pmartin@geo.arizona.edu](mailto:pmartin@geo.arizona.edu)>

Mauro Galetti <[mgaletti@stanford.edu](mailto:mgaletti@stanford.edu)>

"Rinker, Bruce" <[brinker@co.pinellas.fl.us](mailto:brinker@co.pinellas.fl.us)>

Hello George -

Thank you for sending me the pdf of your paper, "Coevolution of Cycads and Dinosaurs." I thought it was terrific. I have been working in the realm of assisted migration lately, so I was very pleased to see how you dealt with posited loss of seed dispersers for cycads post K/T and how climate change exacerbated the problem. I have posted the pdf of your paper on my TorreyGuardians website. Go to this page and scan down for it (also, click on the first entry of this assisted migration page to read an excellent article on the controversy over assisted migration in a time of climate change that features our Torrey Guardians group):

<http://www.torreyguardians.org/assisted-migration.html>

I've been wondering whether *Torreya's* sacrotesta was adapted for reptile dispersal in the Jurassic, and now has to get by with squirrels burying seeds. For more on that, see a paper that Paul Martin and I co-wrote in 2004:

<http://www.torreyguardians.org/barlow-martin.pdf>

There is a landowner in the Florida panhandle who has lots of gopher tortoises on his property. He volunteered to test *Torreya* seeds on his tortoises. Obviously, *Torreya taxifolia* (the species we work with) is too endangered, but I would like to get hold of *T. californica* seeds via the Cal Polytechnic lands just north of Santa Cruz. Huge seed production there. I was unsuccessful at getting anyone at the reserve to talk with me. Do you have any suggestions for how to begin such an effort via the normal academic channels? Might that be something you'd be interested in taking on? If so, I could get you the name of the Tortoise fellow, and if you go to this page on the website, you can see the prolific seed production at that site:

<http://www.torreyguardians.org/swanton.html>

Evolutionarily yours,  
Connie Barlow

On 5/14/08 4:52 PM, "mbdowd@bigplanet.com" <[mbdowd@bigplanet.com](mailto:mbdowd@bigplanet.com)> wrote:

> ---- Original Message ----  
> From: [mustoeg@cc.wvu.edu](mailto:mustoeg@cc.wvu.edu)  
> To: [Michael@TheGreatStory.org](mailto:Michael@TheGreatStory.org)  
> Subject: Ghosts of Evolution  
> Date: Wed, 14 May 2008 11:47:21 -0700  
>  
> Connie,  
> I discovered your book at our university bookstore a couple of years  
> ago  
> after I'd already completed a manuscript about coevolution between  
> cycads and dinosaurs, and I thought you'd be interested in the  
> attached  
> story that appeared last year in Cycad Newsletter (not a journal that  
> you are likely to see at your local newsstand). As you will see,  
> there  
> are lots of similarities between what happened with dinosaurs  
> dispersing  
> cycad seeds and all of those avocado-eating mammals.  
> George M.  
>  
> George Mustoe  
> Geology Department  
> Western Washington University  
> Bellingham, WA 98225  
>

---

6/26/08  
Hello Torrey folks -

This is Connie Barlow. Lee Barnes and I will be talking this afternoon. He lives in Waynesville. At this moment, it looks like Waynesville is more likely the site than Highlands. Our suggestion will likely be for the photographer to stop first at Jack Johnston's home, since he already has *Torreya* planted there and since he has some new seedlings just sprouting from seed. Then we would all continue north to Waynesville, maybe an hour and a half from there.

Below you will find googlemaps links to the topographic close-ups of both locations:

1. Jack Johnston's home 35 miles south of NC border on way from Atlanta to Highlands/Waynesville: 422 Neptune Lane, Lakemont, GA 30552. On google maps terrain, it looks like you are on a south-facing slope, just under 2000 feet elevation, and that the ridge top due north of you tops out at about 2400 feet. Paste in this address to get to the terrain map:

<http://maps.google.com/maps?f=d&hl=en&geocode=&saddr=422+Neptune+Lane,+Lakemont+GA&daddr=&mra=pi&mr cr=0& sill=34.778547,-83.435079&sspn=0.011562,0.014355&ie=UTF8&ll=34.778547,-83.435079&spn=0.023123,0.02871&t=p&z=15>

2. Chuck and Sara Evans in Waynesville NC: Our address is 1833 Eagles Nest Road, right across from when Rambling Ridge Road intersects with Eagles Nest. Our elevation is about 3400 feet and we have a total of 3.5 acres. On google terrain it looks like they are in the bottom of a little swale, with 4800 ridge draining into them from the NW. Past in this address to get the terrain map:

<http://maps.google.com/maps?f=q&hl=en&geocode=&q=1833+Eagle's+Nest+Road,+Waynesville+NC& sill=37.0625,-95.677068&sspn=45.418852,58.798828&ie=UTF8&ll=35.49097,-83.028874&spn=0.022922,0.02871&t=p&z=15>

---

Sara -

I just did a Google Maps closeup of your subdivision and clicked on "Terrain" that gives the contour intervals. From what I can see, it looks like you live at 3,300 in a kind of swale running W-E that has a ridge to the south 200 to 300 feet higher than you, with groundwater running from west to east in the swale, and that you have 1,000 feet of mountain ridge rising directly from your property up to the north, with several spots on it peaking around 4,400 feet. Is that correct?

You say, "it may be too shady". Is the shadiness owing to deciduous trees? Are there open places in the canopy where a little judicious ground management of undergrowth here and there would work to give 6 dispersed seedlings opportunities for partial sun?

If so, it looks very good to me. I just left a message on Lee Barnes's cell phone to call me, and also to see if he could walk the land with you while you are there July 9-21. If you and he together figure out spots to plant 6 seedlings, would you be willing to have the Audubon photographer come and do a photoshoot of us planting the seedlings on July 30, even though you won't be there then?

And do check with the others you mention. Perhaps the location for rewilding will shift entirely to Waynesville, instead of Highlands.

One more question: Given that the seedlings may not produce seed until most of us in this email correspondence are dead, could you establish provisions somehow that would ensure that the next owners of the property would not cut over the *Torreya* and that they would allow *Torreya* Guardians to periodically check in on the trees, and harvest seeds for further distribution?

NOTE TO JANET: If Waynesville is on the list for plantings July 30, then it would be ideal if the Audubon photographer could start July 30 morning at Jack Johnston's place 35 miles south of NC, where he has seedlings already planted and where the 2007 Biltmore seed harvest planted seeds have just begun to sprout for him. Then we could drive up to Highlands (if any of the new seedlings go in there) and then (or instead) keep going on up to Waynesville to plant more seedlings there. Else the photographer could just meet us in Waynesville -- that is, if Lee Barnes assesses that the situation for planting looks good there.

I just left a message on Lee's cell phone to call me. Here are his stats

Lee Barnes  
Ph.D. Environmental Horticulture  
Land Stewardship Consulting/ Stewardship Dowsing  
Unique Mountain Properties- <http://www.uniquemountainproperties.com>  
PO Box 1303, Waynesville NC 28786  
828-452-5716 home office/fax  
828-646-1593 cell

NOTE TO SARA: Please email me your full address and phone number. My cell is 850-420-8002

Together for Torreya,  
Connie

On 6/18/08 10:02 PM, "Sara M. Evans" <[s-ewan@umn.edu](mailto:s-ewan@umn.edu)> wrote:

>  
> Dear Connie and Lee,  
>  
> Our land is on Eagle's Nest Mountain in Waynesville. It may be too shady,  
> but I would invite Lee to go take a look. Our address is 1833 Eagles Nest  
> Road, right across from when Rambling Ridge Road intersects with Eagles  
> Nest. Our elevation is about 3400 feet and we have a total of 3.5 acres.  
> We will be in N. Carolina from July 9-21 and could walk it with you if you  
> would like. I am also copying this to several others who might be  
> interested in planting taxifolia. Linda McFarland chairs the board of the  
> Corneille Bryan Native Garden at Lake Junaluska; Joyce Hooley and her  
> husband Bob Gingrich, have a lovely place up Plott Creek at around 4000'  
> elevation; Susan and Bob Broadhead have 40 acres outside of Barnardsville.  
> I have mentioned this project to them in the past, but they will have to let  
> us know if they are interested.  
>  
> Thanks,  
> Sara  
>  
>  
> ----- Forwarded Message  
> From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
> Date: Wed, 18 Jun 2008 20:15:52 -0400  
> To: Charles Dayton <[cdayton@goldengate.net](mailto:cdayton@goldengate.net)>  
> Cc: Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>, Lee Barnes  
> <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>  
> Conversation: Torreya seedlings for Waynesville NC  
> Subject: Re: Torreya seedlings for Waynesville NC  
>  
> Chuck and Sara -  
>  
> Waynesville would be terrific too! Thank you for volunteering to steward  
> immigrant T. taxifolia on your land! As it turns out, Michael and I need to  
> drive from Highlands NC to Charlottesville VA, so Waynesville could be on  
> our way. We need to be in Charlottesville by Aug 2, so we could be in  
> Waynesville July 31 or Aug 1 -- a day or two after the planting in Highlands  
> area.

---

Hello Robin -

Good to hear from you. I would appreciate receiving a copy of the journal article with the Torreya article. Please send to:

Connie Barlow  
The Great Story  
5246 Mutiny Bay Rd.  
Freeland, WA 98249  
USA



You can contact Mark Schwartz for permission to reprint the opposing side at his university email address:  
[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)

I just got word that another seed recipient just very recently had success with seeds sprouting, so hang in there. I am pasting in his email below. Also, make sure you are informed of our propagation page:

<http://www.torreyguardians.org/propagate.html>

Together for Torreya,  
Connie

EMAIL FROM JACK JOHNSTON:

Hi Connie,

Today I noticed 7 Torreya sprouting from seeds planted last fall in one instance and again in late winter. At harvest time I decided to chill some seeds in the refrigerator to see if that would improve germination and did not plant them until the coldest of our weather had passed.

The seedlings are about 3 inches tall. I'll water them in the bed during the growing season.

If the Audubon photographer makes it to my house, this feature will be of possible interest to see the seedlings coming up.

Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>

On 6/13/08 1:53 PM, "Robin Jamie" <[robin.jamie@db.com](mailto:robin.jamie@db.com)> wrote:

Hi Connie,

Forgot to say thanks for the seeds, they all arrived safely but so far no signs of life.

Your article was published in the most recent version of the British Conifer Society journal. If you would like a copy please send me your address and I will mail one to you.

Regarding the second article, the case against re-wilding, I would like to include that in the next BCS journal. Can you put me in touch with the author so that I can get permission?

Thanks

Robin

—

6/13/2008

Hello Torreya Guardians

1. FREE DOWNLOAD the article featuring Torreya Guardians, "Taking Wildness in Hand: Rescuing Species" (in May/June 2008 issue of Orion Magazine). It is a superb look at the human side of the controversy over assisted migration of species, featuring Torreya taxifolia. (it is an interactive site, so you can add your comment if you wish.) Go to:

<http://www.orionmagazine.org/index.php/articles/article/2966/>

2. JULY 30 T. Taxifolia TREE PLANTING IN HIGHLANDS NC. If any of you have friends who live near Highlands, NC, please let them know about our scheduled planting of 31 seedlings on private lands on July 30 in the Highlands/Cashiers area of NC. Exact sites for planting still being discussed. A photographer for Audubon Magazine will be there, as Audubon will be doing a story on assisted migration. Watch this page on our website, as I post more details as the time approaches:

<http://www.torreyguardians.org/rewilding.html>

Together for Torreya,  
Connie Barlow

—

fr CB 6/12/08

TO: Highlands Plateau Chapter of Audubon

FR: Connie Barlow of Torreya Guardians, <http://www.torreyaguardians.org>

RE: Audubon Magazine photoshoot July 30-31 at Highlands NC re assisted migration of Torreya taxifolia

Hello -

In an era of climate change, conservationists have begun to talk about "assisted migration" of vulnerable plants. For a current list of hotlinks for you to see the scope of the controversy, visit:

<http://www.torreyaguardians.org/assisted-migration.html>

The most recent article on this topic featured our group, Torreya Guardians, and our actions to help our namesake, Torreya taxifolia, migrate from its historic range (and "Ice Age Pocket Refuge" in northern Florida), where it is unable to reproduce anymore, to where we regard as its likely deep-time range during previous interglacials: that would be your own neck of the woods, around Highlands NC.

The article titled "Taking Wildness in Hand: Rescuing Species" (in May/June 2008 issue of Orion Magazine) is a superb look at the human side of the controversy. Direct hotlink for online viewing:

<http://www.orionmagazine.org/index.php/articles/article/2966/>

While this article was in press, AUDUBON MAGAZINE, contacted me about an article they'd like to run on Torreya Guardians and assisted migration. It seems that, while professional conservation biologists are debating the issue, our group of "citizen-naturalists" (some of whom are professional horticulturalists and botanists) is the only group that is actually taking action. Torreya taxifolia is widely regarded as the number 1 priority for such effort--and this highly endangered conifer tree is exceedingly unlikely to become a kudzu-like error. Audubon has lined up a photographer to photograph our on-the-ground planting of 31 potted Torreya taxifolia seedlings on private lands in Highlands/Cashiers area on JULY 30 AND JULY 31.

#### REQUESTED ACTIONS OF HIGHLANDS CHAPTER BEFORE JULY PLANTING:

1. SCHEDULE A FIELD TRIP. It would be terrific if one of your members would coordinate with Jack Johnston or me in scheduling an actual field trip for interested Audubon members at the Highlands site where the planting will take place on July 30-31. Also, to help with the planting.
2. SPREAD THE WORD ON THE EVENT. Torreya Guardians would be grateful if you could spread the word on the event, with more details once it is decided which private lands will be the site(s) and how we coordinate with the landowner to allow access to interested parties on the day of the planting.
3. LET CONSERVATION-MINDED LANDOWNERS IN YOUR AREA KNOW THAT WE ARE EVALUATING POSSIBLE SITES. Planting must be on private land (using seedlings propagated from privately owned trees outside of native habitat), as this tree is an endangered species. For a variety of reasons, Highlands NC is the prime area we see for continuing assisted migration efforts for Torreya taxifolia. We envision continuing the assisted migration effort in future years as more seeds and seedlings become available. So even though all interested landowners will not be able to volunteer their habitats for the July 2008 planting, there will be opportunities in future years. Please let interested parties know that they should visit our Torreya Guardians website, <http://www.torreyaguardians.org> to learn more, and then to contact both me and Jack Johnston:  
[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)
4. CONSIDER TAKING THE LEAD TO SERVE AS THE LOCAL INSTITUTION THAT OVERSEERS THE PROGRESS OF THE SEEDLINGS, THAT INTERACTS WITH THE PRIVATE LANDOWNERS, AND THAT DEALS WITH FUTURE PRESS QUERIES. Surely some of your members will be interested in becoming "Torreya Guardians" in this way (though others may be against assisted migration at this stage). Torreya Guardians has no bylaws, no officers, no real organization, no budget. It is just a website of interested parties and volunteers, like Jack Johnston and me. Both of us have day jobs, so we attend to Torreya Guardians work only in spare time. It would be great if a group within the Highlands Chapter stepped forward at the local Torreya Guardians for this landmark effort.

5. RECRUIT YOUNG PEOPLE TO THE JULY PLANTING. Trees being planted this summer in Highlands will likely not bear seed until Jack Johnston and I are elderly or dead. This is the beginning of a multigenerational effort. It would be wonderful if Highlands Audubon could recruit local youth (Girl Scouts, a church youth group, etc.) to join us in the planting and to become personally invested in the tending of the plants and their monitoring, and (we hope) eventual seed collection and further propagation. This action will also offer tremendous opportunities for youth to design and carry out scientifically credible monitoring of seedling survival that can lead to learning precisely which mountain subhabitats this returning species prefers. I personally visited the California species of this genus in its mountain habitats in order to get a sense of shading, slope, aspect, etc. conditions where "Florida" Torreya might prefer to live. See photo essay on this at: <http://torreyaguardians.org/california.html>

Note: Some of your group may remember me, Connie Barlow, as the guest who presented an illustrated talk on assisted migration for *Torreya taxifolia* as the final session of the 2006 summer lecture program at Highlands Nature Center. Some of you may also know Jack Johnston, who is active in the area (he lives across the border in northern Georgia).

THANK YOU FOR YOUR TIME!

Connie Barlow

PLEASE REPLY TO BOTH CONNIE BARLOW AND JACK JOHNSTON EMAILS.

—

Leigh -

Great to hear from you. Very interesting about your regional botanist being AGAINST planting in the native range till all died out. A very interesting theory--that is, assuming that there is a single fungus that depends entirely on Torreya trees and that would be extirpated without them. From my slim knowledge, I thought it was a variety of problems -- kind of like what you'd find happening to any plant having to try to survive outside its habitat needs. If you want to move forward in getting seedlings from Atlanta Botanical Garden, contact Ron Determann directly there:

[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)

Also, your interchange with Gholson is so fascinating, I'd love to pass it on to the woman who will be writing the *Torreya taxifolia* article for Audubon. Or would you prefer to contact her directly with a way of stating things that you feel best about. She is:

Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>

Below is my recent correspondence on liming, with the woman who wrote the Orion article and with Christina Larson at Shoal Sanctuary in northern Panhandle. Do get in touch with her directly if you wish: "Christina Larson" <[LarsonStudio@cox.net](mailto:LarsonStudio@cox.net)>

Hi Michelle -

You might be interested in keeping abreast of, maybe doing an article on, Lee Klinger's amazing work with bringing dying oak trees back from the brink in Calif. The reason I thought of you is that, when you see the below, you will see how private folks are working patch by patch, and taking responsibility for trees on public lands too — and doing ceremony when they support them. Lee accompanied me on my *Torreya californica* venture north of Santa Cruz — where the gigantic *Torreya* trees are -- and he did ceremony when we came upon some ancient redwoods where, when scraping a little soil back, he showed me evidence of the paleoIndians having "limed" the trees by bringing ground seashells in. Anyway, it was his liming idea for Sudden Oak Death, combined with my seeing Atlanta Botanical Garden lime their *Torreya* seedlings every 3 months of so, plus knowing of the role of liming the giant oaks in otherwise moss-ridden England, that led me to lime some dying *T. taxifolia* on some private property near the Apalachicola in December 2007, and where, apparently (see below) it made a difference.

Dear Connie, keeper of Torreyas,  
Our trees are thriving, thanks to you. What was that magic power you put on them? Was it lime? We need to make a note. This is the first one to survive and all the yellow is gone, on green as can be.  
Your Shoal Sanctuary friends,  
Chris & Robert Larson

To learn about Lee Klinger's work, you can see the Torreya Guardians webpage with a photoessay of Lee's and my journey into the big Torreya trees:

<<http://www.torreyaguardians.org/swanton.html>>

Plus the news page and the home page on his SuddenOakLife website:

<<http://www.suddenoaklife.org/>>

<[http://www.suddenoaklife.org/wst\\_page5.html](http://www.suddenoaklife.org/wst_page5.html)>

Together for Torreya,  
Connie Barlow

---

Christina -

Wow! Thanks for reporting. Remember that small bag of "agricultural lime" that we bought at the hardware store near your home? I used the entire bag of 2 of your trees: the badly yellowing one that is solitary by your screened-in building, and the beginning-to-yellow one right at the corner by the totem pole — kitty corner from the one that survived the burn. It will be important, as a control for the experiment, not to lime the Torreya right behind the Totem Pole Torreya. See if it begins to yellow. And if the limed one shows any sign of distress, lime it again. Of course, if the control tree starts to really go downhill, then go ahead and lime it—as above all, the health of all the remaining trees is what matters most.

I'd like to post your experience and your photos on the Torreya Guardians website. Could you write up a little report of the history of the Torreyas on your property, and identify which is which in the photos you sent me. I'm positive that when I go on my other computer and its photo file I'll find good "before" shots of both that I took when I was there in December.

Together for Torreya,  
Connie  
"Christina Larson" <[LarsonStudio@cox.net](mailto:LarsonStudio@cox.net)>

On 5/11/08 1:04 PM, "Leigh Brooks" <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> wrote:

> Hi Connie,  
> Always fun to read what you're up to! Thanks for passing along this info.  
>  
> The Chattahoochee Women's Club is interested in getting some of the trees  
> from ABG. Their building is adjacent to Gholson Nature Park, and they could  
> take on care of seedlings. I mentioned this to Angus Gholson, esteemed  
> botanist here in Chattahoochee. He does not like the idea. He does not  
> think any torreyas should be planted in this region. His reasoning is that  
> the fungus is still with us that caused the blight, and that as long as  
> trees are here for the fungus to prey on, the habitat will not recover. He  
> thinks people should wait until all the torreya here are dead, and  
> presumably the fungus too, before trying to reintroduce them. Well, this  
> caught me by surprise, I must admit. Never heard anyone say we shouldn't  
> plant them in their native range. I have not yet communicated this story to  
> anyone, not sure where to go from here. I don't want to upset him by going  
> forward, but I don't think his view reflects scientific consensus. In fact,  
> Schwartz recommends they be planted here rather than anyplace else. What do  
> you think?  
>  
> Interested in the liming of torreyas in FL when you post that.  
> Thanks for all you do,  
>  
> Leigh Brooks  
> Chatthaochee, FL  
>  
>  
> ----- Original Message -----  
> From: "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

> To: "Torreya-2" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
 > Cc: "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
 > Sent: Friday, May 09, 2008 9:09 AM  
 > Subject: Torreya Guardians2 in Orion Magazine May  
 >  
 >  
 >  
 > 1. Orion Magazine article on Torreya Guardians  
 > 2. Audubon Magazine to cover Torreya Guardians  
 > 3. Rewilding possibility end of July in North Carolina?  
 > 4. Birth of PLANT GUARDIANS website  
 >  
 > Hello Torreya Guardians -  
 >  
 > (REPLY ONLY to [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com))  
 >  
 > This is Connie Barlow. The May/June issue of Orion Magazine contains an  
 > 8-page article by Michelle Nijhuis, titled "To Take Wildness in Hand."  
 > Subtitle: "While scientists debate how to help save species from a warming  
 > climate, others aren't willing to wait." The debate over assisted migration  
 > in a time of global warming is front and center, with the exemplar species  
 > being Torreya taxifolia. Why? Because, at the moment, Torreya Guardians is  
 > the only organization that not only has assisted migration on its agenda but  
 > is actually doing it. And the reason we are the only organization as yet  
 > that has stepped out is because we really aren't an organization: just a  
 > bunch of interconnected individuals with a website, undertaking individual  
 > and small-group actions in a fully bottom-up and spontaneous way. Any  
 > "real" organization would still be talking about the pros and cons and maybe  
 > beginning to construct an actual plan that would carefully and prudently  
 > guide the effort--that is, if the plan eventually was approved.  
 >  
 > If you are not a subscriber to Orion magazine, you can purchase the current  
 > issue in your local bookstore or do as I just did: go online and pay for a  
 > 10-issue digital subscription -- for just \$10 total. Here is the page for  
 > doing that:  
 >  
 > <[http://www.orionmagazine.org/index.php/mag/orion\\_digital/](http://www.orionmagazine.org/index.php/mag/orion_digital/)>  
 >  
 > Within one minute of my using my credit card to subscribe, I got an email  
 > reply that let me click to access the current issue: full-cover lovely pdf  
 > format, which you can also download and thus archive on your own computer  
 > (though it is 20 MB).  
 >  
 > Anyway, it is a beautifully written article, and because Orion covers  
 > environmental issues by attending to the human and subjective side of the  
 > matter, you will find some fun descriptions of and quotations by Torreya  
 > Guardians, in all our individual quirkiness: me, Jack Johnston, Lee Barnes,  
 > Bill Alexander. Plus Mark Schwartz who bridges in a very friendly way to  
 > "radicals" like me, while standing firm in the worldview of conservation  
 > caution and respect for the concept of native habitat (as it is currently  
 > understood). Also a Nature Conservancy site manager for T. taxifolia in  
 > Florida is interviewed and he, understandably, is a long way from venturing  
 > toward the bridge, so the controversy itself comes alive in these pages.  
 > Overall, I think the article will become a classic in environmental  
 > literature because it shows the human side of what happens during major  
 > worldview shifts and does so through the lens of the debate about a single  
 > species.  
 >  
 > AUDUBON MAGAZINE: Months ago, a freelancer who writes occasionally for  
 > Audubon contacted me about doing an article on assisted migration, with  
 > Torreya as a focus. Knowing that the Orion article was already in process,  
 > I suggested focusing on Joshua Tree, another poster plant for assisted  
 > migration. Alas, nobody has yet adopted that tree for a citizen effort like  
 > ours, so they had to come back to me and Torreya. A photo shoot will

> probably be happening in this time block: July 30 - August 1. I believe  
 > that right now Audubon is figuring on showing up in Jack Johnston's backyard  
 > in northern Georgia, where he has 5 *T. taxifolia* planted that he purchased  
 > from the nursery in South Carolina that has its own seed stock. And that I  
 > will be there for the occasion.

>  
 > I think we Torreya Guardians can give Audubon something far spicier. What  
 > about this:

>  
 > REWILDING QUERY: Anybody besides me interested in buying up the rest of the  
 > South Carolina nursery seedlings and engaging is a real "rewilding"  
 > somewhere around Highlands or Cashiers NC (where Jack Johnston has a second  
 > home), and which would have been the recipient big-mountain ecosystem in  
 > past interglacials when *T. taxifolia* migrated back north, presumably by  
 > simply heading upstream? Rewilding would mean not a planting in someone's  
 > tended yard there, but planting in someone's "wild" forested property.  
 > After all, assisted migration implies that we believe that if we can just  
 > get the species there, it will already have what it takes to survive and  
 > reproduce on its own in its new home -- in the wild. We would, of course,  
 > initially plant the seedlings in places where slope, aspect, vegetational  
 > community and other characteristics inclined us to think the plants would  
 > feel as if they were in Eden, and locals would surely want to keep an eye on  
 > them, perhaps removing branches of neighboring trees that, over the years,  
 > might come to take over too much sunlight (a *Torreya* can survive and  
 > meagerly grow in almost total shade, but it needs sunlight to invest in  
 > reproduction). But, on the whole, we would be saying, "Okay, Friend, we  
 > think you'll like it here; now show us what you can do!"

>  
 > Ideally, this "first rewilding action" would become a community event,  
 > something written up in the local paper, and where the landowner(s) could be  
 > proud of their contribution to the community and a species in need.

>  
 > More, I'd love to see an organization of kids or teens involved in a big  
 > way--maybe girl scouts or boy scouts or "Earth Scouts", or a local person  
 > could start up a branch of "Earth Scouts" there (see:  
 > <<http://www.earthscouts.org/>>). They could be assigned in advance the task  
 > of absorbing the info on TorreyaGuardians.org, studying the photographs I  
 > posted there of the habitats where *Torreya californica* grows in the  
 > mountains, and being mentored by local adults there (e.g. Jeff Zahner (?),  
 > in addition to part-time resident Jack Johnston) And, of course, the  
 > private landowner(s) would pledge to grant that organization ongoing access  
 > to monitor and minimally manage the site.

>  
 > Young folks would be crucial because, while Atlanta Botanical Garden is  
 > superb at using advanced horticultural techniques in getting its potted  
 > orchards to produce early and fabulously, this grove of rewilded seedlings  
 > would be reproducing at a normal pace middle-aged or older folks (I'm 56)  
 > doing the planting likely would not be  
 > alive to watch the squirrels bury the first crop of seeds. We need to  
 > recruit the young folks now to step in to being "guardians" of these trees  
 > for the long-term. We need to give birth to a dedicated lineage of  
 > guardians for the long-term, who will pass on the experience, the verve, and  
 > the lore from one generation to the next.

>  
 > Here's what I can contribute:

>  
 > (1) ONE TORREYA SEEDLING. I have one lovely potted *Torreya taxifolia*, about  
 > 18 inches tall, that I've been carrying in my van (my husband and I are  
 > itinerant "evolutionary evangelists") every since Atlanta Botanical Garden  
 > generously gave me one of their seedlings after my tour of their *Torreya*  
 > reproduction effort there in December 2007. I've been waiting till our  
 > business carries us back to North Carolina, which will happen July 30, 31,  
 > and August 1 -- as I am determined to plant "my" tree there. But it needs  
 > partners; we need more seedlings.

>

> (2) MONEY TO PURCHASE MORE SEEDLINGS. I can also contribute money to

> purchase all the rest of the seedlings from the Woodlander's Nursery in

> Aiken, SC. And I'd be happy to pay Jack Johnston for gasoline to drive

> there (that's where he purchased the *T. taxifolia* individuals he now has

> planted in his yard.) My husband's 2007 book, "Thank God for Evolution,"

> has just been purchased by Viking/Penguin for reissue in hardcover next

> month, and some money is coming our way from that deal, a portion of which I

> can use in this effort.

>

> (3) PLANTGUARDIANS.ORG WEBSITE. I will also be using some of that money to

> finally get a website up and running for a url name I published several

> years ago: "plantguardians.org". I do not have the time to run the website,

> but it will be in a form that anyone who is not computer-phobic will easily

> be able to learn how to serve as webmaster. (Torreya Guardians is written

> in straight html code by me, but now there are fabulous ways to make it

> possible for anybody to learn to be a webmaster.) Torreya Guardians will be

> the first link to that site, and I'll be asking the new webmaster to also

> post individual pages for *StewartiaGuardians* and *MountainCamelliaGuardians*

> that Jack Johnston has provided start-up information and organization for.

> Thus . . .

>

> CONSERVATION ENTHUSIAST QUERY: If any of you wish to recommend an

> enthusiastic person (maybe someone just graduating from a conservation

> biology program, who is happy to live a simple life, has no family

> responsibilities yet, and thus can take on webmaster duties for very little

> pay), please let me know. They would need to be someone who goes, "Wow!,

> I'd love to do that!" and then would churn up all sorts of ideas for how

> they could get the word out and encourage individuals and groups to develop

> the content and the commitment for posting guardian webpages for other

> plants, one species at a time. I will continue with *TorreyaGuardians*, but I

> have a full-time job on the road and cannot do anything with

> *PlantGuardians.org*. The person needs to be a self-starter and a superb

> networker. And several of the pages now on *TorreyaGuardians.org* will get

> moved to that umbrella site: the page that lists online articles about

> assisted migration, plus our old "Standards for Assisted Migration" page,

> which is on the first page of entries when you google "assisted migration."

>

> <<http://www.torreyaguardians.org/assisted-migration.html>>

> <<http://www.torreyaguardians.org/standards.html>>

>

> Note: My initial vision of PLANT GUARDIANS is not so much for plants needing

> assisted migration, but putting in place a way to ensure that all species

> that need special support (notably, threatened and endangered species) will

> continue to be attended to if and when our economy falls apart. Right now,

> we rely too heavily on professional paid scientists and horticulturalists to

> care for those species in our behalf. If the money dries up, we need the

> volunteer people-power, the expertise, and the internetted communication

> lines for citizen naturalists to immediately step into the void -- and to

> work together for nothing, in behalf of as many species as even one single

> individual steps up and pledges to take on. *Torreya Guardians* is a role

> model for the fact that, yes, this can be done.

>

> Together for Torreya,

>

> Connie Barlow

>

> BTW: Periodically check out the comments page on our website to see what is

> happening. For example, you can learn about 2007 seed-crop distribution,

> how Atlanta Botanical Garden is now willing to donate seedlings to bona fide

> institutions -- even well beyond the borders of Georgia, to help ensure

> continuation and propagation of the species in insitutional plantings. I

> am also in communication with a *Torreya* cultivator in northern Florida who

> has had magnificent results saving dying trees there by "liming", and I will

> post that communication soon.  
>  
> <<http://www.torreyaguardians.org/comments.html>>

---

Christina -

Wow! Thanks for reporting. Remember that small bag of "agricultural lime" that we bought at the hardware store near your home? I used the entire bag of 2 of your trees: the badly yellowing one that is solitary by your screened-in building, and the beginning-to-yellow one right at the corner by the totem pole — kitty corner from the one that survived the burn. It will be important, as a control for the experiment, not to lime the Torreya right behind the Totem Pole Torreya. See if it begins to yellow. And if the limed one shows any sign of distress, lime it again. Of course, if the control tree starts to really go downhill, then go ahead and lime it—as above all, the health of all the remaining trees is what matters most.

I'd like to post your experience and your photos on the Torreya Guardians website. Could you write up a little report of the history of the Torreyas on your property, and identify which is which in the photos you sent me. I'm positive that when I go on my other computer and its photo file I'll find good "before" shots of both that I took when I was there in December.

Together for Torreya,  
Connie

On 4/27/08 5:02 AM, "Christina Larson" <[LarsonStudio@cox.net](mailto:LarsonStudio@cox.net)> wrote:

Dear Connie, keeper of Torreyas,  
Our trees are thriving, thanks to you. What was that magic power you put on them? Was it lime? We need to make a note. This is the first one to survive and all the yellow is gone, on green as can be.  
Your Shoal Sanctuary friends,  
Chris & Robert Larson

---

Hi Michelle -

You might be interested in keeping abreast of, maybe doing an article on, Lee Klinger's amazing work with bringing dying oak trees back from the brink in Calif. The reason I thought of you is that, when you see the below, you will see how private folks are working patch by patch, and taking responsibility for trees on public lands too — and doing ceremony when they support them. Lee accompanied me on my Torreya californica venture north of Santa Cruz — where the gigantic Torreya trees are -- and he did ceremony when we came upon some ancient redwoods where, when scraping a little soil back, he showed me evidence of the paleoIndians having "limed" the trees by bringing ground seashells in. Anyway, it was his liming idea for Sudden Oak Death, combined with my seeing Atlanta Botanical Garden lime their Torreya seedlings every 3 months or so, plus knowing of the role of liming the giant oaks in otherwise moss-ridden England, that led me to lime some dying T. taxifolia on some private property near the Apalachicola in December 2007, and where, apparently (see below) it made a difference.

Dear Connie, keeper of Torreyas,  
Our trees are thriving, thanks to you. What was that magic power you put on them? Was it lime? We need to make a note. This is the first one to survive and all the yellow is gone, on green as can be.  
Your Shoal Sanctuary friends,  
Chris & Robert Larson

To learn about Lee Klinger's work, you can see the Torreya Guardians webpage with a photoessay of Lee's and my journey into the big Torreya trees:

<<http://www.torreyaguardians.org/swanton.html>>

Plus the news page and the home page on his SuddenOakLife website:

<<http://www.suddenoaklife.org/>>  
<[http://www.suddenoaklife.org/wst\\_page5.html](http://www.suddenoaklife.org/wst_page5.html)>

Together for Torreya,  
Connie Barlow



--

----- Forwarded Message

From: Lee Klinger <[lee@suddenoaklife.org](mailto:lee@suddenoaklife.org)>  
Date: Sun, 11 May 2008 13:09:40 -0700  
To: \*Sudden Oak Life <[lee@suddenoaklife.org](mailto:lee@suddenoaklife.org)>  
Conversation: Two gatherings in Marin on May 20  
Subject: Two gatherings in Marin on May 20

SUDDEN OAK LIFE ANNOUNCEMENT!

First Gathering - My good friend Annette Nibley is hosting a social gathering that is open to the public at her beautiful garden in Mill Valley on Tuesday, May 20 from 1 to 3 pm. She has invited me as a special guest to share some of my knowledge and to answer questions about the tending oaks and other trees. She has several oaks, buckeyes, and other trees that seem to have responded nicely to mineral nutrient amendments. I have a number of photos of her trees taken at the start of the treatments that we will use to evaluate the progress of their recovery. Her address is: 74 Sycamore Ave., Mill Valley, CA 94941

Second Gathering - Immediately after the first gathering (~ 3:30 pm), I will be meeting Donna Shoemaker in Corte Madera and we will be hiking a short way up King Mountain to continue our work on "Grandfather Oak", an ancient giant tree that is ailing. We will be applying a limewash poultice to the trunk and offering a prayer for its recovery. For some background information on this work see: [http://www.marinij.com/ci\\_7688426](http://www.marinij.com/ci_7688426)

Please call or email me if you have any questions. You do not need to RSVP for either of these gatherings but it would be helpful to let me know if you might come.  
My Best to You,  
Lee

Dr. Lee Klinger  
Independent Scientist, Oak Specialist  
PO Box 664, Big Sur, CA 93920  
831-917-7070  
[lee@suddenoaklife.org](mailto:lee@suddenoaklife.org)  
<http://www.suddenoaklife.org>

Jack and Lee and Bill -

I sent the 2 Audubon folks managing this story the same email I sent everyone on my Torreya list, and got the emails I pasted in at bottom:

So the Audubon photoshoot will happen up in Highlands/Cashiers.

Jack and Lee - Let's try for a mini-rewilding. Could you two use your connections to get the locals excited about this? Make sure Jeff Zahner knows and Christina Frangione and anyone else you think should be involved, and see what good ideas they might have and what they might volunteer to do. And figure out whose private forested land(s) would make the most sense to have come on board to be the location(s). My personal preference would be land with a lot of variation in slope and aspect so that we could try out different locations, but all near enough to interpollinate. Definitely some very steep slope, mimicking the areas in California where *T. californica* seemed to have the most success hanging in there on its own.

Jack - Could you contact Aiken nursery and see how many *T. taxifolia* are left and how much it would cost to purchase them all? Also, note that if you get the Nature Center in Highlands involved, they could request Atlanta Botanical Garden to donate a bunch of seedlings, so that we could have both a repository situation (Nature Center lands) and rewilding on private forested lands happen at the same time for the same photoshoot. So both radical and moderate approaches would be working together.

Lee - Do any of our 2005 seed distributees have actual seedlings that they might like to contribute to this effort -- and plan to attend themselves to participate in the planting?

Anybody have any other ideas of what we ought to be doing in preparation and how to get other people excited about participating in this happening (sometime between July 30 and Aug 1)?

Note: I am cc-ing the folks I am aware of who are Torreya Guardians and who also live in North Carolina.

Note: A friend of mine forwarded my original long email to a friend of his who is working nationally with the Girl Scouts, so I might be hearing about interest from GS at the national level.

Together for Torreya,  
Connie

---

Hi, Connie,  
Thanks for the information. This sounds like a great thing to shoot. We are now working on getting a photographer who is available to come to the Highlands/Cashier site during your three-day window. We'll be back in touch about this soon.

Have a nice weekend.

Jerry  
"GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)>  
(managing editor at Audubon)

On 5/9/08 12:31 PM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

> Hi Connie,  
> Your plan is very exciting! Please keep me posted. I'll be getting  
> into this story in a big way in June, so I'll certainly be in touch in  
> a few weeks.  
> Thanks,  
> Janet

(Janet is the freelance writing who will be writing the article.)

---

5/9/08 fr CB to dave Foreman

Hi Dave -

This is Connie Barlow. Below is an email I just sent out to my Torreya Guardians list and also to the journalists I've been communicating with at Orion and Audubon magazines. Make sure you read carefully the Rewilding and Plant Guardians parts of this email, and feel free to forward to others. Two questions for you and/or other rewilders:

(1) Any suggestions for the rewilding effort I propose for Torreya in Highlands NC this July (for the Audubon photoshoot)?

(2) Any recommendations of a young, enthusiastic conservationist to apply for the post of running a soon-to-be "PlantGuardians.org" website?

---

THE EMAIL SENT TO TORREYA GUARDIANS LIST:

1. Orion Magazine article on Torreya Guardians
2. Audubon Magazine to cover Torreya Guardians
3. Rewilding possibility end of July in North Carolina?
4. Birth of PLANT GUARDIANS website

Hello Torreya Guardians -

(REPLY ONLY to [cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com))

This is Connie Barlow. The May/June issue of Orion Magazine contains an 8-page article by Michelle Nijhuis, titled "To Take Wildness in Hand." Subtitle: "While scientists debate how to help save species from a warming climate,

others aren't willing to wait." The debate over assisted migration in a time of global warming is front and center, with the exemplar species being *Torreya taxifolia*. Why? Because, at the moment, Torreya Guardians is the only organization that not only has assisted migration on its agenda but is actually doing it. And the reason we are the only organization as yet that has stepped out is because we really aren't an organization: just a bunch of interconnected individuals with a website, undertaking individual and small-group actions in a fully bottom-up and spontaneous way. Any "real" organization would still be talking about the pros and cons and maybe beginning to construct an actual plan that would carefully and prudently guide the effort--that is, if the plan eventually was approved.

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Within one minute of my using my credit card to subscribe, I got an email reply that let me click to access the current issue: full-cover lovely pdf format, which you can also download and thus archive on your own computer (though it is 20 MB).

Anyway, it is a beautifully written article, and because Orion covers environmental issues by attending to the human and subjective side of the matter, you will find some fun descriptions of and quotations by Torreya Guardians, in all our individual quirkiness: me, Jack Johnston, Lee Barnes, Bill Alexander. Plus Mark Schwartz who bridges in a very friendly way to "radicals" like me, while standing firm in the worldview of conservation caution and respect for the concept of native habitat (as it is currently understood). Also a Nature Conservancy site manager for *T. taxifolia* in Florida is interviewed and he, understandably, is a long way from venturing toward the bridge, so the controversy itself comes alive in these pages. Overall, I think the article will become a classic in environmental literature because it shows the human side of what happens during major worldview shifts and does so through the lens of the debate about a single species.

AUDUBON MAGAZINE: Months ago, a freelancer who writes occasionally for Audubon contacted me about doing an article on assisted migration, with *Torreya* as a focus. Knowing that the Orion article was already in process, I suggested focusing on Joshua Tree, another poster plant for assisted migration. Alas, nobody has yet adopted that tree for a citizen effort like ours, so they had to come back to me and *Torreya*. A photo shoot will probably be happening in this time block: July 30 - August 1. I believe that right now Audubon is figuring on showing up in Jack Johnston's backyard in northern Georgia, where he has 5 *T. taxifolia* planted that he purchased from the nursery in South Carolina that has its own seed stock. And that I will be there for the occasion.

I think we Torreya Guardians can give Audubon something far spicier. What about this:

REWILDING QUERY: Anybody besides me interested in buying up the rest of the South Carolina nursery seedlings and engaging is a real "rewilding" somewhere around Highlands or Cashiers NC (where Jack Johnston has a second home), and which would have been the recipient big-mountain ecosystem in past interglacials when *T. taxifolia* migrated back north, presumably by simply heading upstream? Rewilding would mean not a planting in someone's tended yard there, but planting in someone's "wild" forested property. After all, assisted migration implies that we believe that if we can just get the species there, it will already have what it takes to survive and reproduce on its own in its new home -- in the wild. We would, of course, initially plant the seedlings in places where slope, aspect, vegetational community and other characteristics inclined us to think the plants would feel as if they were in Eden, and locals would surely want to keep an eye on them, perhaps removing branches of neighboring trees that, over the years, might come to take over too much sunlight (a *Torreya* can survive and meagerly grow in almost total shade, but it needs sunlight to invest in reproduction). But, on the whole, we would be saying, "Okay, Friend, we think you'll like it here; now show us what you can do!"

Ideally, this "first rewilding action" would become a community event, something written up in the local paper, and where the landowner(s) could be proud of their contribution to the community and a species in need.

More, I'd love to see an organization of kids or teens involved in a big way--maybe girl scouts or boy scouts or "Earth Scouts", or a local person could start up a branch of "Earth Scouts" there (see: <<http://www.earthscouts.org/>>). They could be assigned in advance the task of absorbing the info on [TorreyaGuardians.org](http://TorreyaGuardians.org), studying the photographs I posted there of the habitats where *Torreya californica* grows in the mountains, and being mentored by local adults there (e.g. Jeff Zahner (?), in addition to part-time resident Jack Johnston) And, of course, the private landowner(s) would pledge to grant that organization ongoing access to monitor and minimally manage the site.

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reproducing at a normal pace—and that means that any of us middle-aged or older folks (I'm 56) doing the planting likely would not be alive to watch the squirrels bury the first crop of seeds. We need to recruit the young folks now to step in to being "guardians" of these trees for the long-term. We need to give birth to a dedicated lineage of guardians for the long-term, who will pass on the experience, the verve, and the lore from one generation to the next.

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(3) PLANTGUARDIANS.ORG WEBSITE. I will also be using some of that money to finally get a website up and running for a url name I purchased several years ago: "plantguardians.org". I do not have the time to run the website, but it will be in a form that anyone who is not computer-phobic will easily be able to learn how to serve as webmaster. (*Torreya Guardians* is written in straight html code by me, but now there are fabulous ways to make it possible for anybody to learn to be a webmaster.) *Torreya Guardians* will be the first link to that site, and I'll be asking the new webmaster to also post individual pages for *StewartiaGuardians* and *MountainCamelliaGuardians* that Jack Johnston has provided start-up information and organization for. Thus . . .

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Together for *Torreya*,

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BTW: Periodically check out the comments page on our website to see what is happening. For example, you can learn about 2007 seed-crop distribution, how Atlanta Botanical Garden is now willing to donate seedlings to bona fide institutions -- even well beyond the borders of Georgia, to help ensure continuation and propagation of the species in insitutional plantings. I am also in communication with a *Torreya* cultivator in northern Florida who has had magnificent results saving dying trees there by "liming", and I will post that communication soon.

<<http://www.torreyaguardians.org/comments.html>>

—

Hello Janet and Jerry -

Just last night I learned that the Orion article on Torreya Guardians was out: a friend who subscribes noticed my name and brought it to dinner at the home we are staying in this week in Wisconsin. So I sent out an email notice to my Torreya Guardians list, which I will paste in below. Be sure to notice 2 things in that long email: my mention of the Audubon magazine interest, and how I propose to ramp up the July photoshoot into a bona fide rewilding effort, involving all sorts of people (I hope!)

I'm assuming, thus, that a photoshoot could take place in Highlands or Cashiers NC, rather than at (or only at) Jack Johnston's home.

Together for Torreya,  
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REWILDING QUERY: Anybody besides me interested in buying up the rest of the South Carolina nursery seedlings and engaging is a real "rewilding" somewhere around Highlands or Cashiers NC (where Jack Johnston has a second home), and which would have been the recipient big-mountain ecosystem in past interglacials when *T. taxifolia* migrated back north, presumably by simply heading upstream? Rewilding would mean not a planting in someone's tended yard there, but planting in someone's "wild" forested property. After all, assisted migration implies that we believe that if we can just get the species there, it will already have what it takes to survive and reproduce on its own in its new home -- in the wild. We would, of course, initially plant the seedlings in places where slope, aspect, vegetational community and other characteristics inclined us to think the plants would feel as if they were in Eden, and locals would surely want to keep an eye on them, perhaps removing branches of neighboring trees that, over the years, might come to take over too much sunlight (a *Torreya* can survive and meagerly grow in almost total shade, but it needs sunlight to invest in reproduction). But, on the whole, we would be saying, "Okay, Friend, we think you'll like it here; now show us what you can do!"

Ideally, this "first rewilding action" would become a community event, something written up in the local paper, and where the landowner(s) could be proud of their contribution to the community and a species in need.

More, I'd love to see an organization of kids or teens involved in a big way--maybe girl scouts or boy scouts or "Earth Scouts", or a local person could start up a branch of "Earth Scouts" there (see: <<http://www.earthscouts.org/>>). They could be assigned in advance the task of absorbing the info on [TorreyaGuardians.org](http://TorreyaGuardians.org), studying the photographs I posted there of the habitats where *Torreya californica* grows in the mountains, and being mentored by local adults there (e.g. Jeff Zahner (?), in addition to part-time resident Jack Johnston) And, of course, the private landowner(s) would pledge to grant that organization ongoing access to monitor and minimally manage the site.

Young folks would be crucial because, while Atlanta Botanical Garden is superb at using advanced horticultural techniques in getting its potted orchards to produce early and fabulously, this grove of rewilded seedlings would be reproducing at a normal pace—and that means that any of us middle-aged or older folks (I'm 56) doing the planting likely would not be alive to watch the squirrels bury the first crop of seeds. We need to recruit the young folks now to step in to being "guardians" of these trees for the long-term. We need to give birth to a dedicated lineage of guardians for the long-term, who will pass on the experience, the verve, and the lore from one generation to the next.

Here's what I can contribute:

(1) ONE TORREYA SEEDLING. I have one lovely potted *Torreya taxifolia*, about 18 inches tall, that I've been carrying in my van (my husband and I are itinerant "evolutionary evangelists") every since Atlanta Botanical Garden generously gave me one of their seedlings after my tour of their *Torreya* reproduction effort there in December 2007. I've been waiting till our business carries us back to North Carolina, which will happen July 30, 31, and August 1 -- as I am determined to plant "my" tree there. But it needs partners; we need more seedlings.

(2) MONEY TO PURCHASE MORE SEEDLINGS. I can also contribute money to purchase all the rest of the seedlings from the Woodlander's Nursery in Aiken, SC. And I'd be happy to pay Jack Johnston for gasoline to drive there (that's where he purchased the *T. taxifolia* individuals he now has planted in his yard.) My husband's 2007 book, "Thank God for Evolution," has just been purchased by Viking/Penguin for reissue in hardcover next month, and some money is coming our way from that deal, a portion of which I can use in this effort.

(3) PLANTGUARDIANS.ORG WEBSITE. I will also be using some of that money to finally get a website up and running for a url name I published several years ago: "plantguardians.org". I do not have the time to run the website, but it will be in a form that anyone who is not computer-phobic will easily be able to learn how to serve as webmaster. (*Torreya Guardians* is written in straight html code by me, but now there are fabulous ways to make it possible for anybody to learn to be a webmaster.) *Torreya Guardians* will be the first link to that site, and I'll be asking the new webmaster to also post individual pages for *StewartiaGuardians* and *MountainCamelliaGuardians* that Jack Johnston has provided start-up information and organization for. Thus . . .

CONSERVATION ENTHUSIAST QUERY: If any of you wish to recommend an enthusiastic person (maybe someone just graduating from a conservation biology program, who is happy to live a simple life, has no family responsibilities yet, and thus can take on webmaster duties for very little pay), please let me know. They would need to be someone who goes, "Wow!, I'd love to do that!" and then would churn up all sorts of ideas for how they could get the word out and encourage individuals and groups to develop the content and the commitment for posting guardian webpages for other plants, one species at a time. I will continue with *TorreyaGuardians*, but I have a full-time job on the road and cannot do anything with *PlantGuardians.org*. The person needs to be a self-starter and a superb networker. And several of the pages now on *TorreyaGuardians.org* will get moved to that umbrella site: the page that lists online articles about assisted migration, plus our old "Standards for Assisted Migration" page, which is on the first page of entries when you google "assisted migration."

<<http://www.torreyguardians.org/assisted-migration.html>>  
<<http://www.torreyguardians.org/standards.html>>

Note: My initial vision of PLANT GUARDIANS is not so much for plants needing assisted migration, but putting in place a way to ensure that all species that need special support (notably, threatened and endangered species) will continue to be attended to if and when our economy falls apart. Right now, we rely too heavily on professional paid scientists and horticulturalists to care for those species in our behalf. If the money dries up, we need the volunteer people-power, the expertise, and the internetted communication lines for citizen naturalists to immediately step into the void -- and to work together for nothing, in behalf of as many species as even one single individual steps up and pledges to take on. Torreya Guardians is a role model for the fact that, yes, this can be done.

Together for Torreya,

Connie Barlow

BTW: Periodically check out the comments page on our website to see what is happening. For example, you can learn about 2007 seed-crop distribution, how Atlanta Botanical Garden is now willing to donate seedlings to bona fide institutions -- even well beyond the borders of Georgia, to help ensure continuation and propagation of the species in insitutional plantings. I am also in communication with a Torreya cultivator in northern Florida who has had magnificent results saving dying trees there by "liming", and I will post that communication soon.

<<http://www.torreyguardians.org/comments.html>>

---

12/31/07 from CB to  
jsmit154 <[jsmit154@utk.edu](mailto:jsmit154@utk.edu)>

Hello Brandon -

It's great to hear of you stepping forward on this. Here is my suggestion:

Recently, when I visited Atlanta Botanical Garden T. taxifolia seed propagation unit, I was told that because they now have an excess of seedlings, they would be happy to donate such to educational or other nonprofit institutions who would like to further such propagation on their own grounds. (See the following new link on our website to see the recommendations for seed and seedling nurture that I learned during my Atlanta visit).

<<http://www.torreyguardians.org/propagate.html>>

So, if you can make the effort to propose the idea to those institutions, all you need to do then is to give them the name and contact info of the man in charge of the program at Atlanta Botanical Garden:

Ron Determann  
[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)  
404 591 1714

And please do keep me posted on whether you are successful.

Thank you for you effort!

Together for Torreya,  
Connie Barlow

On 12/26/07 1:39 AM, "jsmit154" <[jsmit154@utk.edu](mailto:jsmit154@utk.edu)> wrote:

>  
> During your next seed dispersal, I would like to request contacting the  
> University of TN in Knoxville. I believe that East TN may also be an area  
> that should be considered seriously for assisted migration of the Florida  
> Torreya. Has this species been mentioned as a possible replacement for  
> recently devastated hemlock groves in the southern highlands?  
>

> Brandon  
>  
>  
—

Hi Lee -

I hope your trip to visit your parents was fulfilling. I just received another request to participate in Torreya seed germination (see below).

Ron Determann at Atlanta Botanical Garden found no problem with the Torreya propagation page and photos I posted, so I am interested in alerting all on my email list to them at the same time that I can send out official notice on the status of the 2007 seed harvest and distribution. So do keep me posted.

<<http://www.torreyaguardians.org/propagate.html>>

P.S. I am enjoying having a "pet" *T. taxifolia* that I carry around with me in the van. About 10 inches tall in its pot, donated to me by Ron at Atlanta when I visited there.

Together for Torreya,  
Connie

#### SEED REQUEST:

During your next seed dispersal, I would like to request contacting the University of TN in Knoxville. I believe that East TN may also be an area that should be considered seriously for assisted migration of the Florida Torreya. Has this species been mentioned as a possible replacement for recently devastated hemlock groves in the southern highlands?

Brandon  
jsmit154 <[jsmit154@utk.edu](mailto:jsmit154@utk.edu)>

—  
Ron -

I apologize for taking so long to get back to my torreya volunteer work and respond to you. You mention below that you were "a bit taken back by the listing of me as an advisor." I finally figured out what you were referring to: the page that lists the people and institutions as advisors, so it was really easy for me to remove your name and Atlanta Botanical Gardens. I can understand the sensitivity on this, given that your program necessarily is doing all it can to work just within the 2 states that encompassed the plant's native range.

As to GPCA website info, I think I found what you were referring to: on the "save" webpage of Torreya Guardians I had excerpted from their webpage. But since I hadn't asked them for permission, I have now changed that to simply give a link. I am trying hard to have Torreya Guardians be as helpful a website as possible in behalf of the tree, without offending anyone, so I hope this latest change solves that problem. I'd rather hotlink to other sites anyway than lengthen this one.

For Torreya,  
Connie Barlow

On 12/19/07 7:15 AM, "Ron Determann" <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)> wrote:

>  
> Connie, It was nice to have you here. I have no problem providing the  
> guardians with all the info about propagation of these plants and such,  
> but was a bit taken back by the listing of me as an advisor. I would  
> like that to be removed. It could be stated as information obtained from  
> The Atlanta Botanical Garden, that's fine. Also I would encourage you to  
> get in touch with Jennifer Ceska regarding the use of GPCA website info,  
> thanks ron



>  
> -----Original Message-----  
> From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
> Sent: Tuesday, December 18, 2007 2:42 PM  
> To: Ron Determann; David Ruland  
> Cc: Lee Barnes; Jack Johnston  
> Subject: Torreya Guardians draft webpage on Atlanta Botanical Garden  
> visit  
>  
> Hello Ron and David -  
>  
> Thank you so much for the tour of your T. taxifolia section at the  
> Garden a  
> few weeks ago. I finally compiled all my notes and photos on how ABG  
> goes  
> about propagating T. taxifolia successfully from both seeds and  
> cuttings,  
> and I posted those notes up on our Torreya Guardians website. Before I  
> announce this page to my list, please peruse it and let me know if I  
> need to  
> make any changes and corrections:  
>  
> <<http://www.torreyaguardians.org/propagate.html>>  
>  
> Together for Torreya,  
>  
> Connie

---

10/30/07 from Connie to <[slburgess@calpoly.edu](mailto:slburgess@calpoly.edu)> never got a reply:

Hello Susan Burgess -

My name is Connie Barlow, and I am the founder and webmaster of <<http://www.torreyaguardians.org>>, which is dedicated to undertaking work to help Florida's torreya conifer tree, *Torreya taxifolia*, recover and thrive in suitable habitat.

In June 2005, I visited numerous *Torreya* trees on Swanton Pacific Ranch, in the company of Jim West, and pursuant to ranch rules and permits. I was in awe of the rich seed production of your *Torreya californica* trees and took lots of photos and made observations. The results of that field visit are posted on our website, at this specific page:

<<http://www.torreyaguardians.org/swanton.html>>

One of the theories tossed around as to why the Florida species of *Torreya* is having so much trouble in comparison to the California species is that, as the Ice Age waned, the eastern *Torreya* species that had spent the peak glacial in the Ice Age refuge in the Florida Panhandle (Apalachicola) was unable to migrate north back to the southern Appalachians, which is the posited "native" habit for the ancient genus during previous interglacials. It is hypothesized that extinction or local extirpation of a seed disperser might be part of the problem. (I was first author of a paper to this end, which you can access at):

<<http://www.torreyaguardians.org/barlow-martin.pdf>>

California's *Torreya*, of course, was able to migrate upslope (or, in the case of Swanton habitat, the coastal fog of the summer season may be sufficient protection against rising temperatures.)

Recently, a scientist who is working with 100 captive gopher tortoises has stepped forward, offering to test the seeds of California *torreya* on his tortoises. Do the tortoises regard the seeds as food? Is seed germination enhanced following passage through the gut of a tortoise.

Because I noticed hundreds and hundreds of *Torreya californica* seeds on trees in Swanton (particularly at the old railroad station site, where habitat fragmentation has offered several specimens a lot of direct sunlight, it occurred to me that your reserve might be the best place from which to seek seeds.

Torreya Guardians would be exceedingly grateful if your organization would harvest and send ripe seeds to the scientist, Lawrence Fisher, who is studying gopher tortoises. I suspect that there may still be some ripe seeds available for harvest from this season -- that it is not yet too late.

You can read more about the efforts of Torreya Guardians in the April 2007 issue of the journal Conservation Biology:

McLachlan, James et al. 2007, "A Framework for Debate of Assisted Migration in an Era of Climate Change", Conservation Biology 21: 297-302.

Our work was also featured in the January issue of Conservation magazine, accessible here:

<http://conbio.net/cip/article81whe.cfm>

Thank you for your consideration,

Connie Barlow

—

7/20/07

Jack and Lee -

Hi! Since 2 print journalists (one from Orion) and national NPR radio journalist in charge of a yearlong series on global warming have contacted me over the past few days, I have taken the effort to get the comments page on the Torreya Guardians website up to date, with your latest dialogue below. Know that I always tell reporters to go there to see what is happening. One or more will probably visit North Carolina for some site visits for their story, and I am recommending you two, plus the Biltmore plus Jeff Morris toward the east, plus Smithgall Woods in northern Georgia, as that seems to me to be the first real on-the-ground intentional effort of assisted migration, because even though T tax is a Georgia native, the southern appalachians of GA are a far cry from the snippet of Apalachicola river habitat in the SW of the state. So expect to hear from folks.

Together for Torreya,  
Connie

On 7/9/07 7:29 PM, "LEE R BARNES" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Jack,

I've been most successful rooting cuttings in the fall after hard frosts have put the buds into dormancy- cuttings taken at other times tend to flush new growth prior to rooting. So do you have any roots? or callus/excessive callus at the bottom end of the cuttings?? - I would have expected rooting within a few months... what strength rooting hormone did you use?- also, evergreen cuttings often benefit from scoring the bottom sides of the cutting- I generally used a sharp knife to lightly scape bark off the cutting along two sides of the bottom inch of the cutting. Larger diameter cuttings 1/8 to 1/4 inch diameter worked better than smaller diameter cuttings.

The root system of cuttings tend to be thick, unbranched and brittle. I hope this helps- it's been about 20 years since I've done Torreya cuttings- I never had trouble rooting but I had access to a mist system- it is important to root cuttings with upright growth- lateral branches will root but plagiotrophic growth and only grow as a groundcover- Happy Trails, Lee

----- Original Message -----

From: Jack Johnston <[mailto:jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>

To: [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)

Sent: 7/9/2007 3:55:55 AM

Subject: Torreya cuttings

Hi Lee,

Asking for feedback: some Torreya cuttings stuck last Oct. are still green and may be struggling to root. I keep them under shade cloth to reduce the stress. If they root, would you expect them to grow any this year? I basically stuck the cuttings in pots, no mist, no cover, just shade. Did use rooting hormone. Jack

—

Hi Michelle -

I would be really thrilled if you went on the ground on a *Torreya* quest and incorporated that into your story. I will append a few more ideas on bottom. But first, what you asked for.

Go here to get the full photo story and map of my Fall 2006 visit to the Biltmore Gardens *Torreya* sites. Because they are endangered species, they are entirely unmarked and not mentioned at all in the visitor guide maps, so you will need this page to find them. I would also be curious to talk with you by phone afterward to get your assessment of how they are doing. Notice that I took a special effort to try to find and count fruit in 2006, and you can do that too.

<<http://www.torreyaguards.org/biltmore-2006-long.html>>

Lee Barnes: [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net) (in charge of 2006 seed harvest, refrigeration, and mailing)

Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>

Christa Frangiamore <[cfrangiamore@mindspring.com](mailto:cfrangiamore@mindspring.com)> She organized the event at the Highlands Nature Center that I did my "Bring Back *Torreya taxifolia*" program for. So she could tell you about its reception there.

[labrooks@wanadoo.fr](mailto:labrooks@wanadoo.fr) Leigh brooks used to work for Nature Conservancy near Apalachicola. Fabulous thinker and totally into this idea. Definitely talk with her.

Peter White [pswhite@unc.edu](mailto:pswhite@unc.edu) head of Botanic Gardens at chapel hill nc. Hugely respected botanist. Into the early discussions on this.

Stan Simpkins — the US FWS guy in charge of *Torreya* endangered species plan [stan\\_simpkins@fws.gov](mailto:stan_simpkins@fws.gov)

[balexander@biltmore.com](mailto:balexander@biltmore.com) Bill Alexander

[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu) mark Shwartz

"Hope, Devane A." <[DAHope@lpagroup.com](mailto:DAHope@lpagroup.com)> person in South Carolina trying to see if a private grove there has fruit to harvest.

Jeff Morris (25 acres; conifer hobbier)

403 Crestwood Lane

Spencer, NC 28159

[abogado28144@hotmail.com](mailto:abogado28144@hotmail.com)

He's had success with germinating 2005 harvest and plans to clone from branches.

Oh, Doug Fox, author of the Assisted Migration article in Conservation Magazine Jan 07 that started all the press hubbub just emailed me about some follow-up, so you two should be in touch to make sure you don't overlap in your queries and topics: Douglas Fox <[dsfox@earthlink.net](mailto:dsfox@earthlink.net)>

While in North Carolina, you could add to your article adventure by visiting the Smokies. Drive up to the parking lot at Clingman's Dome and then walk up to the observation tower. Along the way you will see Frazier Fir. And from the top is a horrific site of skeletons of them. Dying. Learn the story about them. Apparently, they are successfully planted on plantations (where?) for becoming Christmas trees, but dying off in their "native" range. A deep-time perspective sees them as having "chosen" to travel vertically at the end of the interglacial, while Balsam Fir travelled horizontally northward, and that they were probably the same gene pool before they got separated thusly. If I owned a mountain top south of the Balsam Fir range and north of the Smokies, I would definitely do assisted migration on my private land to keep them going in the wild. I also have great photos I took on Clingman's Dome Fall 2006, in case you can't get there. Drive down the north side of the park from high elevation and notice all the dead hemlock. Woolly adelgid, yes, but perhaps also climate stressed. Apparently there were times in the recent (near-time), but still prehistoric past when Hemlock vanished from the pollen record of the east, so this may not be unusual. The director of the Harvard Botanical Garden (I forget the real name of the garden) told me his idea about the periodic loss of Hemlock. He is pretty much resigned to losing all the lovely Hemlocks at their garden eventually. His name is Peter Del Tredici; I interviewed him for the ginkgo section of the Ghosts book.

You absolutely must get hold of *Forests in Peril: Tracking Deciduous Trees from Ice-Age Refuges into the Greenhouse World* (Paperback)

By Hazel Delcourt. I interviewed her about this (not for a book or article, just for my own interest) just before she retired from U Tenn Knoxville. As I remember now, it was this book that got me off my butt about *Torreya* and had me contact her, Paul Martin, Peter White, and several others to have an email conversation about actually doing assisted migration for *Torreya*. Because before this book, it was just my crazy idea. In the book, she does a powerful job of teaching about Ice Age pocket refuges. Anyone who reads this book will instantly become in favor of at least moderate assisted migration.

Obviously, visiting the Apalachicola State Park and adjacent Nature Conservancy property would be great too, and very sad. Make sure you contact Nature Conservancy personnel in advance to get a tour from them. I never did that, I just explored the park on my own to find the sad trees.

If you wanted to do a really cool article sometime, you could visit all three of the major Ice Age pocket refuges for Eastern North America. I've been to 2. Altamaha can't hold a candle to the Apalachicola, as far as having good shaded rich bank topography on which to grow stuff. But I bet the one Hazel talks about in Louisiana is terrific. I would love to have them declared "Sacred Sites" for vegetation lovers of eastern north america. See the Sacred Sites webpage on my [www.TheGreatStory.org](http://www.TheGreatStory.org) website.

HERE'S SOME CORRESPONDENCE I'VE HAD WITH THE POSTER PLANT FOR ASSISTED MIGRATION FOR WESTERN US: JOSHUA TREE

Chris -

I enjoyed the ramblings on pronghorns and cucurbits! I haven't entered the blogging world yet -- only when google happens to take me there, as it did in the case of Joshua Trees and sloths, so please send me an email if you post more on assisted migration. And what about starting a joshuatreeguardians effort?

Evolutionarily yours,  
Connie

On 2/16/07 11:16 PM, "Chris Clarke" <[coyotl@faultline.org](mailto:coyotl@faultline.org)> wrote:

> Connie;  
>  
> I'm quite pleased to hear from you, having been a fan of Ghosts of  
> Evolution since, honestly, before it came out. (I was lucky enough to  
> receive a set of pre-pub proofs.) There are few books that have  
> affected my thinking so profoundly, and I thank you for that.  
>  
> You may find this old post of mine of some interest:  
>  
> [http://faultline.org/index.php/site/comments/  
> whats\\_owed\\_to\\_those\\_who\\_have\\_gone\\_before/](http://faultline.org/index.php/site/comments/whats_owed_to_those_who_have_gone_before/)  
>  
> I am beginning to dig in to your *Torreya* materials, and am quite  
> interested. I've found the whole "laissez-faire/intervention"  
> dialectic rather compelling for some years, and look forward to  
> learning more. Seems to me that the issues of invasive exotics  
> provides some precedent: once we took on the role of weeding the  
> "wild," thus admitting that the line between garden and wilderness is  
> not at all distinct, discussing taking on the role of transplanter  
> was almost inevitable.  
>  
> I'd be interested to see what you've put together on the issue of the  
> Joshua tree. Of course, the tree is doomed to extinction without its  
> symbiote the yucca moth, and so any assisted migration would  
> necessarily include the moth. "The moth" is a bit of a reification,  
> in fact: two species are responsible for Joshua tree pollination, one  
> per main form. The moths are somewhat occult, living most of their  
> lives as subterranean pupae. Challenges!  
>  
> I expect I'll be doing a little writing about assisted migration at  
> Creek Running North, and possibly — if I get a sense that the much  
> larger audience there is interested in matters ecological past the

> dolphin-saving level — at Pandagon, where I've recently joined the team.  
>  
> On Feb 14, 2007, at 11:20 AM, Connie Barlow wrote:  
>  
>> Chris -  
>>  
>> Hello, this is Connie Barlow, author of "Ghosts of Evolution:  
>> Nonsensical  
>> Fruit, Missing Partners, and Other Ecological Anachronisms." I am the  
>> initiator and webmaster of <<http://www.torreyguardians.org>> and, as a  
>> result, was interviewed for the Jan 2007 issue of Conservation  
>> magazine that  
>> opened up the topic of assisted migration for plants in a time of  
>> global  
>> warming. Our Torreya Guardians have already been doing that for  
>> our beloved  
>> tree. Check us out. Torreya taxifolia is the poster child for  
>> assisted  
>> migration in the eastern U.S., Joshua tree certainly in the north.  
>> I've  
>> been doing powerpoint programs around the country advocated assisted  
>> migration for Torreya, and now that I learned about Joshua Tree,  
>> for that  
>> too.  
>>  
>> Check out this page I put up on the website for direct hotlink  
>> access to the  
>> key articles on this issue:  
>>  
>> <<http://www.torreyguardians.org/assisted-migration.html>>  
>>  
>> For Torreya,  
>> Connie

On 7/11/07 5:23 PM, "Michelle Nijhuis" <[michelle@nasw.org](mailto:michelle@nasw.org)> wrote:

Hi Connie, nice talking to you just now. When you have a moment, would you send me contact info for Jack Johnstone, Bill Alexander, and Jeff Morris (? - the amateur horticulturist in E. North Carolina)? Also, if you could send me the page with photos from the Biltmore Gardens, that would be great. Thanks again for your help, Michelle

Michelle Nijhuis  
39007 Pitkin Road  
Paonia, Colorado 81428  
970.527.3793  
[michelle@nasw.org](mailto:michelle@nasw.org)  
<http://www.coyotecommons.org/michelle.html>

----- Original Message -----

From: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: Michelle Nijhuis <[michelle@nasw.org](mailto:michelle@nasw.org)>  
Sent: Thursday, July 5, 2007 2:53:33 PM  
Subject: Re: from Orion Magazine

Re: from Orion Magazine Sure -

Do visit the website first and peruse it:

<<http://www.torreyguardians.org>>

You can call our cell 425-760-9941. A good time would be this Saturday afternoon while we are on the road driving from Ann Arbor MI to Springfield IL. If that doesn't work, call on the phone anytime and we can arrange a

time to talk if I'm not available. I will not be looking at email for awhile as I have a deadline that will consume me for a week.

Connie

On 6/29/07 2:13 PM, "Michelle Nijhuis" <[michelle@nasw.org](mailto:michelle@nasw.org)> wrote:

Dear Connie Barlow, hello from Colorado. I'm a writer for Orion Magazine, and I'm interested in learning more about T. tax and assisted migration. Would you have a few minutes to speak with me? If so, please let me know a good time and place to call. Many thanks for your time, Michelle

Michelle Nijhuis  
39007 Pitkin Road  
Paonia, Colorado 81428  
970.527.3793  
[michelle@nasw.org](mailto:michelle@nasw.org)  
<http://www.coyotecommons.org/michelle.html>

Hi Doug -

Great to hear from you again. Your article was superb in content and in writing style, and wow it got a lot of press stuff to happen. Congratulations! Michelle Nijhuis just talked with me yesterday about Torreya and assisted migration, as she is doing a story for Orion Magazine on it.

A couple things:

1. Google "assisted migration" and you will find the Standards for Assisted Migration on our Torreya guardians website is #2 entry.
2. A new page I added hasn't shown up on google, but it is where I try to hotlink all the relevant webpages for assisted migration. Your article is at the top of the list. You can get to it at:

<http://www.torreyaguardians.org/assisted-migration.html>

You can also get to that page by going down to the #9 entry on google, which is the Wikipedia site for assisted migration. I suggest you add to that site. The only thing I did to it was hotlink it to the assisted migration page on my website.

Question: I haven't yet had access to an e or paper copy of the Mark Schwartz et al paper in Conservation Biology, which came after your article. I subscribe to Conservation, but that doesn't get me onto the site of the professional journal. Do you have direct e access to a pdf of that so I can read it finally?

Would love to talk with you and hear from you, too, what is going on. I have to complete an index for a book under a tight deadline, so call our cell phone sometime after July 20 and see if I am available, or email me again then.

425-760-9941

Together for Torreya,  
Connie

On 7/12/07 10:04 AM, "Douglas Fox" <[dsfox@earthlink.net](mailto:dsfox@earthlink.net)> wrote:

> Hello Connie,  
> I hope all is well...  
>  
> I haven't spoken with you, I think, since when I was working on the  
> assisted migration story in Conservation Magazine (for which I  
> interviewed you back in Sept / Oct / Nov or so).  
>

> I've been thinking about following up on this story for some time, and  
> am now about ready to grind into action. So I just wanted to touch base  
> with you, and find out about your whereabouts / availability over the  
> next few weeks. Will you be able to talk sometime soon?  
>  
> And, just in case, do you expect to come through California any time  
> soon? (i ask only because i do know that you move around quite a bit.)  
>  
> Thanks Connie, and talk to you soon I hope!  
> Doug  
>

---

**Subject: Seeds of 2005 Torreya taxifolia harvest germinating**

**Date: Tuesday, March 6, 2007 4:12 PM**

**From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>**

**To: <[balexander@biltmore.com](mailto:balexander@biltmore.com)>, <[bjjkeel@aol.com](mailto:bjjkeel@aol.com)>, <[dgordon@tnc.org](mailto:dgordon@tnc.org)>, <[hermasm@auburn.edu](mailto:hermasm@auburn.edu)>, <[joshua-brown@verizon.net](mailto:joshua-brown@verizon.net)>, <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>, <[muirpower@mac.com](mailto:muirpower@mac.com)>, <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)>, Paul Martin <[pmartin@geo.arizona.edu](mailto:pmartin@geo.arizona.edu)>, <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)>**

**Cc: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>**

Hello Torreya Guardians -

This is Connie Barlow. Great news! Didier Maerki at Arboretum de Villardebelle <[villardebelle@pinetum.org](mailto:villardebelle@pinetum.org)> emailed me the following email. He received a packet of 10 seeds from the Fall 2005 harvest at the Biltmore:

Dear Torreya Guardians,

This is to inform you that the 2 first seeds germinated and are sprouting. Both labeled as male, date of sowing 16 May 2006.

Sorry for the not so good quality of the photos, I am in a hurry and I do not want to delay the information.

Best Wishes,

Didier

I have posted this message on two pages of the website: comments and rewilding

<<http://www.torreyaguardians.org/rewilding.html>>

On another topic. When you google "assisted migration plants", one of our pages is #4. I have added a new page to keep track of the assisted migration articles, especially the ones that reference Torreya's situation, so I have hotlinks from this page to as many others as I know of:

<<http://www.torreyaguardians.org/assisted-migration.html>>

Together for Torreya,

Connie

--

10/11/06

Hello Bill Alexander and Lee Barnes -

Two things:

1. I switched the [www.TorreyaGuardians.org](http://www.TorreyaGuardians.org) webpage on my 2006 Biltmore Torreya visit to the short version that gives no clues of the trees locations.

2. Tis October! Is the seed harvest happening at the Biltmore? And will there be any surplus at all this year for Lee Barnes to distribute? Our new contact in Highlands, NC, Jack Johnston, who already works to maintain wild genotypes of Stewartia (and is on the board of the Carolinas Chapter of the American Chestnut Foundation) would be thrilled to get some T. tax seeds to begin propagation in the Highlands area.

Together for Torreya,  
Connie Barlow

---

**Subject:** Torreya specimens sending to Peter White for ID

**Date:** Wednesday, September 20, 2006 3:42 PM

**From:** Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

**To:** Peter White <[peter.white@unc.edu](mailto:peter.white@unc.edu)>

**Cc:** Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>, Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>, Christa Frangiamore <[cfrangiamore@mindspring.com](mailto:cfrangiamore@mindspring.com)>, Robbin Moran <[rmoran@nybg.org](mailto:rmoran@nybg.org)>

**Conversation:** Torreya specimens sending to Peter White for ID

RE: Identifying the unknown species of Torreya grove in Highlands NC

Hello Peter -

This is Connie Barlow. My contacts in Highlands NC believe that it is best to wait for the landowner to leave his summer home this fall before they enter the property again to collect fresh branch specimens to send to you for you and your staff to key out.

Meanwhile, I have just put together a priority mail package and am sending you ALL MY DRIED SPECIMENS:

- T. californica: 2 different branch specimens from California (Sequoia National Park and Yosemite National Park sites), collected May 2005
- T. taxifolia: branch specimens from 2 different individuals at the Biltmore Gardens, collected August 2006
- T. unknown species: one branch specimen from the Highlands grove in question, collected August 2006.

I have written on the specimen paper the exact page and photographs on the Torreya Guardians website that each collected specimen pertains to, so you can see what the tree as a whole looks like in photos.

I have asked Jack Johnston at Highlands to send you a fresh branch specimen (and fruit if at all possible) when they are able to re-enter the property of the undetermined Torreya species grove. When that happens, I will ask my California contact to send you a fresh sample of T. californica at the same time.

Together for Torreya,  
Connie

—

Jack -

Thank you for being on top of this. I'm glad that Jeff is sensitive to these particular owners, as the last thing we would want would be to never have anybody be able to visit them again. When you and Jeff do eventually visit the trees, and can collect some fresh branches (probably too late for seeds, alas), and can send them to Peter White right away at UNC Chapel Hill, do let me know, so that I can get my contact in California to send fresh California torreya branches at the same time.

Meanwhile, I have just put together a package for Peter of my dried specimens: 2 different branch specimens from California (Sequoia National Park and Yosemite National Park sites), branch specimens from 2 different individuals of T. taxifolia at the Biltmore, and one branch specimen from the Highlands grove in question. I will let all of us know what Peter and his staff come up with.

Together for Torreya,  
Connie

On 9/15/06 9:28 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

I have asked Jeff Zahner twice about the Highlands trees, and he is willing to take me over when the family is not in residence which will be later in the year. I have asked him in Aug. and Sept. and he said the time is later. I don't know what that means.

I have plans to visit Jeff at his home this fall, so maybe can visit the trees then. I do not have a date when I can visit the trees, and it depends on Jeff.

Jack



From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: Peter White <[peter.white@unc.edu](mailto:peter.white@unc.edu)>, "Moran, Robbin" <[rmoran@nybg.org](mailto:rmoran@nybg.org)>, Bill Alexander Bill Alexander <[balexander@biltmore.com](mailto:balexander@biltmore.com)>, Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>, Christa Frangiamore <[cfrangiamore@mindspring.com](mailto:cfrangiamore@mindspring.com)>  
CC: Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>, Rob Nicholson <[RNICHOLS@email.smith.edu](mailto:RNICHOLS@email.smith.edu)>, Leigh Brooks <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)>, "Gallagher, Dean" <[dean.gallagher@MyFWC.com](mailto:dean.gallagher@MyFWC.com)>, "zahners@gmail.com" <[zahners@gmail.com](mailto:zahners@gmail.com)>  
Subject: Re: UNC Botanical Garden to key out Highlands Torreya sample  
Date: Wed, 13 Sep 2006 22:10:26 -0400  
>NEWS: Univ North Carolina Botanical Garden will key out Highlands Torreya  
>sample  
>  
>PETER WHITE - thank you for offering to have your UNC ID the Highlands  
>Torreya species. I will endeavor to have FRESH samples sent to you.  
>  
>ROBBIN MORAN - If UNC lacks a fruiting Torreya NUCIFERA, could you send  
>Peter (address below) a couple sample seeds from your New York Botanical  
>Garden, and several fresh branchlets with at least 2 years growth? I  
>remember when I lived in New York, I visited NYBG in September and found T.  
>nucifera seeds galore having fallen all over the ground.  
>(Peter's address below.)  
>  
>BILL ALEXANDER - In order to help Peter White key out the Highlands Torreya  
>species, it would be ideal if you could have your staff send to Peter White  
>fresh branchlets of T. TAXIFOLIA (including 2 years growth cycle) and maybe  
>even a seed from the BILTMORE grove. I would recommend collecting several  
>branchlets that are the most morphologically diverse, so that he can get a  
>sense of the range.  
>Address below.  
>  
>JACK JOHNSTON - Could you collect several samples of HIGHLANDS Torreya  
>branchlets (and ideally a seed; should be ripe or real close to ripe by  
>now)? Make sure you get at least 2 years growth in each (noting that some  
>branches produced no new growth this year), and especially try to include  
>the biggest and smallest growth examples from that grove. And then send to  
>Peter White, keeping them fresh, at the address below. If you can't, could  
>you let Christa Frangiamore know that we need her to do it (or to recruit  
>Jeff Zahner, as I don't have his email address)?  
>  
>I WILL CONTACT JIM WEST who lives near the best Torreya CALIFORNICA groves,  
>and who can collect and send fresh branchlet and seed samples of CALIFORNIA  
>TORREYA to Peter White.  
>  
>That way, Peter should have fresh samples of all 3 species to compare with  
>the unknown species from Highlands.  
>  
>Thank you all!  
>  
>BTW: I have received a lot of info and ideas lately on the Torreya ID and  
>other Torreya issues. Snippets of comments by Peter White, Robbin Moran,  
>Jack Johnston, Rob Nicholson, Dean Gallagher, and Leigh Brooks all appear on  
>the comments page:  
>  
><http://www.torreyaguards.org/comments.html>  
>  
>\_\_\_\_\_  
>  
>On 9/10/06 9:39 AM, "Peter White" <[peter.white@unc.edu](mailto:peter.white@unc.edu)> wrote:  
>  
>> Also, wrapping material in damp newspaper, then that in a plastic bag,  
>> with the material sent by reasonably rapid mail, would insure the  
>> material was fresh when received.  
>>  
>> Our Herbarium is curated by Alan Weakley who is writing a flora for NC,

> > SC, VA, and GA. Since folks from Highlands have often sent herbarium  
> > material to our herbarium, we may even have specimens on hand of the  
> > same trees.  
>  
> Peter S. White email: [peter.white@unc.edu](mailto:peter.white@unc.edu)  
> Department of Biology -- Campus Box 3280  
> University of North Carolina at Chapel Hill  
> Chapel Hill, North Carolina 27599-3280 USA  
> Biology Phone: 919-962-6939 FAX: 919-962-1625  
> NCBG Phone: 919-962-0522 FAX: 919-962-3531  
> Home Phone: 919-967-4926  
> Web information: [www.bio.unc.edu/faculty/white/](http://www.bio.unc.edu/faculty/white/)  
> [www.ncbg.unc.edu](http://www.ncbg.unc.edu)  
>  
—

Jack -

I liked the whole thing too much to cut any of it. It is posted now on the comments page. Check it out:

<http://www.torreyaguardians.org/comments.html>

On 8/31/06 10:04 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

If you want to post my e-mail, I suggest you edit about half of it out to make it more pertinent. You are welcome to edit and post. Jack

From: *Connie Barlow* <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: *Jack Johnston* <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>  
Subject: *Re: Torreya*  
Date: *Thu, 31 Aug 2006 16:02:03 -0400*

Jack -

Great communication. May I post it on the comments page of Torreya Guardians website so that others may consider it? Briefly, the seeds of all the Biltmore trees are so ovate, and the seeds of all the wild sites of California Torreya I visited are so oblong, that it seemed certain that they must be T. California. But the best way to tell would be for someone to actually harvest the Highlands seeds (you?) and take a photo of them (as they were too far up for anyone to be able to touch). Better yet, if you could schedule a trip to the Biltmore. Make sure you call Bill Alexander in advance to have him put your name on the list for free access that day, as otherwise it costs \$38! If you have the time, it would be great if you could do a comparison between the two. As to foliage: I saw such strikingly different foliage among the California trees, even on the same individual, that, personally, I wouldn't even attempt to think that foliage would give a clue. Do visit the California pages on the Torreya Guardians website and see the foliage ~ and all the diverse habitats! Personally, I have much more faith in the utility of looking at California habitat for „Florida%o Torreya than looking at anything in its historic range; again, because of the deep-time story I have.

Together for Torreya,  
Connie

On 8/29/06 9:00 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

When comparing two groups of plants at different sites, it is entirely possible as you know, for variability due to differences in genetic material. When you say that the Highlands and Biltmore populations are different, and are basing it on fruit shape alone, I do not think that is enough. For example, I collect *Stewartia* seeds and find all kinds of differences from one plant to another in capsule shape, leaf shape, and habit of the plants. If you are convinced that the two populations are different species, it should be based on several characteristics.

I have just returned from Oregon and was in a yard where an atypical Douglas fir was misidentified by a long time resident based on the bark and limb patterns. Had he looked at the cones, it would have been easy to correctly identify.

Brown leaves, twigs: Something similar can happen with Canadian hemlocks, and it is not the wooly adelgid problem.

Seed availability: assuming competition from squirrels, less than 100% harvest, and seeds that are non-viable, it remains to be seen what can be done this year. I hope your man on the site is aggressive in collecting. For example, I collected *Magnolia fraseri* before going to Oregon (early date for harvest) and when I returned, the seeds were gone from the wild sites. In this case, a 12 day delay in harvest would have meant a missed crop.

Cuttings: for a backyard hobbyist to try to grow *T. taxifolia* from cuttings would mean a probable loss of the cuttings. Have you considered asking the folks at Biltmore to grow cuttings for this effort and making them available? If they are willing, this should take little greenhouse space, and rooted cuttings can be available in 12 months.

Site requirements: checking with the folks already growing *Torreya* in Georgia as to the best site requirements will save making a lot of mistakes. For example, with magnolias it can generally be said that full sun is best, but some in the group like shade. I do not think that one can compare the California material to the Florida as to site requirements.

Future seed set at Biltmore: assuming that Biltmore will continue to provide seeds, an annual visit to the trees and a comparison to your mapping should be done. This will indicate which trees are producing fruit, if a tree does not produce, if new ones start setting seeds, and if there are deaths.

Best regards,  
Jack Johnston

---

Stephanie -

Great to hear from you! I would love to see the card. Through the end of October, we actually are living in one spot, so you can send it to:

Connie Barlow  
General Delivery  
Scarborough Post Office  
Scarborough, ME 04074  
USA

I did google you, so thank you for making that suggestion to see your work with particular plants and gardens. I actually have a website that you might find interesting, in that I believe it is the first website existing for a particular endangered plant species that is an entirely volunteer activity that combines the expertise of botanical garden staff, scientists, naturalists, and horticulturalists, with interested citizens to work in behalf of a single plant. It is called "Torreya Guardians", and it is dedicated to possibly the world's most endangered conifer: *Torreya taxifolia*, which is in desperate shape in its "native" range in Florida USA. You will see a lot of photographs on the website.

<http://www.torreyaguardians.org>

I also purchased the web name [www.PlantGuardians.org](http://www.PlantGuardians.org), as I envision other groups of citizen-activists working on behalf of single plants species (or genera) and using the web to network, as we are doing for *Torreya*. Especially if economies crash and money is not available for governmental support of endangered species conservation, then the plants could be assisted by such volunteer groups. I also envision such networks to be important once global warming makes it important for people to be involved in "assisted migration" for wild plants. I haven't done anything with the website yet, but I envision using wiki technology to make it possible for folks to step forward in behalf of a plant without me, as webmaster, having to be involved in any way.

Together for *Torreya*,  
Connie

On 9/13/06 6:57 AM, "Michael Dowd" <[mbdowd@bigplanet.com](mailto:mbdowd@bigplanet.com)> wrote:

----- Forwarded Message  
From: Stephanie Parkes <[stephanieparkes@ihug.co.nz](mailto:stephanieparkes@ihug.co.nz)>  
Date: Wed, 13 Sep 2006 21:02:09 +1200

To: <[Michael@TheGreatStory.org](mailto:Michael@TheGreatStory.org)>

Subject: Message for Connie Barlow - dreaming of dinosaurs

Dear Connie,

My name is Stephanie Parkes and I am a research technician for a Crown Research Institute, Landcare Research, in New Zealand.

I am reading *The Ghosts of Evolution* and I am very excited by the theme of your book. I am particularly moved by the Ginkgo's connection with dinosaurs as the Ginkgo is a favorite tree of mine. I also make greetings cards, and I have made one for you to celebrate the Ginkgo 'dreaming of dinosaurs'.

I understand from your book and website that you are rather mobile, so I was wondering if you have a postal address to which I could send the card?

If you want to verify my identity, Google my name and you should come up with a couple of papers I have co-authored, plus a published book on gardening.

*The Ghosts of Evolution* is a treat to read.

Thank you.

From Stephanie

—

Istvan -

Great! I am glad that the photos are useful.

Connie

On 9/13/06 12:44 PM, "István Rácz" <[iracz-50@t-online.hu](mailto:iracz-50@t-online.hu)> wrote:

Dear Connie,

Small world (thinking of your grandfather)...

Your images and notes were received here gratefully. Many thanks indeed. I already made a new page layout with the sprouting base and the multiple seed bearing branches. The trunk/bark images are good, the one with the champion tree trunk is indeed fabulous. Great contribution.

I may contact you again later so that you can see the species text and ask for your comments/corrections. Perhaps we will include your horizontal view photo from Yosemite in the section with conifers habitats - and for the caption I may ask for more details. I like the image (bit those pages are full at the moment).

Yours,

Istvan

Connie Barlow wrote:

Hello Istvan -

Thank you for contacting me. I am sending 8 separate emails, each with a high-resolution photograph that I took. You may use any of them in your book, for free. Rather than naming me as the photographer, please attribute them to [www.TorreyGuardians.org](http://www.TorreyGuardians.org) <<http://www.TorreyGuardians.org>> . That way, readers will know to visit our website.

My maternal grandfather immigrated from Hungary to the USA at the age of 14, 100 years ago. His name was Istvan. My maternal grandmother immigrated from Hungary a little later.

For Torrey,  
Connie Barlow

On 9/11/06 1:31 PM, "István Rácz" <[iracz-50@t-online.hu](mailto:iracz-50@t-online.hu)> <<mailto:iracz-50@t-online.hu>> wrote:

Dear Mrs. Barlow,

My colleague and I (with the help of contributors) are in the finish-up of a conifer book, *Conifers Around the World* (see [www.dendropress.com](http://www.dendropress.com) <<http://www.dendropress.com>> ). I found your website and info on the American *Torreya* habitats and some of those champion trees very exciting. During my visit in CA (more than 10 yrs ago) I only saw "small" *Torreyas* up to 12 m and trunk diam. of less than 1 m. Even then, I photographed in black and white; I did not take color images of *Torreya*. Same with my colleague. We have a few images of T.c. from a friend in the US - but we think of better ones. I wonder if there are good images of you to contribute (based on some form of agreement to be made)? We could still accommodate such images before the book goes in print; a) mature tree(s) in wild habitat condition; b) trunk of and old tree.

Attached is the present page layout. Text is still under editing and should come back to us very shortly (from a US editor).

Sincerely,

Istvan Racz  
Hungarian Natural History Museum  
Budapest

p.s. also I attached a page from an Asian *Torreya* for your review.

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**Subject:** *Torreya* Guardians reports of 2 site visits North Carolina

**Date:** Wednesday, September 6, 2006 11:24 AM

**From:** Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

**To:** <[abogado28144@hotmail.com](mailto:abogado28144@hotmail.com)>, <[dean.gallagher@myfwc.com](mailto:dean.gallagher@myfwc.com)>, <[essgold@aol.com](mailto:essgold@aol.com)>, <[grilke@cfl.rr.com](mailto:grilke@cfl.rr.com)>, <[gymnosperm1@intergate.com](mailto:gymnosperm1@intergate.com)>, <[jhooleyg@bellsouth.net](mailto:jhooleyg@bellsouth.net)>, <[mhess@ctflegal.com](mailto:mhess@ctflegal.com)>, <[phoran@uga.edu](mailto:phoran@uga.edu)>, <[relarson@dawesarb.org](mailto:relarson@dawesarb.org)>, <[rporuban@eshores.com](mailto:rporuban@eshores.com)>

**Cc:** Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

**Conversation:** *Torreya* Guardians reports of 2 site visits North Carolina

Hello *Torreya* Guardians -

This is Connie Barlow. August 2006 I gave a powerpoint presentation titled "Rewilding *Torreya* Trees to Appalachia" at the Highlands Nature Center in Highlands, North Carolina. While there, Lee Barnes and I made a site visit to an 80-year old *Torreya* grove on private land. No documentation as to species, and, unfortunately, the fruit shape appeared to me to be California *Torreya*, not Florida *Torreya* (but I could be wrong). You can access a photo essay web page of this site visit by going to:

<http://www.torreyaguardians.org/highlands.html>

A few days later I was near enough to the Biltmore Gardens in Asheville to pay a site visit there. I spent about 6 hours with the trees, carefully examining each specimen and counting the seeds (just 55 this year, compared with a total of 130 collected last year). You can access a photo essay of that site visit too:

<http://www.torreyaguardians.org/biltmore-2006.html>

Please note that the Biltmore field trip page will be posted for ONLY 2 MORE WEEKS. After that, I will replace it with a very abbreviated page so that seed thieves will not be able to use it to find the seed-bearing trees. I will keep the full photo-essay on the website, but under a new name that has no hotlink internal to the website, so that people can only access it if they learn from me the direct link.

I keep posting CURRENT NEWS on the LATEST IN THE SEED HARVESTING AND REWILDING EFFORT on the rewilding page of the website. The newest entry lists the organizations that received the 2005 seed harvest donated to *Torreya* Guardians by the Biltmore Gardens. You can access that directly:

<http://www.torreyaguardians.org/rewilding.html>

Together for *Torreya*,

Connie Barlow

--

---

**Subject:** Re: Highlands and Biltmore Torreya Visits posted on website  
**Date:** Wednesday, September 6, 2006 11:05 AM  
**From:** Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
**To:** Bill Alexander <[balexander@biltmore.com](mailto:balexander@biltmore.com)>  
**Conversation:** Highlands and Biltmore Torreya Visits posted on website

Bill -

Thank you for your response and clarification. I deeply apologize for not having kept your previous emails accessible (or added your phone number to my email address book, which I will do now). My husband and I live entirely on the road, no home, so I keep no paper records. In fact, I was able to come to the Biltmore last minute only when I scored a car from some friends in Brevard while my husband used our van for business (scheduled talks).

I made the changes you mentioned about Chauncy Beadle (at the beginning of the web page) and I added verbatim (without attribution) the para you wrote about WHY the specimens appear in worse condition now than they did 4 years ago. Very good to know that it was caused by hurricane damage to the overstory, etc. That para now appears at the very end of the web page, where I discussed the two original specimens that appear most stressed.

Your point about how the photos and map could assist SEED THIEVES is well taken. So I have created a short version of the page that removes the map and all photos except for just the close-ups of fruit and branches. You can access it now by going directly to this temporary web-page name:

<http://www.torreyaguards.org/biltmore-2006-new.html>

I will assume that this fully takes care of the problem, unless I hear back from you.

I plan to make that short version the official web page of that field trip in two weeks — after I give Torreya Guardians (about 30 people on my email list) a chance to view the full report, with photos and map. I had been delaying reporting the two field trips to the full list until I heard back from you. So what I am going to do now is to put out an email to the Torreya list telling them that they have 2 weeks in which to view the long version of the page with full photographs and commentary. After that time, the short version will be up, and people will simply have to contact me on an individual basis if they want to view the long version.

ONE QUESTION FOR YOU:

Because 7 of the 10 specimens that are clearly not the originals have girths of 7 or 8 inches, it would be interesting to know whether these represent a single year's crop of seedlings that Biltmore staff planted or transplanted all at once — and when that year would have been. Do you have records on that? Or a memory? I am really curious.

Together for Torreya,  
Connie Barlow

On 9/5/06 10:42 AM, "Bill Alexander" <[balexander@biltmore.com](mailto:balexander@biltmore.com)> wrote:

> Hello Connie,  
>  
> You did quite a report on the Biltmore Torreyas! Please make a note that  
> Chauncey Beadle was not Biltmore Estate's forester, but botanist and nursery  
> superintendent, and for many years he was also the estate superintendent.  
>  
> I am somewhat concerned about posting a map on the website with locations  
> and all the details of which trees have seeds and wished that we had  
> discussed it first. I have suspected that folks have harvested Torreya seed  
> without permission in the past and this just brings attention to the fact  
> that they are there. Since visitors can linger in the gardens until dusk,  
> there are not always watchful eyes on what is going on. We have actually  
> found where people have dug up plants of various kinds!

>  
> The broken stems and otherwise weakened and degraded condition of some of  
> the original trees is due to the devastation by hurricane's Francis and Ivan  
> in September 2004. The estate lost hundreds, if not thousands of large trees  
> due to the saturated ground and high winds. Dozens of large pines in the  
> adjacent groves were either uprooted and/or broken. Our arborists had to  
> remove additional ones that had become safety hazards. After having grown  
> under the pines for decades, the Torreya's have experienced sun scald and  
> stress from drier soil since the canopy was opened.

>  
> My phone number has always been attached with my e-mail messages.

>  
> Bill

>  
> Bill Alexander  
> Landscape and Forest Historian  
> The Biltmore Company  
> One North Pack Square  
> Asheville, NC 28801  
> 828.225.6347-Phone  
> 828.225.6383-Fax  
> [balexander@biltmore.com](mailto:balexander@biltmore.com)  
> Visit [www.biltmore.com](http://www.biltmore.com) today!

>  
>  
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>  
>  
>  
>  
> -----Original Message-----  
> From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
> Sent: Sunday, August 27, 2006 6:44 PM  
> To: Lee Barnes; Christa Frangiamore; Jack Johnston; [zahners@gmail.com](mailto:zahners@gmail.com);  
> [balexander@biltmore.com](mailto:balexander@biltmore.com)  
> Subject: Highlands and Biltmore Torreya Visits posted on website

>  
>  
> Hello!

>  
> This is Connie Barlow, writing to the Torreya Guardians folks who in some  
> way participated in or facilitated the visit I (and others) made to the  
> private grove of Torreya sp. (begun in 1920s) in Highlands NC and the visit  
> I made by myself to the Torreya grove (begun in 1939) at the Biltmore  
> Gardens.

>  
> 1. To the HIGHLANDS folks: Check out my Highlands web page and let me know  
> if you have any changes to suggest before I alert my entire Torreya  
> Guardians list to the existence of this page. Especially, notice my sad  
> conclusion that I think the trees are definitely not *T. taxifolia*. The  
> fruits look just like California Torreya. Click on this page:

>  
> <http://www.torreyaguardians.org/highlands.html>

>  
> 2. To BILL ALEXANDER at the BILTMORE: Thank you for last-minute making it  
> possible for me to visit the garden for free. I spent 6 hours entirely with  
> the Torreya's and would like to talk with you about my observations (notably,  
> just 55 seeds seem to be growing this year, on a total of 4 trees) and learn

> about your future plans for these trees. So please reply when a good time  
> would be for me to call you, and give me your phone number, since it is  
> impossible to find that on the Biltmore website. And please check out the  
> photo-rich and lengthy web-page I have posted on that field visit:  
>  
> <http://www.torreyaguardians.org/biltmore-2006.html>  
>  
> 3. To Christa Frangiamore and Bob Zahner: I don't have Jeff Zahner's email  
> address, so could you please forward this email to him. Then, Jeff, send me  
> your email address.  
>  
> 4. To Jack Johnston: I'd like to hear your detailed thoughts after you view  
> both the Highlands and the Biltmore pages.  
>  
> Together for Torreya,  
> Connie Barlow  
> --

—  
Jack -

Responses embedded in ALL CAPS.

On 8/15/06 6:28 AM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

After two sessions of reading about Torreya on the internet, I am excited! I saw the trees at Biltmore two years ago, trees in Florida this year, and have talked with Bob McCartney at Woodlanders about driving down for some plants this fall. I want to try to grow them from cuttings (and seeds as available).

For fun I can contact Jeff Zahner and see if it is possible to visit the trees at Highlands, and can easily visit the plantings at Smithgall Woods at Helen, Georgia where I have seen the plantings once. Since Highlands is close, who knows, it may be possible to try some cuttings one day.

By the way, when is a likely ripening date for the Biltmore seeds? OCTOBER

In my observations of this species, the growth seems slow.

There is an internet mention of plants at Atlanta Botanical Gardens producing seeds in pots. Do you know anything about this? YES, I VISITED THE POTTED ORCHARD AT ATLANTA BOTANICAL GARDEN, BEHIND THE SCENES AND TALKED TO THE FOLKS IN CHARGE. YOU CAN SEE MORE ON OUR WEBSITE:

<http://www.torreyaguardians.org/save.html>

I ALSO JUST HAD EMAIL COMMUNICATION WITH ROB NICHOLSON AT SMITH COLLEGE BOTANICAL GARDEN WHO WAS INVOLVED IN THE TAKING OF CUTTINGS FROM FLORIDA SURVIVING SPECIMENS AND ROOTING THEM AND CLONING THEM FOR DISTRIBUTION TO 3 BOTANICAL GARDENS, INCLUDING ATLANTA. HERE IS HIS EMAIL TO ME:

Hi Connie, been on vacation. We no longer have any Torreya as I shipped them all south where they can be put in the ground. We propagated about 4 or 5 thousand of the cuttings so I felt we had done about as much as we could. If a tenth of those survive to seeding size, I'll be happy. I will be in a half day today and full days Thursday and Friday so you are welcome to come by for a look but since our new director came on, my research component has drastically been reduced so there is not much in house in the way of conifers.  
Regards, Rob N.

I have been experimenting for years with well draining mixes for growing plants. This is required for Stewartia. I think this is necessary for Torreya in pots.

Warm regards,  
Jack Johnston

JACK – I REALLY LOOK FORWARD TO WHAT YOU, GIVEN YOUR EXPERIENCE, MIGHT SUGGEST AND DO WITH REGARD TO HELPING T. TAX. SO DO STAY IN TOUCH WITH YOUR IDEAS.



CONNIE

Dear Connie;

Great to hear from you again. I will echo the comments from Dave Steadman. Yes, please consider giving us one of your splendid and animated lectures. I can still recall with great pleasure the response from the audience when you spoke to us at Selby Gardens several years ago now.

As Dave Steadman noted, MacFadden has been notified of your visit. I think the rewilding item is a winner!

Have you considered looking even further back in time? I think here of the Cretaceous and the so-called fern dominance at and after the Cretaceous-Tertiary event. The presence of a "fern prairie" fascinates and provides wonder for us paleo types. Dr. Dilcher NAS, who is the Graduate Research Professor at our Museum, has an interest in such things and we often talk about popularizing the concept. Don't have too much worked out as yet, but a bit of a talk with you and your ideas with Dilcher could develop into something interesting.

So, yes, stop in, and we will have you and Michael for dinner or a lunch depending on your schedule.

David

\*\*\*\*\*

Connie Barlow wrote:

- > Hello David Jarzen and David Steadman -
- >
- > This is Connie Barlow (Steadman -- I am a friend and colleague of Paul
- > Martin). My husband and I are going to be in the Gainesville area doing a
- > couple of programs (one at the Unitarian church, the other at UFL), and will
- > likely be there from March 14-22.
- >
- > I'd love to drop by the museum sometime during that time and see each of
- > you. Also, I have 2 richly illustrated powerpoint programs that I can offer
- > at a moment's notice, which I presented at Selby Gardens, New College,
- > Brooker Creek Preserve, and Weedon Island Preserve in Jan and Feb this year:
- >
- > 1. "REWILDING NORTH AMERICA: A DEEP-TIME PERSPECTIVE
- > (I include Steadman's proposal to bring the tree sloths back to Hispaniola
- > in this program)
- >
- > 2. "ASSISTED MIGRATION OF PLANTS IN A TIME OF GLOBAL WARMING"
- >
- > Program #1:
- > "Rewilding North America: A Deep-Time Perspective" - In August 2005, the
- > journal Nature published a landmark paper by 12 authors (including Josh
- > Donlan, Harry Greene, Paul S. Martin, Dave Foreman, Michael Soule, Joel
- > Berger, and others) that uses a benchmark of 13,000 years ago for wildlife
- > restoration (where feasible) in North America. This means "bringing back"
- > the American cheetah, the American camel, the American plains lion, and
- > American elephants, using proxies from the Old World to re-start their
- > evolution in the New World and to restore their vital roles as shapers of
- > ecological landscapes. Although not an author of this paper, Connie was
- > cited in the 2006 paper, and she has written on this topic (with Pleistocene
- > ecologist Paul Martin) in their own 2005 paper, "Assisted Migration for
- > Torreya Taxifolia" and a pair of papers published in Wild Earth journal in
- > 1999: "Rewilding for Evolution" (by Connie) and "Bring Back the Elephants"

> (by Paul Martin). This is a color digital powerpoint program. Presented at  
> Teton Nature Center (Moose, Jackson Hole WY, 2005), Sedona Public Library  
> (Sedona AZ, 2006), Weedon Island Preserve (Tarpon Springs FL, 2007), and New  
> College (Sarasota, FL 2007)  
>  
> Program #2:  
> "Assisted Migration of Plants in a Time of Global Warming" - The cover story  
> of the February 2007 issue of Conservation Magazine explored the pros and  
> cons of human intervention in helping plants track climate change. The New  
> York Times (Science Times section) then summarized the issues raised in that  
> landmark article. The citizen initiative of Torreya Guardians was  
> highlighted in the original article, as this group is already engaged in  
> "rewilding" this highly endangered conifer to points far north of its  
> so-called "native range" in the Florida panhandle. Connie Barlow instigated  
> this group, and is among those who suggest that *Torreya taxifolia* was "left  
> behind in near time" in its Ice Age pocket refuge in Florida. Thus, at this  
> point in an interglacial, where the tree normally would be is the southern  
> to mid Appalachians. Connie and Paul S. Martin co-authored an advocacy paper  
> proposing "assisted migration" of *T. taxifolia* in the 2005 issue of Wild  
> Earth magazine. Connie also proposed this intervention for *Torreya* in her  
> 2001 book, *The Ghosts of Evolution*. *Torreya taxifolia* is thus the poster  
> plant for assisted migration in eastern North America, while Joshua Tree is  
> the poster plant in western north America. This is a color digital  
> powerpoint program. Presented at Highlands Nature Center (Highlands, NC  
> 2006), Selby Botanical Garden (Sarasota, FL 2007) and New College (Sarasota,  
> FL 2007). Click to access Torreya Guardians website; a list of hotlinks to  
> the key articles; and proposed standards for assisted migration.  
>

--

David M. Jarzen, Ph.D.  
Courtesy Research Scientist  
Paleobotany and Palynology Laboratory  
Florida Museum of Natural History  
Dickinson Hall  
PO Box 117800  
Gainesville, Florida 32611-7800

PH 352.392.1721 x 245

—

TO: Peter White at Univ North Carolina Botanical Garden  
TO: Bill Alexander at the Biltmore Gardens (*T. taxifolia*)  
TO: Mark Schwartz (access to *T. californica*)  
TO: Didier Maerki at the conifer garden in southern France

This is Connie Barlow of Torreya Guardians. Notice in the email below that a Chinese researcher is doing a molecular taxonomy for *Taxus* and *Torreya* genera. Fabulous! It would be wonderful to finally learn the degree of distinctiveness between each of the species. I encourage any of you to make personal contact with the researcher directly to correspond about actual samples to send.

Note to Peter White: If you could send him/her the sample of the *Torreya* of unknown species that I collected at Highlands, NC, we could find out with certainty which *Torreya* species it is.

Note to Hao DaCheng: Please keep me (Connie Barlow) informed of your results. I would like to link your results to our Torreya Guardians website.

--

----- Forwarded Message  
From: dacheng <haod@dicp.ac.cn>  
Date: Tue, 12 Dec 2006 12:02:06 +0800

To: cbtanager <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Subject: Torreya californica and Torreya taxifolia

cbtanager,

We are doing chemotaxonomy and molecular taxonomy for Taxus and Torreya species that are cultivated in mainland China. However we do not have Torreya californica and Torreya taxifolia for comparison and phylogenetic analysis, since we want to use a few novel cpDNA and nrDNA markers that are not found in NCBI GenBank.

Could you pls send us, in an envelope, a few leaves(dry or fresh) of Torreya californica and Torreya taxifolia for gDNA extraction. We will list your name in any future publications. Or if you need samples of T.mairei, T.yunnanensis or T.chinensis, we can send you some.

We wish to have a collaboration with you and look forward to hearing from you.

Best regards,

Hao DaCheng  
Pharmaceutical resource discovery, Gp1806  
Dalian Institute of Chemical Physics, Biotechnology Building  
Chinese Academy of Sciences  
Zhongshan Road 457  
Dalian, 116023  
China  
Tel: 0086-411-84379317 Extn605  
Fax: 0086-411-84676961

----- Forwarded Message

From: David Ray <[david\\_ray@tnc.org](mailto:david_ray@tnc.org)>

Date: Fri, 12 Dec 2008 09:19:51 -0500

To: <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

Conversation: Atlanta Bot Garden Torreyas to nonprofits in Asheville NC?

Subject: RE: Atlanta Bot Garden Torreyas to nonprofits in Asheville NC?

Hi Connie--

Thanks for your message and for providing all of that information. We will discuss this with other Nature Conservancy staff (including our Florida Chapter staff who are already involved in Torreya conservation in northern Florida), and with our US Fish and Wildlife Service partners; and we will also examine Nature Conservancy internal policy with respect to these kinds of efforts. Once we've done that, I'll be back in touch. Please don't hesitate to contact me in the meantime if you wish to discuss anything.

Cordially,

David Ray

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]

Sent: Monday, December 08, 2008 9:23 AM

To: [sswartz@warren-wilson.edu](mailto:sswartz@warren-wilson.edu); David Ray; Ron Determann; Linda McFarland

Cc: Lee Barnes; Schwartz, Mark; Jack Johnston; Bill Alexander

Subject: Atlanta Bot Garden Torreyas to nonprofits in Asheville NC?

TO:

€ Ron Determann, Atlanta Botanical Garden (Torreya taxifolia propagation)

Ron Determann <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)>

€ Shawn Swartz, forest manager at Warren Wilson College, Asheville NC

[sswartz@warren-wilson.edu](mailto:sswartz@warren-wilson.edu)

€ David K. Ray, Southern Blue Ridge Project Director, The Nature Conservancy

[david\\_ray@tnc.org](mailto:david_ray@tnc.org)

€ Linda McFarland, codirector Corneille Bryan Native Plant Garden, NC

Linda McFarland <[shortia56@hotmail.com](mailto:shortia56@hotmail.com)>

RE: Possible opportunities for nonprofits to assist endangered *Torreya taxifolia* tree (northern FL) in forests of mountainous NC

FR: Connie Barlow, [www.TorreyaGuardians.org](http://www.TorreyaGuardians.org)

---

Hello all -

Michael Dowd and I are in the Asheville NC area for about a month, house-sitting on a property where we, Lee Barnes, Jack Johnston, and others participated in the "assisted migration" ["managed translocation"] of 21 seedlings purchased from a plant nursery in South Carolina (Woodlanders) of the highly endangered *Torreya taxifolia* tree (Taxaceae) -- all legally done.

(On that same day, we all participated in the assisted migration of another 10 *T. taxifolia* seedlings to Corneille Bryan Native Plant Garden, under the direction of Linda McFarland.)

This email is primarily to introduce Linda McFarland, Shawn Swartz, and David K. Ray (the latter met my husband, Michael Dowd, at a church program in Asheville recently) to Ron Determann, Atlanta Botanical Garden, who has a hugely successful propagation project, producing hundreds of *Torreya taxifolia* seedlings from cloned plant tissue of the original genotypes extant in native habitat along the Apalachicola River, FL in 1990. I have visited Ron's operation twice, with photos from those visits at:

<http://www.torreyguardians.org/propagate.html>

A year ago, Ron told me he would be happy to SUPPLY NONPROFIT ORGANIZATIONS IN NORTH CAROLINA WITH *T. TAXIFOLIA* SEEDLINGS GRATIS as participants in safe repositories and breeding (technically, NOT assisted migration, as that action is not yet countenanced under the Endangered Species Management Plan for this species). You would have to check with him to find out whether the seedlings would be allowed to be planted in managed forests on your private properties; otherwise, you would have to purchase seedlings grown from private seed stock not subject to the ESA, as *Torreya Guardians* has done.

(I am cc-ing Bill Alexander, Forest Historian at the Biltmore Gardens, as his group has supplied *Torreya Guardians* with seed from their mature *Torreya taxifolia* trees for each of 2 years in which a hundred or so seeds were produced there, but we haven't been very successful in getting those seeds to germinate.

To learn about what "assisted migration" is, and why it is so controversial, go to this webpage that I maintain that provides quick access to all the online-available professional papers and media reports:

<http://www.torreyguardians.org/assisted-migration.html>

The article I coauthored (2005) initially proposing assisted migration for *T. taxifolia* -- not so much as a refugee from climate change but as a returning native that, for some reason, had been otherwise unable to migrate on its own back to the Appalachians from the "pocket reserve" in northern Florida, where it and so many other species of our eastern deciduous forests hung out during the peak of the glacial advances, can be read at:

<http://www.torreyguardians.org/barlow-martin.pdf>

The article expressing caution about such effort that was published at the same time in the same place, by Mark Schwartz, who is one of the scientists working with *T. taxifolia* under the Endangered Species Act (and is now one of the leaders of the cross-disciplinary effort to development management guidelines for "managed translocation" <[http://www.nd.edu/~hellmann/MRWorkingGroup/Managed\\_relocation.html](http://www.nd.edu/~hellmann/MRWorkingGroup/Managed_relocation.html)>) can be accessed at:

<http://www.torreyguardians.org/schwartz.pdf>

Mark Schwartz is also coauthor of the key paper (Conservation Biology) that brought the debate over assisted migration to the conservation community as a whole in 2007:

[http://www.nd.edu/~tmarsico/McLachlan\\_et\\_al\\_2007\\_Conservation\\_Biology.pdf](http://www.nd.edu/~tmarsico/McLachlan_et_al_2007_Conservation_Biology.pdf)

Lee Barnes is the *Torreya Guardian* who coordinated the two sets of plantings, assisted migration, of *T. taxifolia* in July 2008. He lives in Waynesville:

Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>

828-452-5716

Linda McFarland was Lee's contact at Corneille Bryan Native Garden, where 10 seedlings were planted. She has expressed interest in helping other NC native gardens/forests learn about possible opportunities for working with *Torreya taxifolia* in whatever ways the Atlanta Botanical Garden might sanction such participation.

For photo-essays of the 2 actual plantings in the Waynesville NC area this past summer, visit these webpages. Note that I, as webmaster, have also added individual webpages for each of the 31 planted seedlings, so that we can keep track of their individual progress, and include lots of plant-specific and season-specific photos. Go to:

<http://www.torreyguardians.org/waynesville-rewilding.html>

Make sure you click on the links at the bottom of that page to access more site and seedling-specific photos and commentary. When you get to the individual trees, make sure you click on "Celia" and "Charles Darwin" in order to see some photos of *Torreya*s with snow cover.

For those considering planting *Torreya taxifolia* in NC forests, I highly advise you visit the photo-essays of my own visits to wild habitats of the sister species in California, *Torreya californica*. There you will see the kind of mountain habitats that all 4 or 5 other species of genus *Torreya* apparently live in (hence my, and Bill Alexander's earlier, idea that *Torreya taxifolia* got stuck in its peak-glacial preserve, and that during interglacials it is truly a temperate mountain species.)

<http://www.torreyguardians.org/california.html>

You can access photo essays of the *T. taxifolia* at Biltmore Gardens via:

<http://www.torreyguardians.org/north-carolina.html>

Some of the correspondence on the rewilding effort that comes my way can be accessed at:

<http://www.torreyguardians.org/comments.html>

NOTE:

1. Watch for the March 2009 issue of Audubon magazine, as there will be an article in there by Janet Martinelli, who (with a photographer) was onsite for the first assisted migration effort (at both sites in Waynesville)
2. Around December 15, a reporter and photographer for a North Carolina wildlife magazine will be led by Lee Barnes on a tour of the *Torreya taxifolia* plantings in Waynesville.

Together for *Torreya*,  
Connie Barlow

---

Hello Debi -

Unfortunately, we were all too busy digging and planting to capture any video, although I did have a good video camera with me. But there are stills. Begin with what you see on this webpage of *Torreya* Guardians (and make sure you follow the links for more images).

<http://www.torreyguardians.org/waynesville-rewilding.html>

Also, Audubon Magazine had a professional photographer there with his assistant. The article was supposed to appear in the summer issue of Audubon, with photos, but because of scaling down the size of the magazine, it has been postponed. You can contact the freelance writer who did the article for Audubon and was on the photoshoot:

Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>

Here is the photographer:

Ken Gehle <[ken@kengehle.com](mailto:ken@kengehle.com)>

On 6/18/09 1:02 PM, "Debi Goodwin" <[Debi.Goodwin@CBC.CA](mailto:Debi.Goodwin@CBC.CA)> wrote:

Hi,

I'm a producer at the Canadian Broadcasting Corporation working with science reporter Kelly Crowe on a twenty minute piece on assisted migration. We are going to be looking at a project in the Okanagan Valley in Canada where they are planting evergreens from much further south as a study project.

We would like to be able to include the story of the *Torreya taxifolia* and your efforts to save it which several research scientists in Canada refer to as an example of what can be done. I was wondering if you have any video of your group at work planting or at the very least any electronic pictures that we can use in our piece to show what you have done.

Please let me know if that is possible. I can arrange for courier pickup of any video material you can share with us and would be happy to talk to you about our piece. We would send you a link to the finished piece and could put a link to your group on our website: [www.cbc.ca/national](http://www.cbc.ca/national)  
<<http://www.cbc.ca/national>>

Thanks,  
Debi Goodwin  
Documentary Producer  
The National  
[debi.goodwin@cbc.ca](mailto:debi.goodwin@cbc.ca)  
416-205-7792 (w)  
647-205-7792 (cell)

—

Dear Connie,

Don't worry, no hurry! Thank you for your kind words - and I look much forward to picking up the discussion whenever it fits into your schedule. I do have to tell you that I am so very, very excited today, as I received the first of hopefully many prints from a new artist collaborator in Australia; he's a wildlife artist, and we have just embarked on a book-project journey that has been bubbling in my brain & heart since 1998 (and which was greatly enhanced by reading your book!). But more about that later. Suffice to say that the project is about ghosts. Our kind of ghosts :-)

Danish hugs,  
Dennis

Connie Barlow wrote:

> Dennis -  
>  
> Yes, I got your email, and was/am still! Saving it for a detailed response.  
> The gist -- I am thrilled with what you are doing! It's just that  
> *Torreya* Guardians is my avocation, and it is heating up for the moment so all  
> my extra effort goes there, plus I still have my vocation to maintain.  
>  
> So yes, expect to hear from me again on your terrific project!  
>  
> Connie  
>  
>  
> On 7/22/08 12:37 AM, "Dennis Hansen" <[dmhansen@stanford.edu](mailto:dmhansen@stanford.edu)> wrote:  
>  
>  
>> Dear Connie Barlow,  
>>  
>> Thanks a lot for the article on this fascinating topic; I wrote an email  
>> to you a few weeks back about tortoises and other things - and was  
>> wondering if you'd be willing to share more thoughts about *Torreya* and

>> tortoises/other dispersers. Together with some other rewilding people  
>> (Josh Donlan & Karl Campbell), I have just started work on a paper about  
>> extinct giant tortoises and the use of extant (giant) tortoises as  
>> ecological analogues/proxies worldwide. I would be very happy to include  
>> something on *Torreya* in this story, even if it is speculative (the main  
>> thrust of the paper will be speculation, and drawing together what we  
>> have learnt from the few empirical studies on analogue tortoises so far).  
>> Any input you could provide would be most welcome!  
>>  
>> Cheers & best regards,  
>> Dennis  
>>

---

Re: Assisted Migration for *Torreya taxifolia* (endangered conifer tree) from Ice Age pocket refuge in northern Florida to western North Carolina.

Hello Don -

I appreciate the time you have taken to discuss the issue and to respond to me. Quite understandable that there would be mixed responses to the general idea of assisted migration in your Audubon group. Thank you for reaching out to the wider conservation community there in Highlands/Cashiers. I have included Mercedes Heller on the cc here, as you suggested.

Update on our project: We won't be doing anything in Highlands or Cashiers this year. We have 2 private landowners in Waynesville NC that are on board. But in future years when we have access to more seeds/seedlings, one of us *Torreya* Guardians will definitely get in touch with Mercedes Heller to learn if any land stewards in your area would like to participate.

Connie Barlow  
<http://www.torreyaguardians.org>

On 7/8/08 9:00 PM, "djshure@bellsouth.net" <[djshure@bellsouth.net](mailto:djshure@bellsouth.net)> wrote:

Connie,

I wanted to bring you up to date concerning your earlier request for our Chapter's participation in your upcoming planting of *Torreya taxifolia*. As President of the Highlands Plateau Audubon Society, I circulated your email to all of our Board Members and asked for feedback about the request. The initial concerns centered on timing and the fact that the long-term commitment required in maintaining the planted seedlings was rather tangential to our current mission as an Audubon Chapter. Some of our Board were also quite mixed in their response to the concept of Assisted Migration. We actually discussed the issue again at a monthly Board Meeting on July 1 at which time we concluded that we were unable to meet your request. It is important that you be aware of the time and thought that we devoted to your request as well as the fact that some of the Board remain supportive of what you are proposing as a conservation initiative. We wish you well as you proceed forward despite the reservations outlined in the Orion article.

Brock Hutchins indicated you had decided to begin looking in north Georgia for an alternate planting location on private land. Have you been successful with these efforts? My reason for asking is that while our Chapter deliberated on how to respond, I took the liberty of contacting other organizations in the Highlands-Cashiers area to indicate what you were preparing to do and to see if interest existed to possibly work with you on your project. The Land Stewards under the direction of Mercedes Heller have expressed a definite interest in the project. This organization involves all of the major groups of land stewards in our area of North Carolina and was really the best alternative in seeking help with the plantings. Mercedes is also serving as President of the Highlands-Cashiers Land Trust.

I am recommending that you get in touch with Mercedes ( [hellerdb2@yahoo.com](mailto:hellerdb2@yahoo.com) ) to discuss where things stand. If it is too late for this event then perhaps they might be of help with plantings in the future. Good luck with your efforts. We will look forward to reading the upcoming article in Audubon about your role in Assisted Migration. Please pass this on to Jack Johnston so he is aware of what happened. Thanks!

Don Shure

----- Original message from Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>: -----

> TO: Highlands Plateau Chapter of Audubon  
> FR: Connie Barlow of Torreya Guardians, <http://www.torreyaguardians.org>  
> RE: Audubon Magazine photoshoot July 30-31 at Highlands NC re assisted  
> migration of Torreya taxifolia  
>  
> Hello -  
>  
> In an era of climate change, conservationists have begun to talk about  
> "assisted migration" of vulnerable plants. For a current list of hotlinks  
> for you to see the scope of the controversy, visit:  
>  
> <http://www.torreyaguardians.org/assisted-migration.html>  
>  
> The most recent article on this topic featured our group, Torreya Guardians,  
> and our actions to help our namesake, Torreya taxifolia, migrate from its  
> historic

—

Hi Doug -

Jim Schwartz is the web designer. His name is there only because he did it as a test case for Jack Johnston, who suggested Stewartia Guardians as he's already doing things for that genus. Jack was one of the threesome key involved in the Torreya planting this summer:

Jack Johnston = Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>

PS to Jim and Jack - Douglas Fox wrote the cover story of the Jan 2007 issue of Conservation magazine that launched media interest in Torreya Guardians. You can access it at:

<http://www.conservationmagazine.org/articles/v8n1/when-worlds-collide/>

Connie Barlow

On 1/5/09 9:06 PM, "Douglas Fox" <[dsfox@earthlink.net](mailto:dsfox@earthlink.net)> wrote:

> Connie,  
> Many thanks... and congratulations on the continuing coverage. I saw  
> Michelle's story in Orion (which was lovely) a few months ago. But I  
> hadn't seen either the Nature or Boston Globe stories.  
>  
> I just went through the new website and it looks really interesting. How  
> soon do you think it will launch?  
> (I'm trying to decide how soon to propose a story on it to one of my  
> editors...)  
>  
> I suppose that Jim Schwartz (first Stewartia guardian) is a relatively  
> close associate, perhaps also a member of the Torreya Guardians?... Is  
> there any way that I can contact him?  
>  
> cheers,  
> Doug  
>  
>  
>  
> Connie Barlow wrote:  
>> Hi Douglas -  
>>



>> Well, your article started all the attention that Torreya Guardians has been  
>> getting in the media. Check out this page of my website to peruse the media  
>> I've been able to track:  
>>  
>> <http://www.torreyaguardians.org/assisted-migration.html>  
>>  
>> We did a rewilding of 31 seedlings to NC in July, which Audubon reporter and  
>> photographer attended so Audubon magazine will publish that story March 09.  
>> See my photo essay online of the event:  
>>  
>> <http://www.torreyaguardians.org/waynesville-rewilding.html>  
>>  
>> As to the wider issue, I contracted with someone to establish a more  
>> self-serve website that I won't have to be quite so labor intensive about  
>> (Torreya Guardians is very labor intensive for me). It is registered under  
>> the url [www.PlantGuardians.org](http://www.PlantGuardians.org). It is nearing launch, and you can view what  
>> we've got going thus far at:  
>>  
>> [http://64.22.87.10/~plant/index.php?option=com\\_content&view=frontpage&Itemid](http://64.22.87.10/~plant/index.php?option=com_content&view=frontpage&Itemid)  
>> =1  
>>  
>> So your question is quite timely!  
>>  
>> Connie  
>>  
>> On 1/4/09 8:41 PM, "Douglas Fox" <[dsfox@earthlink.net](mailto:dsfox@earthlink.net)> wrote:  
>>  
>>  
>>> Hello Connie,  
>>> You may remember that we spoke by phone about 18+ months ago when I did  
>>> a story for Conservation Magazine on assisted migration.  
>>>  
>>> During our phone chat you mentioned an interesting idea that you had,  
>>> but hadn't (at the time) really moved forward with: You had mentioned  
>>> the idea of sort of setting up an online community aimed at encouraging  
>>> / facilitating / coordinating people who would like to adopt a species  
>>> which is threatened by climate change and in need of assisted migration  
>>> (much in the way that you have with *T. taxifolia*). I may not have the  
>>> details of this exactly correct, but I believe you mentioned something  
>>> along those general lines. So..... I just wanted to touch base and see  
>>> whether you've actually started to move forward with that idea, or  
>>> anything similar to it. I thought it was fascinating, would love to  
>>> write about it, and so just wanted to check in on it.  
>>>  
>>> Happy new years, by the way; I hope you're well.  
>>> Douglas Fox  
>>>

---

**Subject:** magazine story  
**Date:** Thursday, October 19, 2006 1:06 PM  
**From:** Douglas Fox <[dsfox@earthlink.net](mailto:dsfox@earthlink.net)>  
**To:** <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
**Conversation:** magazine story

Hello Dr Barlow,

Mark Schwartz at UC Davis suggested that I contact you.

I'm a writer with Conservation in Practice Magazine (published by the Society for Conservation Biology), and am currently working on a story on global warming-induced shifts in species' geographic ranges---and the conservational implications: in particular, growing dialog about whether

it will be necessary / beneficial to actually move some species that are unable to shift their geographic range, and therefore at risk of extinction.

Obviously, the ongoing efforts with *Torreya taxifolia* represent an important case study in this area... And so I would very much like to speak with you by phone sometime in the next few days. Would this be possible?---If so, I would be grateful.

Tomorrow morning, if you can speak then, would be perfect (I'm based in California... not sure what time zone you're in); I'd be happy to chat with you any time after 7:30am CA time, up until Noon CA time (at which point I head to the airport and catch a flight).

If tomorrow doesn't work for you, then sometime over the weekend or early next week would also work... I'll be in Arizona then, which is currently the same time as California (due to lack of daylight savings time).

Probably the best thing would be for you to ring me today on my cell phone...602 432 8054... and we can quickly decide on a time that works for both of us.

Alternatively, feel free to reply back via email and suggest a time and the phone number at which I should call you.

I've already got a copy of your paper (and Schwartz's reply) in Wild Earth Forum, and have seen the *Torreya* Guardians website; however, please feel encouraged to email me any other papers that you feel might be of interest to me.... would be great to see them before we speak.

Thank you, Dr. Barlow; I look forward to speaking with you!  
Sincerely,  
Douglas Fox

—

Dear Connie,  
Thank you for pointing me to the correct parts of the website for the propagation and liming of the *Torreya* trees.

Currently I am compiling and reviewing what has been published and I am interested in the topics you have included.

I would like to visit some of the places that *Torreya* is growing this year to see how the trees are doing both in and outside their native range.

Best wishes,  
Ed

On Jun 23, 2009, at 12:59 AM, Connie Barlow wrote:

Ed -

The *Torreya* Guardians website is pretty complex. So I want to just point you to two pages that may be of most interest:

The first is the general page on propagation of *T. taxifolia*, which highlights in a photo-essay what Atlanta Botanical Garden has been doing:

<http://www.torreyguardians.org/propagate.html>

The second is a new page I just created on the success of liming *Torreya* trees in northern Florida:

<http://www.torreyguardians.org/liming.html>

Together for *Torreya*,

Connie Barlow

On 5/20/09 11:58 PM, "Edward Croom" <[ed@croomia.com](mailto:ed@croomia.com)> wrote:

Dear Connie and others on this email,

I apologize for the long delay in responding to your email.

My interest in the Florida *Torreya* and the genus *Taxus* are in large part due to my admiration of the work of Hardy Bryan Croom. Hardy Bryan, wife and all children all died in a shipwreck so there are no direct descendents. Hardy Bryan is my first cousin four generations removed, which seems pretty remote even for a product of the South to claim.

Although I went with Mark Schwartz and Rob Nicholson to see wild and cultivated trees in 1989, I had to abandon my interest in *Torreya* to work full time for many years to change the source of Taxol from the rare Pacific Yew bark to ornamental *Taxus* from nurseries. This worked but not without years of effort by a large number of us for a project that I was the champion.

Many on this email know far more than I and have contributed many years of their lives to the Florida *Torreya*. I am very interested to learn what is important for the Florida *Torreya* to survive and would like to visit the tree and those who have studied it.

If I find I can make a contribution after I understand more what we know and need to know, then I will add my two cents but at this point ask your patience to not comment on each specific plant or place until I understand more to keep my learning first and any comments for the future.

With sincerest and deepest gratitude for everyone's contributions to preserve the Florida *Torreya*,

Ed Croom

On Apr 30, 2009, at 11:29 AM, Connie Barlow wrote:

To: Ed Croomia, Fred Fussell, and Leigh Brooks

Re: The last *T. taxifolia* in Columbus GA

Hello Ed et al:

This is Connie Barlow, webmaster and originator of

<http://www.torreyguardians.org>

1. Ed: Would you be open to a phone interview by me (or, preferably, Leigh Brooks or whoever volunteers to record this history) so that "we" all could learn as much as you know about the historic *T. taxifolia* trees in Columbus and the history of their demise? I would like to post photos and a webpage on these trees (and the one that remains) on the *Torreya* Guardians website.

2. Is Leigh or Fred or Jack or Russell interested in taking on the job of conducting the interview and writing up a short synopsis of the situation with the Columbus trees?

3. Would Lee or Jack or Russ be willing to advise Fred on mineral supplements that might best help this one remaining tree fight *Phytophthora* and other diseases? I first learned about such supplements while doing a site visit to *Torreya californica* wild trees with Lee Klinger, founder of <http://suddenoaklifeorg.wordpress.com/about/>

4. JACK: Are you capable of getting healthy branchlets of the Columbus tree to root, and thus of getting the genotype into forms that can be planted, perhaps, with existing plantings in North Carolina in order to increase the genetic variability of those plantings?

Together for *Torreya*,  
Connie

On 4/30/09 11:12 AM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

>  
> Connie;  
>  
> Yes, there used to be three trees there, two died in about 1995. This is the  
> last one, as far as I know, in Columbus. It is nice to see Ed back thinking  
> about Torreya.  
>  
> Mark  
>

On 4/30/09 9:44 AM, "Fred C Fussell" <[wewoka@knology.net](mailto:wewoka@knology.net)> wrote:

Dear Connie,

My visitor (actually my tree's visitor) last Sunday afternoon was Edward Croom ([ed@croomia.com](mailto:ed@croomia.com)) who, indeed, is a direct descendant of Hardy Croom, or so I understand. He dropped by here because he'd read about the recent tornado that skirted our neighborhood a week or so ago and he wanted to see if the tree in our yard had survived.

I suggest that you contact Ed directly (I'm copying him on this) to discuss/learn what he knows regarding the history of this and other such trees in Columbus. I simply don't have enough knowledge or the necessary botanical vocabulary to make valid comments. Ed did tell me, however, that he remembers seeing at least two other specimens that were here on this block of Front Street up until several years ago.

Please continue to copy me on any correspondence regarding this topic, if you will. This is so much fun!!!

Sincerely,

Fred (Fussell - with an "F")

Fred C. Fussell  
538 Front Avenue  
Columbus, GA 31901  
studio 706-221-2271  
cell 229-314-9095

FROM LEIGH BROOKS:

Also, a long-time Torreya Guardian, Leigh Brooks, Leigh Brooks <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> sent me the email below, so she might want to arrange a visit to your (and any other still-alive) Torreya trees in your neighborhood.

Connie,  
This sure is interesting! I had heard from knowledgeable botanists here in north Florida familiar with Torreya taxifolia that there were some trees in the historic district of Columbus, two homes is what I remember hearing. In May 2002 my sister Anatheia visited and we did a road trip to see all the Torreyas we had heard of in the Southeast. We stopped at Columbus and searched the historic district very slowly street by street in the car, then a little on foot. Low and behold, we spotted a big tree! People at the house were sitting on the porch, so I talked to them about it. They had no idea what it was, but were nice and let me take photos. I left them a brochure from Apalachicola Bluffs and Ravines Preserve that had a bit about Torreya. Just located the pics, black & white. They are labeled:

Torreya taxifolia >45'H ~2'dbh lightening?

Colombus, GA Historic Dst 538 Front Ave  
Photo: Leigh Brooks 05/02/2002

So, I have seen the tree in Fred's yard, and yes, it's *T. taxifolia*! A large one indeed. I am pleasantly surprised it is still living. The top and one side looked dead, probably from lightening.

Found my notes from the site. Some additional info. The residents said the dead branches happened in the last year. They had lived there 2 years and the tree was healthier back then. The remaining branches looked healthy. Some needles had fallen on the ground. It looked like it had like male flowers. There was yellow bellied sapsucker evidence (lines of small holes) throughout the trunk. Suckers and new growth were present. The trunk had some holes along the length, may be where branches fell or were cut? There was a historic sign with year the house was built: 1898.

I am fairly certain the tree and any others that may still remain in the historic district were planted when the homes were built. It is very close to the Chattahoochee River, and there was horticultural trade by steamboat back then. The age of the house and the size of the tree seem to reasonably correspond. The botanists here also say they were planted, though I can't remember the story.

Leigh Brooks  
Chattahoochee, FL

---

Hi Connie,  
Thanks for sending this about the Clinton trees.

I have been visiting *Torreya* in the wild and cultivation since 1989 and will add this one to my to visit list.

Ed

On May 12, 2010, at 3:47 PM, Connie Barlow wrote:

- > Re: Ed Croom and Connie Barlow pooling our data on existing NC
- > translocation
- > sites
- >
- > Hi Ed -
- >
- > Per our phone conversation yesterday after the official T tax recovery
- > meeting, I have attached the PDF of my long phone conversation in
- > Dec 2009
- > with A. J. Bullard about where the seedlings from the big trees in
- > Clinton
- > NC ultimately got planted. That PDF is also accessible at this
- > hidden url
- > (I don't link it to anywhere from the *Torreya* Guardians website, as it
- > contains personal addresses and phone numbers):
- >
- > <http://www.torreyaguardians.org/clinton-torreyas.pdf>
- >
- > On the home page of *Torreya* Guardians I have a link called:
- > "*Torreya* Plantings in North Carolina" It goes here:
- >
- > <http://www.torreyaguardians.org/north-carolina.html>
- >
- > That is the master page where I try to keep listed and current all
- > the sites
- > I know of and who the contact people are.
- >

> The only other important piece of information about NC  
> translocations that I  
> keep hidden on the site is the photo-essay and map that I made of my  
> 2006  
> post-hurricane visit to the Biltmore trees. Here is the hidden url:  
>  
> <http://www.torreyaguardians.org/biltmore-2006-long.html>  
>  
> Originally, I had it accessible to the public, but Bill Alexander at  
> the  
> Biltmore specifically asked me to remove it from public access, as  
> they  
> worry about the seeds being stolen (and that's also why the trees  
> are not  
> signed and not put on their map). So that's why I made a short  
> version of  
> my site visit and that is the only one directly accessible online by  
> everyone. But you and other professionals working on translocation  
> should  
> have access to it. I hope that when somebody officially starts  
> evaluating  
> these existing plantings from the standpoint of learning the best  
> habitat  
> conditions for NC plantings that these photo-essays with exact dates  
> will be  
> invaluable.  
>  
> I'd be happy to list on the North Carolina main url any additional  
> sites you  
> are aware of, and I also would be happy to create spin-off photo-  
> essay pages  
> if you have any jpgs on those sites and would supply captions and  
> dates with  
> them. The nice thing about being a geek is that I can so easily and  
> quickly  
> update any of the pages on the Torreya Guardians site.  
>  
> And if you personally follow up on visiting any of the sites  
> mentioned by  
> Bullard, please take a digital camera and document them. I'd love  
> to put up  
> a webpage on them, photos with captions, and any "report" you want to  
> submit. Again, it is possible to upload both a public version and a  
> more  
> detailed hidden version with exact location directions.  
>  
> For Torreya,  
> Connie Barlow

---

Thanks for keeping me informed.  
Ed

On May 14, 2010, at 7:12 AM, Connie Barlow wrote:

Re: comments on recovery plan update for Torreya taxifolia

Dear Professor Reichard -

I deeply appreciate your response to my query and thank you for cc-ing Vivian Negrón-Ortiz at the USF&WS. My biggest hope in my communications quest has been to ensure that the recovery plan for a tree I very much care about considers the big-picture understandings coming out of the leading edge of conservation biology work, and your measured response does just that.

Thus far, several people have expressed to me an interest in having the scientific community revisit the Leopold Report. I hope that the USF&WS will consider sponsoring such a professional review by which all of their species-specific work might obtain a larger frame of understanding appropriate to these times.

As webmaster of the [TorreyaGuardians.org](http://TorreyaGuardians.org) website, I would like to eventually post a compilation of comments made on matters that vitally affect this particular species. May I have your approval to post your comment, exactly as it is below, as part of this longer document? If so, please email me how you want your name and professional affiliation to appear, including any papers, your forthcoming book chapter, etc. that you would want the reader to know about your work.

Thank you,

Connie Barlow

On 5/13/10 8:51 PM, "Sarah Reichard" <[reichard@u.washington.edu](mailto:reichard@u.washington.edu)> wrote:

> Hello Connie,  
>  
> I am not against assisted migration. For some species this may be needed,  
> for others it may not. The work that Janet may have referred to is for a  
> book that the Center for Plant Conservation is producing with Island Press  
> on reintroductions of rare plants. In working on my chapter on assisted  
> migrations as a pathway for biological invasion, I found I was reassured  
> both through invasion theory and weed risk assessment tools that while the  
> possibilities of invasion exist, they are reasonably minimal.  
>  
> However, as a biologist who also works on rare species and is on the  
> recovery team for two species, I believe all planning for rare species  
> should be done thoughtfully, with the very best biological science informing  
> actions. I understand the feeling of urgency that you may feel, but there  
> are many excellent scientists carefully considering the risks of each action  
> taken toward recovery. They also deeply care about the species they are  
> charged with protecting. No one wants to see any species reserved to seed  
> banks - we all want vibrant populations in the wild. We just need to make  
> sure we consider all the risks - not just invasive risk, but the potential  
> impacts to the communities to which it is introduced beyond invasion, and  
> others.  
>  
> The Leopold Report may need revising - certainly there have been  
> controversies about it for some time. This is a wider issue that will be  
> decided at a much higher level than state staff scientists.  
>  
> The world needs passionate people who care about our plants and animals. The  
> world also needs biologists who do indeed see a bigger picture than passion  
> about a single species and who can weigh actions to determine impacts. I am  
> pleased that the USFWS respected your views and I hope you will also respect  
> their need to consider that bigger picture.  
>  
> Thanks,  
>  
> Sarah Reichard  
>  
> ----- Original Message -----  
> From: "Connie Barlow" <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
> To: <[reichard@u.washington.edu](mailto:reichard@u.washington.edu)>  
> Cc: "Vivian Negron-Ortiz" <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)>; "Janet Marinelli"

---

Eileen -

A lot has happened in the realm of "assisted migration" since I wrote this chapter. So I added 3 key new references to account for these (including an important paper published in Science journal in 2008). Also, Torreya

Guardians actually did a rewilding in July 2008 (which Audubon magazine sent a reporter and a photographer to document and which will appear in Audubon in March 2009). So, I added the info on that event briefly to page 215 (see below).

Schwartzman's criticism (Reviewer No. 2) I dealt with on pl. 211 (see blue type below).

In the corrections below, black type is the original wording, RED type is what I have added. BLUE type is commentary just for you to explain what I did.

Best,  
Connie Barlow

---

Corrections here:

P. 211, line 8. Change quotation mark to a comma after the phrase, Nicholson speculated

P. 211, line 9 thru para end. Change this sentence to: Thanks to a **host** of recent scientific **papers** (e.g., Barlow and Martin 2005, McLachlan et al. 2007, Hoegh-Guldberg 2008) and popular articles (e.g., Fox 2007, Nijhuis 2008, Marris 2008), Florida torreya has become a "poster plant" for alerting **the** public and scientists, alike, to the lurking dangers of global warming and the consequent need for what has come to be known as *assisted migration*. **Assisted migration must not, of course, be promoted as an alternative to reducing greenhouse gas emissions. But it is decidedly unrealistic to assume that climatic change and its challenges to biotic diversity will vanish in the next decade or two. Again, time lags (melting polar and glacial ice) will take a long time to equilibrate even if the concentration of atmospheric CO2 could politically and economically be stabilized at today's levels.**

[Note to Eileen: The 2 sentences (in red) immediately ABOVE were added to address the criticism pointed out by Schwartzman: "page 217 bottom I suggest that preventing global change catastrophe is a preferable ethical imperative."]

P. 211, last liine. Add in another citation: (McLachlan et al. 2007; **Hoegh-Guldberg 2008**)

P. 212, First line of 2nd para: add this cite: Florida torreya has attracted my attention (and increasingly that of others; e.g., **Nijhuis 2008**)

P. 215, Add this new paragraph just before the section head: **The test case for assisted migration occurred in July 2008, when the citizen group I helped found (Torreya Guardians) undertook assisted migration for 31 seedlings of *Torreya taxifolia* purchased from a nursery in South Carolina. A handful of volunteers (and reporters documenting the action) gathered in the mountains near Waynesville, North Carolina, and spent a day planting the seedlings into wild, forested settings on 2 parcels of private land. The Torreya Guardians website documents that action: [www.TorreyaGuardians.org](http://www.TorreyaGuardians.org).**

P. 218, Add this note to just before the References: **Note: The Torreya Guardians website has a page dedicated to providing citations and links to the classic and current scientific papers and news reports on the assisted migration debate and actions: [www.torreyaguardians.org/assisted-migration.html](http://www.torreyaguardians.org/assisted-migration.html)**

P. 219, New references to be added to the references list:

**Hoegh-Guldberg, O. et al. 2008. "Assisted Colonization and Rapid Climate Change" *Science* 321: 345-46.**

**Marris, Emma. 2008. "Moving on Assisted Migration." *Nature Reports Climate Change* (Online): 28 August 2008 | doi:10.1038/climate.2008.86**

**Nijhuis, Michelle. 2007. "Taking Wildness in Hand: Rescuing Species." *Orion* (May/June): pp. 43-47.**

[Note: The multi-author references look strange to me for 2 reasons. First, why not do an et. al for any ref that has 3 or more authors? Listing 12 authors for a single paper gets a little cumbersome. Second, I have never seen multi-authors listed with the last name preceding the first name for all subsequent authors. Rather, the way I am used to seeing it is: Barlow, Connie, Eileen Crist, and Bruce Rinker. 2009. Etc.]

On 9/9/08 2:28 PM, "Eileen Crist" <[ecrist@vt.edu](mailto:ecrist@vt.edu)> wrote:

Dear Connie,



Thank you for your contribution to our Gaia volume. The reviewers liked your paper.

We include reviewers' specific comments below. There were in all three reviews, but only two had comments specific to each paper.

Please address the questions raised, especially by David Schwartzman (first reviewer).

We attach our version of your paper (slightly edited) so you can access the manuscript pagination referred to below.

Connie... we kindly ask that you turn around your paper as swiftly as you are able!

Thank you again and with best regards,  
Eileen and Bruce

\*\*\*\*\*

REVIEWER 1 (David Schwartzman, chose not to be anonymous)

page 210 1st paragraph Much superior description than "gaia theory"

page 217 bottom I suggest that preventing global change catastrophe is a preferable ethical imperative.

Barlow's chapter is interesting, but in my view a very problematic prescription for confronting the impacts of global warming.

REVIEWER 2 (Anonymous)

Barlow: Controversial ideas, fun to read, would be perfect with some maps.

Connie,

Just looked over this quickly, will get down to incorporating your edits in a more serious way tomorrow or the next day, barring going into labor. But just wanted to thank you for what look like some really excellent edits. No offense to our scientist friends, but there is a real difference when a fellow writer looks at your work. I am really grateful for the time you took to look it over!

Emma

On Tue, Jan 12, 2010 at 6:31 PM, Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:

Emma -

You wrote, "getting something published often takes longer than having a baby" -- I hope that remains true and that your little one emerges hale and healthy soon!

Overall, great job. Having written two popular science books that I aimed to appeal to both professionals and educated lay readers, I know how difficult it is to do both and I never was fully successful. My sense is you will be slammed by professionals for no other reason than overuse of cutesy language like "Oh no" and routine cliches. It has the FEEL of a lower class of readers than the substance you convey. My view is that lay leaders don't mind an occasional technical locution, and nobody minds routine prose so long as it is sparked by some occasional perfect metaphors and freeze-frame killer short sentences. Surely your editor or copyeditor will do much of that anyway. But you might want to give it a read simply with that sense in mind. You don't want to alienate the professionals, in part because I believe your book would be something the professionals would want to recommend to professional newbies who need to catch up quick with both the breadth of the science and the policy ramifications. You do a fabulous job of showing the range of arguments. My sense is that the way you structure your book, by the time the reader finishes they will be roundly out of the ancient preservationist camp and into the new land of forced, if humble, action. At least I hope so. And I suspect you can do that without yourself ever having to come out forthrightly one way or the other. Just the quintessentially able journalist.

Best wishes for you and I hope a very healthy and happy baby! (The one from your womb, as well as the one from your brain.)

I tracked my edits in red in the MS Word doc attached, titled : CHAPTER SIX-Barlow edits.doc. And I also just inserted in ALL CAPS a number of comments right in the text, rather than just posting general comments here, so do make sure you peruse my copy attached.

1. Hydrogen sulfide - Is volcanic gas from which H is gotten to form carbohydrates, rather than having to use sunlight to break the double bonds of H from H<sub>2</sub>O. Sulfur is the result of this first step.

2. Watch in all drafts for "climatic" not to be switched to "climactic". That happened to Steve Schneider's first book, hardcover, throughout the entire thing! Aaargh!

3. I like your use of "species who" rather than "species that". Yes! Lynn Margulis long ago told me that she routinely did that.

4. You say, "They found that the most important variable—that is, the one that best predicted the actual ranges of beech—is how warm it is during the growing season." Important as to whether this is inclusive or exclusive. I suspect it is exclusive — that is, that there is a threshold of warmth below, and another above, which beech populations will not show up.

5. I, of course, added a lot of detail to the background you introduce about *Torreya*, and expect you to deal with it as any other highly biased contribution! The stuff I contribute is factual — it just might be more detail than you want, though I of course think there is nothing more important than helping your readers appreciate the supreme importance of adding a deep-time perspective to how we ecologically view these changing times.

6. Very much enjoyed learning the historical background of how the scholars got going on this, and their webs of historical connection—including the lovely personal detail about the women's basketball game; gives the reader insight into the personal side of how science works.

7. Great scientific points, and making them in memorable ways, in the Vancouver Island section. Wow, and your conclusion on anthropogenic prehistoric effects is powerful.

8. So glad to see the emphasis on migrating genotypes from more southerly populations that you have in the O'Neil section. That is an absolute crucial consideration that may be essential WITHIN existing native range, regardless of how things got with getting conservationists onboard to carry plants beyond their "historic" range limits. Also great how it helps the reader to see that pathogen outbreaks may be a symptom of genotypes no longer well suited for that part of their range. Excellent! And so great to see in the B.C. example that assisted migration is already happening -- it is not just something to keep debating. So easy to see the slippery slope — that if one agrees that more southerly population seed stock should be used to replant logging sites, then it is real easy to argue for moving the species as a whole northward — into somebody else's distinct ecological communities. And how the simple act of replanting seeds higher upslope is the first step. Really great! Your book brings this out in a way that reading isolated journal articles on the topic really haven't done. Also, now that I think about it, foresters are used to manipulating ecosystems, so of course they are in the lead, whereas wilderness conservationists and others of the preservationist worldview would be the laggards. Again, in my view, it is only by inculcating the conservation community with a deep-time perspective (paleoecological) that this will shift. Great to see the foresters actually prideful of what they are doing — in contrast to the reticence of the pure-science culture of Hellmann. It occurs to me there are really 5 camps at work here with a big role to play in how we respond to climate change and the biodiversity crisis: the practical resource-driven foresters, the pure scientists, heartfelt citizen-naturalists, conservation institutions (naturally have inertia), and journalists like yourself!

9. I would judiciously edit the actual quotes of some of the conversations scientists had with you — at least where the strange grammar or clunkiness "stops" the reader from easily reading. No one will mind — they will be thankful.

On 1/9/10 6:52 PM, "Emma Marris" <[e.marris@gmail.com](mailto:e.marris@gmail.com) <<http://e.marris@gmail.com>> > wrote:

Dear All,

I am scrambling to finish a draft of my book by my publisher's deadline of Feb 1. This is complicated by the fact that I am overdue to have my baby (due date Jan 7th, but if she wants to do me a favor she'll stay in there for 42 weeks so I can get this draft done!). Anyhow, here is where I am with the assisted migration chapter. I am debating adding a section on the legal implications and/or the problems with climate envelope modeling, but neither of these might be as interesting to the non-specialist general public reader I am targeting. I would love to hear any comments you might have on the draft, especially of course any errors I might have made, but also any thoughts you have on material it would be fun to include or notes on where it drags and gets dull as you are reading, stuff like that. Below is my rough table of contents so you can see the context of the chapter. You are all busy, so I understand if you don't have time to read this over in the next week or two. It is a bit long, but as it is a popular treatment, I hope it is fun and easy to read.

--

--

Emma Marris  
Correspondent for Nature  
Columbia, Missouri  
[www.nature.com/news](http://www.nature.com/news) <<http://www.nature.com/news>>  
[www.emmamarris.com](http://www.emmamarris.com) <<http://www.emmamarris.com>>  
573-256-0611  
skype: emma.marris

—

Thanks. I will have to read this to make sure mine isn't too similar. I was afraid this would happen!

Emma

On Thu, Apr 23, 2009 at 8:48 PM, Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
Hi Emma -

This is Connie Barlow of Torreya Guardians. Google alerts just took me to a press release for a Mar 2009 book that is all about the assisted migration / rewilding controversy and comes from a deep-time perspective. Yet Amazon little paras show nothing about that. Nonetheless, it sounds similar to your book project. See press release at:

[http://www.eurekalert.org/pub\\_releases/2009-04/uoc--fwg041309.php/](http://www.eurekalert.org/pub_releases/2009-04/uoc--fwg041309.php/)

(I have also added that link and the book title to my own assisted-migration links page.)

--

--  
Emma Marris  
Correspondent for Nature  
Columbia, Missouri  
[www.nature.com/news](http://www.nature.com/news) <<http://www.nature.com/news>>  
[www.emmamarris.com](http://www.emmamarris.com) <<http://www.emmamarris.com>>  
573-256-0611  
skype: emma.marris

—  
Connie,  
Thanks for cc'ing me in on these emails. A great way to get a flavor of what you guys are up to!

Emma

On Tue, Nov 4, 2008 at 8:11 AM, Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
Hello Russ -

I just posted (as Aug 17, the date I received your email) the contents of your email below, so that the basic info is available without depending on you and me actually getting around to developing a new webpage for the Torreya Guardians website to follow your planting. You can find it on the page that handles all of the major correspondence related to assisted migration for the tree:

<http://www.torreyaguardians.org/rewilding.html>

BTW: I am cc-ing Jack and Lee, of course, but also Janet Marinelli from Audubon and another journalist, Emma Marris (who wrote a news report in Nature online on the assisted migration controversy) and interviewed me on the phone last week.

P.S. To all - Russ and I have had several more correspondences, but I wanted to have available below his original email to me of August 17.

On 9/17/08 2:54 PM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)> wrote:

> Dear Connie,  
> I planted 10 of the Woodlanders' Torreyia within a week or so after I helped  
> with the Wayneville plantings. In general, all that Woodlanders had left were  
> smaller plants (a season younger?) than what we planted as a group so it will  
> be hard to compare the fate of the two groups, at least for the first couple  
> of seasons. I used approximately a cup of hydrated lime per planting. Until  
> we had rains from the tropical storm Faye I was watering my 10 every couple of  
> days. But now at least there is considerably more naturally occurring  
> moisture in the ground and I have cut back on the hand watering. These 10 are  
> either along a forest edge or grouped further out into the sun of an old  
> pasture/meadow. It will be interesting to see which do better. All ten show  
> are showing at least some new growth, some more than others but it is too  
> early to make any generalizations re edge vs open. All ten have wire 'cages'  
> to help me identify where they are and keep the occasional animal from running  
> over the seedlings. I clothes-pinned rectangles of fiberglass window  
> screening to the south-west quadrant of the cages to moderate the late  
> afternoon sun until they harden off.  
> I'm glad you have a little more info on the origin of the Woodlanders parent  
> plants; something I was missing.  
> Keeping my fingers crossed for the future!  
> Russ  
>  
> On Tuesday, September 16, 2008, at 01:41PM, "Connie Barlow"  
> <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
>> Hi everybody -  
>>  
>> This is Connie Barlow. Lee Barnes drew a measurement grid on white  
>> posterboard and then photographed each of the 10 seedlings we planted at  
>> Corneille Bryan Native Garden. He sent me the photos and now I have created  
>> a SEPARATE WEBPAGE FOR EACH SEEDLING, and have posted these on the Torreyia  
>> Guardians website.  
>>  
>> As each seedling's progress is monitored in the years to come, those who do  
>> the monitoring can submit reports and photos on a tree-by-tree basis, and  
>> the pages will then be kept up-to-date.  
>>  
>> Lee tells me that this fall he will take photos against the grid of the rest  
>> of the seedlings (planted at Sara Evans' property).  
>>  
>> You can peruse these new webpages by going to this webpage and then  
>> scrolling to the bottom, where you can click on each individual plant:  
>>  
>> <http://www.torreyaguardsians.org/waynesville-1.html>  
>>  
>> QUESTIONS:  
>>  
>> Russell - Are you still planning to purchase seedlings from Woodlanders  
>> Nursery and plant T. taxifolia on your property?  
>>  
>> Janet Manning / Linda McFarland - How do the seedlings look at Bryan Native  
>> Garden  
>>  
>> Sara - How do the new trees look on your property?  
>>  
>> Lee - Have you had to do any supplemental watering of plants, or have the  
>> rains been good enough?  
>>  
>> Jack - How are your 2007 Smithgall Woods seedlings doing that you sprouted  
>> this year? Have you gone to Smithgall Woods yet to try to collect more  
>> seeds?  
>> --  
>>  
—

On Sat, Oct 25, 2008 at 3:39 PM, Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
Emma -

I saw the story you wrote when it came out. Great job! In fact, I added it to the webpage I keep for directing folks to the key papers and news reports on assisted migration:

<http://www.torreyguardians.org/assisted-migration.html>

Things are breaking so fast on this topic that the chapter is sure to be outdated by the time the book is published; but the early history is well defined now, so that would be a safe call for a book chapter, and I imagine you will find just about anything you are interested in on that angle by clicking around on the page noted above.

Even though not all the email communications that hub through me or I that I am cc'd on are noted on the Torreya Guardians website, I try to get the main ones up there. So make sure you check out these two pages, too:

<http://www.torreyguardians.org/comments.html>

<http://www.torreyguardians.org/rewilding.html>

Notably, make sure you read the posted chapters from Brian Keel's PhD thesis on assisted migration, as he coined the term; while Mac Hunter (coauthor of the Science journal paper you highlighted in your Nature report) is pressing for "assisted colonization" as the term of choice. Choices made by the media will probably eventually prove which term wins out. Make sure you see this page to follow the course of communications on the naming debate:

<http://www.torreyguardians.org/assistedmigrationdebate.html>

You can give me a call anytime this coming week on my cell (eastern time zone): 425-760-9941

For Torreya,  
Connie Barlow

On 10/24/08 11:30 AM, "Emma Marris" <[e.marris@gmail.com](mailto:e.marris@gmail.com)> wrote:

Dear Ms. Barlow,

I am a freelance environmental reporter, working on a book chapter on assisted migration. I previously wrote a story for Nature Reports Climate Change on the phenomenon (<http://www.nature.com/climate/2008/0809/full/climate.2008.86.html>), <<http://www.nature.com/climate/2008/0809/full/climate.2008.86.html%29>,> but at that time I had a very tight deadline and was not able to speak with everyone I wanted to. I am hoping to give the story a fuller treatment in a book that I am writing about new developments in conservation. I should add that the book is not yet sold, but there is considerable interest in it, and I have high hopes it will be. Do you have a spare moment some time perhaps next week (or even today!) to chat about you efforts on behalf of *Torreya taxifolia*?

Emma Marris  
573-256-0611  
[www.emmamarris.com](http://www.emmamarris.com) <<http://www.emmamarris.com>> <<http://www.emmamarris.com>>

---

Hi Connie-- Good comments. I guess I am swayed by the fact that in this flora were a number of plants typical of summer-wet SE swamp areas. Here are some important ones:

Taxodium cf distichum (megafossils), Torreya bonseri (megafossils), Myrica, Juglans, Fagus, Ilex, Liquidambar, Nyssa (abundant), cf. Carpinus, Tilia, Persea (megafossils), Platanus (megafossils), Acer (leaves), Carya (megafossils), Ulmoideae, and a number of Betulaceae, Pinus, Vitis (megafossils).

Admittedly the conifer pollen present are not all regular natives of Florida today but some do not grow far away: Tsuga, Larix type, Abies, And some are weird Tertiary fossils we see in the Miocene out here: Cedrus type. Typical of late Tertiary floras there are a few

asian genera present too: pollen of Podocarpaceae, Cercidiphyllum (megafossils), Eucommia.

What I said in our oral paper to GSA was that "If the *Torreya bonseri* were indeed closely related to *T. taxifolia*, then a bunch of these associates strongly suggest an environment like that of coastal Florida. If the *Torreya* was for some reason misidentified, then the assemblage could be something like that of coastal N. Carolina up to Virginia. "

In terms of the environment, the fossil site near Tenino is less than 1000 ft in elev., and shows a number of lignite layers suggesting swampy conditions. And In these lignites the pollen of *Taxodium* type and *Nyssa* are esp. abundant.

We are of course still trying to figure out this flora out but it is hard to try and match this flora up with a more montane assemblage. Admittedly at 11 million years ago the floras on the west coastal area were suggestive of summer moist warm temperate conditions, unlike the summer dry conditions of today. I suppose we ought to try and keep in mind about *Torreya californica* et al. I will try and get back to the original and check out the megafossil again.

I did read your paper with Martin and found it extremely interesting, as well as the other reports on trying to raise *Torreya* and *Taxus* seedlings.

Thank you very much for your comments and your interest.  
Regards- Estella L

Estella B. Leopold  
Professor Emeritus, Dep't Biology  
Box 351310  
University of Washington  
Seattle WA 98195  
ph. 206/ 685-1151

On Apr 12, 2010, at 12:43 PM, Connie Barlow wrote:

> Estella -  
>  
> Thank you for sending the poster session write-up. A couple possible  
> fact/interpretation corrections re *Torreya*:  
>  
> You wrote: "Leaf fossils include *Torreya* (Stinking Cedar), a tree  
> that today  
> lives only along the Florida coast, suggesting a mean annual  
> temperature of  
> around 20°C."  
>  
> Suggestion:  
>  
> 1. *Torreya* genus is represented in mountainous reaches of northern  
> California today by *T. californica*, so that would be the closest  
> species hit  
> -- not *T. taxifolia*. See my photo essays on site visits to *T.*  
> *californica*  
> at:  
>  
> <http://www.torreyguardians.org/california.html>  
>  
> 2. Most, if not all, of us *Torreya* Guardians subscribe to the idea  
> that *T.*

> taxifolia is endangered today primarily because it was unable to  
> move back  
> north out of its "pocket refuge" in the Apalachicola of northern  
> Florida  
> after the peak glaciations. All its conspecifics elsewhere in the  
> world  
> live in mountainous habitat where cool, shaded microclimates are  
> easy to  
> find and where altitudinal migration is possible. I have  
> personally seen  
> natural propagation of seedlings around parent T. taxifolia trees  
> planted  
> decades ago in Asheville NC and Cashiers NC, so there is good  
> evidence that  
> their northward range limit in Florida has nothing to do with  
> ability to  
> survive and propagate. Also, I just posted on our website a photo-  
> essay by  
> a teacher in northern Wisconsin whose recent *Torreya taxifolia* and  
> *Taxodium*  
> *floridana* (another endangered plant limited to the Apalachicola site)  
> plantings made it through a snowy winter. You can also see an older  
> *Taxodium* on his property in the essay:  
>  
> <http://www.torreyaguardians.org/wisconsin-heim.html>  
>  
> For more on the pocket-refuge theory for why *Torreya taxifolia* and  
> *Taxodium*  
> *floridana* got stuck in Florida, see my article co-authored with  
> Paul S.  
> Martin:  
>  
> <http://www.torreyaguardians.org/barlow-martin.pdf>  
>  
> Best wishes,  
> Connie Barlow  
>  
>  
> On 4/7/10 7:26 PM, "Estella B. Leopold" <[eleopold@u.washington.edu](mailto:eleopold@u.washington.edu)>  
> wrote:  
>  
>

---

Dear Connie and George!

I RAN across this message about the 2 trees you had planted, naming them Aldo and Celia. Very nice! thanks for your nice thought. I am sending this to my sister, Nina! best Estella L.

On Aug 12, 2008, at 9:52 AM, Connie Barlow wrote:

> Hello Estella!  
>  
> This is Connie Barlow, founder of [TorreyaGuardians.org](http://TorreyaGuardians.org) and a friend  
> of Celia  
> Hunter's. A colleague who knows us both (George Mustoe) suggested  
> I let you  
> know about a conservation biology action my group has just  
> undertaken, in  
> which we named 2 of the 31 endangered seedlings we planted, "Aldo  
> Leopold"  
> and "Celia Hunter" (Celia was a dear friend of mine, and I put a  
> few pinches  
> of her ashes beneath the tree so named; I know that you know her  
> because she  
> and I once camped out at your house while we were in the Seattle area,

> though you were not there at the time). I have attached jpgs that  
> show the  
> signs we held up for context photo archiving the location of each  
> seedling  
> (we decided to name each, rather than number them; that is me in  
> the photos,  
> holding the signs).  
>  
> Our action was documented by a writer and a photographer  
> commissioned by  
> Audubon magazine, and will likely appear in the March 2009 issue.  
>  
> Meanwhile, I have published a photo-essay of this first "assisted  
> migration"  
> for an endangered plant (from the Apalachicola peak-glacial reserve in  
> Florida to the mountains of North Carolina) in light of global  
> warming. A  
> purely upstart citizen undertaking, not having anything to do with th  
> official mgmt plan for this endangered species. ESA had a pre-annual  
> meeting meeting on "assisted migration" last week. You can access  
> it at:  
>  
> <<http://www.torreyaguardians.org/waynesville-rewilding.html>>  
>  
> On another thread of connection, I lived part-time during the 90s  
> near where  
> the West Fork meets the East Fork in the Gila Wilderness north of  
> New York  
> City. I was there during the 75th anniversary of the Gila as a  
> wilderness  
> and the 50th of Sand County Almanac. Aldo is a hero of mine, and I  
> wrote a  
> tribute to his "fierce green fire" story when the Mexican Gray  
> Wolves were  
> first brought in. It was never published, but I put it on audio in  
> 2000  
> while sitting on a log in the West Fork of the Gila. You can  
> access that if  
> you wish at:  
>  
> <<http://www.thegreatstory.org/songs/aldo.mp3>>  
>  
> By the way, a colleague of yours, Hazel Delcourt, was in  
> conversation with a  
> number of us and the conversation led to establishment of Torreya  
> Guardians,  
> aimed at moving this endangered conifer north. Hazel's book,  
> "Forests in  
> Peril" which chronicles her paleobotanical work at pocket Ice Age  
> Refuges  
> was the inspiration for me to begin the conversations.  
>  
> I am also the author of several books on evolution, most recently,  
> "The  
> Ghosts of Evolution" (Basic Books)  
>  
> Best wishes,  
> Connie Barlow

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ABSTRACT FOR POSTER PRESENTATION:

**The Wilkes Formation: using stratigraphy and paleobotany to study the effects of ancient volcanic activity on a Miocene forest**



George E. Mustoe\*, Geology, Western Washington University  
Estella B. Leopold, Biology, University of Washington  
Thomas E. Yancey, Geology & Geophysics, Texas A&M University  
Linda Reinink-Smith, Earth & Space Sciences, University of Washington.  
\*e-mail: [mustoeg@wwu.edu](mailto:mustoeg@wwu.edu)

Late Miocene clay beds exposed along the banks of Salmon Creek in Lewis County, Washington contain abundant specimens of iron carbonate (siderite) that have shapes reminiscent of animal dung. Investigators who have studied these objects have arrived at widely divergent interpretations, divided between those who strongly believe that the objects are true coprolites and those who are adamantly convinced that the objects are pseudofossils. One of the staunchest advocates of the latter viewpoint is University of British Columbia geology professor Dr. W.R. Danner. The doubly-pointed ends and striated surfaces indicate that the coprolite-shaped objects must have originated from plastic extrusion of a viscous parent material rather than from precipitation of minerals in pore spaces in water-saturated sediment, the geochemical process that ordinarily produces concretions. The shapes of the sinuous specimens appear to be perfect for coprolites, but several factors make an excremental origin problematic. Inclusions of undigested material (e.g., bone fragments, plant fibers, hair, or fish scales) are not present, and no animal fossils have been found anywhere in the Wilkes Formation. Also, it is difficult to envision a diagenetic process that would cause fecal material to become completely converted to microcrystalline siderite, while wood fragments in the same bed remained unmineralized. However, it is difficult to envision an inorganic depositional process that could produce shapes that look so much like animal dung.

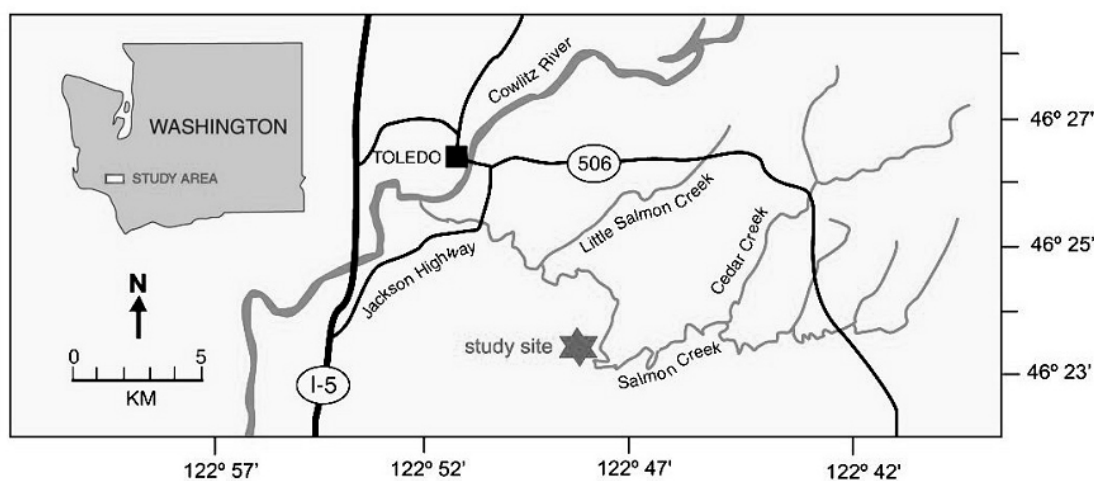
A limitation of past interpretations is that investigators based their hypotheses on specimens that had been fluvially transported, without finding the source strata. In 1993, a site where ferruginous "coprolites" were eroding from a bed within the Wilkes Formation was discovered. In 2007, our team of researchers studied this location in detail, combining stratigraphy, sedimentology, and analysis of fossil pollen from a 24m thick sedimentary sequence exposed along Salmon Creek. Although the alleged coprolites were a geologic attraction, our research focuses on the formation's geologic history, a story of catastrophic mudflows that episodically inundated a forested floodplain, followed by successional development of new plant communities.

The Wilkes Formation comprises three stratigraphic members. The lowest 10 m were deposited by three successive lahars (volcanic mudflows). Each cycle begins with massive sandy silt from the mudflow, topped by fine sediment deposited in standing water, with an upper carbonaceous layer produced by settling of floating organic debris. The 7m middle unit contains alternating beds of mudstone and woody peat, representing episodes of reforestation disrupted by mudflows. Two peat horizons contain an interlayer of volcanic ash. The lower ash layer has a poorly constrained radiometric age of  $11.6 \pm 0.4$  Ma. An upper 5.7m unit of sandy clay was deposited in a lake, produced by blockage of watershed drainage. The highest 2m of clay contain numerous excrement-shaped ferruginous "coprolites".

The Wilkes Formation contains one of the richest pollen records known from the Pacific Northwest. The presence of swamp-dwelling trees such as *Nyssa* (Tupelo) and *Taxodium* (Swamp Cypress) in the lower unit indicates a wet floodplain habitat. Pollen from aquatic plants and algal cysts may represent endemic inhabitants as well as material transported from an upstream lake breached during lahar genesis. Pollen from alder, birch, and other deciduous trees in the middle unit is evidence of episodes of reforestation, consistent with upright woody stems preserved in adjacent mudstone layers.

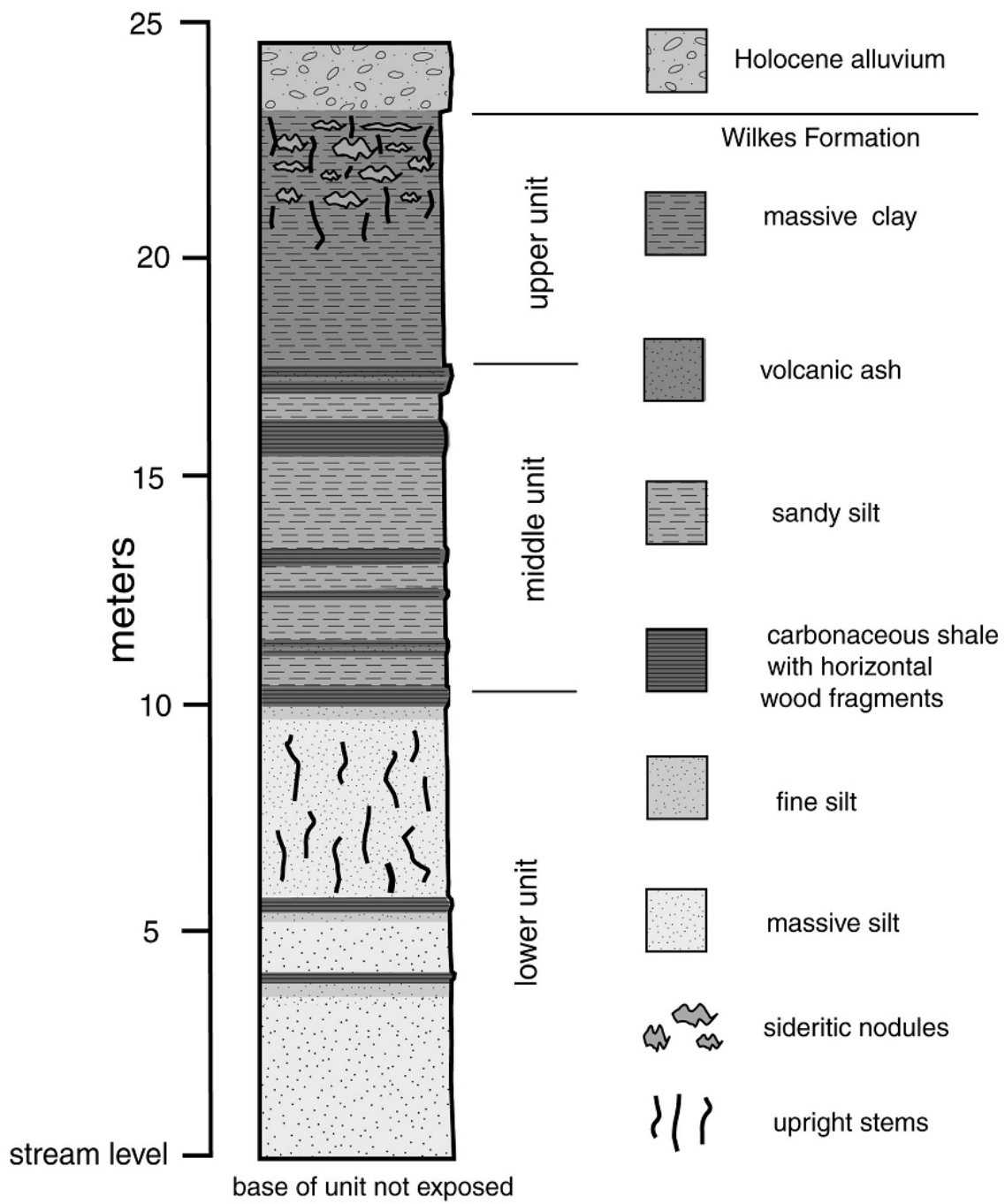
Fossil pollen indicates a summer-wet and warm-temperate climate (>100 cm precipitation annually), with a flora similar to modern coastal deciduous forests of the southeastern United States. Leaf fossils include *Torreya* (Stinking Cedar), a tree that today lives only along the Florida coast, suggesting a mean annual temperature of around 20°C. Similarities of the Wilkes Formation flora in southwest Washington with contemporaneous paleofloras in Oregon and Washington demonstrate that the Cascade Range had not yet been elevated in the late Miocene to produce a regional rain shadow.

Results of our examinations of the mineralogic and textural features of the alleged coprolites using optical and scanning electron microscopy are not reported here, and we have resisted the temptation to draw conclusions as to the origin of the alleged coprolites. However, any hypothesis for the origin of the ferruginous masses found in the highest clay bed needs to be consistent with the unusual environmental conditions that caused this sedimentary sequence to be deposited.





Late Miocene Wilkes Formation strata exposed along Salmn Creek



Stratigraphic section of the Late Miocene Wilkes Formation at Salmon Creek



Ferruginous "coprolite" from Salmon Creek.

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Dear Connie Barlow!

Wow, am I impressed with all your writings and out put! How wonderful. So glad George put me on to your name! Thank you George! Yes I am impressed about the 2 trees, and Celia Hunter etc. Esp. I am charmed by all the book titles you have written!Marvelous! And George and I are publishing a story about a fossil *Torreya* that grew in Washington State about 11 million years ago! Exciting! Lets talk further!  
in admiration- Estella L

Estella B. Leopold  
Professor Emeritus, Department of Biology  
Box 351800  
University of Washington  
Seattle WA 98105  
ph 206/685-1151

---

To: Ed Croomia, Fred Fussell, and Leigh Brooks

Re: The last *T. taxifolia* in Columbus GA

Hello Ed et al:

This is Connie Barlow, webmaster and originator of

<http://www.torreyguardians.org>

1. Ed: Would you be open to a phone interview by me (or, preferably, Leigh Brooks or whoever volunteers to record this history) so that "we" all could learn as much as you know about the historic *T. taxifolia* trees in Columbus and the history of their demise? I would like to post photos and a webpage on these trees (and the one that remains) on the *Torreya* Guardians website.

2. Is Leigh or Fred or Jack or Russell interested in taking on the job of conducting the interview and writing up a short synopsis of the situation with the Columbus trees?

3. Would Lee or Jack or Russ be willing to advise Fred on mineral supplements that might best help this one remaining tree fight *Phytophthora* and other diseases? I first learned about such supplements while doing a site visit to *Torreya californica* wild trees with Lee Klinger, founder of <http://suddenoaklifeorg.wordpress.com/about/>

4. JACK: Are you capable of getting healthy branchlets of the Columbus tree to root, and thus of getting the genotype into forms that can be planted, perhaps, with existing plantings in North Carolina in order to increase the genetic variability of those plantings?

Together for Torreya,  
Connie

On 4/30/09 11:12 AM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

>  
> Connie;  
>  
> Yes, there used to be three trees there, two died in about 1995. This is the  
> last one, as far as I know, in Columbus. It is nice to see Ed back thinking  
> about Torreya.  
>  
> Mark  
>

On 4/30/09 9:44 AM, "Fred C Fussell" <[wewoka@knology.net](mailto:wewoka@knology.net)> wrote:

Dear Connie,

My visitor (actually my tree's visitor) last Sunday afternoon was Edward Croom ([ed@croomia.com](mailto:ed@croomia.com)) who, indeed, is a direct descendant of Hardy Croom, or so I understand. He dropped by here because he'd read about the recent tornado that skirted our neighborhood a week or so ago and he wanted to see if the tree in our yard had survived.

I suggest that you contact Ed directly (I'm copying him on this) to discuss/learn what he knows regarding the history of this and other such trees in Columbus. I simply don't have enough knowledge or the necessary botanical vocabulary to make valid comments. Ed did tell me, however, that he remembers seeing at least two other specimens that were here on this block of Front Street up until several years ago.

Please continue to copy me on any correspondence regarding this topic, if you will. This is so much fun!!!

Sincerely,

Fred (Fussell - with an "F")

Fred C. Fussell  
538 Front Avenue  
Columbus, GA 31901  
studio 706-221-2271  
cell 229-314-9095

FROM LEIGH BROOKS:

Also, a long-time Torreya Guardian, Leigh Brooks, Leigh Brooks <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> sent me the email below, so she might want to arrange a visit to your (and any other still-alive) Torreya trees in your neighborhood.

Connie,

This sure is interesting! I had heard from knowledgeable botanists here in north Florida familiar with Torreya taxifolia that there were some trees in the historic district of Columbus, two homes is what I remember hearing. In May 2002 my sister Anatheia visited and we did a road trip to see all the Torreyas we had heard of in the Southeast. We stopped at Columbus and searched the historic district very slowly street by street in the car, then a little on foot. Low and behold, we spotted a big tree! People at the house were sitting on the porch, so I talked to them about it. They had no idea what it was, but were nice and let me take photos. I left them a

brochure from Apalachicola Bluffs and Ravines Preserve that had a bit about Torrey. Just located the pics, black & white. They are labeled:

Torreya taxifolia >45'H ~2'dbh lightening?  
Colombus, GA Historic Dst 538 Front Ave  
Photo: Leigh Brooks 05/02/2002

So, I have seen the tree in Fred's yard, and yes, it's T. taxifolia! A large one indeed. I am pleasantly surprised it is still living. The top and one side looked dead, probably from lightening.

Found my notes from the site. Some additional info. The residents said the dead branches happened in the last year. They had lived there 2 years and the tree was healthier back then. The remaining branches looked healthy. Some needles had fallen on the ground. It looked like it had like male flowers. There was yellow bellied sapsucker evidence (lines of small holes) throughout the trunk. Suckers and new growth were present. The trunk had some holes along the length, may be where branches fell or were cut? There was a historic sign with year the house was built: 1898.

I am fairly certain the tree and any others that may still remain in the historic district were planted when the homes were built. It is very close to the Chattahoochee River, and there was horticultural trade by steamboat back then. The age of the house and the size of the tree seem to reasonably correspond. The botanists here also say they were planted, though I can't remember the story.

Leigh Brooks  
Chattahoochee, FL

---

FROM: Connie Barlow, <http://www.torreyaguardians.org>

NOTE TO ALL: Fred Russell lives in Columbus Georgia and sent me e-photos of a big tree in his yard that he thought might be T. tax. It is! You might want to READ FROM THE BOTTOM UP to follow the email conversations that have ensued, including a recent visit to his tree by a (possible?) descendent of Hardy Croom, who named the genus.

REQUEST: Would either Fred Russell or Leigh Brooks volunteer to write up a summary of what has been going on about this tree and the history of the other big taxifolia trees in the neighborhood, and then Fred can send me the photos and I will create a separate webpage on the Torreya Guardians site just to post all the history of the Columbus GA trees? And Leigh can send me the old photos she took of the trees on her prior visit there.

---

Fred -

Did you know that Edward Croom who just visited your tree is likely a descendant of the guy who actually named genus Torreya, upon discovering T. taxifolia in Florida?! Go to this webpage and read about Hardy Bryant Croom and his naming of Torreya:

<http://www.hmdb.org/marker.asp?marker=17753>

If he is a descendent, could you ask him for his story, of what he has heard about the naming of Torreya and previous visitations to the remaining trees by his ancestors or relatives? Or get his email address and I or Leigh Brooks will ask him directly.

Also, a long-time Torreya Guardian, Leigh Brooks, Leigh Brooks <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> sent me the email below, so she might want to arrange a visit to your (and any other still-alive) Torreya trees in your neighborhood.

Connie,

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*Torreya taxifolia* >45'H ~2'dbh lightening?  
Columbus, GA Historic Dst 538 Front Ave  
Photo: Leigh Brooks 05/02/2002

So, I have seen the tree in Fred's yard, and yes, it's *T. taxifolia*! A large one indeed. I am pleasantly surprised it is still living. The top and one side looked dead, probably from lightening.

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I am fairly certain the tree and any others that may still remain in the historic district were planted when the homes were built. It is very close to the Chattahoochee River, and there was horticultural trade by steamboat back then. The age of the house and the size of the tree seem to reasonably correspond. The botanists here also say they were planted, though I can't remember the story.

Leigh Brooks  
Chattahoochee, FL

On 4/26/09 5:54 PM, "Fred C Fussell" <[wewoka@knology.net](mailto:wewoka@knology.net)> wrote:

Dear Connie,

At the very moment that we returned home today from a weekend visit to see our kids in Oxford, MS, we spotted a stranger on our front porch -- one with Lafayette County, Mississippi, (Oxford) license plates on his car -- knocking on our front door. It turned out to be Edwrd Croom, jr., Ph. D., who was here hoping to photograph our Torreya. Ed had no clue that you & I had corresponded about the tree during the past two weeks. He was actually on his way to the Atlanta Botanical Gardens (?) to see other examples of Torreya and made a side trip to Columbus.

As it happens, Ed & I have many, many other common interests and connections. However, he had seen and documented our tree and two others on our street in Columbus several years ago. Unfortunately, the other two were destroyed a few years ago.

What a wild coincidence!

I'm copying Ed on this.

All the best.

Fred

Fred C. Fussell  
538 Front Avenue  
Columbus, GA 31901  
studio 706-221-2271  
cell 229-314-9095

On Apr 24, 2009, at 9:14 AM, Connie Barlow wrote:

Fred -

Could you send the photos directly to Lee Barnes, too? Thanks

Lee - Oh, this is not China Fir. Fred took fabulous photos and both the branchlets and the trunk look exactly like Torreya to me, but which species?

Connie

On 4/23/09 6:11 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Connie,

Can you forward the photo?- it's probably China Fir (*Cunninghamia lanceolata*)- key differences would be China Fir has clustered cones (1.5 inch broad) with distinctive overlapping modified leaf-like scales; branches slightly to extreme pendulous (hanging) ; bark brown, peeling as long irregular strips and inner reddish bark; leaves with needles held in multiple ranks (with row needles sticking at angle to petiole- not flat); old brown leaves remain together on tree for several years; and leaf margins finely serrated (saw toothed).

I've seen 40-50 ft. specimens while traveling thru central GA- always taller than wider; too thick to see through, and dry leaves at base and within in green canopy. Can sprout from roots when tree is cut. See <http://www.hort.net/gallery/view/tax/cunla/>. Happy Trails, Lee

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Thursday, April 23, 2009 4:06 PM  
To: Fred C Fussell  
Cc: Jack Johnston; Lee Barnes  
Subject: Re: Florida Torreya (*Torreya taxifolia*)?

Fred -

Golly – The photos you sent look exactly like a big Torreya! I, personally, cannot distinguish among the species, but I see that your Columbus GA home would be right along the watercourse route for *T. taxifolia* to move between its glacial home (along the Apalachicola at the very southmost of the state) and its interglacial home (which I suspect would have been the mountains of North Carolina)

So, a couple questions for you:

1. Are the leaves real prickly to the touch — that is, are the points at the ends of the leaves really, painfully sharp? If so, you definitely have a Torreya, though can't yet know which species.

2. I notice in the last photo that some rather large stump sprouts have been cut off. How long have you known this tree, and what behavior did the stump sprouts have before they were cut? Were any of them really growing fast?

3. What is the overall health of the tree? The photo looks as if the top is dying. Is that true? If it is in trouble, try placing agricultural lime on the soil around it.

4. What is the circumference of the trunk at breast height?

5. Are there any old-timers in the neighborhood longer there than you who might know something about this tree? Does it seem to be a male or a female? Check out this hidden page on the TorreyaGuardians website, where you can better see the branches and propagules of *T. taxifolia* at the Biltmore (it is a hidden webpage because the Biltmore asked me to hide it so that see thieves can't easily find their trees):

<http://www.torreyaguardians.org/biltmore-2006-long.html>

6. If yours really is a *T. taxifolia*, the genotype may be really valuable to preserve. Our colleague, Jack Johnston, in northeastern Georgia might be interested in taking some branch cuttings from it and trying to root them. Also, know that if the main trunk is dying, the tree would naturally stay alive by putting more energy into one of its stump sprouts, so if you see any new stump sprouts coming up, do not cut them back. Let them grow, and it will become a new tree, same genotype.

7. Could you send the photos directly to Jack Johnston? Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>

8. Has any botanist, conservation biologist working with this endangered species ever visited your tree before? Are there any more Torreya anywhere nearby you?

9. Is it okay if I post your photos on our website? Should I just say Columbus GA, or can I give the 538 First Ave. address too?



On 4/15/09 11:44 AM, "Fred C Fussell" <[wewoka@knology.net](mailto:wewoka@knology.net)> wrote:  
This tree is in my front yard in Columbus, GA. Can you identify it? Thanks.

Fred C. Fussell  
538 Front Avenue  
Columbus, GA 31901  
studio 706-221-2271  
cell 229-314-9095

---

On 4/23/09 6:53 PM, "Fred C. Fussell" <[fcfussell@knology.net](mailto:fcfussell@knology.net)> wrote:

By the way, I'm an independent museum curator and I'm currently working on a project for the Wiregrass Museum of Art in Dothan, AL. that involves my traveling throughout the counties of Southeastern Alabama. Last week on a jaunt to Troy, AL, from Union Springs, AL, I spotted what appears to be yet another tree of at least similar characteristics, but I think a bit larger than mine. When I go back that way again in a week or two I'll stop and make photos of it. It would of course be closer to the Southern reaches of habitat but somewhat further from the Chattahoochee/Appalachicola basin than my tree.

This from Clason Kyle, the owner of the property at 538 Front, Columbus. My landlord.

Fred

Begin forwarded message:

From: Fred C Fussell <[wewoka@knology.net](mailto:wewoka@knology.net)>  
Date: April 23, 2009 6:36:46 PM EDT  
To: "Fred C. Fussell" <[fcfussell@knology.net](mailto:fcfussell@knology.net)>  
Subject: Fwd: Florida Torreya (Torreya taxifolia)?

Begin forwarded message:

From: "ckyle" <[ckyle@knology.net](mailto:ckyle@knology.net)>  
Date: April 23, 2009 6:26:54 PM EDT  
To: "Fred C Fussell" <[wewoka@knology.net](mailto:wewoka@knology.net)>  
Subject: Re: Florida Torreya (Torreya taxifolia)?

Hi,

Appreciate your interest in the tree.

Yes, I have known this and thought at one point I mentioned it to yawl, but guess I didn't. Better that you found it out on your own, rather than thinking I was just bsing.

The tree had an award about ten years ago, largest of its type in the state. Had it framed, but it disappeared along with a parade of tenants, so there was no particular one to blame. Maybe it just tired of being hung and departed.

Let's do what we can to save it. Lime?

Clason

----- Original Message -----

From: Fred C Fussell <<mailto:wewoka@knology.net>>  
To: Clason Kyle <<mailto:ckyle@knology.net>>  
Sent: Thursday, April 23, 2009 5:36 PM  
Subject: Fwd: Florida Torreya (Torreya taxifolia)?

Clason,

I think maybe you'll find this to be interesting. In trying to identify the big conifer that's in the front yard at 538 Front, I sent detailed photographs of it to a botanist who heads up an effort to save rare and endangered evergreen tree species. Copied below is her response.

Fred C. Fussen  
538 Front Avenue  
Columbus, GA 31901  
studio 706-221-2271  
cell 229-314-9095

---

Connie,

Thank you so much for the email and keeping us informed on the work of Torrey Guardians. The pictures look great. I confess that I was a little disappointed to hear that the Torreyas in Highlands, NC appeared to be California Torrey and not Florida Torrey. We are always hoping someone will find a mature stand of trees hiding safely from the blight somewhere.

Keep up the excellent work. I checked on the Torreyas at the Tallahassee Museum. They all look pretty sad with only low spreading branches. Still, they are surviving and that counts for something.

Sincerely,

Dean Gallagher, ESII  
Florida Fish & Wildlife Conservation Commission  
Division of Habitat and Species Conservation  
Imperiled Species Management Section  
620 South Meridian Street  
Tallahassee, FL 32399-1600  
PHONE (850) 922-4330  
FAX (850) 921-6988  
[dean.gallagher@myfwc.com](mailto:dean.gallagher@myfwc.com)  
visit [www.MyFWC.com/psm](http://www.MyFWC.com/psm)

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Wednesday, September 06, 2006 11:25 AM

---

Hello Jerry -

My husband and I have, for 6 years, been full-time on the road as "America's evolutionary evangelists". There is one superb window of opportunity in July that puts us on a direct path through northern Georgia: Any of these 3 days we could schedule to be there:

July 30, July 31, August 1.

(We have church services in Memphis we are doing on July 27, with follow-up workshops there on July 28 or 29. Then on August 3 we are doing another church service in Charlottesville VA. So the drive through northern Georgia would be right enroute.)

We will have been carrying one potted Torrey tree in our van with us since December 07, when Atlanta Botanical Garden gave me one as a gift. I have been setting it out for sun wherever we stop, and look forward to Jack figuring out where in the Highlands NC area (where he has a second home; his regular home is in northern Georgia) I/we can plant the tree on someone's private property, where it will now or eventually be with neighboring Torrey trees so that, whether it is male or female, it will eventually be in service of reproducing more of its kind. My preference would be to plant it in a spot of sun in a forest regrowth area on a very steep rocky slope, east,

west, or north facing. Or to plant it as a returning interglacial native to exactly where the native hemlocks have recently died out. I'm going to depend on Jack to figure out where that might be.

Thus my preference for the shoot is Highlands/Cashiers North Carolina area, rather than northern Georgia. *Torreya taxifolia* has already been planted by Atlanta Botanical Garden in northern Georgia. The radical move is to take it deliberately into North Carolina and put it "in the woods" rather than in a tended open spot— to attempt to "rewild" it, but definitely on regrowth, private land.

My cell phone: 850-420-8002  
My husband's cell (Michael Dowd): 425-760-9941

(Mia Van Meter, cc-d about, is our assistant in charge of scheduling.)

Together for *Torreya*,  
Connie Barlow

On 5/7/08 2:07 PM, "GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)> wrote:

> Hi, Connie,  
> Janet Marinelli is going to be writing a story for us about assisted  
> migration and efforts to save the Florida *torreya*. She thought it would be  
> good to photograph you for the story. I think it's going to be a really good  
> (and important) story, and I hope you'll be around to help us out.  
>  
> It looks as if we're going to try to arrange for a photographer to visit  
> Georgia in July. Will you be around then? Also, can you tell me exactly  
> where you're located. We are going to try to shoot Jack Johnston too, so  
> we're hoping we can coordinate the shoot. (I'm not sure where he lives,  
> since I have just an email address for him too.) Like everyone, we're on a  
> tight budget, so we're trying to be efficient about the photo shoot.  
>  
> Also, can you give me a phone number (or numbers)? Thanks for your help, and  
> I look forward to working with you.  
>  
> Best,  
> Jerry  
>  
> Jerry Goodbody  
> Managing Editor  
> Audubon Magazine  
> 212-979-3130  
> [jgoodbody@audubon.org](mailto:jgoodbody@audubon.org)

Josh -

Great that you learned about us, and thank you for contacting us. I don't see prospects for collaboration with *Torreya* Guardians for two reasons:

It is legal for *Torreya* Guardians (not operating under the auspices of the Endangered Species Act) to work only with trees raised in nurseries or from private seed stock from trees outside of the wild native range in Florida. Any wild trees you have are strictly off limits to us, as they fall under the purview of the Endangered Species Act.

2. Because the USF&WS is already doing a heroic effort to try to keep *Torreya taxifolia* present and perhaps even again reproducing in its "native" range in northern Florida, *Torreya* Guardians seems to be putting its entire efforts into (a) assisting the migration of nursery seedlings to the Appalachians, and (b) distributing seeds to individuals in northern climates who will attempt to use them in orchard situations to raise more seeds.

Together for *Torreya*,  
Connie Barlow

On 11/30/08 12:23 AM, "Hiker Hostel" <[hikerhostel@yahoo.com](mailto:hikerhostel@yahoo.com)> wrote:

I saw your information on saving the Torreya tree. I own land inside Torreya State Park. I would be interested in discussing the use of our trees for your project as well as building the population on my property. The land in Florida is where I grew up but I currently live just outside of Atlanta in Dahlonega, GA

Josh Saint  
(770) 312-7342

Nicely done Connie. I am happy.

Cheers Hugh

---

Dr Hugh Possingham FAA

ARC Federation Fellow 2006-2011  
Director of The Ecology Centre and AEDA  
Professor of Mathematics, Professor of Ecology [www.uq.edu.au/spatialecology/](http://www.uq.edu.au/spatialecology/) <<http://www.uq.edu.au/spatialecology/>> (lab web site)  
[www.aeda.edu.au](http://www.aeda.edu.au) <<http://www.aeda.edu.au>> (Applied Environmental Decision Analysis centre)

Submit a symposium suggestion to Intecol X, Brisbane August 2009: <http://www.intecol10.org/> <<http://www.intecol10.org/>>

Submit something exciting to Conservation Letters now: [www.conservationletters.com](http://www.conservationletters.com) <<http://www.conservationletters.com>>

Go to the Australian applied maths conference, Feb 2009 <http://www.sci.usq.edu.au/conference/index.php/ANZIAM/> <<http://www.sci.usq.edu.au/conference/index.php/ANZIAM/>>

+ 61 7 3365 9766 (w): 0434 079 061 (m)

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Tuesday, 29 July 2008 10:37 AM  
To: Jessica Hellmann; [hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu); Chris Thomas; Hugh Possingham  
Subject: Re: Assisted colonization naming comments posted

Hello Jessica and Chris and Malcolm and Hugh:

This is Connie Barlow of Torreya Guardians. I thank all 4 of you for responding to my request a week ago for reconsidering the terminology: assisted colonization or migration. After hearing from all 4 of you, I am much less concerned about the term assisted colonization.

I apologize for taking so long to get back to you. I have posted a test-page on our website that lists all 4 of your comments, drawn from the emails you either sent me directly or cc-d me on. As none of you expressly authorized me to post your comments, I have it only available as a test page at the moment, not linked to the rest of the Torreya Guardians website. You can access it here:

<http://www.torreyaguards.org/assistedmigrationdebate-test.html>

REQUEST: Please let me know, each of you, whether or not I may post your comment as shown on this test page — and I am happy to make any changes you may wish.

I would like to get this full-comment page posted in advance of the ESA pre-meeting on this issue, which I understand begins August 3. On July 30, 3 of us Torreya Guardians will be planting 31 Torreya taxifolia on two different private properties south of the Smokies in North Carolina (elevations 3400 and 2600 feet, mountainous terrain). An Audubon reporter and photographer will be there to film this effort in "assisted migration", or colonization, which I also enjoy referring to as "rewilding", if one comes to the matter (as I do), from a deep-time perspective. Again, only from a deep-time perspective is it clear that moving Torreya taxifolia north is truly help with its own long-established migratory patterns of movement south and north to track the waxing and waning of glaciations--glacial /interglacial migrations, rather than merely seasonal migrations. (On July 29, Audubon will be reporting/photographing the official Endangered Species Act propagation work at the Atlanta Botanical Garden.)

Jessica: When the "Assisted Colonization" working group has finished meeting, please either (a) give me a hotlink to connect our own webpage with whatever website will post the results (especially on the naming issue) or that will continue the effort, or (b) send me a pdf of any report(s) that you'd like to have posted on the web and I'll be happy to do it from the TorreyaGuardians website (and also I will make sure to hotlink them into wikipedia).

Thanks!

Connie Barlow

---

**Subject:** RE: Assisted colonization response fr Torreya Guardians  
**Date:** Monday, July 21, 2008 7:56 AM  
**From:** [hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)  
**To:** Chris Thomas <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)>, Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>, Hugh Possingham <[h.possingham@uq.edu.au](mailto:h.possingham@uq.edu.au)>  
**Cc:** Ove Hoegh-Guldberg <[oveh@uq.edu.au](mailto:oveh@uq.edu.au)>, <[lhughes@rna.bio.mq.edu.au](mailto:lhughes@rna.bio.mq.edu.au)>, <[Sue.McIntyre@csiro.au](mailto:Sue.McIntyre@csiro.au)>, <[david.lindenmayer@anu.edu.au](mailto:david.lindenmayer@anu.edu.au)>, <[parmesan@uts.cc.utexas.edu](mailto:parmesan@uts.cc.utexas.edu)>, <[hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)>, <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>, Ron Determann <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)>  
**Conversation:** Assisted colonization response fr Torreya Guardians  
**Priority:** normal

Dear Connie et al:

I understand that I am the person responsible for the proposed switch to "assisted colonization" and having read the four reasons you support continued use of "assisted migration" I have to stand by my original argument and agree with Chris' elaboration. "Colonization" is a perfectly acceptable word among ecologists and your concerns about its "hegemonic overtones" will not worry most scientists who are primarily concerned with evaluating this management option in clear language rather than advocating it with the public.

You might be interested to know that I recently spoke to a forum of conservation managers (mostly from government agencies and NGOs) in Minnesota about assisted colonization and they were surprisingly ready to embrace the idea. I say "surprisingly" because when I presented this idea to an academic audience at UMaine there was lots of push-back. Indeed some of the Minnesotans were advocating going a long step beyond using this technique to save a rare species from extinction; they were talking about moving ecological dominants, e.g., southern pines to replace northern pines whose populations were crashing. When I asked the Minnesotans why they accepted assisted colonization so much more readily than the Mainers, the response was: "We are all farmers at heart, quite comfortable with manipulating landscapes."

... mac hunter

On 20 Jul 2008 at 23:48, Hugh Possingham wrote:

> I agree completely, and in one of my interviews I clarified this point  
> also, although not as clearly as you have Chris  
>  
> Cheers Hugh  
>  
> \_\_\_\_\_  
> Dr Hugh Possingham FAA  
> ARC Federation Fellow 2006-2011  
> Director of The Ecology Centre and AEDA  
> Professor of Mathematics, Professor of Ecology  
> [www.uq.edu.au/spatialecology/](http://www.uq.edu.au/spatialecology/) (lab web site) [www.aeda.edu.au](http://www.aeda.edu.au) (Applied  
> Environmental Decision Analysis centre)  
> Submit a symposium suggestion to Intecol X, Brisbane August 2009:  
> <http://www.intecol10.org/>  
> Submit something exciting to Conservation Letters now:

> [www.conservationletters.com](http://www.conservationletters.com)  
> Go to the Australian applied maths conference, Feb 2009  
> <http://www.sci.usq.edu.au/conference/index.php/ANZIAM/>  
> + 61 7 3365 9766 (w): 0434 079 061 (m)  
> -----Original Message-----  
> From: Chris Thomas [<mailto:cdt2@york.ac.uk>]  
> Sent: Sunday, 20 July 2008 8:11 PM  
> To: Connie Barlow  
> Cc: Ove Hoegh-Guldberg; [lhughes@rna.bio.mq.edu.au](mailto:lhughes@rna.bio.mq.edu.au);  
> [Sue.McIntyre@csiro.au](mailto:Sue.McIntyre@csiro.au); [david.lindenmayer@anu.edu.au](mailto:david.lindenmayer@anu.edu.au);  
> [parmesan@uts.cc.utexas.edu](mailto:parmesan@uts.cc.utexas.edu); Hugh Possingham; [hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu);  
> [hellmann.3@nd.edu](mailto:hellmann.3@nd.edu); Ron Determann  
> Subject: Re: Assisted colonization response fr Torreya Guardians  
>  
> Dear Connie,  
>  
> Thank you for your email - and I have seen some of the Torreya  
> information  
> you have posted on the web.  
>  
> I was personally particularly keen that this issue be described as  
> "assisted colonisation" rather than the more commonly used "assisted  
> migration". This is my personal view, and other authors of our paper  
> might  
> possibly wish to add something.  
>  
> In common usage (outside pure science), "migration" is most commonly  
> used  
> in two major contexts.  
>  
> The first, and most common, is to describe the seasonal return migration  
> of  
> birds and other groups of animals. This is quite clearly NOT what is  
> being  
> discussed. There are already policy reports and published scientific  
> papers  
> on the potential consequences of climate change for these "true"  
> migrants,  
> so I believe that it will be very confusing to use "assisted migration"  
> as  
> the general term to describe the type of endeavour we are discussing.  
>  
> The second common usage relates to human migration, meaning the net  
> flow  
> of people from one region to another. The connection with this is also  
> undesirable because (a) this already has a negative image in many  
> people's  
> minds, and (b) it usually represents the flow of individuals from one  
> region to another, already populated, region, rather than establishment  
> in  
> already without human populations.  
>  
> In a scientific context, the term migration is also sometimes used in  
> ecology to describe the unidirectional movement of individuals from one  
> location to another. However, migration in this context normally means  
> the  
> act of movement itself, and not the establishment of new populations in  
> the  
> locations where individuals arrive (although this may be the  
> consequence).  
> Assisted colonisation does not stop at moving individuals; it may also  
> require preparation (and protection) of sites to receive the immigrants,  
>  
> and subsequent management of the establishing population until such time

> as  
> a self-sustaining population has been achieved.  
>  
> My personal belief is that "assisted colonisation" avoids confusion with  
>  
> other types of migration, and identifies that establishing populations  
> at  
> the destination is the key goal (not simply moving individuals).  
>  
>  
> best wishes,  
>  
> Chris Thomas  
>  
>  
> On Jul 19 2008, Connie Barlow wrote:  
>  
> >To: authors of the Science paper on "assisted colonization"  
> >  
> >Fr: Connie Barlow, of Torreya Guardians, the citizen's group advocating  
> >assisted migration of Torreya taxifolia from Florida to the  
> Appalachians  
> >  
> >Re: Concerns about the shift in terminology from "assisted migration"  
> to  
> >"assisted colonization"  
> >  
> >Hello all. I am the founder and webmaster of the citizen's group that  
> is  
> >actually undertaking assisted migration of a highly endangered conifer,  
> >Torreya taxifolia. I applaud your paper in Science journal in not only  
> >advocating this bold new move in conservation but in offering a  
> decision  
> >tree to help conservation managers in moving forward in ways that can  
> be  
> >regarded more broadly as objective and rational.  
> >  
> >I have two suggestions for future discussion:  
> >  
> >1. Paul S. Martin and I, when we published our original paper on this  
> topic  
> >in Wild Earth (2004), stressed the deep-time perspective in perceiving  
> not  
> >only the need for but naturalness of climate-induced migration. Thus,  
> for  
> >our focal species, the endangered conifer Torreya taxifolia, we stress  
> that  
> >the proposed translocation from northern Florida (actually, the "pocket  
> >glacial reserve") to the southern Appalachian Mountains is mimicking  
> what  
> >would almost certainly have been the tree's natural migratory movements  
> >during previous episodes of interglacial warming. I think it would  
> help  
> >conservationists and others "warm" to the idea of assisted migration if  
> the  
> >populace became better educated about the massive movements species  
> have  
> >made during previous episodes of massive climate change. See, for  
> example,  
> >Hazel Delcourt's excellent book, "Forests in Peril", which stimulated  
> the  
> >initial debate that led to the formation of TorreyaGuardians.org  
> >  
> >

> >  
> <[http://www.amazon.com/Forests-Peril-Tracking-Deciduous-Greenhouse/dp/0939923890/ref=sr\\_1\\_1?ie=UTF8&s=books&qid=1216489789&sr=8-1](http://www.amazon.com/Forests-Peril-Tracking-Deciduous-Greenhouse/dp/0939923890/ref=sr_1_1?ie=UTF8&s=books&qid=1216489789&sr=8-1)>  
> >  
> >2. I would urge you to reconsider adopting the term "assisted colonization"  
> >as a replacement for the term we and others have been accustomed to using,  
> >"assisted migration." I have created a new page on the  
> >[www.TorreyGuardians.org](http://www.TorreyGuardians.org) website in which I post 4 reasons why  
> >"assisted  
> >migration" is preferable as the term of choice. I also invite further  
> >comments, and will post those on the web page too, so that discussion  
> >can  
> >spread. Click here to visit that webpage:  
> >  
> ><<http://torreyguardians.org/assistedmigrationdebate.html>>  
> >  
> > Overall, my experience has been that "Assisted Migration" is a very  
> > controversial topic. My sense is that "Assisted Colonization"  
> > unnecessarily evokes additional wariness, and that a return to the  
> > term  
> > "assisted migration" would be very helpful for moving the paradigm  
> > shift  
> > beyond academia and into institutional conservation actions and  
> > advocacy.  
> >  
> >In addition, please make sure you are aware of the initial articles  
> >that  
> >began this debate, both occurring in a "Forum" in the Fall 2004/Winter  
> >2005  
> >issue of Wild Earth. You can access them by visiting a webpage I have  
> >created that lists all the significant online papers and reports on the  
> >"assisted migration" and related "rewilding" issues:  
> >  
> ><<http://torreyguardians.org/assisted-migration.html>>  
> >  
> >On that page, do click on the first link, too. This article on  
> >assisted  
> >migration features the work of Torrey Guardians. Although it is not  
> >academic, it is beautifully written (for Orion magazine) and highlights  
> >the  
> >human/subjective sides of the debate.  
> >  
> >Evolutionarily yours,  
> >Connie Barlow  
> >  
> > BTW: You will note that I cannot directly link to the July 18  
> > multi-author paper in Science because it is available only by  
> > purchase. I  
> > personally have a pdf of the 2-page forum piece and would love to be  
> > able  
> > to either post it directly on my website or hotlink to somewhere where  
> > it  
> > is posted. I know that not uncommonly, authors of such papers have  
> > them  
> > posted in pdf on their own academic websites. If any of you know how I  
> >  
> > can hotlink to the pdf, or know who I can talk to at Science journal  
> > to  
> > get permission to post it on mine, please let me know.  
> >  
> > P.S. I am the author of the 2001 book, "The Ghosts of Evolution", in



> > which one section proposed translocation of *Torreya taxifolia*, upon  
> the  
> > assumption that human extinction or extirpation of its seed disperser  
> was  
> > at the root of its inability to head north from its pocket refuge in  
> > northern Florida.  
> >  
> >  
> >  
> >  
> <http://www.amazon.com/Ghosts-Evolution-Nonsensical-Ecological-Anachronis>  
> ms/d  
> > p/0465005527/ref=pd\_bbs\_sr\_1?ie=UTF8&s=books&qid=1216490466&sr=8-1  
> >  
> >  
> >  
> >  
> >  
> >  
> >  
> --  
> Chris D Thomas (Professor of Conservation Biology)  
> Department of Biology  
> University of York  
> PO Box 373  
> York, YO10 5YW  
> UK  
>  
> tel: 01904 328646 international +44 1904 328646  
> email: [cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)  
>  
>  
>  
> No virus found in this incoming message.  
> Checked by AVG - <http://www.avg.com>  
> Version: 8.0.138 / Virus Database: 270.5.2/1562 - Release Date:  
> 7/19/2008 2:01 PM  
>

Malcolm L. Hunter, Jr.  
Department of Wildlife Ecology  
University of Maine  
Orono Maine 04469

207/581-2865  
[hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)

---

Ms Barlow: Thanks. You can pay by check or if you prefer you can give us a credit card number. We would not run the card until trees are picked up. We will need to enter a specific order and print an invoice so will need a name, address, phone number, e-mail address, and password (of your or our choosing) to manually enter the order into our system. Jack can let us know when he wants to pick up the plants. Thanks, Bob, Woodlanders, Inc.

-----Original Message-----

From: Connie Barlow <[cbfanager@bigplanet.com](mailto:cbfanager@bigplanet.com)>  
Sent: Tuesday, May 20, 2008 9:24am  
To: [info@woodlanders.net](mailto:info@woodlanders.net)  
Subject: Re: 30 *Torreya taxifolia* seedlings

Hi Bob -

Can I send you a check for \$600 to pay for the 30 *Torreya taxifolia* trees? Jack Johnstone will schedule a time with you directly to pick up the 30 trees in June.

Connie Barlow

On 5/15/08 11:21 AM, "[info@woodlanders.net](mailto:info@woodlanders.net)" <[info@woodlanders.net](mailto:info@woodlanders.net)> wrote:

Ms Barlow: Thanks, We will look forward to receiving your order and a scheduled pick up date. Bob McCartney, Woodlanders, Inc.

-----Original Message-----

From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Sent: Thursday, May 15, 2008 8:58am  
To: [info@woodlanders.net](mailto:info@woodlanders.net)  
Subject: Re: Woodlanders Contact Request

Bob -

Terrific! I have told the folks at Audubon magazine that we'll have 30 trees with us on July 30 for the scheduled photoshoot in Highlands, NC of rewilding *Torreya taxifolia* (onto private forested lands there). As soon as I get the okay from Jack Johnston that he or someone will be available to pick them up, I will purchase all 30 online.

Together for Torreya,  
Connie Barlow

On 5/13/08 1:04 PM, "[info@woodlanders.net](mailto:info@woodlanders.net)" <[info@woodlanders.net](mailto:info@woodlanders.net)> wrote:

Ms Barlow: We could probably let you have 30 *Torreya taxifolia* in one gallon size containers. These can be ordered on-line and paid with credit card or when picked up. Let us know when they would be picked up. Thank you for the information you sent. Bob McCartney, Woodlanders, Inc.

-----Original Message-----

From: [info@woodlanders.net](mailto:info@woodlanders.net)  
Sent: Monday, May 12, 2008 9:31am  
To: [info@woodlanders.net](mailto:info@woodlanders.net)  
Subject: Woodlanders Contact Request

Name: Connie Barlow  
Email: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
Phone:  
Company: TorreyaGuardians  
Address:

Additional Comments:

Hi Bob - I just talked with you. Please email me the number of *Torreya taxifolia* plants you have available for sale. We're going to want to purchase a lot.

—

EARLIEST EMAILS FROM JACK JOHNSTON (many many more besides these)

On 8/13/06 8:38 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

Many thanks for the lovely book you gave me. I read most of it today. I found the style most enjoyable. It was a non-threatening book in terms of language, not too intellectual as to be stiff, and filled with wonderful observations. It jolted my thinking to consider megafaunal associations with current plants. This is fascinating.

The wire cages I mentioned await future *Torreya* seeds. It would be nice to know the number of seeds harvested at Biltmore this year.

I am on the board of the Carolinas Chapter of the American Chestnut Foundation and have for years anticipated fall harvests to have a sense of what the possibilities are for the spring to come. This has influenced my thinking regarding *Torreya*. What has happened with chestnuts is that many growers in a variety of locations grow a few

plants to spread the genetic material onto different soils and elevations. If a problem develops at one site all is not lost.

The *Torreya* project is one of many years. I would appreciate updates on the grove at Highlands if you get additional information later. I know Jeff Zahner and hope to see him in September. It seems that it is likely *T. taxifolia* rather than *T. californica*, but that has not been demonstrated for sure to my knowledge.

It seems that an opportunity might exist for a good propagator to obtain a few cuttings of the Biltmore trees to clone them. I have not worked with the species and do not have the most hygienic conditions under which to work. I would think that all efforts would need to be made to control *Phytophthora*.

Best regards,  
Jack Johnston

---

Hi Connie,

Interesting that the Highlands grove is not *T. taxifolia*. When I saw the twig sample that you brought to dinner, it was not the same material that I saw in Florida. The leaflets were longer.

I drove to Cashiers to speak with Jeff Zahner about the trees at Highlands and he indicated that the best time to see them would be when the owners are not in residence. I will be seeing him in early Sept. and perhaps we can go over if that is convenient.

A note regarding Jeff: he showed some interest in growing *Stewartia ovata* on his property. This plant has been unavailable in the nursery trade for the most part, and Jeff may be at the point of wanting to grow it for seed production. Just 4 plants would produce a lot of seeds.

I have had contact with Lee.

Jack

From: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>  
Subject: Re: *Torreya taxifolia*  
Date: Wed, 16 Aug 2006 11:02:27 -0400

Jack -

I just touched down but will be back on the road, but want to respond quickly, then more reflection. I am really excited by your enthusiasm and expertise. Cuttings eventually may be the way to go. A couple days ago I spent a whole day with the *T. taxifolia* trees at the Biltmore, and as a whole they are much declined since I visited them a number of years ago. Partly landscaping issues perhaps. More on that later when I post the photos I took. But the main thing is that here is the tallies I got of seed production

Tree A ^ 1 seed  
Tree B ^ 1 seed  
Tree C ^ 21 seeds (but half are not full size so may not be viable)  
Tree D ^ 32 seeds, most look full size

There are about 16 trees with no seeds, some of course would be males, and 2 or the original plantings are in bad shape, dying possibly, with no stump sprouts remaining to shoot up.

Worse, this is the first time I have personally been able to inspect *T. taxifolia* seed, and I now see that the fruit is very different (more globe-like or fig-like than the longer *T. californica* (and I think *T. nucifera* too). That means that the grove we explored in Highlands is not *T. taxifolia*. I suspect *T. californica*. The stems are also quite a bit larger, which might owe both to being earlier planted and having less stressful life. Anyway, enough for now. Just wanted to let you know that the Highlands grove is not Florida *Torreya*. I will let the others know later when my photos from the Highlands visit and my Biltmore visit are up on the webiste.

Together for *Torreya*,  
Connie

On 8/15/06 6:28 AM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

After two sessions of reading about *Torreya* on the internet, I am excited! I saw the trees at Biltmore two years ago, trees in Florida this year, and have talked with Bob McCartney at Woodlanders about driving down for some plants this fall. I want to try to grow them from cuttings (and seeds as available).

For fun I can contact Jeff Zahner and see if it is possible to visit the trees at Highlands, and can easily visit the plantings at Smithgall Woods at Helen, Georgia where I have seen the plantings once. Since Highlands is close, who knows, it may be possible to try some cuttings one day.

By the way, when is a likely ripening date for the Biltmore seeds?

In my observations of this species, the growth seems slow.

There is an internet mention of plants at Atlanta Botanical Gardens producing seeds in pots. Do you know anything about this?

I have been experimenting for years with well draining mixes for growing plants. This is required for *Stewartia*. I think this is necessary for *Torreya* in pots.

Warm regards,  
Jack Johnston

—

Jack -

Great communication. May I post it on the comments page of *Torreya* Guardians website so that others may consider it? Briefly, the seeds of all the Biltmore trees are so ovate, and the seeds of all the wild sites of California *Torreya* I visited are so oblong, that it seemed certain that they must be *T. California*. But the best way to tell would be for someone to actually harvest the Highlands seeds (you?) and take a photo of them (as they were too far up for anyone to be able to touch). Better yet, if you could schedule a trip to the Biltmore. Make sure you call Bill Alexander in advance to have him put your name on the list for free access that day, as otherwise it costs \$38! If you have the time, it would be great if you could do a comparison between the two. As to foliage: I saw such strikingly different foliage among the California trees, even on the same individual, that, personally, I wouldn't even attempt to think that foliage would give a clue. Do visit the California pages on the *Torreya* Guardians website and see the foliage — and all the diverse habitats! Personally, I have much more faith in the utility of looking at California habitat for "Florida" *Torreya* than looking at anything in its historic range; again, because of the deep-time story I have.

Together for *Torreya*,  
Connie

On 8/29/06 9:00 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

When comparing two groups of plants at different sites, it is entirely possible as you know, for variability due to differences in genetic material. When you say that the Highlands and Biltmore populations are different, and are basing it on fruit shape alone, I do not think that is enough. For example, I collect *Stewartia* seeds and find all kinds of differences from one plant to another in capsule shape, leaf shape, and habit of the plants. If you are convinced that the two populations are different species, it should be based on several characteristics.

I have just returned from Oregon and was in a yard where an atypical Douglas fir was misidentified by a long time resident based on the bark and limb patterns. Had he looked at the cones, it would have been easy to correctly identify.

Brown leaves, twigs: Something similar can happen with Canadian hemlocks, and it is not the woolly adelgid problem.

Seed availability: assuming competition from squirrels, less than 100% harvest, and seeds that are non-viable, it remains to be seen what can be done this year. I hope your man on the site is aggressive in collecting. For example, I collected *Magnolia fraseri* before going to Oregon (early date for harvest) and when I returned, the seeds were gone from the wild sites. In this case, a 12 day delay in harvest would have meant a missed crop.

Cuttings: for a backyard hobbyist to try to grow *T. taxifolia* from cuttings would mean a probable loss of the cuttings. Have you considered asking the folks at Biltmore to grow cuttings for this effort and making them available? If they are willing, this should take little greenhouse space, and rooted cuttings can be available in 12 months.

Site requirements: checking with the folks already growing *Torreya* in Georgia as to the best site requirements will save making a lot of mistakes. For example, with magnolias it can generally be said that full sun is best, but some in the group like shade. I do not think that one can compare the California material to the Florida as to site requirements.

Future seed set at Biltmore: assuming that Biltmore will continue to provide seeds, an annual visit to the trees on a comparison to your mapping should be done. This will indicate which trees are producing fruit, if a tree does not produce, if new ones start setting seeds, and if there are deaths.  
Best regards,  
Jack Johnston

---

Hi Connie,

I would be interested in growing a few Florida Torreya provided that seeds are available. Perhaps the best way to get them into the Highlands area is through the Biological Station. The talks attract locals with some land who would perhaps be interested in planting them.

I will be in Highlands later in the week and will inquire with Jeff Zahner as to a good time to see the Highlands trees. The Highlands Plant conference offers plants for sale, and that would be a way to reach locals each year.

Jack Johnston

From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>  
CC: Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>  
Subject: Re: Torreya  
Date: Mon, 04 Sep 2006 08:01:28 -0400

Jack -

Apparently Cenozoic climate shift, and then the Ice Age, segmented the yews in North America into the Pacific Yew, the Canadian Yew, a yew in the glacial pocket refuge in northeastern Mexican mountains (where sweet gum trees also are found!) and the Florida yew. The Florida yew has only a tiny bit wider range than Florida Torreya, and it is endangered. I visited the Florida Yew in the Appalachian State Park, when I was visiting Torreya, and the trees were gorgeous and healthy looking, but I am told that they are no longer producing much seed, and when they do, the deer eat the seedlings. The area is no longer patrolled by old-time poachers who used to keep the deer population down. So if you get interested in taking on Florida Torreya, and getting that back into the Highlands area, that would be terrific. I have no idea as to where seed can be found.

For Torreya,  
Connie

On 9/1/06 5:27 AM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi,

While in Oregon last week I went into the Cascades to visit yew groves. Must be quite similar to Torreya in growth habit but is a smaller species. Brought home a few seeds.

I have no idea if I can see the Torreya at Highlands in Sept., but will check with Jeff Zahner to see if that is possible. The Highlands Plant Conference is Sept. 8-10.

Jack

---

On 9/15/06 9:28 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

I have asked Jeff Zahner twice about the Highlands trees, and he is willing to take me over when the family is not in residence which will be later in the year. I have asked him in Aug. and Sept. and he said the time is later. I don't know what that means.

I have plans to visit Jeff at his home this fall, so maybe can visit the trees then. I do not have a date when I can visit the trees, and it depends on Jeff.

Jack

---

Jack -

Thank you for the important info! I have added your comment to the "comments" page of the TorreyaGuardians website and am cc-ing Lee Barnes and Christa Frangiamore. I look forward to hearing (and posting from you) more details on the habitats you ultimately decide to plant them in and then how they are doing in years to come.

Together for Torreya,  
Connie

On 10/16/06 8:40 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi,

I visited Woodlanders Nursey today and purchased 3 *T. taxifolia* for \$16.50 each. Since these plants are endangered, they do not ship, but anyone can drive to the nursery after first placing an order by computer. They do not allow any walk-in sales. The plants are approximately 18 inches tall and look great. The inventory at the nursery is 60+ plants at this time. They are seedling grown. I am not aware of where the seed source. I do know that there are a lot of unusual trees planted around Aiken, and it is possible that they are growing there.

Jack Johnston

---

Jack -

Is the Blairstown planting of *taxifolia*? If so, could you write a little more about who and how that grove got started, as I will then post it in the comments section of our website. And if any of your own cuttings actually root and take hold and survive, please report on how you did it and what recommendations you have for others to follow, and then I'll post that.

Together for Torreya,  
connie

On 4/28/07 8:12 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi,

Buds are moving on Torreya. Saw a planting near Blairsville, about 20 trees, small, just bushes about 3 feet tall. Multistemmed, males all in bloom it seemed, or maybe old blooms. Females (3) with a few young fruits. Assumed females with no fruit since there were no flowers of any kind. Would make sex ratio about 1:1 for the planting. Cold must have damaged the fruit set.

Tiny cuttings taken last fall at my house have mostly died, but a couple are still green. It was some time before they went under shade cloth, and they have been outside since Oct.

Jack Johnston

---

Jack -

I suspect that the cuttings show no growth because they are putting all their effort into establishing root. I have seen California *torreya* saplings that put on zero new growth in a year, presumably because they are just maintaining in the very dense shade, and yet they seem okay.

Remember to regard the advice I got from Ron Determann at Atlanta Botanical Garden, which I posted on the rewilding page of the Torreya Guardians website:

Also important, Ron told me that Atlanta Botanical Garden has almost 100% success with germination of seed they produce there. Here is how they do it.

TIPS FOR GERMINATING SEED: Remove the flesh around the seed and immediately plant each seed *outdoors* about 1 inch deep in well-drained soil, covered with compost. He says the normal shifts in temperature during the winter in Atlanta and points north are important for stratifying them and breaking dormancy, and that a refrigerator is not

cold and variable enough. Pots outdoors would get the seed too cold in harsh climates, so in the ground (or in slightly raised beds) is best. They use "welded wire" beneath the planting and above to keep rodents away from the seeds. So this means that if we ever get access to more seeds, we need to distribute them right away for fall plantings in outdoor conditions. At Atlanta Botanical Garden, they germinate the seed under oaks, with the natural fungi in the soil. His experience suggests that it is best to remove the fresh seedlings from the germination beds pretty much as soon as you see them, and get them planted where you want them, and you will have better trees.

End of ABG.

I would also like to list you as a *Torreya taxifolia* propagator on our "Who Are Torreya Guardians?" web page. What location should I put for you? Are you growing the cuttings/seeds in Highlands NC?

I visited Torreya State Park 2 days ago, on the way to Tallahassee, which is where we are right now. Over Thanksgiving, I will be staying at a private nature sanctuary in the Panhandle, that planted 8 *T. taxifolia* seedlings in 2001, dispersed around the property. So they are now 6 years old. I already toured the site, and the trees that are still alive (5 of them) are very lush growth, about shoulder height, as they are in the sun, but have no seeds at all yet. One of the 5 is starting to turn yellow foliage. The owner tells me that she watered them devotedly during the drought, but this is what happens when the other ones died too. She says they seem to turn yellow and then finally die during a summer drought — no matter how much water she gives them.

For *torreya*,  
Connie

On 11/18/07 6:32 AM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

The interview with Orion Magazine regarding *Torreya* went well. I wish I had time to learn more about *Torreya* from the writer who seemed to know a great deal about them. What I learned was that deer will eat them and that it is unusual for homeowner to grow them.

I have some *Torreya* seeds washed and exposed to peat at room temperature in plastic bag, will chill later. I had hoped to share them but did not have permission from DNR who gave me permission to have them in the first place since it is an endangered species. Hope for good germination!

I have 3 cuttings green from the ones I took a year ago, but no growth. I find that interesting. My six plants are growing but did develop a few brown needles in the drought.

Should the seeds come up, I will plant a "grove" to try to establish a seed orchard. From what I have seen at Smithgall Woods, it takes about 5 years for seed production to start.

My only concern is that the seeds were harvested a bit green to keep the squirrels at bay.

Best regards,

Jack Johnston

—

Jack -

The cost of doing a website is huge!!!! We got a foundation grant to allow us to finance a new website (Web 2.0, higher tech) to support Michael's book, Thank God for Evolution <<http://thankgodforevolution.com>> and it cost us about \$25,000, not to mention the monthly maintenance costs forever of about \$1000 per month. Because I know how to do Web 1.0 myself, our main business website is totally free <<http://thegreatstory.org/index.html>>, as is, of course, Torreya Guardians., save for the annual \$200 or so fee for the organization "hosting" it. I estimate that it would have cost us well over \$100,000 over the 6 years we have had The Great Story website to pay someone to have it look exactly as it looks now. Cost prohibitive!

But here is what you can do: I would be happy to create a simple html page for mountain camelia on our Torreya Guardians site. The page would have a picture, some basic info and then, importantly, links to any more info you want to have up there or keep adding. You would simply produce all extra info using Microsoft Word, including inserting photos easily into MS Word. Then, you go up to the menu to "File" and scroll down to the "Print" button. A print dialogue box appears. Notice in the lower left corner it says "PDF" Scroll that button to "Save as pdf". Now your lovely word document is in pdf form. You email that to me, and I post it up on the website, which takes me about 2 minutes. So as long as you create all your stuff in pdf, a simple 1 page html page with links is all you need.

Connie

On 12/19/07 6:42 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

I have read the Torreya website with interest. The information is great--liming for instance. I need to do this to the seedlings I have in the ground.

I have thought of establishing a website pertaining to another rare plant, the mountain camellia. *Stewartia ovata*.

However, since I know nothing about doing this, can you fill me in a bit? How much is the annual cost? Did you use a standard template of some sort to establish the website?

My neighbor is having a website constructed for a business and is paying \$2500 for it. I would not be willing to pay that amount of money for a website. His annual cost is maybe \$150 if I recall correctly.

Thanks,  
Jack Johnston

Hi Lee,

It would be nice to have some seeds which would provide diversity to my planting.

Jack Johnston  
P.O. Box 151  
Lakemont, Ga 30552

Let me know if they are still available and if I need to send money for postage.

Thank you,

Jack Johnston

> Date: Wed, 5 Mar 2008 07:33:05 -0800  
> Subject: Torreya Guardians seed distribution-grp4  
> From: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
> To: [Connie@thegreatstory.org](mailto:Connie@thegreatstory.org)  
>  
> From: Lee Barnes [<mailto:lbarnes2@earthlink.net>]  
> Subject: 2008 Torreya Guardians Seed Distribution  
>  
> Dear Torreya Guardians,  
> We are pleased to again offer packets of *Torreya taxifolia*  
> (Florida Stinking Cedar) seed from the 2007 seed harvest at Biltmore Estate  
> in Asheville, NC. We thank Bill Alexander and his staff for collecting and  
> sharing seeds for this grassroots distribution project. We are releasing 20  
> packets, each with 5 male and 5 female seeds to allow for better  
> pollination. We are first offering seeds to the 2006 Distribution volunteers  
> since most of them experienced low germination rates from refrigerator  
> stored seeds. Seeds are currently being stored under natural temperatures  
> but should be requested as soon as possible due to my recovery from hip  
> surgery in mid-March.  
> Thanks to Connie Barlow for her detailed notes taken during her site visit  
> in December 2007 to the Atlanta Botanical Gardens. Ron Determann's generous  
> sharing of their highly successful germination procedures is available from  
> our website <http://www.torreyaguardians.org/propagate.html>. Connie also has  
> provided additional photographs and additional information on rooting  
> cuttings, as well as, more info on site selection, shading and need for  
> periodic liming. I will provide copies of this information with each  
> mailing.  
> Key to successful germination is cold stratification to duplicate nature's  
> cycles in ground beds that get the full range of daily temperature cycles  
> (freeze/thaw) vs. constant 40-45 degree F. temperature storage in a  
> refrigerator. The seeds to be distributed have only been partially  
> stratified so you will need to plant them in protected beds where they



- > receive natural temperatures for a month or two. Simple wire screening is
- > recommended to protect from squirrels.
- > Please email your requests to me and provide complete shipping information.
- > Connie and I are donating all mailing and packing costs and ask that you
- > occasionally report germination status, and plant growth, fruiting, and seed
- > production. Volunteers need to be committed for 10-15 years before good seed
- > production is expected and be willing to further distribute seeds.
- > Thank you for your interest in preserving our national botanical treasure
- > Torreya-
- > Happy Trails, Lee
- >
- > PS from Connie:
- >
- > 1. This summer, Orion Magazine will be publishing a feature article on
- > Torreya Guardians work in a time of climate change.
- >
- > 2. Also, do periodically check the "comments" page of our website to see
- > what's happening, along with new ideas:
- > <<http://www.torreyaguardians.org/comments.html>>
- >
- > 3. Watch the rewilding page too, especially the July 2007 post I made there
- > about Atlanta Botanical Gardens looking for INSTITUTIONS to send seeds and
- > seedlings to. They've got a huge inventory. Unlike Torreya Guardians, they
- > cannot send seeds to individuals, but nature centers and botanical gardens
- > should contact Ron Determann at Atlanta Botanical Garden directly to
- > participate.
- > <<http://www.torreyaguardians.org/rewilding.html>>
- >
- > Lee Barnes
- > Ph.D. Environmental Horticulture
- > Land Stewardship Consulting/ Stewardship Dowsing
- > Unique Mountain Properties- <http://www.uniquemountainproperties.com>
- > PO Box 1303, Waynesville NC 28786
- > 828-452-5716 home office/fax
- > 828-646-1593 cell

—

Hi Connie,

A more complete answer to this note will come when I get a moment. Am working 60 hours in 6 days and am sort on sleep at the moment. Jack

- > Date: Fri, 9 May 2008 14:34:57 -0500
- > Subject: Audubon wants to do Highlands NC photoshoot torreya
- > From: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)
- > To: [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com); [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net); [balexander@biltmore.com](mailto:balexander@biltmore.com)
- > CC: [abogado28144@hotmail.com](mailto:abogado28144@hotmail.com); [joehollis@excite.com](mailto:joehollis@excite.com); [jhooley@bellsouth.net](mailto:jhooley@bellsouth.net)
- >
- > Jack and Lee and Bill -
- >
- > I sent the 2 Audubon folks managing this story the same email I sent
- > everyone on my Torreya list, and got the emails I pasted in at bottom:
- >
- > So the Audubon photoshoot will happen up in Highlands/Cashiers.
- >
- > Jack and Lee - Let's try for a mini-rewilding. Could you two use your
- > connections to get the locals excited about this? Make sure Jeff Zahner
- > knows and Christina Frangione and anyone else you think should be involved,
- > and see what good ideas they might have and what they might volunteer to do.
- > And figure out whose private forested land(s) would make the most sense to
- > have come on board to be the location(s). My personal preference would be
- > land with a lot of variation in slope and aspect so that we could try out
- > different locations, but all near enough to interpollinate. Definitely some
- > very steep slope, mimicking the areas in California where T. californica

> seemed to have the most success hanging in there on its own.  
>  
> Jack - Could you contact Aiken nursery and see how many T. taxifolia are  
> left and how much it would cost to purchase them all? Also, note that if  
> you get the Nature Center in Highlands involved, they could request Atlanta  
> Botanical Garden to donate a bunch of seedlings, so that we could have both  
> a repository situation (Nature Center lands) and rewilding on private  
> forested lands happen at the same time for the same photoshoot. So both  
> radical and moderate approaches would be working together.  
>  
> Lee - Do any of our 2005 seed distribuees have actual seedlings that they  
> might like to contribute to this effort -- and plan to attend themselves to  
> participate in the planting?  
>  
> Anybody have any other ideas of what we ought to be doing in preparation and  
> how to get other people excited about participating in this happening  
> (sometime between July 30 and Aug 1)?  
>  
> Note: I am cc-ing the folks I am aware of who are Torreya Guardians and who  
> also live in North Carolina.  
>  
> Note: A friend of mine forwarded my original long email to a friend of his  
> who is working nationally with the Girl Scouts, so I might be hearing about  
> interest from GS at the national level.  
>  
> Together for Torreya,  
> Connie  
>  
> \_\_\_\_\_  
>  
> Hi, Connie,  
> Thanks for the information. This sounds like a great thing to shoot. We are  
> now working on getting a photographer who is available to come to the  
> Highlands/Cashier site during your three-day window. We'll be back in touch  
> about this soon.  
>  
> Have a nice weekend.  
>  
> Jerry  
> "GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)>  
> (managing editor at Audubon)  
>  
>  
> On 5/9/08 12:31 PM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:  
>  
> > Hi Connie,  
> > Your plan is very exciting! Please keep me posted. I'll be getting  
> > into this story in a big way in June, so I'll certainly be in touch in  
> > a few weeks.  
> > Thanks,  
> > Janet  
>  
> (Janet is the freelance writing who will be writing the article.)

—  
Jack -

Hey, I went on google maps and looked at aerial view of the Lakemont GA area. It seems that area would have been right on the migratory pathway for trees moving to and fro Appalachia, especially before the Savannah River captured the Chatooga. A couple responses to your email:

1. I will go online today and purchase 30 trees that Woodlanders has offered, and will tell them that you will schedule a June pickup with them directly.

2. I agree that the trees need some sun in order to grow and to eventually set seed. What would be ideal would be a natural gap occurring because of a recent treefall. See these photos on this page of TorreyaGuardians to see the vigorous seedlings of *T. californica* at just such a site in California: Photos 1a and 1b at: <http://www.torreyaguardians.org/swanton.html>

3. Location: Outside of a very shady floodplains, I never ran into a *Torreya californica* that was not on a very steep slope. I do not know why. Perhaps opportunities for water to percolate from higher ground during a drought? All I know is that from my time with the trees, I see that steep is good and the very steepest is ideal. My preferences for this planting would be to make it as rewilding as possible: that is, with an eye for the longterm: for the trees to be able to migrate upslope and northward on their own, with the help of squirrels. So that the plantings are not on isolated islands of suitable terrain. That's why the big mountains of North Carolina seemed more ideal to me than the foothills at this peak stage of an interglacial.

4. Even though state lines are arbitrary, right now "Georgia" is part of the "native" habitat for *Torreya*, while "North Carolina" is beyond the bounds. Thus, the only really radical plantings from a popular perspective would be rewilding in North Carolina. What is your Otto site like?

5. Since we'll have 31 seedlings to plant, we could easily plant in several locations.

6. Let us both continue to put out feelers for folks located in Highlands/Cashiers to volunteer to take on the task of looking for enthusiastic private land owners with large properties of steep mountain terrain abutting other properties that are also steep and mostly wild.

Together for Torreya,  
Connie

On 5/15/08 9:59 AM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

Yes, I am sure that I could run over to Bob's and pick up the *Torreya* in June. It would be a nice trip for me.

As you know I do not live at Highlands. Also, keep in mind that *Torreya* does not grow in a shaded forest unless there are canopy gaps. It would be somewhat pointless to try to get them to compete and would be a waste of money in my opinion. The *Torreya* at Smithgall do live in the shade, but do not set seeds and have stunted growth. This environment is even near the edge where more light is available. So I think they need full sun to get going, much as an American chestnut does.

However, if there are planting options needed, I own 7 acres of steep land here at the house, 3.6 acres of sloped land 3 miles from the house, and 9 acres of forested land at Otto, NC which is opposite the Highlands Plateau to the west.

If no options for planting the plants looks good, let me know and I can prepare a gap (space) to accommodate them if you want them planted at any of the locations I mentioned. The two Georgia properties are at Lakemont, 30552. One is near Lake Rabun and the other is east 3 miles.

However, of course there are landowners in Highlands who might be interested in having the plants.

I have seeds planted that should provide me with seedlings next year.

1. Let us select a date in June for me to go to Bob's for the plants.
2. If I am to plant any of them on my land, I must know in June in order to prepare a place.

Best regards,  
Jack

> Date: Thu, 15 May 2008 08:55:52 -0400

> Subject: Re: Torreya photo shoot

> From: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)

> To: [JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org); [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com); [mia\\_tgs@yahoo.com](mailto:mia_tgs@yahoo.com); [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)

> CC: [lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com); [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net); [cfrangiamore@mindspring.com](mailto:cfrangiamore@mindspring.com); [LarsonStudio@cox.net](mailto:LarsonStudio@cox.net); [balexander@biltmore.com](mailto:balexander@biltmore.com); [pswhite@unc.edu](mailto:pswhite@unc.edu); [info@woodlanders.net](mailto:info@woodlanders.net)

>

> Jerry -

>

> As our assistant, Mia Van Meter, already responded, we have July 30 on our

> itinerary to be in Highlands NC for the shoot of rewilding *Torreya taxifolia*

> to the southern Appalachians.

>  
> Note to all: I received this response from Woodlander's Nursery in Aiken  
> SC:  
>  
> "Ms Barlow: We could probably let you have 30 *Torreya taxifolia* in one  
> gallon size containers. These can be ordered on-line and paid with credit  
> card or when picked up. Let us know when they would be picked up. Thank  
> you for the information you sent. Bob McCartney, Woodlanders, Inc."  
>  
> So, question for Jack (or anyone else): Do you have a vehicle capable of  
> picking up 30 gallon containers of torreyas and taking them to Highlands? I  
> will be purchasing all 30 trees online to reserve them for our Highlands  
> planting.  
>  
> As I have no familiarity with Highlands/Cashiers, we're going to need to  
> rely on Jack Johnston, Lee Barnes, or Christa Frangiamore to communicate  
> with one another and get things rolling there to locate one or more private  
> property owners who would be thrilled to have the rewilding happen on their  
> land (and offer to allow the trees to be monitored and minimally managed on  
> their lands in perpetuity).  
>  
> Together for Torreya,  
> Connie Barlow  
>  
>

---

Jack -

Wow! I am impressed with all the possibilities you have turned up thus far. Bravo! No need to make any final decisions on how many trees go to which sites until you think you've tested the waters fully. Keep me posted as the situation develops. We'll have a total of 31 potted seedlings to work with (30 from Woodlanders and the lovely one I have with me). I would imagine that an ideal situation would be to distribute them among 2 or 3 different properties, but probably not any more, as we should expect some of the seedlings to fail, especially in somewhat wild sites. If one property is very large, with several distinctive habitats that we'd like to try, and if ownership interest in long-term conservation efforts along these lines seems secure, then maybe it would make sense to put most of the eggs in one basket.

Question: I found online the Highlands Plateau Audubon Society. At the bottom of this webpage gives the names and phones of all the officers:

<http://www.main.nc.us/nas-hpc/Newsletter.html>

1. Let's get the word out through them immediately about what our search for suitable private properties and the Audubon photo shoot date. Do you want to contact them? Or I will be happy to try to call several of them. June 10 the Orion Magazine article on *Torreya taxifolia* becomes freely available online, so it will be easier to fill people in on the opportunity (and the controversy) when we can tell them to go there, in addition to the Torreya Guardians website.

2. Also, let's see if we can have the Highlands Plateau Audubon Society get directly involved in the planting: to schedule a field trip for volunteers to bring their shovels and garden tools to help with planting. Perhaps the most enthusiastic and horticulturally skilled among them to go onsite (with you? With Jeff?) one or two weeks ahead of time in order to determine and mark sites for planting each of the trees, so that during the photoshoot we aren't scrambling to find and agree on the best mixes and diversity of specific sites.

#### PICK-UP AT WOODLANDERS:

I sent the check to them a week ago, but it hasn't cleared my bank account yet. Bob is expecting you to contact him to arrange a time to pick up the 30 plants in June. As to timing of planting, we have to wait for the Audubon photoshoot. My potted seedling that I have been carrying in our van all over the country since I got it in December does just fine for 3 or 4 days without water, especially if I put it in semishade. I tend to put it out in full sun only when I know I can water it no less often than every third day. Otherwise, I stick it under a yew or a rhodie in lots of shade and it does just fine waiting for me to come back and give it another hit of sun.

Let me know if you or I should contact the Highlands Audubon group.

Together for Torreya,  
Connie

On 5/28/08 1:59 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

Today I met a young man who is working for Jeff Zahner for the summer. He has contact with a trust property in the Highlands area, and it sounded as if that trust is looking for native plant material. It is definitely a lead to follow for a Torreya site.

Jack

On 5/27/08 6:26 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

I assume that you have sent payment for Torreya per your recent e-mail to Bob McCartney at Woodlander's Nursery and that it is okay to drive there to get them.

I can arrange that in early June.

My next question is this--should I go ahead and plant some of them? Thoughts about planting sites are as follows:

1. My property at Otto, NC. I have a wooded slope and can thin some trees.
2. Brent Martin's property north of Franklin: He maybe has room for 4 or 5 trees if that, and I have not approached him regarding this. He lives next to a woods.
3. Ralph Preston's property north of Franklin, NC. Ralph has a full sun environment which is great I think, and he owns the adjoining 400 acres.
4. Paul Vonk's site at Scaly Mountain, NC. High elevation and good habitat in a partial forest opening. Paul owns about 15 acres.
5. Sites of your choosing, wherever that is. The Highlands Biological Station has Torreya on site, and I am not sure which one it is. They have limited space and a lot of shade.
6. National Forest land is off limits as are public preserves.
7. I know Jeff Zahner who has land at Highlands and am willing to contact him regarding a planting there. He is the only one I know who lives at Highlands with good land (some sun).

My thought is that unless you have specific plans for the plants, once they come from the nursery the best thing is to get them in the ground. They will be in one gallon pots which will require constant water (daily). In the ground that would not be the case.

Can you instruct me as to how to proceed once the plants arrive at my house?

Jack

On 6/17/08 8:41 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

Today I noticed 7 Torreya sprouting from seeds planted last fall in one instance and again in late winter. At harvest time I decided to chill some seeds in the refrigerator to see if that would improve germination and did not plant them until the coldest of our weather had passed.

The seedlings are about 3 inches tall. I'll water them in the bed during the growing season.

If the Audubon photographer makes it to my house, this feature will be of possible interest to see the seedlings coming up.

Jack

Hi Connie,

Tonight is not a good night to call due to a before daylight work schedule tomorrow. I'm not surprised at the response from Highlands Audubon. With building lots going for \$500,000 and up, with a desire for either a view (cutting trees), or privacy (cutting no trees) plus big houses, there is little room to plant anything. The area has many affluent people who do not have a clue about anything environmental.

Maybe we can talk tomorrow night at 9 p.m. If this is not a good time let me know.

Jack

> Date: Wed, 18 Jun 2008 11:17:23 -0400  
> Subject: Highlands Plateau Audubon not interested in Torreya effort  
> From: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
> To: [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)  
>  
> Hi Jack -  
>  
> Great news on the sprouted seedlings!!!!!!!  
>  
> I talked on the phone with the main guy at Highlands Plateau Audubon. They  
> are a small group and mostly do birds. He said it would take a minimum of 6  
> months for them to research the issue to be able to decide anything. He  
> suggested we contact the Land Trust for Highlands/Cashiers, or the  
> Jackson/Macon County Conservation Alliance.  
>  
> Please give me a call at 850-420-8002, I am on eastern time. Call anytime.  
> It is my cell and I'll keep it with me.  
>  
> Connie  
> --  
>

---

Hi Connie,

Waynesville is not far from Highlands, and in my opinion would be a great place for Torreya. From Highlands you should be able to drive there in a little over one hour certainly less than two.

Keep in mind that I have land at Otto, NC which is 30 miles west of Highlands if that. There is space for Torreya if you cannot find the situation you want.

Then there is that place at Cullowhee I forwarded info to you--have not followed up on that.

I do a Stewartia viewing walk on Fri. then should have a bit of time over the weekend.

Jack

> Date: Wed, 18 Jun 2008 20:15:52 -0400  
> Subject: Re: Torreya seedlings for Waynesville NC  
> From: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
> To: [cdayton@goldengate.net](mailto:cdayton@goldengate.net)  
> CC: [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com); [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)  
>  
> Chuck and Sara -  
>  
> Waynesville would be terrific too! Thank you for volunteering to steward  
> immigrant T. taxifolia on your land! As it turns out, Michael and I need to  
> drive from Highlands NC to Charlottesville VA, so Waynesville could be on  
> our way. We need to be in Charlottesville by Aug 2, so we could be in  
> Waynesville July 31 or Aug 1 -- a day or two after the planting in Highlands  
> area.  
>  
> Jack Johnston will be picking up at the S. Carolina nursery 30 potted  
> seedlings of T. taxifolia. Plus, I have one that Atlanta Botanical Garden  
> gave me last December that I've been carrying in our van for a year, waiting  
> to get back to North Carolina.  
>  
> I would imagine that it makes sense to allocate no less than six specimens  
> for planting on your land, as we need to ensure a male/female mix for future  
> seed production. But we need to get a better sense of the site conditions.  
>  
> QUESTION: Could you explain more about your landscape? How much acreage,  
> what are the slope and aspect options, what kind of forest subhabitats?  
> What are the adjacent lands like--that is, assuming that in the next half  
> century the squirrels are capable of moving seeds from your trees to wider  
> area. That is, would your land be a good place to launch immigrants to  
> continue spreading on their own as the centuries go by?

>  
> Important: Here is what you need to do to assess your land and begin to  
> scope out where best to plant:  
>  
> 1. Read this entire page to get a sense of how Torreya's cousin grows in the  
> wild in California:  
>  
> <http://www.torreyaguardians.org/california.html>  
>  
> 2. Then click on the 4 site visit internal links on that same page above, so  
> you can see the photo essays on where the trees actually grow. Note, one  
> modification I have in my views since visiting California is that, T.  
> taxifolia seedlings might do very well beneath a semi-open deciduous canopy,  
> as its evergreen status enables it to photosynthesize in warm conditions  
> when deciduous leaves are gone.  
>  
> 3. Then read this page on propagation advice, and especially notice the  
> information about liming. I did some liming on private Torreya plants in  
> northern Florida -- plants that looked to be dying, and the landowner wrote  
> me an enthusiastic email about how they recovered well. Also, one thing I  
> need to add to that page is the importance of not trimming off the stump  
> sprouts. Even young trees will grow stump sprouts--crucial for taking over  
> if the main stem is crushed or otherwise killed for some reason.  
>  
> <http://www.torreyaguardians.org/propagate.html>  
>  
> 4. Overall, my sense is the steeper the better, especially if there is some  
> good upslope area from which water can seep down even in dry spells. East  
> or west facing would be better than south-facing probably. Ideally, you  
> could plant the specimens within pollination distance of one another, mixed  
> in with forest, so that it resembles something natural, but each seedling in  
> a recent treefall area or some place that can get partial sunlight. You  
> might need to intervene somewhat as they grow to ensure that they don't lose  
> their sunlight.  
>  
> 5. Spread the word, and let me know if other private landowners are  
> interested. The main thing we need right now is at least one dedicated,  
> enthusiastic landowner of forested lands in western NC. Highlands,  
> apparently, we don't really have one yet. Jack Johnston in northern Georgia  
> already has seedlings planted on his land, and he just reported to me that  
> the 2007 Biltmore seeds he received, 7 just sprouted within the last few  
> days! So he has even more on the way.  
>  
> OVERALL, I'm very exciting about the prospect of your invitation assist T.  
> taxifolia in moving north via your land, especially since you two have been  
> on our Torreya Guardians email list for some time now.  
>  
> Do keep in touch as you start contemplating whether and where the plantings  
> might actually go.  
>  
> Together for Torreya,  
> Connie  
>  
>  
> On 6/18/08 2:32 PM, "Charles Dayton" <[cdayton@goldengate.net](mailto:cdayton@goldengate.net)> wrote:  
>  
>> I meant OUR private land.  
>>  
>> How would interested landowners know about this? I'm sure we know some who  
>> would be more than willing.  
>>  
>> Just let us know what we need to do,  
>>  
>> Chuck Dayton/ Sara Evans

> >  
> >  
> > On 6/18/08 8:57 AM, "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
> >  
> >> Hello Chuck and Sara -  
> >>  
> >> I am cc-ing Lee Barnes, who is in charge of distributing seeds we get from  
> >> the Biltmore. Lee lives in Waynesville himself, and does a lot of landscape  
> >> consulting there. So I suspect that if there were private lands  
> >> possibilities there, he would already have heard from interested landowners.  
> >>  
> >> Thank you for your interest and suggestion.  
> >>  
> >> Together for Torreya,  
> >> Connie  
> >>  
> >>  
> >> On 6/14/08 8:18 AM, "Charles Dayton" <[cdayton@goldengate.net](mailto:cdayton@goldengate.net)> wrote:  
> >>  
> >>> Connie.  
> >>> We live near Waynesville and have followed this project. Any chance of  
> >>> getting seedlings at the Cornille Bryant native garden in Junaluska, or on  
> >>> private lands in the mountains near Waynesville, at elevation 3,500? There  
> >>> is less rainfall than at Highlands. Is that critical?  
> >>>  
> >>> Chuck Dayton  
> >>> Sara Evans.  
> >>>  
> >>>  
> >>> On 6/13/08 11:53 AM, "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
> >>>  
> >>>> Hello Torreya Guardians  
> >>>>  
> >>>> 1. FREE DOWNLOAD the article featuring Torreya Guardians, "Taking Wildness  
> >>>> in Hand: Rescuing Species" (in May/June 2008 issue of Orion Magazine). It  
> >>>> is a superb look at the human side of the controversy over assisted  
> >>>> migration of species, featuring Torreya taxifolia. (it is an interactive  
> >>>> site, so you can add your comment if you wish.) Go to:  
> >>>>  
> >>>> <http://www.orionmagazine.org/index.php/articles/article/2966/>  
> >>>>  
> >>>> 2. JULY 30 T. Taxifolia TREE PLANTING IN HIGHLANDS NC. If any of you have  
> >>>> friends who live near Highlands, NC, please let them know about our  
> >>>> scheduled planting of 31 seedlings on private lands on July 30 in the  
> >>>> Highlands/Cashiers area of NC. Exact sites for planting still being  
> >>>> discussed. A photographer for Audubon Magazine will be there, as Audubon  
> >>>> will be doing a story on assisted migration. Watch this page on our  
> >>>> website, as I post more details as the time approaches:  
> >>>>  
> >>>> <http://www.torreyaguardians.org/rewilding.html>  
> >>>>  
> >>>> Together for Torreya,  
> >>>> Connie Barlow  
> >>>>  
> >>>>  
> >>>>  
> >

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Date: Mon, 30 Jun 2008 15:12:14 -0400  
Subject: Re: Evans site for Torreya  
From: [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
To: [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net); [s-evan@umn.edu](mailto:s-evan@umn.edu); [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)  
CC: [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)



Lee -

Great job! The photos really help to see how good the possibilities are. I like the idea of planting in different areas, just as you suggest. Could you please send the original email with the photos to Janet Marinelli at Audubon, who is cc-d above? She will be writing the story.

Together for Torreya,  
Connie

On 6/30/08 12:10 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Friends,

I just made a site visit to the Evan's property on Eagles Nest Mountain in Waynesville, NC. I see at least three possible planting areas: 1) in cove area just west of house down to road; 2) possible planting below front of house (sunnier area); and 3) slope northeast and above house (smaller area, sunnier, dryer). There is enough area to plant 10-30 plants in 2-3 microclimates. The paths are narrow but I feel we could go in to plant without noticeable impact but still get in for photo shoot and maintenance, etc.

The cove area is the largest with numerous microclimate area and gentle to steep slopes. There are major rock outcrops on the western part of the property and a few smaller outcrops at the top of the cove. Area below house smaller but could have 6-12 plants. I'm thinking 10-20 feet between transplants at this time. I look forward to walking the property with the owners to get their input.

Happy Trails, Lee

Here are the Evans site for Torreya photos that I want to share with you.  
I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

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On 7/2/08 10:04 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi All,

I am just returned from Woodlander's Nursery and have 30 Torreya taxifolia in one gallon pots in my yard. The round trip was 406 miles. It took a lot of time, but I had a nice visit with Bob McCartney. He had additional plants if anyone wants more. I would guess he had about 10 that were a touch scruffy from this seed lot, then about 10 more that looked great but were younger, and a big pot of seedlings that represents another 15 plants maybe.

He took me to see his seed plants which are on a private estate. There are 3 cutting grown plants, one male and 2 females. One of the females was smashed by a falling oak limb and has not recovered. The two females are only about 3 feet tall and sprawl since they are cutting grown. The male is twice that size. It is so dry that the one female with seeds is aborting most of them. Since Bob has no way to water it, there may not be seeds this year, or certainly only a few.

I'll share a bit of info regarding setting out the plants. I have found it best to get rid of all the material in the pot and try to get the roots in contact with dirt. Once the plant is in the ground it is difficult to water through the bark mix used for growing. I lost a plant last summer even though I was watering. When I pulled it up to examine the roots it was readily apparent that the water was not penetrating well, and that the plant had died from lack of water.

Also, I am concerned about these 30 plants being planted in the shade. It is probably easier for the plants to survive the dry weather with shade, but I know they will not prosper unless light reaches the crowns. I have ample evidence of how important light is due to observations of Stewartia ovata that I grow. The plants put out leaves and grow a little in the shade, but given sun they grow fast. I think it is the same with Torreya.

It is interesting to compare the seedlings I brought back today with the ones I have had in the ground for two years. The ones in the ground are not much taller, but they have a larger stem diameter.

I asked Bob how long he thought it might take for seedlings to flower. He seemed to think about 10

years. However, the seedlings are already 3 years old, and given good conditions maybe less than 10 years?

Best,  
Jack Johnston

—

Hi Connie,

The land trust at Highlands is the way to go with a Torrey planting. Maybe next year.

Your plants look very good. They got some water from above (close to 2 inches) which helped everything. I think I have 16 baby Torreys coming up! Some are just 2 inches tall.

On the day of your arrival I will be working ER and arriving home at 7:45 p.m. I expect you will be parked in my driveway when I arrive or if not shortly thereafter. You will see the Torrey in one gallon pots near a handrail leading to the back steps (which is the main entrance to the house).

Jack

Date: Thu, 10 Jul 2008 13:42:23 -0400  
Subject: Re: assisted migration discussion Highlands NC  
From: [cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)  
To: [djshure@bellsouth.net](mailto:djshure@bellsouth.net)  
CC: [hellerdb2@yahoo.com](mailto:hellerdb2@yahoo.com); [jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)

Re: Assisted Migration for Torrey taxifolia (endangered conifer tree) from Ice Age pocket refuge in northern Florida to western North Carolina.

Hello Don -

I appreciate the time you have taken to discuss the issue and to respond to me. Quite understandable that there would be mixed responses to the general idea of assisted migration in your Audubon group. Thank you for reaching out to the wider conservation community there in Highlands/Cashiers. I have included Mercedes Heller on the cc here, as you suggested.

Update on our project: We won't be doing anything in Highlands or Cashiers this year. We have 2 private landowners in Waynesville NC that are on board. But in future years when we have access to more seeds/seedlings, one of us Torrey Guardians will definitely get in touch with Mercedes Heller to learn if any land stewards in your area would like to participate.

Connie Barlow  
<http://www.torreyguardians.org> <<http://www.torreyguardians.org/>>

On 7/8/08 9:00 PM, "[djshure@bellsouth.net](mailto:djshure@bellsouth.net)" <[djshure@bellsouth.net](mailto:djshure@bellsouth.net)> wrote:

Connie,

I wanted to bring you up to date concerning your earlier request for our Chapter's participation in your upcoming planting of Torrey taxifolia. As President of the Highlands Plateau Audubon Society, I circulated your email to all of our Board Members and asked for feedback about the request. The initial concerns centered on timing and the fact that the long-term commitment required in maintaining the planted seedlings was rather tangential to our current mission as an Audubon Chapter. Some of our Board were also quite mixed in their response to the concept of Assisted Migration. We actually discussed the issue again at a monthly Board Meeting on July 1 at which time we concluded that we were unable to meet your request. It is important that you be aware of the time and thought that we devoted to your request as well as the fact that some of the Board remain supportive of what you are proposing as a conservation initiative. We wish you well as you proceed forward despite the reservations outlined in the Orion article.

Brock Hutchins indicated you had decided to begin looking in north Georgia for an alternate planting location on private land. Have you been successful with these efforts? My reason for asking is that while our Chapter

deliberated on how to respond, I took the liberty of contacting other organizations in the Highlands-Cashiers area to indicate what you were preparing to do and to see if interest existed to possibly work with you on your project. The Land Stewards under the direction of Mercedes Heller have expressed a definite interest in the project. This organization involves all of the major groups of land stewards in our area of North Carolina and was really the best alternative in seeking help with the plantings. Mercedes is also serving as President of the Highlands-Cashiers Land Trust.

I am recommending that you get in touch with Mercedes ( [hellerdb2@yahoo.com](mailto:hellerdb2@yahoo.com) ) to discuss where things stand. If it is too late for this event then perhaps they might be of help with plantings in the future. Good luck with your efforts. We will look forward to reading the upcoming article in Audubon about your role in Assisted Migration. Please pass this on to Jack Johnston so he is aware of what happened. Thanks!

Don Shure

—

Jack -

Okay if I add the text of your email as a new comment onto our rewilding comments page? I just put Lee's latest up a day or so ago.

<http://www.torreyaguardians.org/rewilding.html>

Connie

On 8/5/08 9:44 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi Connie,

Now that you have visited my home you can imagine seeing me carry water up the hill to the Torrey and to the seedlings coming up. Still no rain. I looked at the photos on the website and realized that anyone seeing it would sense a spirit of playful purpose in doing what we did. Nice touch.

I go to see Russell Regnery at his home on Thurs. He was able to purchase a few Torrey at Woodlander's. 4 I think. I left a note for Bob McCartney to send me some too knowing they would be smaller than the ones we planted. I do not know how many. I hope to get them to Jeff Zahner. I'll have enough from the seedlings that are coming up. I pick up the plants on Thurs. Maybe Bob had a half dozen.

My best to Michael,  
Jack

—

Jack -

Wow! I added your comment to the rewilding page of the website (in chronological order). Let me know the elevation of your land and also the number of 5-year old seedlings that were your initial planting, and I'll add those stats into your October 12 posted comment.

<http://www.torreyaguardians.org/rewilding.html>

Best,  
Connie

On 10/12/08 8:33 PM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:

Hi,

Today (Oct. 12) 21 Torrey taxifolia were planted in my yard in a location that will provide sun. The seedlings are in red clay soil which has been amended with lime. Germination was in mid summer and the seedlings averaged about 5 inches tall. Two seedlings died (root rot suspected) in the germination bed. All 21 seedlings were from seeds harvested in late Sept. 2007. The first group was planted immediately without removal of seed coats. The second group was allowed to stay in a warm basement until the seed coats softened. The seed coats were removed and the seeds were washed in soapy water and rinsed. In the two beds there was somewhat better

germination when the seed coats had been removed. The harvest date of late Sept. was chosen to get seeds before squirrels. Ideally it would have been better to wait until an October harvest date.

Torreya planted at 5 years of age and now in the ground two years withstood 22 days without rainfall and water. Following a rain event of 5 inches, three of seven plants showed a few twigs with brown needles. I suspect lack of lime due to leaching by rainwater.

Jack Johnston

---

Janet -

Great to hear from you. I love Audubon magazine, so am glad they are covering it.

1. Lee Barnes will be distributing to Torreya Guardians about 200 seeds that Biltmore Gardens in Asheville gave us this fall. Will largely go to the same institutions and individuals that we sent Biltmore seeds to in 2005, but with terribly low germination rate. Lee lives west of Asheville and is locally very involved in the Katuna Bioregion movement. I am cc-ing him.

2. You should be aware that Michelle Nijhuis <[nijhuis@yahoo.com](mailto:nijhuis@yahoo.com)> has done a major story on Assisted Migration, featuring Torreya and our work, for the Summer 2008 issue of Orion. She went onsite, beginning at the Atlanta Botanical Garden, going to the "native" habitat in the Apalachicola, and then visiting guardians in North Carolina.

3. Something that hadn't developed by the time that Michelle submitted her complete article is that I got a bite from a conservationist in Calif who is now thinking along the same lines for doing assisted migration for the Joshua Tree out in the Mojave Desert. For that plant, there are already reports filed that it can't migrate to keep up with climate change. So as not to overlap with Michelle and Orion, you might want to do the sitework on the Joshua Tree as your poster plant for assisted migration. Here is email correspondence on latter:

In Feb 2007 I sent this email to <[crn@faultline.org](mailto:crn@faultline.org)>, based on a blog I saw he had posted on how Joshua Tree had lost their seed disperser (extinct ground sloths) and thus might need help distributing. I found the blog by googling.

<[http://faultline.org/index.php/site/comments/ground\\_truthing/](http://faultline.org/index.php/site/comments/ground_truthing/)>

<<http://travel.nytimes.com/2007/05/20/travel/tmagazine/07well-29palms-t.html>>

Chris -

Hello, this is Connie Barlow, author of "Ghosts of Evolution: Nonsensical Fruit, Missing Partners, and Other Ecological Anachronisms." I am the initiator and webmaster of <<http://www.torreyaguardians.org>> and, as a result, was interviewed for the Jan 2007 issue of Conservation magazine that opened up the topic of assisted migration for plants in a time of global warming. Our Torreya Guardians have already been doing that for our beloved tree. Check us out. Torreya taxifolia is the poster child for assisted migration in the eastern U.S., Joshua tree certainly in the north. I've been doing powerpoint programs around the country advocated assisted migration for Torreya, and now that I learned about Joshua Tree, for that too.

Check out this page I put up on the website for direct hotlink access to the key articles on this issue:

<<http://www.torreyaguardians.org/assisted-migration.html>>

For Torreya,  
Connie

ON 1/18/08 I RECEIVED THIS REPLY FROM HIM:

Connie;

Sorry it's been a while since I've been in touch. Thought I should let you know that I made brief mention of your project in a post today on Joshua trees:

[http://faultline.org/index.php/site/comments/ground\\_truthing/](http://faultline.org/index.php/site/comments/ground_truthing/)

Hope you're well. I'd like to talk to you at some point soon about an interview for my fledgling series of podcasts, of which I have done precisely one.

- Chris

---

One final suggestion for Janet: Make sure you peruse the "assisted migration page" on our Torreya website, for a list of internet articles that mention it:

<<http://www.torreyaguardians.org/assisted-migration.html>>

P.S. I have had some correspondence with Dave Foreman and his Rewilding Institute along these lines, as Rewilding North America is, in a way, assisted migration -- helping close kin or proxies of recently extinct megafauna get there way back to their long-time native continent.

On 1/22/08 3:37 PM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

>  
> Dear Connie (I hope this is you),  
>  
> I'm writing an article for Audubon magazine on assisted migration and  
> other strategies plant ecologists and conservationists are using or  
> considering to combat global climate change. I'd like to make the  
> story of Florida torreya and the Torreya Guardians a major part of  
> this piece. I was hoping that I could accompany you or someone else  
> from TG on a seed-planting trip, but after re-reading your website I  
> now gather that this isn't happening quite yet. I hope as the article  
> progresses I will be able to interview you at length. For now,  
> however, I am hoping that you can recommend a way that I can get out  
> and see the work of the Torreya Guardians in person. Do you have any  
> suggestions?  
>  
> By the way, I love your books.  
>  
> I have written several books and numerous articles on plant  
> conservation. Until recently, I was a director at Brooklyn Botanic  
> Garden for almost 17 years.  
>  
> Many thanks in advance for your help. I look forward to hearing from  
> you.  
>  
> Janet Marinelli  
> [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)  
> 212-724-6351

---

Janet -

Yes, I did receive it but didn't have any hopeful ways to respond. The seeds are still too precious to give to folks to plant in their back 40, so the only planting happening is in pots of volunteers and institutions and often in their greenhouses or some other protected environment. Two hundred seeds were sent out by Lee Barnes very recently to the same folks and institutions who received packets of 10 seeds from the 2005 Biltmore Gardens seed harvest — as very few of those germinated, sadly.

So, from the perspective of Audubon, this story may not truly be ripe for another dozen years — when the seeds being planted now begin to produce — and prolifically enough for some to actually be rewilded back into the real forests (on private land, of course) in the Appalachians and neighboring regions.

Together for Torreya,

Connie Barlow

On 3/4/08 11:14 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

Connie,  
I'm wondering if you received the email, below. I'd appreciate your thoughts!  
Regards,  
Janet

Begin forwarded message:

From: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
Date: February 29, 2008 4:50:25 PM EST  
To: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Subject: Audubon article

Hi Connie,

I've been going back and forth with the editors of Audubon magazine about the assisted migration story. I made the pitch for changing the focus from Florida torreyia to Joshua tree, but they have some problems with that, which I'm hoping you can help to resolve.

As you know, Audubon is big on art and design, and they are worried about how they could handle the Joshua tree story visually. They had their heart set on sending out a photographer to take great shots of a Torreyia Guardian actually planting seed (or plants) - that is, actually doing assisted migration. At this point the Joshua tree idea is at such an early stage this wouldn't be possible, and they don't want to end up just using stock photos of the plant to illustrate the piece.

Do you have any ideas?

Many thanks,  
Janet

Janet Marinelli  
[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)

—

Yep -

A goodly number will go to Jack Johnston, a volunteer who lives part-time in Highlands, NC, and who would start them into seedlings and then give them away to landowners in the area who would commit to participation in this work. I love the Highlands area as a destination primarily because before the Savannah River captured the southward drainage from Highlands, all that water used to flow SW and eventually dump into the Apalachicola. Thus, the primary direct root using river-side shade environments for getting from the peak-ice pocket refuge in northern Florida back to the Appalachians as the climate warmed would have landed those pioneering plants right in Highlands. The key will be if Lee and Jack think it is yet appropriate to plant out a few seeds or seedlings directly into non-virgin forest on private lands (rather than in a kept orchard-like setting), as only the former would be true rewilding — getting the seed/seedling there and then saying, "You're on your own, bud!" Rumor has it that the nature center in Highlands received some *T. taxifolia* seed for planting a number of years ago, but unless there is continuing institutional continuity and nurturance, institutions may not be any more secure than individual lands. Thus I actually am deeply interested in individuals being empowered to do the work, without having to rely on institutions.

When I was in Atlanta in early December, I saw the vast inventory of seedlings Atlanta had produced from the "potted orchard" of cloned branchlets that it started there in 1991. Atlanta will only work with institutions, of course. But the head of the conservation program gave me a lovely potted seedling, about a foot tall that I carry in my van with me and get out in the sunlight whenever possible. I am holding onto it till our public presentations work bring us to Tennessee in September, when I'll be near enough to Highlands to maybe make an excursion there. I'd love to plant this seedling myself — in a "wild" forest setting on a proper slope on somebody's private lands — preferably within pollen range of other *Torreyia*'s being nurtured nearby. But maybe Jack will be moving a bit into the "wild" with whatever seeds Lee Barnes sends his way.

Jack's email is:  
Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>

Together for Torreya,  
Connie

On 3/5/08 8:01 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

Hi Connie,

Thanks for your reply. I just got Lee's email about the latest seed distribution. Will any of those be going to private landowners? (I remember a pic of one, I think it was a woman who had planted Torreya on her property, perhaps on the TG website; not sure.) Are all the seeds going to botanic gardens? Perhaps Audubon could photograph someone planting the new batch of seeds to be distributed, even if in pots. Any thoughts?

Again, thanks!  
Janet

—

Dear Jack and Lee,

I am following up on the email from Connie Barlow, below.

Audubon magazine is interested in having me write an article about assisted migration; I have written several books and numerous articles about plant conservation and was on staff at Brooklyn Botanic Garden for more than 16 years. Jack - I also gave a lecture at the Highlands nature center a couple of years ago. Did we meet?

Anyway, in recent days I have been going back and forth with the editors of Audubon over how the article will be illustrated. As you probably know, art and design are important to the magazine and they do not want to just illustrate this article with stock photos. They seem to have their heart set on sending a photographer to take great shots of a Torreya Guardian actually planting seed (or plants) - that is, actually doing assisted migration. Connie's email wonders whether you are ready to do this on private land in Highlands, which sounds like quite a fitting place to take this historic step. Is this something you are contemplating? If so, would it be possible for Audubon to capture it in photographs?

I'd appreciate hearing back from you!

Many thanks,  
Janet Marinelli

Begin forwarded message:

From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Date: March 5, 2008 1:16:52 PM EST  
To: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
Cc: Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>, Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>  
Subject: Re: Audubon article Torreya

Yep -

A goodly number will go to Jack Johnston, a volunteer who lives part-time in Highlands, NC, and who would start them into seedlings and then give them away . . .

—

Janet -

That's great! Jack, of course, is the centerpiece of showing any sort of planting operation, so keep communicating with him. Also, the watersheds near Highlands and Cashiers would likely have been precisely the spots where Torreya taxifolia re-entered the Appalachians during previous interglacials, although because Torreya pollen cannot

be distinguished from related conifers, there can be no absolute proof based on pollen samples drawn from bog muds.

Definitely take photos of Atlanta Botanical Garden torreya operation. Go to this page of the website to see the photos and captions that I took at ABG. Especially look at photo N, as this movingly indicates that squirrels can be counted on to be of some assistance in planting seeds:

<http://torreyaguardians.org/propagate.html>

Make sure you see the photos I took of the biggest Torreya cousins in America: Torreya californica is, in my mind, a model for what Torreya taxifolia could come to look like in the Appalachians — growing in the wild there — in a few hundred years. Big trees! Peruse the photoessay I posted from my visit to those trees 3 years ago:

<http://torreyaguardians.org/swanton.html>

As to trying to photograph me: good luck! My husband and I are full-time itinerant evolutionary evangelists, and have been for 6 years. We operate out of a big van. Right now my potted Torreya is enjoying the cool, moist climate of Eugene; next week we will be in Portland OR. I set the tree out wherever we are staying, careful to always put it on real soil as ABG emphasizes that that is important for ensuring good communities of mycorrhizal fungi. You can see where we will be when by going our itinerary page:

<http://thegreatstory.org/itinerary.html>

You can see our van at this page:

<http://thegreatstory.org/hospitality.html>

BTW: We are excited that my husband's new book, published Nov 07 by a tiny publisher in Oklahoma, just got bought up by Viking/Penguin for a relaunch of the hardcover, and a lot of publicity on our evolutionary evangelism will thus be happening shortly. You can learn about his book at:

<http://thankgodforevolution.com>

Together for Torreya,  
Connie

On 4/10/08 8:41 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

Dear Jack and Connie,

After three months of going back and forth with Audubon magazine (!) I have finally convinced them that it is possible to make the article on assisted migration interesting visually as well as editorially. My editor there wants my help with a detailed memo about what the photo possibilities are (I've forwarded his message, below).

They would still like a photo or photos of people planting torreya (or at the site where they have planted torreya). Jack, what would be the best time for photographing this; or does timing even matter? Also, I'm assuming that you have been planting on forested private land. Is this indeed the case?

Connie, they would like a photo of you with your potted torreya and your van, since you are the Torreya Guardians' "roving ambassador." I'm not sure where you live. The cost of multiple photo shoots is an issue for Audubon, so would it be possible for you to be in Georgia when the photographer is there to take pictures of Jack and possibly others in that area?

I can also recommend that while they are in the area they photograph torreya being propagated and grown at Atlanta Botanical Garden. Does this make sense? Can you think of any other good photos? As noted in the email below, they are open to running stock photos of the Joshua tree, and any other plants that are candidates for assisted migration.

I'd appreciate hearing from you both as soon as possible, so we can get this going! If it's more convenient to talk by phone, please let me know how to reach you. My phone is 212-724-6351.

Many thanks!  
Janet



Janet Marinelli  
[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)

Begin forwarded message:

From: "GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)>  
Date: April 9, 2008 11:20:52 AM EDT  
To: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
Subject: Re: Assisted migration

Janet,

I think the first thing we need to figure out is when we will need to shoot this. So yes, it would be great if you could check with both Connie and Jack about the best time to shoot. Then we can go from there.

Here are some of the options for shooting that I can think of. Maybe you can think of others.

\* Shots of the actual planting. This could be Jack Johnston or any of the 20 people he says are planting torreyas around where he lives (or it could be someone else somewhere else, if that makes more sense). Also, it sounds as if some of the seeds are planted in pots and then replanted later as seedlings. If that's a step in the assisted migration process, then maybe we could shoot that step, too.

\* Connie Barlow. Sounds like she's the soul of the Torreyas Guardians, so I agree that she's a good person to photograph. I don't know where she lives, but maybe she could even travel to wherever we decide to shoot people planting. Maybe we could shoot her with her potted torreyas seedling, sort of the botanical ambassador for the Guardians' work.

\* Maybe we could shoot the tree's native habitat around the Appalachian River. I know there are at most saplings here, but if they're the most robust example of the tree, maybe that would be good. Plus, in your proposal you made it sound like a pretty neat place, so it sounds like this would be pretty pleasing visually.

While it would be great to send a photographer around to multiple locations, we're going to have to play that by ear. So we could consider supplementing a shoot with stock. We talked about assisted migration for Joshua trees. Are there other species people are doing this for, too? Maybe we could even break out a sidebar on these other species and illustrate it with a shot of a Joshua tree. They're such neat-looking plants. Or maybe not, but it's a thought.

Another thing. Now I know there is also a California torreyas. Are there other torreyas, too? I just want to make sure we focus on the Florida torreyas, since that's the tree that's on the brink. When Kevin and I were discussing this last week, he did a google image search that came up with the California tree. I just don't want the art department going down the wrong road on this.

Anyway, let me know what you think about this. Anything you can add or amend would be appreciated. I can then do a formal art memo so Kim and Kevin can figure out who to assign this to.

Thanks.

Jerry

—

On 4/28/08 8:16 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

> Connie and Jack,  
>  
> I just want you to know that Audubon will be contacting you about  
> scheduling photography. I told them that Connie may be able to be in  
> Georgia in late July so they can photograph both of you at the same  
> time. I will try to be there at that time too.  
>  
> I'll be back in touch before then as I get more deeply involved in  
> researching the article.  
>  
> Many thanks for your help so far, and I look forward to meeting both  
> of you!

>  
> Janet  
>  
> Janet Marinelli  
> 646-286-7602  
> [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)

---

Christa,  
I'm following up on Connie Barlow's email. I am the freelance writer who is doing the article on Torreya for Audubon magazine. We met a couple of years ago when I lectured in Highlands - interestingly, I lectured the week before Connie Barlow! I look forward to seeing you again this summer, when I'm in the area for the Audubon story.  
Regards,  
Janet

Janet Marinelli  
Blue Crocus Consulting  
230 Central Park West #11M  
New York, NY 10024  
646-286-7602  
[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)

[www.janetmarinelli](http://www.janetmarinelli)

On May 12, 2008, at 9:56 AM, Connie Barlow wrote:

> Hi Christa -  
>  
> This is Connie Barlow. You hosted me in Highlands for the Zahner  
> Conservation lecture and a dinner you gave at your house a few years  
> ago,  
> when I spoke on assisted migration for Torreya taxifolia. I want to  
> make  
> sure you got the email I sent out to my TorreyaGuardians list a few  
> days  
> ago. I don't remember whether your email is on our list. Anyway,  
>  
> I will paste it in below. The gist: current issue of Orion speaks  
> of the  
> Torreya Guardians effort, feature article, and even your dinner  
> party is  
> mentioned, where you introduced me to Jack Johnstone. Audubon  
> magazine is  
> doing an article on us too, with a photoshoot scheduled for  
> Highlands NC  
> sometime between July 30, 31 and August 1. The focus: Torreya  
> Guardians  
> actually planting T. taxifolia to be "rewilded" in private forest  
> lands  
> there. I just called Woodlanders Nursery in Aiken SC, as they have  
> their  
> own seed producing Torreya taxifolia so have about 50 seedlings per  
> year for  
> sale. I told Bob McCartney (he remembered Jack Johnston driving  
> there to  
> purchase a number) that I pretty much want to buy them all. He says  
> he'll  
> get back to me to let me know how many there are. We'll need to  
> rely on  
> Jack to drive there to pick them up, because they cannot ship an

> endangered  
> species across a state line.  
>  
> Anyway, with all your connections in Highlands, could you help us  
> locate one  
> or more private landowners in Highlands or Cashiers with large  
> forested  
> property, especially with varying slope and aspect (I'd love to see  
> some  
> plantings on very steep slopes), and who would be happy to  
> participate in a  
> project in which they would make their lands available for this very  
> long-term project, and could be depended upon to allow authorized  
> individuals to come onsite to prepare for the planting, and then to  
> periodically check on the plants and perhaps do careful measurements  
> of  
> different results based on slope, aspect, shading, etc? The  
> management  
> effort might require ensuring that neighboring trees don't fully  
> shade out  
> the Torreya (my experience in California with *Torreya californica*  
> suggests  
> that , although they can subsist in almost total shade, their growth  
> is  
> diminished and they will not produce any reproductive organs unless  
> there is  
> sunlight on at least a portion of the tree.)  
>  
> Could you network with the other folks in Highlands, such as Jeff  
> Zahner (I  
> don't have his email address), and see what they might come up  
> with? My  
> thoughts are that it might be great to involve the local girlsclub/  
> boysclub  
> troop or a church youth group in actually taking responsibility to  
> monitor  
> and nurture the plants. Do know that the Atlanta Botanical Garden has  
> oodles of seedlings, the results of the prolific reproduction of its  
> potted  
> orchards from the cloned branches of *Apalachicola* genotypes, and  
> they are  
> very happy to donate to bona fide institutions to act as safety  
> repositories  
> -- not rewilding. So ideally the Audubon shoot could entail *Torreya*  
> Guardians doing rewilding in natural habitats, while the Nature  
> Center would  
> be planting on its managed grounds a number of potted seedlings that  
> ABG  
> would freely make available to them. So that both moderate and  
> radical  
> approaches to the species' problem could be seen to happen in a  
> mutually  
> friendly way, with wide support from local townspeople.  
>  
> Okay, here is the email I sent out:  
>  
> This is Connie Barlow. The May/June issue of Orion Magazine contains  
> an  
> 8-page article by Michelle Nijhuis, titled "To Take Wildness in . . .

Many thanks Connie. This is very exciting! There is much information on the Torreya Guardians website, in the emails you have sent over the past months, and in journals I will be reading. I'll no doubt be in touch with questions as soon as I have digested all this. Happy travels! -- Janet

-----Original Message-----

>From: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
>Sent: Jun 27, 2008 7:51 AM  
>To: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>, "GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)>, [ken@kengehle.com](mailto:ken@kengehle.com), Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>, Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>  
>Subject: Torreya planting and photoshoot Waynesville July 30

>  
>Hello all -

>  
>This is Connie Barlow. I talked with Lee Barnes on the phone last night.  
>He's going to walk the land at Sara Evans and Chuck Dayton's place in  
>Waynesville this weekend (see his email below), but he roughly knows about  
>it and thinks it is a good location. He agrees with me that deciduous shade  
>is no problem, because our little evergreen will have early spring and late  
>fall to catch full sun. Apparently they are in a big drought up there right  
>now, so shade may actually be helpful to prevent drought damage of Torreya  
>this year and in later life.

>  
>Lee will also talk again with Sara and Chuck and arrange to meet with them  
>when they come to their land on July 9 through 21. So it seems to be a  
>definite go that Waynesville will be the spot for the afternoon photoshoot  
>of tree planting, with a tour of Jack Johnston's place and seedlings enroute  
>in northeastern Georgia in the morning. (My husband and I will actually  
>arrive at Jack's on July 29 and overnight there, so we will simply be there  
>when Janet Marinelli from Audubon and Ken Gehle, the photographer who lives  
>in Atlanta, arrive at Jack's).

>  
>So, again, here are the addresses:

>  
>EARLY MORNING OF JULY 30: Jack Johnston, 422 Neptune Lane, Lakemont, GA  
>30552 (near Clayton and Rte 23 in the NE tiny corner of Georgia). Jack's  
>phone: (706) 782-7393

>  
>AFTERNOON OF JULY 30: Sara Evans and Chuck Johnston property, 1833 Eagles  
>Nest Road, Waynesville NC. Lee Barnes will meet us all there and will have  
>figured out where on the land some of the seedlings should go. By then,  
>there may also be another property in the Waynesville area to take the other  
>half of the 31 seedlings, but this single property confirmed now is  
>sufficient for the photoshoot. Lee's cell phone: 828-646-1593

>  
>Together for Torreya,  
>Connie  
>850-420-8002, or 425-760-9941 (our cell phones)

>  
>P.S. We are in the finger lakes region of NY for 3 weeks right now, ranging  
>out for talks from here. Click the first link below to read the New York  
>Time magazine article from earlier this month that featured my husband's new  
>book and our 6-year itinerant ministry. Click the second link to peruse  
>Michael's glitzy website for his book and archive of media attention:

>  
>[http://www.nytimes.com/2008/06/15/magazine/15wwln-essay-t.html?\\_r=3&ref=magazine&oref=slogin&oref=slogin](http://www.nytimes.com/2008/06/15/magazine/15wwln-essay-t.html?_r=3&ref=magazine&oref=slogin&oref=slogin)

>  
><http://thankgodforevolution.com>

>  
>Below is the relevant part of our speaking schedule. It looks like Michael  
>and I may have time to stop in Smithgall Woods on July 28 or 29 on our way  
>to Jack's home (Smithgall is where Atlanta BG has some of its outplantings,  
>and where Jack was allowed to collect Torreya seeds that are now sprouting  
>on his land). Also, Michael and I will have July 31 available to continue

>the planting in Waynesville (and/or make a pilgrimage to the Torreya at  
>Biltmore Gardens) before we have to head north to Charlottesville VA.

>

>July 27, First Unitarian, Memphis TN (MD)

>July 27, Neshoba UU Church, Cordova TN (CB)

>July 29-30, Torreya taxifolia photoshoot Clayton GA & Waynesville NC (CB)

>August 3, Unity Church, Charlottesville VA (MD morn + 7PM)

>

>As you all know, the Torreya Guardians website I maintain is:

>

><http://www.torreyaguardians.org>

>

>\_\_\_\_\_

>

>The photographer is Ken Gehle, who's based in Atlanta. Here's his info.

>

>KEN GEHLE PHOTOGRAPHY, INC.

>

>404-377-5160 - STUDIO

>404-966-6907 - iPHONE

>

>[ken@kengehle.com](mailto:ken@kengehle.com)

>

>[HTTP://WWW.KENGEHLE.COM](http://WWW.KENGEHLE.COM)

>

>

>

>On 6/26/08 3:47 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

>

>> Connie,

>> The Google map for 1833 Eagles Nest is a little off- I've checked

>> local GIS and my Terrain Navigator software...I know the general area and

>> it's pretty shaded with deciduous trees... it's about 3600 ft....there might

>> be some canopy gaps depending on exact location chosen by landowners... I'm

>> sure we can find a good spotsince Sara owns several lots side-by-side. I'm

>> guessing that they will need to water some this summer if the drought

>> continues... it's in a location that I can check without too much trouble

>> ...

>> You should really check out "Google Earth"- super great maps that

>> "fly" you location to location and even sky maps. The basic software is free

>> and good but I paid for next level up for about \$40 and it's super super

>> cool!

>> I'll probably be out to dinner with friends from 5-7 ish this

>> evening if you try to call- I'll have my cell - Thanks and Happy Trails, Lee

\_\_\_\_\_

Janet-

Great and disturbing questions! I remember when Michelle Nijhuis interviewed me for Orion a year ago, she asked what I felt about assisted migration for animals too. I shook my head and said, 'I don't want to go there.' I'm just looking at Torreya.

I think I'll do the same with you for the Audubon article. In my view, the reason citizen naturalists could act so quickly on their own is, if one just looks at Torreya, the answer is obvious and uncomplicated. It is arguably the most endangered conifer in the world; we are moving it from peak-glacial to presumed interglacial range (thus a natural migration, albeit over a long time period); and nobody is worried that it is going to kudzu on us. Combined, these are the reasons why Torreya is a superb "poster plant" for global warming, at least in the eastern U.S.

I think I'd prefer to just stay an advocate for Torreya, and leave the discussion, worries, advocacy about other species to others. I'd like to keep our Torreya action untainted by the wider issue, and certainly not set myself up for being any sort of an expert or spokesperson for anything other than Torreya--and, I don't speak for the other

Torreya Guardians. Those of us engaged in the action last week are fully agreed on that action. I imagine we may differ somewhat on the wider issue.

That said, I'd love to see the Audubon piece deal precisely with the scope of the possibility field that you are seeing. So my suggestion are:

(1) Interview Peter del Tredici up at Arnold Arboretum about his thoughts on the Torreya rewilding. He had been involved very early on in the pre-Torreya Guardians discussion, but was overwhelmed by email so I dropped him out. Especially ask him about hemlock, as I recall when I visited him up there he was proud of their Hemlock Hill but sad that within a few decades it would be gone. From there you can move onto ginkgo, his role in understanding why ginkgo is where and how it is today and then your great question. That way you rope him in slowly to the big Q you have.

(2) Interview Josh Donlan Josh Donlan <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org)> He's at ESA right now, so you'll have to wait. But he and I were in communication right after the rewilding and he seemed enthusiastic. He is the lead author of both Pleistocene Rewilding papers that I told you about. I have pdfs of both available through this page (scroll to near bottom to find them):

<http://www.torreyguardians.org/assisted-migration.html>

(3) Interview Paul Martin, my mentor and coauthor of the 2004 Torreya advocacy (Paul was also one of the seedlings we named). He is 78 or 79 now and in a wheelchair, but I just got an email from him thrilled about our action (as I sent an email to the whole Torreya Guardian list last night). He's at:

Paul Martin <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)>

(4) Track down and interview Hazel Delcourt, author of the "Forests in Peril" book (after you scan the book, of course). When I interviewed her at the U in Knoxville just before she and her husband retired from academia (to move to the south and be able to do more parenting with their teen daughters), she was truly radical about assisted migration. That is, she wasn't just thinking about species but genotypes. American beech is still represented in the Apalachicola, and though nobody is worried about beech, she thinks those genes are precious for maybe being able to keep some beech presence in the northern USA decades from now. Beech is also a great contrast to Torreya. Because the bulk of the population was able to move north, nobody is worried if it blinks out in the Apalachicola. But because Torreya missed the opportunity to scoot north, it is of great concern. (Also, remember that Jack Johnston is rooting the endangered Florida yew. At the end of this email I am pasting in an email from a Tennessee woman who wants to rewild Florida yew on her mom's property.)

(5) If you do further work on the ginkgo question, there is a lovely example of something in the middle, and that I am actually the lead on (though it has never gone anywhere), but not as a Torreya Guardian. It came from my Ghosts book work. I have a whole section on Kentucky Coffee Tree there, the pod being an ecological anachronism in the extreme (nobody disperses it now). A year or so after it was published I had a chance to actually personally test whether a rhino would find the pod delicious! (Rhinos, like ginkgos, were in N.A. until about 5 million years ago and they were an important component of our Miocene landscape). "The Wilds" in southern Ohio is a reclaimed strip mine dedicated to 3 zoos using it as natural landscape to encourage breeding of endangered herbivores. Well, owing to a local contact who set up the meeting, I was able to go out onto the grounds in a truck with a rhino keeper. We found a male in a mud pool way out on the grounds, he called it over, and my colleague and I took turns hand-feeding the Indian black rhino! It ate as many pods as we had, and did not spit out the seeds. Heck, by now there might be some lovely little Kentucky coffee trees growing on the grounds, thanks to rhino poop. In fact, right after our visit I heard that they were thinking about using the animals to spread honey locusts for shade, as they didn't have enough staff to be able to hand plant 10,000 acres. They had tried planting HL earlier, but they bought nursery stock -- thornless! The animals ate them up. I suggested they switch to local native HL, that have lots of thorns. That should work. Anyway, I haven't followed up, but it would make a cool part of the story or a different story. I humorously referred to The Wilds as a place to be considered as "Miocene Rewilding" (more radical, of course than Josh Donlan et al "Pleistocene Rewilding"). I've got fun photos, too, of a rhino sniffing a KY coffee pod and then of its prehensile upper lip covering a hand up to the wrist as it deftly takes one pod at a time. Was a life experience for me to be nuzzled by a rhino! Oh, one other cool part of the story. To convince the keepers that the pods were okay (the seeds themselves are poisonous, but superbly protected in about the hardest casing imaginable), my colleague and I opened a pod and ourselves ate some of the sweet green pulp while the keepers looked on. Another cool part of the story is that we also visited the herd of female white rhinos and then one of 2 big males kept indoors while the other male roamed. The keeper told us that none had reproduced. They figured "that if a female hasn't had a male soon after she matures, then maybe she can never get pregnant." Well! Two weeks after that conversation, my colleague sends me a photo of a baby white rhino by its mom. Nobody even knew she was pregnant, and out pops a healthy white rhino! I'd be happy to send you a few jpgs if you'd like.

Together for Torreya,  
Connie

---

On 7/16/08 3:24 PM, "[VTu1906101@aol.com](mailto:VTu1906101@aol.com)" <[VTu1906101@aol.com](mailto:VTu1906101@aol.com)> wrote:

The following is a description of my Mom's 33 acre property protected by a conservation easement 100%. Located at 1063 Sunset Dr, Gallatin, Tn 37066, owned by Vadis Larrabee Pierce. Largely surrounded by Old Hickory lake with a 230 acre farm to the east and acre-plus residences to north and west. Land is partially wooded by several glades and large trees in lake proximity. They are mostly deciduous. Mostly open areas with maples, red buds and white pines planted. Elevation is 400. We have planted other endangered trees: Franklin, Georgia Plume, anise, wafer ash, and corkwood trees. We have 20 American Chestnuts growing as part of the back breeding program with the Chinese chestnut. The only endangered tree listed in my book of Native Trees of the Southeast is torreyia taxifolia. vicki

vicki turner 196 moultrie park nashville tn 37205 ph/fax 615 383 6571 [www.vptventures.com](http://www.vptventures.com) <<http://www.vptventures.com/>>

On 5/27/08 5:27 PM, "[VTu1906101@aol.com](mailto:VTu1906101@aol.com)" <[VTu1906101@aol.com](mailto:VTu1906101@aol.com)> wrote:

My mother has put a conservation easement on her 33 acre property in Sumner County, Tn. We have planted many rare and endangered trees: Georgia plum tree, wafer ash, anise tree, Franklin and corkwood tree. I would love to receive Florida yew seed to propagate. vicki

vicki turner 196 moultrie park nashville tn 37205 ph/fax 615 383 6571 [www.vptventures.com](http://www.vptventures.com) <<http://www.vptventures.com/>>

---

On 8/4/08 9:50 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

> Hi C --

>

> I remember that chapter on ginkgo in your book. So then if Ginkgo  
> showed evidence that it wanted to grow here in North America by, for  
> example, reproducing on its own, then you would favor rewilding it  
> here since it grew here 10 million years ago? What I'm trying to get a  
> handle on is the meaning of native in this jumbled world we've  
> created. If a species is endangered in its present range but grew in  
> North America millions of years ago, and there is no evidence that it  
> would do great ecological damage if restored to its ancient range,  
> would you favor rewilding it here? Would there be a difference between  
> doing that and rewilding Torreya in North Carolina, as it still clings  
> to life, however tenuously, a few hundred miles away?

>

> -- J

>

> On Aug 4, 2008, at 9:08 AM, Connie Barlow wrote:

>

>> J -

>>

>> Great question! Peter del Tredici is the man to ask. I suspect he  
>> is still  
>> director of the living collection at Arnold Arboretum. I visited  
>> him there  
>> while researching my Ghosts of Evolution book (which has a chapter  
>> on ginkgo  
>> in it), because he did his PhD studying ginkgo in China,  
>> specifically a deep  
>> time perspective on its seed dispersal -- which some have concluded  
>> coevolved with small carrion feeding dinosaurs. (The seeds smell  
>> like  
>> vomit/dung). But Peter concluded coevolved with multi-tuberculates  
>> who  
>> acted like squirrels -- extracting the nut from the flesh and  
>> burying it.

>> He wrote in a 1989 publication, "Ginkgo, Torreya, and Cephalotaxus are  
>> evolutionary anachronisms, analogous to the Central American  
>> angiosperms  
>> that lost their original mammalian dispersers about ten thousand  
>> years ago."  
>> Nevertheless, when I interviewed him believe both were correct: both  
>> squirrel-niche mammals and dinosaurs. Kind of like I suspect Torreya  
>> evolved for dispersal by both squirrels (who removed the outer  
>> flesh) and  
>> tortoises who digested the flesh (too much terpene in it for  
>> mammals) and  
>> then pooped out the seed.  
>>  
>> My memory is that ginkgo just does not reproduce on its own in North  
>> America, and I'm not sure whether it does in its "native" range of  
>> China  
>> either. It has a very weird reproductive system. Distinct male v.  
>> female  
>> trees, of course, but something about how the female will go to the  
>> trouble  
>> of creating a whole big seed before pollination may or may not  
>> actually  
>> happen. But ginkgo keeps going because of amazing lignotubers. Peter  
>> actually imagined that some of the "wild" ginkgo on the slopes in  
>> China  
>> might be millions of years old -- that is, they've been resprouting  
>> from the  
>> same lignotubers for millions of years!  
>>  
>> Hmm, I just consulted my Ghosts book. I wrote just a section on  
>> ginkgo and  
>> include my experience of Peter giving me the tour of Arnold Arboretum.  
>> There I say, "Ginkgo biloba is an exotic in North America only if one  
>> insists on a constricted view of time. Rather, the tree has been  
>> helped by  
>> humans to reinhabit its native range. . . Ginkgo disappeared from  
>> North  
>> America just 7 million years ago, and from Europe 2 million years  
>> ago. . ."  
>> Also I found that when Peter visited the wild ginkgo area in China he  
>> couldn't find a single seedling.  
>>  
>> C  
>>  
>>  
>> On 8/3/08 10:56 PM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
>> wrote:  
>>  
>>> Hi Connie,  
>>>  
>>> I'm curious about what, if any, limits you see to the notions of deep  
>>> time and nativeness in the context of rewilding. Ginkgo apparently  
>>> survives in the wild only on Xitianmu Mountain in Zhejiang. Since it  
>>> once grew in what is now North America, would you favor rewilding it  
>>> here?  
>>>  
>>> Janet  
>>  
>> --  
>>  
>>  
>>  
>  
> Janet Marinelli



> Blue Crocus Consulting  
> 230 Central Park West #11M  
> New York, NY 10024  
> 646-286-7602  
> [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)  
>  
> [www.janetmarinelli.com](http://www.janetmarinelli.com)

---

Janet -

Wow! So we planted sons and daughters of the Norlina tree. That is great to know! (Lee: I will add that information to the individual tree webpages I will add to the website.)

Connie

On 8/28/08 11:57 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

> Hi Connie,  
> FYI, re the provenance of the plants.  
> Janet  
>  
> -----Forwarded Message-----  
>> From: [info@woodlanders.net](mailto:info@woodlanders.net)  
>> Sent: Aug 27, 2008 4:09 PM  
>> To: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
>> Subject: RE: Torreya taxifolia question for Audubon article  
>>  
>>  
>> Janet: Over the years we have propagated and distributed Torreya taxifolia  
>> from a number of sources and all from trees in cultivation. I believe all of  
>> the Torreya we have propagated and distributed in recent years (including the  
>> ones you refer to) were seedlings from plants here in Aiken. Years ago on a  
>> nearby estate we planted two female trees and a male. The females were  
>> cutting-grown from the famous old Torreya in Norlina, NC and the male was  
>> cutting grown from a specimen at the Henry Foundation in Gladwynne, PA. Hope  
>> this is of help. Bob  
>>  
>>  
>>  
>>  
>>  
>>  
>> -----Original Message-----  
>> From: "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
>> Sent: Wednesday, August 27, 2008 12:38pm  
>> To: [info@woodlanders.net](mailto:info@woodlanders.net)  
>> Subject: Torreya taxifolia question for Audubon article  
>>  
>> Dear Bob,  
>>  
>> I am writing an article for Audubon magazine on assisted migration and  
>> Florida torreyea. As you probably know, the species has become a "poster  
>> child" for assisted migration of plants in response to climate change, and a  
>> number of Torreya Guardians, including Jack Johnston and Connie Barlow, have  
>> planted specimens purchased from you in two locations in North Carolina. I'm  
>> wondering if you can give me any information on the provenance of these  
>> plants. Where did you get the parent plant material?  
>>  
>> Many thanks in advance for your help!  
>> Janet Marinelli

---

Janet -

Now that the Nature online report has Camille Parmesan saying she plans to file a request with the Endangered Species Act to allow her to move the little checkerspot cocoons, I suspect Torreya Guardians will just be a footnote in the main press--as now the professionals are beginning to move on it.

Connie

On 8/31/08 1:30 PM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

> Hi Connie,  
>  
> I appreciate your concern. The pieces I've seen so far don't bother me too  
> much because my primary focus will be citizen involvement in assisted  
> migration and other conservation efforts. If there's any way you can steer  
> other writers toward other angles, that would be wonderful.  
>  
> Thanks,  
> Janet  
>  
> -----Original Message-----  
>> From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
>> Sent: Aug 30, 2008 11:38 AM  
>> To: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
>> Subject: Torreya thoughts  
>>  
>> Janet -  
>>  
>> Having been a writer myself, I now see the supreme wisdom of Audubon editors  
>> pressing you to report on an actual action of assisted migration and sending  
>> photographers there. Audubon has such a long lead time for processing  
>> articles, that without that actual event focus you would have been decidedly  
>> scooped.  
>>  
>> I am going about my life here assuming it is just fine for me to talk with  
>> whatever reporters come my way, and that you will still be able to do your  
>> article with original material unavailable to any other journalist or  
>> writer.  
>>  
>> I just want to make sure that is your understanding, too, and that you are  
>> therefore unfazed by the new Nature news report.  
>>  
>> Together for Torreya,  
>> connie  
>  
--  
Hi Connie,

I hope you have been well. It will be nice to watch over those little torreyas for a few weeks!

I submitted my article to Audubon more than a month ago. It was almost 5,000 words long, and they want me to cut it down to 3,000 (ahh, print!). I had done some quoting from Ghosts of Evolution and they want me to get direct quotes from you instead. Do you have some time to talk next week? Wednesday afternoon (the 3rd) or Friday afternoon (the 5th) would work well for me. Please let me know if you're available, and how I can reach you.

Many thanks, and please send my regards to Michael.

Janet

---

Connie, fyi. Sure glad I wasn't hoping to scoop anyone! -- Janet

Begin forwarded message:

From: "GOODBODY, Jerry" <[JGOODBODY@audubon.org](mailto:JGOODBODY@audubon.org)>  
Date: April 20, 2009 6:18:16 PM EDT  
To: Janet Marinelli <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>  
Subject: Re: assisted migration

Hi, Janet,

Glad to hear from you. First, assisted migration has been bumped from July-August. Sorry about that, but we have a real story bottleneck here. Not clear when it is going to run, but I can tell you for sure it won't be July-August.

If I can get a few things out of the way in the next few days, I am going to spend Friday working at home, trying to get assisted migration and a couple of other things into shape. I'm sorry about the delay. It doesn't seem fair to the writers (you have a lot of company in this regard), and I find it annoying to have my stories delayed, but we're all kind of in the same boat here. I'll be back in touch. Thanks.

Best,  
Jerry

---

Hi Connie,

I remember talking to Jack about Smithgall Woods when I was researching the story, but it must have been before he collected the seeds because he didn't know what the status of the trees was there. Thanks for the info, and for your other thoughts. I'll be back in touch when it's time to do the update -- no sense doing it now since there may be further developments by the time Audubon is ready to publish the piece. I certainly will ask Jenny about their plans given the PNAS paper. But since Atlanta is part of the Center for Plant Conservation and abides by CPC guidelines, and CPC isn't a fast-moving organization, I don't expect a change in policy anytime soon.

Janet

On Jul 1, 2009, at 1:10 PM, Connie Barlow wrote:

Janet -

Smithgall Woods *T. taxifolia*s have been producing seed at least since autumn 2007 — the first year Jack Johnston asked for permission to collect the seeds, which he did, and which he did again last year. Apparently, at least in 2007, the squirrels were the only ones bothering with them, so it was really important for Jack to collect them, and he had great success in sprouting them outdoors directly in soil, protected by wire mesh tops, sides, and bottom.

See the third row of photos down on this page and read the captions to see Jack's work with the Smithgall Woods seeds:

<http://www.torreyguardians.org/waynesville-rewilding.html>

The 22 author PNAS June 2009 paper is rather curious in my view. Would be interested to hear yours. When you read the paper itself, the comparison diagrams sound and look very useful in a gestalt sense, but when you read the supplemental (webpage below), and read specifically the *Torreya taxifolia* case study, you see that instead of bringing out the points expressed by real people, they manufacture an anonymous pro and con response. Notably, I can't imagine the most "con" person really arguing that *T. taxifolia* might dangerously spread in the Appalachians. More, the argument about conifer acidifying the soil totally neglects that a hugely dominant conifer, hemlock, is now almost gone, and thus the soil acidification will change drastically — *T. taxifolia* would help to reverse that, at least if it could become widespread and as plentiful as hemlock. Also, there is not a word in the case study that explains why pro assisted migration people feel *Torreya* "belongs" in the Appalachians — no mention of deep time perspective. To my mind, the paper ignores the possibility for collective intelligence to qualitatively reduce the span between the two positions before you even begin to quantify them — that is, if you got 2 or 3 of the most pro leaders on a conference call with 2 or 3 of the most con leaders/authorities, the most ridiculous arguments would be weeded away — the arguments skewing at least the "con" diagram. And then you would have something realistic. Would be interesting to know if the pro folks for the other 2 case studies read the supplemental section of the paper the same way I do. Would be interesting to know why, given that there are real people available for such a dialogue, no dialogue was run before the diagrams were fashioned. Of course, it would be useful to list the arguments initially put on the table

by both the pro and the con side that both sides decided were unimportant after the dialogue, so that the the entire process would be visible in the report.

To see the case studies, click the url at the bottom right of page 1 of the pdf of the main paper. The main paper link:

<http://www.pnas.org/content/106/24/9721.full.pdf+html>

Oh, Janet, one hugely important way to update your article would be that, now that the Managed Relocation Working Group has done its thing and the paper is on the table (interpreted, rightly, by the media as making assisted migration no longer whacky but a professional conservation biology option), it would be hugely important to see what Atlanta Botanical Garden will be doing as a result. They are so good at what they do that they are swamped with seedlings. If the Endangered Species Management plan could now be modified to included as "native" habitat, something like "future native" or "managed relocation habitat extension" then, boom, they could be off and running in rounding up institutions in the Appalachians to actually plant those seedlings.

Together for Torreya,  
Connie

—  
Hi Connie,

It means a lot to me that you like the article -- you know as much about this subject as anyone!

Thanks for appreciating my biblical metaphor. Audubon cut a lot of this out, including the account of my trip to the steepheads. A longtime Liberty County judge named E.E. Callaway persuaded many of the local people that these forests were the actual site of the Garden of Eden; among the evidence he cited was the presence of the torreya, the gopher wood of Noah's Ark.

I will indeed put everything up on my website as soon as I can. I'm on deadline for a huge project: a website and print document based on the Sustainable Sites Initiative ([www.sustainable-sites.org](http://www.sustainable-sites.org)), but for homeowners instead of professionals.

Enjoy the rest of spring! I've been managing to get out into Central Park, a migratory bird hotspot as you probably know, to see the spring blooms and bird migrations. Today I saw orioles sipping nectar from the flowers of a tulip tree between the Shakespeare Garden and the Delacourte Theater.

Please send my regards to Michael. I'll be back in touch.

Janet

On May 5, 2010, at 4:42 PM, Connie Barlow wrote:

> Re: "Plant Guardians" feature article in May/June Audubon magazine  
>  
> Janet -  
>  
> The article you wrote for Audubon, which includes your observations  
> of our  
> Waynesville plantings, is awesome! I have linked it to several  
> parts of the  
> Torreya Guardians website, including making it the lead article on  
> the page  
> that is very high on Google for "assisted migration":  
>  
> <http://www.torreyaguardians.org/assisted-migration.html>  
>  
> Check it out and see the para I wrote to summarize its content.  
>

> Your article is a model of science writing - riveting, presenting  
> diverse  
> views, using the actual words of involved parties to entertain or  
> startle,  
> as well as educate, and above all, ensuring that the reader comes  
> away with  
> the view you most want to share -- that this is a hugely important,  
> frightening, and inescapable conservation dilemma that those who  
> love the  
> natural world must deal with.  
>  
> Your quotes and extracts about me were right on in reality and  
> importance.  
> Lee Barnes, too, was shown in both his research credentials and his  
> horticultural activism. So glad Jack got a beautiful Ken Gehle  
> photo as the  
> lead illustration, as he played such an instrumental role in that  
> assisted  
> migration action, and in his continuing work on his land.  
>  
> Lovely literary allusion you chose to artistically unite the whole  
> article  
> -- Noah -- and, more broadly, the "biblical" proportion of this.  
> Nice way  
> to show relevance of having Reverend Dowd participating too!  
>  
> Overall, great job! Don't forget to add it to your publications url (I  
> checked; it is not there yet) and to blog about on your Blue Crocus  
> url.  
>  
> Bit of news: May 11, the USFWS person in charge of the mgmt plan for  
> T tax  
> as an endangered species (<[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)>) is convening  
> a mtg  
> in Panama City to bring the parties together and thrash out updates  
> to that  
> ancient old plan. I will be sure to notify the participants of your  
> article. She has been very good about pro-actively communicating  
> with me for  
> several years, and you will see on the attached Excel file of  
> participants  
> that Torreya Guardians is recognized as a participant in the meeting  
> --  
> albeit by conf call phone. Thus far, it looks like Russ Regnery and  
> I will  
> be on the call.  
>  
> Together for Torreya,  
> Connie  
>  
> P.S. I'm in rural SE Ohio right now - no more beautiful place to  
> enjoy  
> spring birdwatching in lush deciduous forest. From my outdoor desk  
> this  
> morning I saw an black-throated green warbler. And a short walk  
> down the  
> path yesterday to a small meadow opening in the forest near a creek  
> gave me  
> an hour of watching a pair of Orioles harvest tent-caterpillars from  
> their  
> communal web, one after another. They seemed to extract only a  
> little bit  
> of what was edible from its innards, then discarding the bulk of the  
> body.

> Also saw and listened to a male rose-breasted grosbeak doing its  
> thing in  
> the same forest territory as the Orioles. Just doesn't get better  
> than  
> that!  
>  
>  
> On 5/5/10 8:40 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:  
>  
>> Hello everyone.  
>>  
>> My article on the assisted migration of Florida torreya is now up on  
>> the Audubon website. You can find it at  
>> [www.audubonmagazine.org/features1005/activism.html](http://www.audubonmagazine.org/features1005/activism.html)  
>>  
>> The May/ June issue of the magazine is now available on newsstands,  
>> and includes a number of photos of the plantings at the Corneille  
>> Bryan Native Garden and in Waynesville. You can see the wonderful  
>> photo of Jack at his home both on the website and in the print  
>> version.  
>>  
>> This article was of course written for the printed magazine, and  
>> given  
>> the economics of print these days a ton of information got cut. I'll  
>> be putting the full-length version of the piece up on my website in  
>> the next week or so. I'll let you know when it's there.  
>>  
>> Thanks so much, again, for your help with this article!  
>>  
>> With every best wish,  
>> Janet  
>>  
>> Janet Marinelli  
>> [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)  
>> [www.janetmarinelli.com](http://www.janetmarinelli.com)  
>>

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Janet -

Thanks for the lead. I just contacted her. Josh Donlan, lead of the 2 papers on Pleistocene Rewilding, sent me this email reply:

Hi Connie,

Thanks for the note, update, and your efforts for Torreyia and advocating ecological history in conservation efforts in general. I really like the idea of a new Leopold Report. And I am sorry to hear, but not surprised, that is strong resistance to an AM approach to Torreyia with the service. (You should ask them about condors in the Grand Canyon and ferrets in Mexico - both projects the Service supported and managed).

I am happy to write a letter to the lead (Vivian?) urging her to consider a pilot project for AM with Torreyia. Can you send me her contact details.

Thanks,  
Josh

---

On 5/13/10 9:22 AM, "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)> wrote:

Connie,

You may want to get in touch with Sarah Reichard, botanist and biological invasion expert at the University of Washington, Seattle. Sarah has recently done a study (as yet unpublished, as far as I know) that suggests the risk of invasion from assisted migration of plants is very small. Her email address: [reichard@u.washington.edu](mailto:reichard@u.washington.edu)

Good luck!  
Janet

On May 13, 2010, at 8:51 AM, Connie Barlow wrote:

May 13, 2010

Fr: Connie Barlow, founder of Torreya Guardians

To: Jessica Hellmann, Camille Parmesan, Patrick Shirey, Josh Donlan

cc: Vivian Negron-Ortiz (USF&WS person in charge of plan update for management of Torreya taxifolia)

cc: Estella Leopold (paleobotanist, emeritus Univ Wash)

cc: the 4 journalists/writers who have done long pieces on assisted migration: Janet Marinelli, Emma Marris, Michelle Nijuis, and Jim Robbins

Re: Assisted Migration and the USF&WS management plans for endangered species: A call for a new "Leopold Report" equivalent and for you folks to make it happen, plus news on the May 11, 2010 recovery plan meeting (USF&WS) for Torreya taxifolia

Dear Jessica, Camille, Patrick, and Josh -

As you know, I keep up on both the academic papers and the media reports on the issue of assisted migration, and I post an annotated list of these with links updated on

—

Jeff -

Great to hear from you. I added your comment here to the comments page on our website:

<http://www.torreyaguardians.org/comments.html>

I'd be happy to post a page on your own Torreya taxifolia plantings, as it is important to archive in accessible form the full extent of Torreya's presence in North Carolina, in case anyone wants to professionally assess their health in NC in the future. As to words, all I require are the basics: when planted, elevation, and other microhabitat aspects, plus some photos with captions.

Watch for the May issue of Audubon, as the feature article on our July 2008 plantings in Waynesville is finally being published.

Best,  
Connie Barlow

On 3/27/10 7:15 AM, "Jeff or Jodie Zahner" <[jzahner@dnet.net](mailto:jzahner@dnet.net)> wrote:

Hi Connie,

I just received a link to the Bob Zahner tree from my mom. It's such a pretty tree and it made me happy - I wanted to thank you for all you are doing to help the Torreya and wish you well for the coming Spring - it's finally here!

Here at 4000 ft our Torreya are healthy and were missed by the ice-laden pine branches crashing around them. The littlest ones were completely covered with snow for five weeks straight but seem to be fine....

Good luck and thanks again,

Jeff

---

Dear Connie,

Thank you for your email. I am sympathetic to your concerns, and we will discuss it at the ESA meeting. I also understand the authors' worry that "migration" tends to refer to seasonal movements, e.g., migratory birds. But I also think that the term "migration" is also well defined in the paleo literature with the definition that we intend in this modern context.

My own concern about "assisted colonization" is the same that Chris Thomas raises in his email about "assisted migration" so clearly this needs more discussion. I tend to think of "colonization" in the way that it is defined by the invasion pathway - as the first step in population establishment. Instead, we might envision more conservation action than just establishment. But then Thomas says the same about "assisted migration" and doesn't feel that "assisted colonization" has that problem. Again, I'll do my best to raise your concerns at the meeting.

Just previous to the ESA meeting, we're gathering a group of conservation biologists, invasion biologists, lawyers, ethicists, and economists to form a working group that we think will have something meaningful to contribute to this issue. (The working group is being convened by myself, Mark Schwatz, Jason McLachlan, and Dov Sax.) We'll talk about the naming issue with that group as well, and I'll let you know what they had to think.

I've seen your site, and I've enjoyed watching it grow. Thanks very much for your efforts on this important issue - you guys started it all!  
Best wishes,  
Jessica

On Jul 20, 2008, at 7:16 AM, Connie Barlow wrote:

Hello Dr. Hellman -

I just cc-d you on mailings I do to my avocational list of the website I run, Torreya Guardians, as I pointed folks to the ESA meeting you are lead organizing.

My purpose for this email is to try to enlist you to ensure that some attention during that session is given to the choice in terminology: "assisted migration" v. "assisted colonization". I strongly favor the former (and original) term.

Please visit the following page on my website where I am attempting to elicit discussion on this very important issue. Choice of terminology can make a big difference in insititutional/individual acceptance or resistance to the ideas you and we are both working with.

<http://www.torreyguardians.org/assistedmigrationdebate.html>

I also keep a running, updated tally of online links to articles, papers, news reports on the assisted migration issue:

<http://www.torreyguardians.org/assisted-migration.html>

Thanks,  
Connie Barlow  
Volunteer for Torreya Guardians  
--

Jessica J. Hellmann  
Asst. Professor  
Dept. of Biol. Sci.



University of Notre Dame  
Notre Dame, IN 46556  
574.631.7521 (ph)  
574.631.7413 (fax)

---

Connie,

That's very interesting. Thanks for sharing! When it comes out, I'll add the note to our managed relocation website. I'm sure that you're doing the same on your website.

Best wishes,  
Jessica

On Mar 25, 2009, at 1:12 PM, Connie Barlow wrote:

Hi all -

I just posted this comment on the "Comments" page of the *Torreya* Guardians website:

March 25, 2009 / by Connie Barlow / Michelle Nijhuis' article "Taking Wildness in Hand" (on *Torreya taxifolia* assisted migration controversy) has been selected for the 2009 edition of Best American Science and Nature Writing.

The anthology will be published next fall by Houghton-Mifflin. The guest editor, New Yorker environmental writer Elizabeth Kolbert, selected Michelle Nijhuis' story published in the May/June issue of *Orion* magazine, called "To Take Wildness in Hand," which describes the promise and perils of "assisted migration" of species, with *Torreya taxifolia* being the species focus. Congratulations Michelle! (The article can be accessed in full online at <http://www.orionmagazine.org/index.php/articles/article/2966/>)

Google alerts notified me of this selection, as reported in March 16 edition of High Country News:

<http://www.hcn.org/issues/41.5/see-you-in-april>

Congrats to Michelle!

Connie Barlow

---

Hi Jim -

A deep-time approach certainly supports all the Pleistocene rewilding proposals, e.g., Josh Donlan et al. It would also make it a no-brainer to start introducing more southerly genotypes of trees in eastern North America northward hundreds of miles in test populations — to keep pace (or anticipate) climate change, but to do so with less of a sense of "this is unnatural." Rather, north-south movements we would help facilitate (say, of beech) would be no more unnatural than the N-S movements of beech and other trees facilitated by Passenger Pigeons and blue jays and tornados during the waxing and waning of the ice sheets. And that is why, in my view, this paper is so helpful:

1. **"An Assessment of Invasion Risk from Assisted Migration"** by Jillian M. Mueller and Jessica J. Hellmann, *Conservation Biology*, 28 June 2007.

Content: Distinguishes history of inter- v. intra-continental invasive species in assessing the risks. Concludes that fish and crustaceans may pose a high risk. "We conclude that the risk of AM to create novel invasive species is small, but assisted species that do become invasive could have large effects." NOTE TO JESSICA: The old url I had linked to this no longer works. Give me the new url. Also, I sense that this article is essential for convincing conservationists that N-S movements in eastern North America are not dangerous. In fact, can anybody show me an example of an invasive species in among plants in the eastern USA that is, in fact, owes to translocation N-S in eastern North America? I bet there are no examples.

All for now,

Connie

On 5/20/10 2:14 PM, "Jim Robbins" <[jimrobbins@mt.net](mailto:jimrobbins@mt.net)> wrote:

Connie --

In a nutshell how would deep time change our approach to conservation -- all conservation, not just torreya?

----- Original Message -----

From: Connie Barlow <<mailto:cbtanager@bigplanet.com>>

To: Jessica Hellmann <<mailto:hellmann.3@nd.edu>> ; Camille Parmesan <<mailto:parmesan@uts.cc.utexas.edu>> ; Patrick Shirey <<mailto:pshirey@nd.edu>> ; Josh Donlan <<mailto:jdonlan@advancedconservation.org>>

Cc: Vivian Negron-Ortiz <[mailto:Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)> ; Estella B. Leopold <<mailto:eleopold@u.washington.edu>> ; Janet Marinelli <<mailto:jmarinelli@earthlink.net>> ; Emma Marris <<mailto:e.marris@gmail.com>> ; Michelle Nijhuis <<mailto:michelle@nasw.org>> ; Jim Robbins <<mailto:jimrobbins@mt.net>>

Sent: Thursday, May 13, 2010 6:51 AM

Subject: Assisted Migration and the need for a New "Leopold Report" for USF&WS mgmt of ESA species

May 13, 2010

Fr: Connie Barlow, founder of Torreya Guardians . . .

—

Jim -

Absolutely. I'm preparing for a talk I'll be flying to Houston for this weekend, but after I return Monday evening, a phone conversation is fine any time. (I'm in Seattle.) 850-420-8002 is my cell.

Do make sure you peruse our Torreya Guardians website before the call:

<http://www.torreyaguardsians.org/>

I googled you and see you have written a great deal from your post in Montana. A book on this crucial new topic is much called for — though having written 4 science books myself, I would be absolutely frozen by how quickly the ethos around this concept is changing. I imagine you plan to bring this to press quickly. I will, of course, be recommending others for you to interview who are also part of this Torreya effort.

I am self-employed at home, so you can call anytime.

Connie Barlow

On 12/10/09 1:41 PM, "Jim Robbins" <[jimrobbins@mt.net](mailto:jimrobbins@mt.net)> wrote:

Connie --

I write for the New York Times and I am working on a book about assisted migration. I wondered if I could interview you? Can you send me a phone number and a time to call?

Thanks, Jim Robbins

—

**Subject:** Re: John Briggs paper in Fisheries relates to Assisted Migration debate

**Date:** Tuesday, September 23, 2008 3:52 PM

**From:** John Briggs <[clingfishes@yahoo.com](mailto:clingfishes@yahoo.com)>

**Reply-To:** [clingfishes@yahoo.com](mailto:clingfishes@yahoo.com)

**To:** Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

**Conversation:** John Briggs paper in Fisheries relates to Assisted Migration debate

Dear Connie:

Thank you for the kind comments about my North Atlantic fisheries article. The concept is certainly relevant to the work in terrestrial assisted migrations. I should have made reference to the connection. Thank you also for the reference to your web site and the assisted migration literature. It will be helpful. I'll look for your book on ghosts of evolution.

Best wishes, Jack Briggs

.

--- On **Sat, 9/20/08, Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>** wrote:

From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>

Subject: John Briggs paper in Fisheries relates to Assisted Migration debate

To: [clingfishes@yahoo.com](mailto:clingfishes@yahoo.com)

Cc: "Janet Marinelli" <[jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)>, "Josh Donlan" <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org)>, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)>, "Jessica Hellmann" <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>, "Chris Berdik" <[rcberdik@yahoo.com](mailto:rcberdik@yahoo.com)>

Date: Saturday, September 20, 2008, 11:07 AM

Hello John Briggs -

This is Connie Barlow, author of "The Ghosts of Evolution" (Basic Books, 2001). I just came upon your April 2008 paper published in Fisheries, and want to let you know that I view it as required reading for those of us involved in the "assisted migration" debate for terrestrial species affected by climate change. I have cc-d a number of people who need to be aware of it.

(For those of you cc-d, you can get to it by going to the link below and then paging down to p. 180. His discussion of "The Great Trans-Arctic [Marine] Biotic Interchange beginning 3.5 million years ago is crucial reading for those of us familiar with the "Great American Biotic Interchange," brought about for land creatures some 3 million years with the Isthmus of Panama connection)

"The North Atlantic Ocean: Need for Proactive Management", by John C. Briggs. Fisheries, April 2008. Vol 33, pp. 180-184.

[http://www.fisheries.org/afs/docs/fisheries/fisheries\\_3304.pdf](http://www.fisheries.org/afs/docs/fisheries/fisheries_3304.pdf)

Note to John Briggs:

You, in turn, might want to become familiar with what the rest of us terrestrial folk have been talking about. A good way to peruse the topic is to go the webpage I keep for listing all the important papers and news reports and blogs on "assisted migration" and "rewilding."

<http://www.torreyguardians.org/assisted-migration.html>

Thus far, all the items listed and linked have been entirely terrestrial. I added your April 2008 paper to the bottom of the list, and wrote this brief description of it:

For those of us considering the importance of "assisted migration" of species impacted by climate change, or outright "rewilding" of species or surrogates to regions in which they lived thousands of years ago, this paper is something to ponder. Here the author proposes that the collapses of fisheries in the North Atlantic may be irreversible without infusion of new species diversity, and that much is to be gained (and little risked) by introducing North Pacific fishes into the North Atlantic. The deep-time

discussion of "The Great Trans-Arctic [Marine] Biotic Interchange" (which began 3.5 million years ago when the Bering Land Bridge was transgressed by marine waters), is crucial reading for those of us working with entirely terrestrial biotas.

Best wishes,  
Connie Barlow

--

—

Dear Torreya Guardians –

This is John Nielsen from the Science Desk at NPR News in Washington. I am doing a story about assisted migration projects linked to global warming and as far as I can tell you're the only such project up and running.

I'd like very much to feature your work in the story I am working on: the only glitch is that the deadline for the story's just been moved up to COB this Friday. For that reason, I would be exceptionally grateful if you'd help me get in touch with a torreya expert ASAP. So far I have been unable to locate the phone numbers for the experts mentioned on your website.

Thanks and cheers,

John Nielsen  
202 513 2781  
202 641 8378

—

Connie,

Those videos are wonderful. Thanks for passing them along - I love them!

Please keep me posted.

You might enjoy the link below. Click on "statement" and scroll down to the section "Conservation Biogeography".

I hope we are able to cross paths sometime.

Best,  
Josh

◆ Josh Donlan is invited to speak on rewilding at the UNESCO International Year of Biodiversity Science Policy Conference in Paris (25-29 January) <[http://portal.unesco.org/science/en/ev.php-URL\\_ID=8090&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/science/en/ev.php-URL_ID=8090&URL_DO=DO_TOPIC&URL_SECTION=201.html)> . He co-chaired the committee on the statement and recommendations <<http://www.unesco.org/mab/doc/iyb/recommendations.pdf>> from the conference for the Conference of the Parties to the CBD to be held in Nagoya, Japan in October.

On Feb 24, 2010, at 11:37 AM, Connie Barlow wrote:

Hi Josh -

This is Connie Barlow. I just posted 2 short videos on my YouTube Channel that I know you will enjoy. The first (link below) is really fun -- hiphop song I wrote and sang and instrumented on Garageband -- full of photos from my 2001 Ghosts of Evolution book. See who I dedicate the video to at the end (and who holds a Shasta ground sloth dungball). The weird picture of me wearing a Honey Locust Pod headdress was when Paul Martin and I staged a "Mammoth Memorial Service" at the Mammoth Site in Hot Spring SD around 1998 or 1999.

<http://www.youtube.com/watch?v=A-kYjjphxJY>

The pictures of the Indian one-horned rhino eating *Gymnocladus* pods in that video I took at The Wilds in southern Ohio - offsite natural site for endangered species owned by 3 zoos trying to breed them. I got to test-feed the pods to a male rhino out on the range there -- since its a browser it

gobbled them all up (I took the photo while sitting in the front passenger seat of a warden's truck, with my friend stretching out his arm from the rear seat to feed the rhino.) What an experience! First time since the Miocene that Kentucky Coffee Tree was reunited with its most ancient dispersal partner! The gray rhinos, as grazers, we tested first, and they had zero interest in it, as expected.

Oh, if you want the lyrics to that Ghosts song in pdf, click here:

<http://thegreatstory.org/songs/ghosts.html>

This next video to look at is an Overkill talk with chart that I gave in 2004. I am just now finally pulling out some old video and getting clips up on YouTube such that they can get in use. No more book writing by me: just cool webpages and videos!

<http://www.youtube.com/watch?v=oHHPSQkrDIA>

Just want to make sure you are aware of a resource list I keep up to date on online accessible papers/articles on the issue of assisted migration (with some stuff on rewilding at the bottom, though I don't maintain any google alerts on it, but if you give me the cites and urls I'll be happy to add:

<http://www.torreyaguardians.org/assisted-migration.html>

Oh, I think music videos are the way to get a message out today, and I specialize in the wow factor and the humor of a ten-year-old boy, as I never really grew up. So, if you've got some ideas for a MUSIC VIDEO ON REWILDING, I'd be happy to collaborate, as I am now really adept at Final Cut video software (I wrote the song, recorded it, laid on music, assembled the photos, and put together the video using Final Cut in just two long, thrilling days!) As to voice, you could assemble some students/colleagues to sing into a computer anywhere using a cheap but good mic, once the basic music line is laid down, then I could assemble, or music types could do the whole song, and then I'd just run with making the pictorial part of the video.

See my music video collaborations on this page of one of my websites:

<http://www.thegreatstory.org/contemporary-church-videos.html>

Here's my own publications page and bio:

<http://www.thegreatstory.org/CB-writings.html>

Best wishes,  
Connie Barlow  
--

C. Josh Donlan MA PhD  
Address from Sept '09 - May '10  
Copeland Fellow in Global Sustainability  
Department of Biology, Amherst College  
Amherst, MA 01002 USA

Director, Advanced Conservation Strategies | <http://www.advancedconservation.org>  
Fellow, Cornell University | <http://www.eeb.cornell.edu/donlan>

—  
Thanks Connie.

Maybe hold off on adding the paragraph for some UN reasons. I have kept in close touch with Emma and her book. Jim Robbins - no.

Please keep me posted on things.

Bests,

Josh

On Jan 29, 2010, at 7:26 AM, Connie Barlow wrote:

Josh -

Great to periodically keep in touch like this. I have a google alert for "assisted migration", "assisted colonization", and "managed relocation", so whenever a significant paper or news report shows up online I add it to the annotated list I keep at the following url. If you scroll way down to the bottom of the url immediately below, you will see the "rewilding" papers that I also have listed. Alas, I do not have a google alert on it, as I've already topped out my time and as rewilding has other meanings, but if you ever want to have something added to this list, just let me know. The url, BTW, consistently shows up as #2 or #3 on a google search for "assisted migration" and "assisted colonization", so I have found that scholars have a keen interest in making sure their papers are listed and linked there. Here is the url:

<http://www.torreyguardians.org/assisted-migration.html>

One other link on my site you might want to periodically scan whenever you are trying to update your sense of current events on this issue is our "comments" page, for which I as webmaster select entries myself.

<http://www.torreyguardians.org/comments.html>

If you want me to add your para from your email below to the comments page, I would be happy to do so.

For Torreya,  
Connie Barlow

P.S. I assume you are keeping journalists Jim Robbins and Emma Marris (yes?) informed of your newest activities, as I recall in conversations with them (or at least one of them, my brain is foggy on that) that they are including rewilding chapters in their forthcoming books on new conservation ideas.

On 1/28/10 12:38 PM, "Josh Donlan" <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org) <x-msg://267/jdonlan@advancedconservation.org> > wrote:

Thanks Connie.

Looks like a timely and important conference. You will be pleased to hear that I presented a plenary talk this week in Paris at UNESCO International Year of Biodiversity Biodiversity-Policy Conference. Among other things, I covered rewilding, assisted colonization, the role of history in conservation strategies, etc. Lots of excitement and interest from the audience and delegation.

Sincerely,  
Josh

On Jan 26, 2010, at 8:13 PM, Connie Barlow wrote:

Note to the cc people: Patrick Shirey is the author of the crucial Dec 2009 paper, "Assisted Colonization under the Endangered Species Act."

Patrick -

Thank you for the lead on the April 2010 conference at Mississippi State U, for which abstract proposals are due Feb 1. Here is the url you supplied:

<http://www.cfr.msstate.edu/wildlife/symposium/>

The conference looks important, so I added this comment of yours to the "Comments" page on our website so that others might find out about it. Here is that page:

<http://www.torreyaguardians.org/comments.html>

I am cc-ing Josh Donlan, who is lead author of the two classic papers on Pleistocene Rewilding (published in Nature and then a longer one in American Naturalist), as I sure hope at least one of those authors can make a presentation. What I feel is most lacking in conversations about assisted migration outside of our Torrey Guardians group and outside of the Pleistocene Rewilding conversation is a willingness to look at what is native habitat from a deep-time perspective. It's like almost all wildlife biologists are still stuck in the (Starker) Leopold Report conclusions of the 1970s, when Leopold was commissioned by the National Park Service (as I recall) to come up with a benchmark time (just prior to Columbus) that parklands would be managed for. Time for a new perspective! I have spent a lot of time with Paul S. Martin, Pleistocene ecologist and one of the coauthors of the Pleistocene Rewilding papers, and he really taught me to see thru deep-time eyes — and how thoroughly mixed up species cohabitations were at the height of the glaciation and then in the huge variations in species recovery of northern ranges — basically the community model (which his own work 5 decades ago had helped establish!) got thrown out and the opportunistic species frame came in (thanks in large part to the work of palynologist Hazel Delcourt).

Overall, once one steps into the deep-time perspective, it becomes utterly rational to think of northward introductions not as moving outside of native range, but as really keeping pace with native range as extant species (by definition) have always had to do! Torrey was moved by us not into new habitat, but returned to its deep-time habitat (the southern Appalachians) which most likely was central (or even southerly) to its range for tens of millions of years prior to the onset of the Pleistocene.

Anyway, about halfway down my webpage that lists all the important papers and reports concerning assisted migration is this key article. Any wildlife biologist who reads it should lighten up about fears of northerly movements, although it justifies freshwater fisheries biologists very important concerns. Seems to me that the Pleistocene Rewilding authors, plus this paper, are crucial for getting deep-time considerations into the mix.

**"An Assessment of Invasion Risk from Assisted Migration"** by Jillian M. Mueller and Jessica J. Hellmann, *Conservation Biology*, 28 June 2007.

Content: Distinguishes history of inter- v. intra-continental invasive species in assessing the risks. Concludes that fish and crustaceans may pose a high risk. "We conclude that the risk of AM to create novel invasive species is small, but assisted species that do become invasive could have large effects."

I have cc-d the journalists I know who have covered this issue in the hopes that at least one will show up at that conference.

For Torrey,  
Connie Barlow  
Torrey Guardians

On 1/19/10 7:25 AM, "Patrick Shirey" <[pshirey@nd.edu](mailto:pshirey@nd.edu) <[x-msg://267/pshirey@nd.edu](mailto:x-msg://267/pshirey@nd.edu)> <[x-msg://36/pshirey@nd.edu](mailto:x-msg://36/pshirey@nd.edu) <[x-msg://36/pshirey@nd.edu](mailto:x-msg://36/pshirey@nd.edu)> > > wrote:

Hi Connie,

I thought you might want to know about a species introductions and reintroductions symposium at Mississippi State University in April.

<http://www.cfr.msstate.edu/wildlife/symposium/>

It seemed like something that might interest the Torrey Guardians. I am considering submitting an abstract.

Best,  
Patrick

—

Thanks Connie.

What a great story. I will be sure to spread the news.

Cheers,  
Josh

On Aug 1, 2008, at 9:34 AM, Connie Barlow wrote:

Hi Josh -

Yep, I had already seen Brandon's blog in Wired, and in fact we've just been in touch and he's asked to be added to my Torrey Guardians list for my occasional email alerts. I have just finished the draft of the full overview of the Torrey Rewilding action. Yet to be linked (I hope) are personal commentaries from participants reflecting on the action (I will certainly write one myself and post it). Other than that, it is probably mostly done. The photodocumentary pages of each of the two sites will be supplemented with maps and notations of exact plantings, and which ones received soil amendments, but those will not be linked for public access. But I will note on the public pages that interested parties can contact me and request the code for access.

Here is the direct, updated link, not yet posted with the rest:

<http://www.torreyguardians.org/waynesville-rewilding.html>

For Torrey,  
Connie Barlow

On 7/31/08 2:17 PM, "Josh Donlan" <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org)> wrote:

Hi Connie et al.

I timely article in Wired just came out focused on the subject as well. Link is below

Cheers,  
Josh

\*\*\*\*\*

Josh,

Sorry the deadline carousel made it hard to connect, but if you've got a few free moments from the ESA meeting this week, I'd still be glad to talk -- about the Great Plains rewilding concept, and anything else interesting happening in the field. Will you be around?

Brandon

p.s. Here's my article:

[http://www.wired.com/science/planetearth/news/2008/07/species\\_relocation?currentPage=all](http://www.wired.com/science/planetearth/news/2008/07/species_relocation?currentPage=all)

On Jul 31, 2008, at 8:16 AM, Connie Barlow wrote:

RE: Assisted migration/colonization + rewilding terminology discussion

Hello all -

Below is Mac's email to me which I honored by eliminating the second para of his comment that was in the test document. So I have now posted the publicly accessible document at:

<http://www.torreyguardians.org/assistedmigrationdebate.html>

1. Notice that I have also added my own July 31 posted comment, following all of yours. I title it "acceptance of terminology; advocacy of "rewilding" as a correlative term. I go on to give a brief overview of the "first rewilding of Torrey taxifolia", undertaken for 31 seedlings yesterday by Torrey Guardians at 2 private sites in the Waynesville NC



area. More will be posted on the website in the next 2 days on this historic undertaking, including lots of photos. I'll let y'all know when it is up for view.

2. Mac's email directly below lays out an interesting panoply of terms with short definitions. I sense that the "assisted colonization" meeting pre-ESA will be lively and useful in this regard. So, again, after the meeting, Jessica let me know what written results I can hotlink to or post in pdf on our website (at least temporarily, until you get something official up and running, but I know how long that can take. When you do get something officially posted after the meeting, I'd be happy to remove anything you give us on a temporary basis for posting on the Torreya Guardians website, and simply hotlink it to the official site.) I do things instantly because I am webmaster.

Connie Barlow

On 7/29/08 2:54 PM, "Mac Hunter" <[Hunter@apollo.umenfa.maine.edu](mailto:Hunter@apollo.umenfa.maine.edu)> wrote:

Dear Connie

I am comfortable with you quoting the first paragraph of my email. I am not sure about the second paragraph which diverges strongly from the focus on terminology and might slightly ruffle the feathers of some Minnesotans and Mainers who don't consider themselves farmers or conservatives respectively. Does it really need to be included here?

I have since had further exchanges on this issue in which we considered "assisted dispersal" (does not confuse the animal ecologists but still fails to recognize that much of the work required will come in establishing a population) "assisted translocation" (internally redundant) and "assisted range shifts" (awkward language). "Assisted colonization" may remind some people of invasive species but it makes me think about disturbance and the first stage of succession.

With the prominence of the issue in Science I expect there will be considerable inertia around "assisted colonization."  
.....mac

Date sent: Tue, 29 Jul 2008 08:31:02 -0500  
Subject: Re: Assisted colonization naming comments posted  
From: Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: Chris Thomas <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)>  
Copies to: Hugh Possingham <[h.possingham@uq.edu.au](mailto:h.possingham@uq.edu.au)>,  
Jessica Hellmann <[hellmann.3@nd.edu](mailto:hellmann.3@nd.edu)>,  
<[hunter@umenfa.maine.edu](mailto:hunter@umenfa.maine.edu)>

Chris -

Excellent! I've already heard back affirmatively from Hugh Possinger, as well. So just 2 more to hear from before I open the link. The

main place the page will be linked from will be this key page:

<http://www.torreyguardians.org/assisted-migration.html>

It is the page I began back when the NYT reported on the initial popular article in Conservation, that was in anticipation of the subject in the April 2007 paper in Conservation Biology. (Wow, I just see that McLachlan and Jessica Hellmann were coauthors of that paper.) Anyway, my goal was to create a page that (a) would stay current on the core papers, public reports, and commentary, and (b) would work its way up to being (and staying) high on Google, so that anyone entering into the subject would easily be able to trace the important history and access the core papers.

Try this: type in "assisted colonization" into Google. You will see that this page on Torreya Guardians is number 5. Then type in "assisted migration" and you will see the page is number 3. It is an important page, so please help me keep it current by letting me know what important additional on-line available stuff happens. (You will note that when you click on the McLachlan, Hellman, Schwartz paper, it actually brings up the real pdf. I hope that someday soon one of you will send me a link for the pdf of the forum paper in Science -- although I do sympathize with the journal needing to collect some revenue for awhile on folks paying online for access to that one paper.)

Onward for Torreya taxifolia,  
Connie Barlow

On 7/29/08 3:19 AM, "Chris Thomas" <[cdt2@york.ac.uk](mailto:cdt2@york.ac.uk)> wrote:

Dear Connie,  
I am happy for my comments to be made available on your webpage (could polish the English, of course, but not too bad!). Chris

Connie Barlow wrote:

Hello Jessica and Chris and Malcolm and Hugh:

This is Connie Barlow of Torreya Guardians. I thank all 4 of you for responding to my request a week ago for reconsidering the terminology: assisted colonization or migration. After hearing from all 4 of you, I am much less concerned about the term assisted colonization.

I apologize for taking so long to get back to you. I have posted a test-page on our website that lists all 4 of your comments, drawn from the emails you either sent me directly or cc-d me on. As none of you expressly authorized me to post your comments, I have it only available as a test page at the moment, not linked to the rest of the Torreya Guardians website. You can access it here:

<http://www.torreyguardians.org/assistedmigrationdebate-test.html>

REQUEST: Please let me know, each of you, whether or not I may post your comment as shown on this test page < and I am happy to make any changes you may wish.

I would like to get this full-comment page posted in advance of the ESA pre-meeting on this issue, which I understand begins August 3. On July 30, 3 of us Torreya Guardians will be planting 31 Torreya taxifolia on two different private properties south of the Smokies

in North Carolina (elevations 3400 and 2600 feet, mountainous terrain). An Audubon reporter and photographer will be there to film this effort in "assisted migration", or colonization, which I also enjoy referring to as "rewilding", if one comes to the matter (as I do), from a deep-time perspective. Again, only from a deep-time perspective is it clear that moving *Torreya taxifolia* north is truly help with its own long-established migratory patterns of movement south and north to track the waxing and waning of glaciations--glacial /interglacial migrations, rather than merely seasonal migrations. (On July 29, Audubon will be reporting/photographing the official Endangered Species Act propagation work at the Atlanta Botanical Garden.)

Jessica: When the "Assisted Colonization" working group has finished meeting, please either (a) give me a hotlink to connect our own webpage with whatever website will post the results (especially on the naming issue) or that will continue the effort, or (b) send me a pdf of any report(s) that you'd like to have posted on the web and I'll be happy to do it from the *Torreya* Guardians website (and also I will make sure to hotlink them into wikipedia).

Thanks!

Connie Barlow

-----  
Malcolm Hunter, Jr.  
Dept. of Wildlife Ecology  
University of Maine  
Orono, Maine 04469-5755 USA

-----  
Kara -

This is very exciting. As you will see in another email, I am asking 4 *Torreya* Guardians in your area to see if one can make a site visit to your grove. Meanwhile, this is to let you know that I have added your comment to the comments page on our website, but without your full address and without your email. If others can help you, they can contact you via me. But the 4 I am corresponding with are the gung ho local activists on this.

I have also added you to my email list that I send out to (usually 3 or 4 times a year) when something significant happens on *Torreya taxifolia* issue.

Thank you for contacting me!

Together for *Torreya*,  
Connie Barlow

<http://www.torreyguardians.org/comments.html>

On 5/16/07 3:09 PM, "Kara C.Ferris" <kara@picarapc.com> wrote:

> Hello-  
>  
> I have three *T. taxifolia* on my property- two large trees and one  
> medium tree with a clump of small trees and sprouts (maybe  
> seedlings?) around it . They produce a lot of cones but I haven't  
> seen mature ones. I haven't really looked that hard, though. Maybe  
> there are treasures hidden in the ground around them, which hasn't  
> been disturbed in years.  
>  
> It's quite possible that these trees are from the original

> population. My late grandfather-in-law, Harry Dewar, was an  
> electrical engineer who often worked for the TVA on dam projects. He  
> collected specimens from all over the South and planted them on this  
> property, formerly a pasture, now a forest. This house was completed  
> in 1952, around the same time as the Appalachian dam. It would make  
> sense that he would collect specimens from the area to be flooded,  
> assuming he was there, but I have no proof of this.  
>  
> In any case, I would like someone to come look at the trees and tell  
> me how I can help to preserve them. I want to make some changes to  
> that area of the property- take out the non-natives and get rid of  
> some pines and magnolias- but I'm afraid to alter the conditions lest  
> it affect the existing trees. I would love to plant more *T. taxifolia*  
> in place of the common trees, if I can get them. I'm also interested  
> in planting some *Franklinia*.  
>  
> Please email or call me and let me know how I can help with this or  
> any other conservation projects. You can forward this email to any  
> other interested parties.  
>  
> Thank you-  
>  
> Kara C. Ferris  
> 2169 Spring Creek Rd.  
> Decatur, GA 30033  
> 404-329-1603  
> [kara@picarapc.com](mailto:kara@picarapc.com)  
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Karl -

Glad that you found us! I have added you and your organization (with your webpage link) to the "Who Are Torreya Guardians?" page, listing you as an advisor to us. Also, I posted the text of your email, with a link to your webpage on our "Comments on Rewilding" page. I checked out your website; lovely photos and fun one of you with the rattlesnake. Glad to see this area being heralded; I'd love to see public education about the Appalachian as it being a special heritage site for eastern North America, as the protector of rich plant diversity during the peak ice ages.

Together for Torreya,  
Connie

On 11/15/06 12:04 PM, "Karl Studenroth" <[nwflec@yahoo.com](mailto:nwflec@yahoo.com)> wrote:

Hello! I came across your website recently about the FL Torreya tree and I was very impressed! It's great to see your site and all the detailed information on it!

I'm Karl Studenroth, a field ecologist-herpetologist. I did extensive research at Torreya State Park from 1994 to 1999. I did amphibian and reptiles surveys, rare & endangered species surveys, ecosystem classification and mapping, among many other things. I also specifically surveyed and mapped Torreya trees in the park. I have a special love for the Torreya tree and of course Torreya S.P. and that area.

Two years ago I founded the Northwest Florida Environmental Conservancy. I just wanted to let you know that I put some brief info about your Torreya Guardians website, and a link to your site on one of our web pages (page 12 - Steepheads).

I hope we can perhaps work together and support each others groups in the future. Keep up the great work!  
Regards, Karl

Karl Studenroth  
Founder - NWFLEC

NWFLEC Website:

[www.nwflec.com](http://www.nwflec.com) <<http://www.nwflec.com>>  
<<http://home.earthlink.net/~gilbertc/>>

Northwest Florida Environmental Conservancy

P.O. Box 1221

Marianna, FL 32446

850-592-1346

—

Keith -

Glad to see you are interested in *Torreya taxifolia*. *Torreya Guardians* has no seeds at the moment. And we only send seeds to people with larger properties in which they can ultimately plant an orchard. *T taxifolia* comes in male or female trees, so a minimum of 4 or 5 must be planted to ensure at least 1 of each sex.

Best wishes with finding *T taxifolia* in a nursery.

Connie Barlow  
*Torreya Guardians*

On 5/24/09 11:59 AM, "Keith Shoemaker" <[keithshoem@aim.com](mailto:keithshoem@aim.com)> wrote:

> Hello,  
>  
> I'm interested in placing a Florida *Torreya* in my yard. I live in Zone  
> 10, would this tree tolerate this climate? Also, Are there any programs  
> that provide free trees to help landowners protect this and other  
> endangered trees? it would make great sense since residential trees  
> tend to be safe from the developers who are clearing most of the  
> pristine areas in Florida.  
>  
> Thanks,  
>  
> Keith Shoemaker

—

Lawrence -

I cc-d you an email I sent to the best prospect for getting California *torreya* seeds for testing on your tortoises. Thank you for contacting me. I sure hope this can work out. Please email me your full mailing address and phone number, in case Swanton Pacific Ranch agrees to provide the seeds. There should still be a few ripe ones on the trees (or on the ground ) now, although squirrels are notorious for gathering and burying them.

For *Torreya*,  
Connie Barlow

On 10/18/07 8:54 PM, "Lawrence Fisher" <[bumbycamp@yahoo.com](mailto:bumbycamp@yahoo.com)> wrote:

I read at the 'rewilding' *Torreya* website about a little experiment to use gopher tortoises as *torreya* propagators. I am studying about a hundred on my property. Send me the details if you are interested in pursuing this.

Lawrence Fisher  
Apopka, FL

—

Dear Connie,  
Thank you very much for your suggestion.  
Most of all, thank you for the great work you are doing.  
Sincerely,  
Lee Ann

On Dec 31, 2007 9:32 AM, Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:

> 1. Seeds are very limited, and we already have several off-continent sites.  
> The rest we are aiming to use to migrate them to their presumed historic  
> peak interglacial range.

>  
> 2. U.S. Endangered Species Act institutions are already doing great work  
> trying to reintroduce to "native" habitat. I do know that the lead  
> institution in that endeavor, the Atlanta Botanic Garden (in Atlanta,  
> Georgia, USA) has an overabundance of seedlings that they are happy to  
> donate to nonprofit institutions, so please contact them directly through:

>  
> Ron Determann  
> [rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)

>  
> Best wishes in your important work,  
> Connie Barlow

>  
>  
> On 12/27/07 6:48 PM, "Lee Ann Conner" <[leeann@ahimsainternational.org](mailto:leeann@ahimsainternational.org)>  
> wrote:

>  
> >  
> > Hello,  
> >  
> > Our non profit organization AHIMSA International is seeking Torreya  
> > taxifolia seeds for our biodiversity conservation program.  
> >  
> > As you already know one of the primary threats to species is loss of  
> > habitat. We are working diligently to address habitat loss while propagating  
> > and reintroducing threatened plant species into native areas and preserving  
> > them as botanical specimens in conservation centers around the world.  
> >  
> > "Over 8,000 plant species worldwide are threatened with extinction",  
> > according to the World Conservation Union. This number grows daily.  
> > Researchers recently estimated that between 22 and 47% of the world's flora  
> > is in serious decline. In the United States alone, 744 plant species are  
> > listed by the by the U. S. Fish and Wildlife Service as threatened or  
> > endangered. This is over half of all the world's imperiled species. Such  
> > accelerated extinction is disturbing, because plants provide essential  
> > ecosystem services that sustain life on the planet. Worldwide efforts to  
> > conserve and manage plants are critically needed. It is our goal to  
> > propagate, protect and preserve this important tree for years to come.

> >  
> > Thank you for all your efforts and important work of preserving Torreya  
> > taxifolia. I really enjoyed looking at your site, its very informative.  
> >  
> > Please learn more about our conservation program by visiting our website at  
> > [www.AhimsaInternational.org](http://www.AhimsaInternational.org). We look forward to hearing from you.

> >  
> >  
> > Thank you,  
> >  
> > Lee Ann Conner  
> > Public Outreach  
> > Ahimsa International  
> >

> > [www.ahimsainternational.org](http://www.ahimsainternational.org)  
> > [leeann@ahimsainternational.org](mailto:leeann@ahimsainternational.org)

---

Lee -

Fabulous!!!! When you pick them up, please email me the stats on how many there actually are, and I will put a note up on the website. Are you going to distribute them this fall, and let folks winterize them themselves? Or are you going to do that. I am recalling that Atlanta Botanical Garden advises having them outside buried in the cold, rather than in a too-constant temp fridge.

Connie

On 10/26/07 6:09 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Bill,

It's really great to hear that you have collected so many seeds this year and you are willing to share with Torreya Guardians. I'm in Asheville early Thursday afternoon (1:30-3ish) and could arrange a pick-up site at your convenience (I'll have a fairly limited pickup period then -2-3 pm as I'm off to Durham to help my parents home from a hip surgery recovery unit). I'm also very flexible to pickup in Asheville the first half of the following week (Nov. 5-8 th).

I'd also like to do some brainstorming with you and Connie as to the best way/places to distribute seeds... I'm more inclined to distribute between highly skilled seed propagators who might then distribute established seedlings or rooted cuttings than just to an eager but unexperienced sgeneral public (altho the passion of individuals iso very important to successful distribution and further long term seed availability. I'd like us all to think about this...)

Bill, I want to thank you again for your interest in preserving Torreya esp. since you and Biltmore Estates are the primary source of seeds, period. So I'm willing to meet you Thursday, etc. or set a better time for you the following week. So please email me or give me a call- Thanks and Happy Trails, Lee 828-646-1593 cell

----- Original Message -----

From: Bill Alexander <<mailto:balexander@biltmore.com>>

To: 'Lee Barnes' <<mailto:lbarnes2@earthlink.net>>

Sent: Friday, October 26, 2007 5:46 PM

Subject: RE: Torreya seed availability

Lee,

We gathered around 200 more or less. Let me know next week how to get them in your hands. I did enjoy meeting with Michele.

Bill

Bill Alexander  
Landscape and Forest Historian  
The Biltmore Company  
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Visit [www.biltmore.com](http://www.biltmore.com) <<http://www.biltmore.com>> today!

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Connie and Jack-

I'm planning on clean seeds this week and sex by dowsing prior to packaging for distribution. I'm thinking of emailing past volunteers and let them stratify on own property per Atlanta Bot. Garden suggestions. Bill Alexander also wanted us to re-ask various institutions. And we'll open remaining seeds to additional qualified "Guardians." Jack is top of the list so I'll need a mailing address...

My comments on yellowing Torreya is that there may be a problem with Phytophthora root rot- other horticulturists have noted a problem with root rot, so over watering can hasten the disease. Typical symptoms of Phytophthora would be yellowing of single branches and then whole sides of trees. There are specific fairly expensive soil drench fungicides – I'd need to check recent recommendations. Best to plant in well drained soil... Later, Lee

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Monday, November 19, 2007 7:50 AM  
To: Jack Johnston  
Cc: Lee Barnes  
Subject: Re: torreya

Jack -

I suspect that the cuttings show no growth because they are putting all their effort into establishing root. I have seen California torreya saplings that put on zero new growth in a year, presumably because they are just maintaining in the very dense shade, and yet they seem okay.

Remember to regard the advice I got from Ron Determann at Atlanta Botanical Garden, which I posted on the rewilding page of the Torreya Guardians website:

Also important, Ron told me that Atlanta Botanical Garden has almost 100% success with germination of seed they produce there. Here is how they do it.

TIPS FOR GERMINATING SEED: Remove the flesh around the seed and immediately plant each seed *outdoors* about 1 inch deep in well-drained soil, covered with compost. He says the normal shifts in temperature during the winter in Atlanta and points north are important for stratifying them and breaking dormancy, and that a refrigerator is not cold and variable enough. Pots outdoors would get the seed too cold in harsh climates, so in the ground (or in slightly raised beds) is best. They use "welded wire" beneath the planting and above to keep rodents away from the seeds. So this means that if we ever get access to more seeds, we need to distribute them right away for fall plantings in outdoor conditions. At Atlanta Botanical Garden, they germinate the seed under oaks, with the natural fungi in the soil. His experience suggests that it is best to remove the fresh seedlings from the germination beds pretty much as soon as you see them, and get them planted where you want them, and you will have better trees.

End of ABG.

I would also like to list you as a Torreya taxifolia propagator on our "Who Are Torreya Guardians?" web page. What location should I put for you? Are you growing the cuttings/seeds in Highlands NC?

I visited Torreya State Park 2 days ago, on the way to Tallahassee, which is where we are right now. Over Thanksgiving, I will be staying at a private nature sanctuary in the Panhandle, that planted 8 T. tax seedlings in 2001, dispersed around the property. So they are now 6 years old. I already toured the site, and the trees that are still alive (5 of them) are very lush growth, about shoulder height, as they are in the sun, but have no seeds at all yet. One of the 5 is starting to turn yellow foliage. The owner tells me that she watered them devotedly during the drought, but this is what happens when the other ones died too. She says they seem to turn yellow and then finally die during a summer drought — no matter how much water she gives them.

For torreya,  
Connie

On 11/18/07 6:32 AM, "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> wrote:  
Hi Connie,

The interview with Orion Magazine regarding Torreya went well. I wish I had time to learn more about Torreya from the writer who seemed to know a great deal about them. What I learned was that deer will eat them and that it is unusual for homeowner to grow them.

I have some Torreya seeds washed and exposed to peat at room temperature in plastic bag, will chill later. I had hoped to share them but did not have permission from DNR who gave me permission to have them in the first place since it is an endangered species. Hope for good germination!

I have 3 cuttings green from the ones I took a year ago, but no growth. I find that interesting. My six plants are growing but did develop a few brown needles in the drought.

Should the seeds come up, I will plant a "grove" to try to establish a seed orchard. From what I have seen at Smithgall Woods, it takes about 5 years for seed production to start.

My only concern is that the seeds were harvested a bit green to keep the squirrels at bay.

Best regards,



Jack Johnston

---

Connie,

I sent this out last week but had your email wrong (.net vs .com). I've gotten 3 requests... I'll send you the addresses I have on file (including one list of folks you gave me last year by email) to check with your additional new Guardians... I'll try to email you those lists later today- Happy Trails, Lee

From: Lee Barnes [<mailto:lbarnes2@earthlink.net>]  
Sent: Tuesday, February 26, 2008 7:44 PM  
To: [bill@roxburghw.freemove.co.uk](mailto:bill@roxburghw.freemove.co.uk)  
Cc: [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)  
Subject: 2008 Torreya Guardians Seed Distribution

Dear Torreya Guardians,

We are pleased to again offer packets of *Torreya taxifolia* (Florida Stinking Cedar) seed from the 2007 seed harvest at Biltmore Estate in Asheville, NC. We thank Bill Alexander and his staff for collecting and sharing seeds for this grassroots distribution project. We are releasing 20 packets, each with 5 male and 5 female seeds to allow for better pollination. We are first offering seeds to the 2006 Distribution volunteers since most experienced low germination rates from refrigerator stored seeds. Seeds are currently being stored under natural temperatures but should be requested as soon as possible due to my recovery from hip surgery in mid-March.

Thanks to Connie Barlow for her detailed notes taken during her site visit in December 2007 to the Atlanta Botanical Gardens. Ron Determann's generous sharing of their highly successful germination procedures is available from our website <http://www.torreyaguardians.org/propagate.html>. Connie also has provided additional photographs and additional information on rooting cuttings, as well as, more info on site selection, shading and need for periodic liming. I will provide copies of this information with each mailing.

Key to successful germination is cold stratification to duplicate nature's cycles in ground beds that get the full range of daily temperature cycles (freeze/thaw) vs. constant 40-45 degree F. temperature storage in a refrigerator. The seeds to be distributed have only been partially stratified so you will need to plant them in protected beds where they receive natural temperatures for a month or two. Simple wire screening is recommended to protect from squirrels.

Please email your requests to me and provide complete shipping information. Connie and I am donating all mailing and packing costs and ask that you occasionally report germination status, and plant growth, fruiting, and seed production. Volunteers need to be committed for 10-15 years before good seed production is expected and be willing to further distribute seeds.

Thank you for your interest in preserving our national botanical treasure Torreya-  
Happy Trails, Lee

Lee Barnes  
Ph.D. Environmental Horticulture  
Land Stewardship Consulting/ Stewardship Dowsing  
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PO Box 1303, Waynesville NC 28786  
828-452-5716 home office/fax  
828-646-1593 cell

---

Connie,

I'm just back in Waynesville and will try calling you late Sunday afternoon... I can help with site and planting suggestions.. Happy Trails, Lee

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Thursday, June 19, 2008 10:04 AM  
To: Sara M. Evans  
Cc: Jack Johnston; Janet Marinelli; Lee Barnes  
Subject: Re: Torreya seedlings for Waynesville NC - Evans land

Sara -

I just did a Google Maps closeup of your subdivision and clicked on "Terrain" that gives the contour intervals. From what I can see, it looks like you live at 3,300 in a kind of swale running W-E that has a ridge to the south 200 to 300 feet higher than you, with groundwater running from

west to east in the swale, and that you have 1,000 feet of mountain ridge rising directly from your property up to the north, with several spots on it peaking around 4,400 feet. Is that correct?

You say, "it may be too shady". Is the shadiness owing to deciduous trees? Are there open places in the canopy where a little judicious ground management of undergrowth here and there would work to give 6 dispersed seedlings opportunities for partial sun?

If so, it looks very good to me. I just left a message on Lee Barnes's cell phone to call me, and also to see if he could walk the land with you while you are there July 9-21. If you and he together figure out spots to plant 6 seedlings, would you be willing to have the Audubon photographer come and do a photoshoot of us planting the seedlings on July 30, even though you won't be there then?

And do check with the others you mention. Perhaps the location for rewilding will shift entirely to Waynesville, instead of Highlands.

One more question: Given that the seedlings may not produce seed until most of us in this email correspondence are dead, could you establish provisions somehow that would ensure that the next owners of the property would not cut over the Torreyia and that they would allow Torreyia Guardians to periodically check in on the trees, and harvest seeds for further distribution?

NOTE TO JANET: If Waynesville is on the list for plantings July 30, then it would be ideal if the Audubon photographer could start July 30 morning at Jack Johnston's place 35 miles south of NC, where he has seedlings already planted and where the 2007 Biltmore seed harvest planted seeds have just begun to sprout for him. Then we could drive up to Highlands (if any of the new seedlings go in there) and then (or instead) keep going on up to Waynesville to plant more seedlings there. Else the photographer could just meet us in Waynesville -- that is, if Lee Barnes assesses that the situation for planting looks good there.

I just left a message on Lee's cell phone to call me. Here are his stats

Lee Barnes  
Ph.D. Environmental Horticulture  
Land Stewardship Consulting/ Stewardship Dowsing  
Unique Mountain Properties- <http://www.uniquemountainproperties.com>  
PO Box 1303, Waynesville NC 28786  
828-452-5716 home office/fax  
828-646-1593 cell

NOTE TO SARA: Please email me your full address and phone number. My cell is 850-420-8002

Together for Torreyia,  
Connie

Friends,

I just made a site visit to the Evan's property on Eagles Nest Mountain in Waynesville, NC. I see at least three possible planting areas: 1) in cove area just west of house down to road; 2) possible planting below front of house (sunnier area); and 3) slope northeast and above house (smaller area, sunnier, dryer). There is enough area to plant 10-30 plants in 2-3 microclimates. The paths are narrow but I feel we could go in to plant without noticeable impact but still get in for photo shoot and maintenance, etc. The cove area is the largest with numerous microclimate area and gentle to steep slopes. There are major rock outcrops on the western part of the property and a few smaller outcrops at the top of the cove. Area below house smaller but could have 6-12 plants. I'm thinking 10-20 feet between transplants at this time. I look forward to walking the property with the owners to get their input.  
Happy Trails, Lee

Here are the Evans site for Torreyia photos that I want to share with you.

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

---

Friends,

I'm excited to hear of Corneille Bryan Native Garden's interest in *Torreya* seedlings- it would be an ideal additional location (more ravine-like, likely to get care during establishment. I know the gardens but have not been by in a couple of years... I'll drop by tomorrow and snap a few photos. Thanks and Happy Trails, Lee

From: Sara M. Evans [<mailto:s-ewan@umn.edu>]  
Sent: Monday, June 30, 2008 1:59 PM  
To: Lee Barnes  
Cc: Linda MacFarland; Janet Manning  
Subject: FW: Evans site for *Torreya*

Lee, this sounds great. I am copying Linda MacFarland (chair of the Corneille Bryan Native Garden Board) and Janet Manning who staffs the Garden. They have expressed an interest in talking about some planting there where you can be sure that the seeds will be tended. The Garden has lost some trees at the upper end which means they have room they didn't think they had when these conversations began. You might want to walk it one day soon and let them know if you think you want to pursue it and what it might involve for them.

Sara

---

Friends,

I stopped by the Corneille Bryan Native Garden (CBNG) at Lake Junaluska today... here's a few photos. The Gardens are in a narrow, North-South oriented ravine that would be ideal for some *Torreya*... I'm guessing the shaded area on the lower west side of the gardens would work well, maybe with seedlings placed to be potential "evergreen screen" along the edge... I'd be happy to meet with Linda and Janet to discuss the site further. This site is well loved and tended and has great educational outreach possibilities. Would be a good photo opportunity. Thanks and Happy Trails, Lee

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

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Jack,

It's very common that the *Torreya* seeds germinate at different rates...there are several reports of *Torreya* not germinating until the second year. Have you given thought to planting distances? I'm leaning more towards 15-20 ft. apart or further... what was the distance between the trees with seeds you collected? I'm thinking plants should not shade each other but close enough for wind pollination? Thanks and Happy Trails, Lee

From: Jack Johnston [[mailto:jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)]  
Sent: Tuesday, July 01, 2008 8:41 PM  
To: Lee Barnes  
Subject: RE: Corneille Bryan Native Garden site for *Torreya* plantings

Hi Lee,

I have heard of this garden, and I agree that it would be a good location based on the care that is given the plants.

I still have *Torreya* coming up! They did not all germinate at the same time. Is that usual?

Jack

---

Jack,

Thanks for your observations- there are sunnier areas at both Evans and Bryan (CGNG) sites- the shelf above the Evans driveway and in canopy gaps at CBNC- at CBNC numerous herbaceous plants fill in the gaps due to more mesic conditions... there would be a little more attention needed here to keep seedlings exposed but I do not see that as a problem. Other "edge" area can be examined. Since these are deciduous forests, seedlings still get JJ year with filtered shade. I only saw a few rare *Torreya* seedlings in thick deciduous forest 23 years ago in *Torreya* State Park... open areas showed fire burn sign... I think some of the seedlings should be planted in cove areas... at Biltmore, naturalized/ squirrel planted seedlings did best in shaded ravine next to evergreen pine forest which was taken out by storms a few years ago...mature plants appeared sunburned several years later. Later, Lee

From: Jack Johnston [[mailto:jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)]  
Sent: Wednesday, July 02, 2008 10:05 PM  
To: Lee Barnes; [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com); 'Sara M. Evans'; 'Linda MacFarland'; 'Janet Manning'

Cc: [jmarinelli@earthlink.net](mailto:jmarinelli@earthlink.net)

Subject: RE: Corneille Bryan Native Garden site for Torreya plantings

Hi All,

I am just returned from Woodlander's Nursery and have 30 *Torreya taxifolia* in one gallon pots in my yard. The round trip was 406 miles. It took a lot of time, but I had a nice visit with Bob McCartney. He had additional plants if anyone wants more. I would guess he had about 10 that were a touch scruffy from this seed lot, then about 10 more that looked great but were younger, and a big pot of seedlings that represents another 15 plants maybe.

He took me to see his seed plants which are on a private estate. There are 3 cutting grown plants, one male and 2 females. One of the females was smashed by a falling oak limb and has not recovered. The two females are only about 3 feet tall and sprawl since they are cutting grown. The male is twice that size. It is so dry that the one female with seeds is aborting most of them. Since Bob has no way to water it, there may not be seeds this year, or certainly only a few.

I'll share a bit of info regarding setting out the plants. I have found it best to get rid of all the material in the pot and try to get the roots in contact with dirt. Once the plant is in the ground it is difficult to water through the bark mix used for growing. I lost a plant last summer even though I was watering. When I pulled it up to examine the roots it was readily apparent that the water was not penetrating well, and that the plant had died from lack of water.

Also, I am concerned about these 30 plants being planted in the shade. It is probably easier for the plants to survive the dry weather with shade, but I know they will not prosper unless light reaches the crowns. I have ample evidence of how important light is due to observations of *Stewartia ovata* that I grow. The plants put out leaves and grow a little in the shade, but given sun they grow fast. I think it is the same with *Torreya*.

It is interesting to compare the seedlings I brought back today with the ones I have had in the ground for two years. The ones in the ground are not much taller, but they have a larger stem diameter.

I asked Bob how long he thought it might take for seedlings to flower. He seemed to think about 10 years. However, the seedlings are already 3 years old, and given good conditions maybe less than 10 years?

Best,

Jack Johnston

---

Friends,

I just met with Sara Evans and Linda MacFarland to walk Sara's property for possible *Torreya* plantings. I'm hoping to get up with Janet Manning to review the planting sites at Bryan Native Plant Gardens... I hear they have over 500 species/cultivars! My photos do not show much detail (yellow surveyor flags kinda hide in the herbaceous layer...) I placed flags in three areas and also eye-balled a 4th site. Basically I selected a sunnier site, a more shaded, and a more moist/humid area- I placed out flags at +/-10-20 ft. spacings... ideally we'll plant +/-20 plants at the Evans and 10-ish at the Bryan Native Gardens at Lake Junaluska. The two locations give us variance in elevation (3400 ft. and 2600 ft.) and the Junaluska site will have more TLC with easier watering and great public exposure. At Junaluska we can probably get sunnier planting sites also.

Some questions come to mind:

- 1) Is Jack coming to Waynesville for the plantings?- I wanted to query his and Connie's thoughts on planting sites since you both have seen more *Torreya* plantings than I...
- 2) Are we going to use soil amendments (like lime, greensand, etc.) or are we going for the more re-wilding concept of little human input as if squirrels were doing the plantings?
- 3) We need to figure a way to map and mark the plantings... Sara may be able to find a survey that we can use as a base map or I can photo-enlarge county property maps. I'm trying to think of an aesthetic way to mark the plantings- we may just use wooden stakes since we only need to mark them for the first few years so we can check up on them... I'm willing to watch them this summer and make sure they get water if our drought continues...
- 4) We need to think of text that we can use on a small sign at Bryan Gardens... I'm willing to pay for some educational info/ small signage for use in the public gardens than match what they are already using....
- 5) Do we know about when folks will be in Waynesville... late morning or early afternoon, etc. - Janet manages the Bryan Garden usually on Mondays and Wednesday - at first I thought you all were coming on Tuesday but I see that July 30th is Wednesday... we might want to go to the Gardens first since it will be easier for the photographer (wider trails, more open, etc.) I'm also thinking about getting the local paper to cover the Bryan Native Garden plantings but be more "low key" with Evan's plantings so that those plantings are a little more private...

Thanks and Happy Trails, Lee

Here are the photos that I want to share with you.

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

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Lee -

Lee you are a gem! Great idea to ask Ron for advice on this.

Connie

On 7/17/08 6:09 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Ron,

Connie Barlow has obtained 30 - 1 gal. *Torreya taxifolia* (from Woodlanders) and *Torreya Guardians* are planting them near Waynesville and Bryan Native Plant Garden at Lake Junaluska. Would you please share any thoughts on planting site- we'll be planting at 3400 ft. cove hardwood site and a deciduous ravine at Lake Junaluska. My basic questions:

1) We are thinking of planting in three microclimates as "clumps" of 6-10 plants- we're thinking 15-20 ft. spacings for light and canopy spacing but also close enough for pollination. At one site (deciduous maple, tulip popular, rich herbaceous layer, trillium, flame azalea, transplanted shortia, etc.) we have three microclimates to choose from- 1) diffuse sun 10-50 ft. from forest edge above cut bank, 2) mid-slope planting, well drained in 50 yr. old canopy gaps, and 3) or lower site, morning diffuse sun, western shade due to side ridge but more mesic site/ higher humidity. Do any of these sites sound more desirable? We will be able to water this season for establishment.

2) The 2nd location is a deciduous shaded narrow north-south oriented ravine (Bryan Native plant garden at Lake Junaluska 2600 ft.) where we have choice of deciduous shade and new canopy gap due to tree removal. The jewel weed etc. has been released in the gaps but plantings can be controlled by volunteers as well as available water.

I appreciate any comments you can supply... we'll be planting at the end of July...Thanks and Happy Trails, Lee

Lee Barnes

Ph.D. Environmental Horticulture

Land Stewardship Consulting/ Stewardship Dowsing

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828-646-1593 cell

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*Torreya Guardians*,

I met with Janet at Corneille Bryan Gardens and we looked at multiple sites that did not interfere with their rare plants. The Gardens are best used as a public educational site and I'm not so concerned about maximizing pollination by clump planting...

The Gardens are narrow and there is not any great location for a clump of plantings more than 3-5 plants at a site. The sunniest site is where some oaks were cut at the upper end of the gardens but there is only room for a couple of trees. We have marked several sites including a more shaded area at the lower western side (see attached map) where there is room for a clump planting.

Has anyone commented on or noted any problems with Black Walnut toxicity on any *Torreya* plantings? We have an area just uphill of several huge walnuts on "Walnut Hill." We're make final planting sites with Jack and Connie's eyeballing of the sites.

I'm expecting we'll get together at the gardens at 12:30- 1 pm-ish if you are leaving Georgia at 10 am and plan to grab a little lunch on the road...

best to call my cell 828-646-1593 when you are on the road so I can double check times with Linda and whoever can meet at the gardens. I'll have planting supplies and tools and we can plant some or all of the plants prior to going to second site (esp. if photographer wants shots at both sites). I'm willing to come back and do final plantings at both sites and follow up with watering for establishment at Evans planting site... Janet will make sure transplants are watered until establishment if we remain droughty.

So I'm planning on meeting everyone at Lake Junaluska just down the creek from the gardens and leading folks to parking areas. Thanks and Happy Trails, Lee

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

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Friends,

I was just at Sara Evan's property this morning and the Torrey seedlings look great (!) despite only scattered rain this last week...none were wilted nor showed any signs of shock. I watered each plant with about a 3/4 gallon of water and will water them once a week if we do not get regular rain.

I'll try to get by Corneille Bryan Gardens tomorrow to check with Janet and folks about those seedlings. I now have a white measuring stick and intend to photograph each plant to document its initial height, double check labeling and confirm names Connie's detailed and mapping. We should probably want to document height growth each year.

Thanks for everyone's help-Happy Trails, Lee

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]

Sent: Friday, August 01, 2008 12:44 PM

To: Brandon Keim; Jack Johnston; Janet Manning; Janet Marinelli; Ken Gehle; Lee Barnes; Linda McFarland; Russell Regnery; Sara M. Evans

Subject: Torrey Rewilding Overview now fleshed out

Hi all -

Check this page again and see all the cool stuff I've added:

<http://www.torreyguardians.org/waynesville-rewilding.html>

QUESTION: I will be creating a separate page, linked to the main Torrey Waynesville Rewilding page, that is dedicated to COMMENTARIES by any of the participants in this action. I am looking forward to writing one myself, as I tried to be half-way reporterly in my writing of the main overview. A commentary allows me to express personal reflections. I encourage any of you who wish, short or long, to contribute something to this historic event.

Send it to me in MS Word. If it is long, I will convert to pdf and link that pdf to the commentaries page, which will be in html code and mainly serve as an annotated table of contents to entice people to sample the pdfs. If it is short, I will transcribe it into code compatible with html and put it right up on the page.

Together for Torrey,  
Connie

---

PHOTO OF CHAMPION TORREYA TREE IN NORLINA

Connie,

I found this photo while cleaning 20 year old boxes- I believe it is from 1983-84 near Norlina, NC...Later, Lee

Here are the photos that I want to share with you.

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

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Connie and friends,

Here are the Torrey "children" at Bryan Gardens... "you're on your own... in your ancestral home..." but with loving care from Janet and staff/volunteers...I'll take photos this winter to complete a photo gallery...

I'm experimenting with the photo backdrop... testing options between yellow or white grid... it depends on the moment to moment lighting... I'm planning on documenting plants at Evans property next... but first keep them watered until season dormancy with first frost-ish...we really need a good tropical depression to sing rain on the mountains for a week!

Connie, I'm really enjoying the annotated list of names (and embracing all their contributions) and meeting them again in the wild as individual Torrey... Janet mentioned my thought of an adopt-a-plant donation program... I'm all ready seeing individual growth habits and "personalities" and starting to guess the "boys from the girls.."( I think the boys are the tall skinny ones...) . Happy Trails, Lee

Here are the photos that I want to share with you.

I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

—

Lee -

Remember at the very end of the day you gave me the aluminum tags you had had in your pocket? Michael had been doing that task at at Cornelle Bryan Center, but then he ran out. So we photographed and mapped the plants without putting on tags. When you all were down in the road waiting for me to come down, too, I yelled back that I was putting tags on. I started at the top of that side, and then I thought Julia was the last one that needed it, but apparently a whole bunch of others didn't get them either.

I posted the gist of your email (below) report on the rewilding page of the website.

Connie

On 9/26/08 8:36 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Friends,

I went up to check the Torreya Wednesday and all look well- I've photographed them and will sort and distribute those photos in the next few days. Oddly about 11 dozen plants were without the aluminum name tags- these were all in the area immediately above the bank by the drive. We have received enough rainfall the last two weeks that I have not had to water the plants for three weeks- I'll continue to monitor the plants and look forward to showing them to Sara. There was a large tree that fell beside on plant, but no damage- the tree was sawed and I counted 110-120 tree rings in a middle section- one can see the growth release (wider growth rings for about 5-10 years) when the chestnut trees died about 70-80 years ago- I hope the wood does not all get split into firewood before I can show this to Sara.

The reporter from Boston Globe interviewed me about the plantings but I've not seen his article- it was suppose to be in last Sunday's paper but might not have been printed until this Sunday. I hope all goes well with everyone's plantings- I'll try to by Lake Junaluska gardens in the next week to check them there also- Happy Trails, Lee

Lee Barnes

Ph.D. Environmental Horticulture

Land Stewardship Consulting/ Stewardship Dowsing

Unique Mountain Properties- <http://www.uniquemountainproperties.com>

PO Box 1303, Waynesville NC 28786

828-452-5716 home office/fax

828-646-1593 cell

—

Hi Bill -

This is Connie Barlow.

I just posted the gist of your comment below on the rewilding status page of Torreya Guardians:

<http://www.torreyaguardians.org/rewilding.html>

Make sure you check out the chapters on assisted migration that I just posted from Brian Keel's thesis (he coined the term):

<http://www.torreyaguardians.org/keel-assisted-mig-a.pdf>

<http://www.torreyaguardians.org/keel-assisted-mig-b.pdf>

Also, keep watch on this page, as I keep posting the latest academic papers and news reports (though not in order or recency):

<http://www.torreyaguardians.org/assisted-migration.html>

IMPORTANT! In order to ensure that the precious genotypes live even if the Chauncey Beadle trees themselves die, please ensure that your grounds crew stops trimming the stem sprouts coming up from the base. I noticed when I first visited the Biltmore that each of the elder trees had lovely stem sprouts, but my most recent visit there shows that they had been pruned away. When I was in California visiting the local torreya there, even very very healthy trees of all ages had stem sprouts. They tend not to grow large at all until the main stem dies.

Together for Torreya,  
Connie

On 10/17/08 7:24 AM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

From: Bill Alexander [<mailto:Baalexander@biltmore.com>]  
Sent: Thursday, October 16, 2008 3:32 PM  
To: 'Lee Barnes'  
Subject: RE: Torreya seed crop this year?

Lee,

I hope you are doing well. Sorry for my long silence, but it has been one of the busiest seasons of my life along with experiencing the loss of a new grandson in September. I hate to be the bearer of bad news, but there will not be any available seed from the Torreyas this year. Any seed formed were either aborted due to the drought or squirrels got to them before we could. Some of the trees are looking very weak and experiencing some dieback and loss of limbs. I hope it is a temporary condition, but they seem a little weaker each year. I am working with our arborist to see if we can do something to help them. He also reported finding no seed on the trees when he checked a month or so ago. That may have been a good thing for the trees in that they needed to reserve their energy to order to survive the drought. I have seen years in the past with few or no seeds followed by a bumper crop the next season. Let's keep our fingers crossed for a good 2009 season!  
Bill

Bill Alexander  
Landscape and Forest Historian  
The Biltmore Company  
One North Pack Square  
Asheville, NC 28801  
828.225.6347-Phone  
828.225.6383-Fax  
[balexander@biltmore.com](mailto:balexander@biltmore.com)

Lee -

Great job on the responses!!!

Together for Torreya,  
Connie

On 1/28/09 10:52 AM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Peter,

Thanks for your interest in Torreya Guardians and our project rewilding /assisted migration of Torreya taxifolia. TorreyaGuardians appear to be a flagship promoting public discussion of rewilding. Here's some comments on your questions... feel free to contact me for clarification, etc. Thanks and Happy Trails, Lee

-What ecological function does the species perform? Are other organisms or systems dependent upon it?

Torreya is a rare species with little study of its ecological function. Torreya taxifolia was widely distributed throughout the Northern Hemisphere as evidenced in pollen fossil records for many millions years. It's historical



location is known only along the lower reaches of the Appalachian River where it has been described as located along bluffs and ravines. The relic population was presumably restricted by regional wildfire and over-collected for steamer firewood. *Torreya's* evergreen nature does offer year round cover for wildlife. Seed propagation is apparently not occurring in the wild and it has been suggested that the nutmeg-sized *Torreya* seeds were possibly disseminated by now extinct megafauna. Squirrels have been observed to distribute seeds in Georgia and North Carolina.

-What sort of habitat is necessary for the species to flourish?

Habitat for *T. taxifolia* is relatively unknown, described historically as growing along the bluffs of the Appalachian in southern Georgia and panhandle Florida. Other *Torreya* species are observed growing either as thick groves on bluffs/rock face or in mixed understory. *Torreya* has been successfully grown in arboretums in North Carolina, Georgia, New York, Ireland, and Switzerland. Preliminary studies suggest buds are winter hardy to minus -10-15 degrees F. (personal comm..1985). Healthy *Torreya taxifolia* trees have grown at the Biltmore Estate for nearly 100 years, surviving winters of -10-15 F. *Torreya Guardians* are field testing two small plantings of 30 *T. taxifolia* in WNC – one site is a north aligned ravine at Corneille Bryan Nature Native Garden at Lake Junaluska. The second site is about 800 ft. higher elevation mid-slope on a 5000 ft. Eagle Nest Mountain. Both mesic and dryer sites were chosen for planting and are being monitored for relative growth and seed production that is expected in 5-10 years.

-How has that habitat shifted in the last few decades?

The rare paleoreugia along the Appalachian River has been impacted by recurring drought cycles and observed major diebacks for over 100 years. Evidence suggests that the African fungal pathogen *Phytophthora* rootrot was introduced through the cotton trade in New Orleans and spread across the southern cotton states, including the panhandle of Florida. This pathogen is known to kill container grown *Torreya* seedlings. Presumably the introduced *Phytophthora* root rot was distributed from cotton fields to nearby forests and infected *Torreya* with major diebacks recorded with record droughts. Drought stress is recognized to influence regional dieback of numerous diseased tree species. Seed production in the historical habitat has not been reported for nearly 20 years. Plantings at the Atlanta Botanical Gardens in Georgia have resulted in natural reseeding and squirrel distribution.

-What does your group do to promote restoration?

We have coordinated two rounds of limited seed distribution to Botanical Gardens, arboretums, and private individuals in Eastern USA, British Isles, and Switzerland. Only a few hundred seeds have been available from one private source with recent seed failures in the last few years. *Torreya Guardians* is coordinating several private plantings with the intent to have a steadier supply of seeds for distribution in perhaps ten years. Different ecological niches at these sites are being investigated with the plants to further determine the species true habitat requirements. Plantings in Waynesville, NC are being monitored for growth, observation of disease, and seed production as plants mature. The website, [TorreyaGuardians.org](http://TorreyaGuardians.org), is continually updated with *Torreya* updates and current progress reports, as well as, continue the discussion of assisted migration.

-What results have you seen (positive or negative) as a result of your work?

Initial seed distribution efforts resulted in poor germination due to insufficient winter stratification. Current recommendations of on-site, in-ground stratification of cleaned seeds will make future distribution more effective. Current 2008 plantings appear to have been well established and are being monitored for winter survival and bud break in the spring. The website [TorreyaGuardians.org](http://TorreyaGuardians.org) continues to educate the public on rewilding discussions and seed saving and transplanting techniques. Connie Barlow is using her experience in setting up *TorreyaGuardians* as a model in creating the new webpage, [PlantGuardians.org](http://PlantGuardians.org), to allow others to champion and promote other rare and endangered species including the rare Mountain Stewardia. Our biggest challenge is manage these plantings for seed production and future distribution with relatively no monies or government support.

-Advice for dealing with other climate-related shifts in habitat?

Observed climate-shifts must stimulate humanity to better study ways to reduce local and global greenhouse gas production, and habitat destruction. We're all on this planet lifeboat together. Rare plants and rare habitats should be especially monitored to prevent loss of biodiversity. When carefully considered, assisted migration might be the only way to preserve numerous plant and animal species. Extinction is forever. First rule, save all the pieces...

Thanks and Happy Trails, Lee

From: Peter LaFontaine [<mailto:Lafontaine@nwf.org>]  
Sent: Thursday, January 22, 2009 1:27 PM  
To: [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net); Jack Johnston  
Subject: Torreya Guardians

Dear Mr. Johnston and Mr. Barnes,

Thanks for taking some time to answer my questions. I'm mostly interested in the climate-related applications of your work with Torreya Guardians.

- What ecological function does the species perform? Are other organisms or systems dependent upon it?
- What sort of habitat is necessary for the species to flourish?
- How has that habitat shifted in the last few decades?
- What does your group do to promote restoration?
- What results have you seen (positive or negative) as a result of your work?
- Advice for dealing with other climate-related shifts in habitat?

Thanks again, and good luck to you.

Sincerely,

Peter LaFontaine  
National Wildlife Federation  
National Advocacy Center  
901 E St, NW -- Suite 400  
Washington, DC 20004

Phone: 202-797-6621  
Email: [lafontaine@nwf.org](mailto:lafontaine@nwf.org)

—

Lee -

That is a fabulous response you wrote. May I add it to the "comments" page on the Torreya website?

Connie

On 4/17/09 9:23 AM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:  
Sidney,

Thanks for the contact. To answer your question: "why moving Torreya is the best way to save it?" I wish that we could reestablish Torreya back into its historical range (Appalachicola watershed drainage- FL-GA) but that may not be possible due to the human influence by introducing Phytophthora root rot into the southern US along with the extensive cultivation of cotton along the Gulf States. There appears to currently be little to no natural seed reproduction in that area. Drought cycles may be becoming more extreme with global climate change. We proposed a logical solution that plantings within the deep time range shown in fossil pollen records (including WNC and over the entire northern hemisphere) are needed to produce additional seeds and evaluate new areas for establishment. Establishing seed producing populations of Torreya in diverse areas should act as a buffer to total

loss due to unpredictable climate change. Many rare and useful plant species now only exist outside of their historical range ([Franklinia](#), [Metasequoia](#), [Ginkgo](#), and many others) due to human concern for the survival of an individual species. We truly need to focus on protecting entire plant and animal communities, but when that is not possible due to habitat loss, we need to focus on short-term propagation and protection just to keep the species alive.

Feel free to call anytime...Thanks and Happy Trails, Lee

From: sidney cruze [<mailto:scruze@verizon.net>]  
Sent: Thursday, April 16, 2009 1:27 PM  
To: Lee Barnes  
Subject: Re: Torreya contact info

sure, here it is:

NCCA Plant Conservation Program Staff Contact Information

Rob Evans – Plant Ecologist

Email Address: [rob.evans@ncagr.gov](mailto:rob.evans@ncagr.gov)

Phone: (919) 733-3610 ext. 249

Also, I have another question for you: can you tell me why you think moving Torreya is the best way to save it? (as opposed to leaving it alone). We've talked about almost every other angle of this situation, but I've never asked you this. If you could get back to me today or tomorrow that would be great.

I'm happy to call you about this, if that works better

Thank you!

Sidney

—

Jackie,

Thanks for your interest in Torreya- I assume you are following all at Torreya Guardians webpage that will bring you up to current activities... We are not sure if seeds will be available this fall (October/Nov.) from Biltmore Gardens, but I'll put you on a list if you desire seeds. You would have to stratify the seeds in the ground for your winter period. Feel free to contact me for additional information. Thanks and Happy Trails, Lee

-----Original Message-----

From: jackie [<mailto:jzflieg@gmail.com>]  
Sent: Wednesday, April 29, 2009 2:21 AM  
To: [lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net); [jzflieg@gmail.com](mailto:jzflieg@gmail.com)  
Subject: T. Tax potential volunteer

Hello, My family and I have property in Sullivan County, New York. There are open fields and some forested land. The property is approximately 30-40 miles NE of the Delaware River. Is that location of interest to you? I also have a sister in Asheville, N.C. and a brother in Tampa, FL. I'm an amateur naturalist/ecologist, and your "assisted migration" is fascinating. Please let me know if that area is of interest to you. Jackie F.

—

Dear Lee -

Thanks for the report — and for the pro-active action. I added your report to these two pages of the website:

<http://www.torreyaguardians.org/comments.html>

<http://www.torreyaguardians.org/rewilding.html>

Together for Torreya,  
Connie

On 6/10/09 1:11 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Connie,

I'm sad to report that we have lost a total of 3 of the ten Torreya seedlings at Lake Junaluska. The loss appears to be from voles eating the bark- I'll send some photos when I get a chance. We are placing short wire-cages of 1/2 inch hardware cloth/rabbit wire around the remaining plants there. I'll try to get up to Sara's in the next few days to report and get some photos. The remaining plants at Lake Junaluska have flushed out with 3-4 inches of new growth... the plants in the sunny area are doing the best, or at least seem to have the thicker foliage. Happy Trails, Lee

Lee Barnes  
Ph.D. Environmental Horticulture  
Land Stewardship Consulting/ Stewardship Dowsing  
Unique Mountain Properties- <http://www.uniquemountainproperties.com>  
PO Box 1303, Waynesville NC 28786  
828-452-5716 home office/fax  
828-646-1593 cell

—  
Friends,

I picked up over 300 seeds from Bill Alexander today- he would like a distribution list. I believe we have 2-3 folks interested but I'd also like to get a number to Jack since he has been so successful in germinating seeds. I also want to try some buried seeds so that we might introduce some different genetics with the plants here in Waynesville-what are your thoughts? I want to mail out seeds pretty soon so folks can cold stratify them in the ground- I'm also thinking of resending seeds to some of the botanical gardens who had little or no germination in the past. Thanks and Happy Trails, Lee

Lee Barnes  
Ph.D. Environmental Horticulture  
Land Stewardship Consulting/ Stewardship Dowsing  
Unique Mountain Properties- <http://www.uniquemountainproperties.com>  
PO Box 1303, Waynesville NC 28786  
828-452-5716 home office/fax  
828-646-1593 cell

—  
Lee -

Great ideas – all. You've got a lot of seeds to work with, hurray! Personally, in addition to Bruce Rinker getting his school involved, I'd love to see some seeds planted in our two existing plots in Waynesville area, so that we can watch how well they germinate and establish naturally, as if a squirrel had planted them — and so that we can get some real genetic diversity into those groves. If Michael's cancer subsides (we will know Jan 14 when he gets the scan and scan results), then Michael and I will be in Waynesville again at th Evans home from somewhere around Thanksgiving 2010 wll into December, so I could do some photography and monitoring.

I have attached the current form of the Word doc where I transfer all email correspondence about folks who want seeds. Outside of the ones we are already working with, there are 3 whose land, latitude/altitude, and personal experience look promising, so I have pasted in those sets of email exchanges immediately below. And with 300 seeds to work with, possibly worth seeing if their situations still apply? Meanwhile, with Jack so good at germinating, we could also buy some time for getting notice out to others. Frankly, with how poor the trees looked the year I took my last visit to the Biltmore, I am hugely surprised that they produced such a massive amount of seeds again. But then, Bill Alexander really knows how those trees do their thing.

Yippee! Seeds, seeds, seeds! And whoever you do send the seeds to, please recommend to them to explore the California Torreya photoessays on the website so that they can see the microhabitats, and for them to review the propagation page, which is a photo-essay of what Atlanta Botanical Garden does: <http://www.torreyaguardians.org/propagate.html>

So, Lee, do whatever you think is best for making the distributions; you have always been in charge of that aspect of our group. Meanwhile, I spent about an hour yesterday educating a New York Times reporter about what we do and why, as assisted migration will be one chapter in his forthcoming book. The Christian Science Monitor reporter who contacted me last month doesn't seem to have followed through with an article — at least not yet. Oh, and Bruce: I am very much looking forward to directing reporters to you in the future, as having a school of students get into this in a multi-generational way is really exciting.

Note to Ed Croom: Do you have any suggestions of landowners you know in appropriate habitat who might want to take on a long-term project of nurturing *T. taxifolia* in wooded landscapes?

Together for Torreya,  
Connie

—

Friends,

I just cleaned 301 seeds that are ready for distribution- there were 115 "floaters" and 186 "sinkers"... I've downloaded Connie's list of Torreya Volunteers and also will look at my list of geographically important volunteers and Botanical Gardens that were sent poor quality seeds in the past (we really need folks with facilities to germinate and raise seedlings for several years prior to transplanting into the wild.)

. I'm wanting to get seeds out so that folks can stratify in situ, fluctuating day/night ground temperatures (per Determann's recommendations). I'm a little concerned about the large number of "floaters" (seeds that float in water, but personal communications with Dr. Ed Croom indicates his contacts with Maclay Gardens/FL who had good germination with floaters.)

I'm wanting to keep some seeds for planting with our Waynesville sites (I'm set-up to ground stratify seeds and grow to transplant size) so that we can increase genetic diversity here. I also want to send a good number of seeds to Jack who has had good germination procedures- I'm thinking 25 -50 seeds for Waynesville and same for Jack...

So I'm asking for your personal thoughts on distribution. I have not had a chance to get up to see the transplants on Eagles Nest and Lake Junaluska but will try with milder weather later this week (we've still got month old snow piles from Blizzard of '09... and possible snow dusting this evening...)... Thanks and Happy Trails, Lee

—

Friends,

I ran by Corneille Bryan Native Garden this afternoon and all the seven remaining Torreya plants looked fine- they were all a bit "laid over" or leaning due to recent snows but no breakage... I got 14 inches of snow in Waynesville the week before Christmas and it's still laying in spots... I'll try to go up to the Eagles Nest plantings late tomorrow morning to get a report. I took photos at Bryan and will send those (and tomorrow's) to anyone who wants a few or all... Thanks and Happy Trails, Lee

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]

Sent: Wednesday, January 13, 2010 2:51 PM

To: Janet Marinelli

Cc: Lee Barnes; Linda McFarland

Subject: Re: Audubon article on Torreya planting

Janet -

I am cc-ing Lee Barnes and Linda McFarland so that they can confirm how many seedlings died owing to rodents eating the cambium of the lower stem. Here is the main page that reports those 3 losses:

<http://www.torreyaguardians.org/waynesville-1.html>

And here are the individual pages that show the photos of damage Lee took:

<http://www.torreyaguardians.org/trees/waynesville-1-chauncey.html>

<http://www.torreyaguardians.org/trees/waynesville-1-hardy.html>

<http://www.torreyguardians.org/trees/waynesville-1-asa.html>

As to your other questions on what other species in the works:

I have a google alert and yet not seen anything on Joshua Tree beyond the interest of journalists stimulated by a paper several years ago and the original Conservation magazine article on the whole issue. So Joshua Tree is not currently being spoken of (plus, as I took the bus in July 2009 from Las Vegas NV to Lee's Ferry at the beginning of the Grand Canyon, I was amazed at how much territory is occupied by Joshua Tree in Nevada - vast vast stretched of desert in low enough elevations; then heading eastward onto the Colorado Plateau they dwindle out, but it would be a smooth trajectory for them to simply keep migrating eastward and hence uphill (though, again, the problem is how far and fast the seed could disperse without human help, as the Shasta Ground Sloth is gone). I think the real concern would be the local population of isolated Joshua Trees in and around Joshua Tree National Monument in California. So that southerly population should not be confused with problems for the species as a whole (which, in that sense, makes it very different from *Torreya taxifolia*.) Having actually seen all the Joshua Tree range in Nevada made a huge difference for me personally in not being too worried about them. The California population may necessarily wink out, and trying to prevent that from happening may make a bit more sense than trying to keep T tax from winking out in northern Florida, but the species itself is not threatened immediately.

Overall, the Australians and the Canadians and the British seem more advanced along the path than the U.S.

Make sure you read this paper for a summary of the history:

<http://globes.nd.edu/news-and-upcoming-events/documents/ShireyAssistedMigration2009.pdf>

And this paper, as the absolute turn for ecologists to HAVE to consider assisted migration:

<http://www.nature.com/nature/journal/v462/n7276/full/nature08649.html>

And this for Chicago Botanical Gardens getting ready to do it with prairie flowers (it's been reported on a lot the last month or so):

[http://www.nytimes.com/2009/11/10/science/earth/10plant.html?\\_r=1&ref=science](http://www.nytimes.com/2009/11/10/science/earth/10plant.html?_r=1&ref=science)

And see this quote from a Sept 2009 UNEP report:

"The reality of a rapidly changing climate has caught many natural-resource managers and policy-makers unprepared. Large-scale translocations might now be needed. Consequently, the conservation community needs to move beyond the preservation or restoration of species and ecosystems in place as the correct approach."

The UNEP report is accessed here:

<http://www.unep.org/compendium2009/>

This on butterflies just this month in PNAS:

<http://www.physorg.com/news182449986.html>

Here is butterflies happening in Britain:

<http://www.citeulike.org/article/5224093>

Go to this page and scroll down to swamp tortoise to see what Australia is doing:

<http://www.cbc.ca/technology/story/2009/11/30/f-climate-change-conservation-bc.html>

Plus this page on Australia actions:

<http://www.icyte.com/snapshots/show/13797>

BUT MOST SIGNIFICANT IS WHAT BRITISH COLUMBIA IS ALREADY DOING because it is foresters, not academic scientists, engaged -- and foresters are used to intense management, not pristine. The cool thing is they have already been planting seeds of genotypes from lower altitudes in the same bioregion to higher altitudes after logging operations (rather than using seeds from the same altitude group). Unfortunately, because they are out there DOING it, not publishing on it, you won't find as much online, but here is a start:

<http://www.for.gov.bc.ca/hre/forgen/interior/AMAT.htm>

Scroll down to the part "AMAT in the News" of the above article and you will see Emma Marris report in Nature. Well, she just completed the draft of a book on the overall shifts in ecological/conservation thinking, and I just suggested edits on the chapter dealing with assisted migration. It really opened my eyes to how far along British Columbia government foresters are in doing this, and what a slippery slope it is once you get started. She did a great job on that and made site visits. Her baby was due Jan 7, but as of yesterday she was still pregnant, so you might be able to catch her by email or phone for a quick conversation:

Emma Marris  
Correspondent for Nature  
Columbia, Missouri  
[www.nature.com/news](http://www.nature.com/news) <<http://www.nature.com/news>>  
[www.emmamarris.com](http://www.emmamarris.com) <<http://www.emmamarris.com>>  
573-256-0611  
skype: emma.marris  
Emma Marris <[e.marris@gmail.com](mailto:e.marris@gmail.com)>

O'Neil of British Columbia contacted me to ensure I would list the articles on the BC work. Here is what he sent me:

On 7/1/09 7:49 AM, "O'Neill, Greg A FOR:EX" <[Greg.ONeill@gov.bc.ca](mailto:Greg.ONeill@gov.bc.ca)> wrote:

> Hello Connie,  
>  
> thank you for the links.  
>  
> I am attaching a recent editorial article in Nature on BC's Assisted  
> Migration Adaptation Trial (AMAT), for your interest. I doubt Nature  
> will give you permission to post the article, but you should be able  
> to post the link.  
> <http://www.nature.com/news/2009/090617/full/459906a.html>  
>  
> CBC TV filmed at two of our AMAT sites last week. They will run a  
> short (10 minute?) documentary on assisted migration some time this  
> summer.  
>  
> Best of luck!  
>  
> Greg O'Neill  
>

Hmmm, I just noticed that my resistance to linking to anything that isn't free online prevented me from making the link to the Nature article, so I have just corrected that, and also moved up the B.C. Main article to closer to the top of my assisted migration articles page:

<http://www.torreyguardians.org/assisted-migration.html>

Oh, wow, I just noticed that the reporter on the long for-pay Nature article on the BC foresters is Emma Marris. It is such an important article I am going to post the pdf myself on my own website until (and if) Nature complains. Gosh, I should have done that before. I hadn't known how important this stuff was till I read Emma's chapter, but it is also right here in the article. So now you can access it here AND THIS ARTICLE IS HUGELY IMPORTANT TO READ:

<http://www.torreyguardians.org/bc-forestry.pdf>

Emma wrote in it: "In a world in which many scientists fret about the toll that global warming is exacting on nature, O'Neill is actually doing something about it." AND: The Canadian province is a pioneer in the field of adaptation, according to Gerald Rehfeldt, a retired United States Forest Service geneticist based in Moscow, Idaho, who has long championed moving trees. "British Columbia is ahead of everybody in the western hemisphere," he says.

The article is very much like that section of her book that I just read. The key distinction is that conservationists and conservation biologists are likely to keep dragging on the idea, but meanwhile foresters are doing it now a business as usual. THAT IS A HUGE DISTINCTION TO HELP AUDUBON READERS SEE!

Thursday I am gone all day (finding out whether my husband's cancer was killed off by the chemo or whether radiation is necessary, so a big day!), but Friday or after is fine for a phone call, or today: 850-420-8002

For Torreya,  
Connie

—

On 1/14/10 1:20 PM, "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

Friends,

I went by Sara Evan's property on Eagles Nest to check the Torreya- all but two looked great... the snow did not knock over the plants quite as much as at the Bryan Nature Garden...I'm guessing the snow was not as "wet" at the higher elevation. I'm sending just a few pictures now and will try to get them all labeled- I'm sending photos of 1) a typical plant at Sara's; 2) Celia is in the fork of a branch on the ground; 3) the dead plant (probably Thomas Jefferson, no label, not quite sure on the map ); and 4) one of the plants at the Nature Center (note wire cage for vole protection); and 5) ice on the rock next to the main waterfall.

I am planning on photos with the background grid, just too busy at the moment and the weather has been terrible! My friends at Grass Roots nursery near Junaluska measured lows of 0 degrees F. but I don't think it was quite as cold at Lake Junaluska... I measured 9 degrees F. as a low on the porch at my house in Waynesville. By the way, Lake Junaluska is mostly frozen over, I think I've only seen that 2-3 times in the last 30 years.

Thanks and Happy Trails, Lee  
I sent these photos using Adobe(R) Photoshop(R) Elements 6.0. Find out more: <http://www.adobe.com/products/photoshopelwin/> <[http://www.adobe.com/go/psewin\\_sigfile](http://www.adobe.com/go/psewin_sigfile)>

—

Janet,

The dead plant was the runt of the plantings... and has looked pretty weak since the plantings...it might resprout from the base in the spring, but I doubt it. I'll look closer at it next time I'm up there...maybe next week. The other weak plant was the second smallest transplant, it does have green needles at the base and I do expect it to leaf-out in the spring. Both of the plants were in the sunnier location. All in all, I think we had excellent survival rates with no care after first month of hand-watering during a drought. The rest of the plants look firmly established and I expect all to grow and prosper. This proves to me that Torreya can be successfully rewilded as transplants... time will tell if they will successfully reseed themselves at our two plantings-Torreya seeds have been spread hundreds of feet from the mother trees by squirrels at Biltmore Estate for many years.



I am saving some of the seeds from the Biltmore Estate to grow seedlings for a couple of years prior to transplanting at these two sites to try to introduce some genetic diversity (seeds from Biltmore and Woodlanders Nursery are from different sources as well as the plant Celia that Connie got from Atlanta Botanical Gardens and carried across the country and back.) Same with seeds to Jack Johnson to add to his established plantings in North Georgia. Please feel free to call or email me if you have additional questions. We received 301 seeds from Biltmore Estate just before Christmas and I'm in the process of sending them out to Botanical Gardens and individuals at locations farther north. I want to get them to folks who can "ground stratify" them, exposing them to natural alternating day/night temperatures that greatly improve their germination based on Atlanta Botanical Gardens experience.

Thanks and Happy Trails, Lee

From: Janet Marinelli [<mailto:jmarinelli@earthlink.net>]  
Sent: Thursday, January 14, 2010 4:29 PM  
To: Lee Barnes  
Subject: Re: Here are the photos that I want to share with you

Thanks so much for the information, Lee! For the purposes of my Audubon article, how should I describe the two plants at the Evans property? Would you say that they are dead, or in severe decline?

Dear Torrey Guardians,

I wanted to share with everybody the current distribution of the 2009 harvest of 300 seeds donated by the Biltmore Estate in Asheville, NC. I have focused on finding allies at Arboreta and Botanical Gardens and a few key seed persons. I have about 65 seeds remaining that I am removing from the 40 degree F refrigerator to a protected outside area where they will be exposed to our seasonal alternating day/night temperatures for cold stratification. My intent is to keep some seeds here in Waynesville for 1) a germination test comparing seeds that "float" and seeds that "sink" while processing after collection, and 2) retain some seeds to grow transplants to add to the further diversity at our current plantings in the Waynesville area. A few sets of 10 seeds are available for further distribution to interested individuals.

I wanted to share email contact information and some comments received during my correspondences. Please also check out updates, photos, and propagation info at Torrey Guardians (<http://www.TorreyGuardians.org>). Please send me any email additions or website corrections.

Seeds that have been distributed so far:

- 1) Dr. Ed Croom, Croomia Botanical Scientific and Regulatory Affairs Consulting, Oxford, MS.- 20 seeds for investigation of possible seed endophytes, possible seed-borne pathogens and preliminary Torrey genetic marker work.
- 2) Joe Hollis, Mountain Gardens Herbs, Burnsville, NC.-20 seeds. -Joe is a regional expert on growing rare species and has one of the best collections of native and Chinese medicinal herbs in the Eastern USA. (<http://mountaingardensherbs.com>)
- 3) Jack Johnson, Lakemont, GA.- 50 seeds. Jack is a long term Torrey Guardian who has been successful with Torrey seed germination. Our intent is to produce additional transplants for planting in northern GA and at the Waynesville, NC planting sites.
- 4) Dr. Bruce Rinker/Charles de Souza/Roger Harris/Alex Niemiera, North Cross School, Roanoke, VA.-20 seeds for germination test and their Hahn Botanical Garden at Virginia Polytech Institute.) Alex currently has a 8-foot specimen that has survived their winters there. They have experience with Torrey cutting propagation.
- 5) Didier Maerki, Geneva, Switzerland.-20 seeds for Arboretum de Villardebelle (<http://pinetum.org>) for germination test, another long term Torrey Guardian with experience with several Torrey spp. They have recently updated their Torrey germination photos on their webpage.
- 6) Sylvain Meier, Nyon, Switzerland. – 20 seeds for Swiss National Arboretum (<http://www.arboretum.ch>) webpage for germination test, long term Torrey Guardian.
- 7) Dr. Mike Ecker/Rich Larson, Newark, OH- 20 seeds for Dawes Arboretum for germination test and winter hardiness evaluation. Successful germination of 4 seedlings from 2006 distribution.
- 8) Ms. Dena Rae Garvue, Clermont, KY.- 20 seeds to Bernheim Arboretum and Research Forest (<http://bernheim.org>) for germination test and their collections.
- 9) Dr. Ted Bilderback/Mark Weathington, Raleigh, NC.- 20 seeds for J.C. Ralston Arboretum (<http://www.ncsu.edu/jcraulstonarboretum>) germination test and their collection. They currently have a couple T. of taxifolia in their collection.
- 10) Dr. Lee Barnes, Waynesville, NC.- +/- 65 remaining seeds for further distribution; cold stratification and seed germination; and production of additional transplants to increase genetic diversity at established plantings.

I wanted to add a few additional comments- several folks have commented on the need to not let seeds dry out prior to cleaning and stratification. I am concerned that seeds that "float" may have lower germination due to drying or less stored food, etc. but Dr. Croom noted that he had heard of good germination of "floaters" seeds personal communications with Maclay Gardens (<http://www.floridastateparks.org/maclaygardens/>) in Tallahassee, FL. who indicated 80% germination from floaters. Others suggested soaking seeds for 24 hrs. after cleaning. I

retested my initial "floaters" that had been stored for several weeks in moist sphagnum moss and found that most were now "sinkers." I did have one uncleaned seed that had rolled behind a container and dried for two weeks that audibly "rattled" inside the woody seed coat- I tried resoaking the seed but it remained a "floater" after several days of soaking- this suggests to me that as little as two weeks seeds can dry out, so I suggest that all seeds be stored in moist sphagnum immediately upon collection and prior to removing fleshy tissues by cleaning. I am curious if the floating seeds might have aided distribution of a species now primarily found growing along a major river??

The fleshy seed coat (sarcotesta) is incredibly sticky and stayed glued to my hands after a dozen hand washings... the only other plant with seeds this difficult to clean in my experience is the Osage Orange.

Again I thank everyone for their interest and dedication to preserving *Torreya taxifolia*. We are still expecting a major article in Audibon magazine about our project, but have heard that it will be delayed due to the death of the photographer. I'll email folks when this article becomes available. Thanks and Happy Trails, Lee

Lee Barnes  
Ph.D. Environmental Horticulture  
Land Stewardship Consulting/ Stewardship Dowsing  
Unique Mountain Properties- <http://www.UniqueMountainProperties.com>  
PO Box 1303, Waynesville NC 28786  
828-452-5716 home office/fax  
828-646-1593 cell

—  
Hello Lee and Jeff -

I have finally gotten around to posting the little dialogue you two had on email last July about the legend of the Norlina NC *Torreya*. Jeff, I showed you as Anon, as I recall you prefer your name not be used. You can find that on the comments page of the website.

<<http://www.torreyguardians.org/comments.html>>

Jeff: The Biltmore collected 200 seeds this year, and will give many of them to us. Lee Barnes will distribute again, but this time immediately, so that recipients can plant outdoors this first winter. A conversation I had with the lead *Torreya* person at Atlanta botanical Garden led me to post that garden's suggestions for germination success. You can find it on our rewilding page:

<<http://www.torreyguardians.org/rewilding.html>>

Both of these pages will be updated within 24 hours of my sending you this email, so you might need to wait a bit to check those pages.

Also, both make sure you look at the pages I have for access to key papers on assisted migration. I list two papers from 2007 issues of Conservation Biology. Both talk about *Torreya* Guardians.

P.S. To LEE BARNES: In whatever standard email you compose to send the seeds out to recipients, please include the "Tips for Germinating Seed" in the green box near the top of the rewilding page. And embellish it with whatever extra advice you think is warranted.

<<http://www.torreyguardians.org/rewilding.html>>

Lee, I had a great and long phone call with Michelle from Orion magazine yesterday.

Together for *Torreya*,  
Connie

On 7/30/07 2:04 PM, "LEE R BARNES" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)> wrote:

>  
> Jeff,  
> I've been to the Norlina *Torreyas* in mid-1980's- there was a very large  
> *torreya* (notably a Champion so must be other records on girth/height/etc.)  
> and many smaller trees that appeared to have been transplanted/moved around

> the landscape. Bill Alexander ( [balexander@biltmore.com](mailto:balexander@biltmore.com); 828-225-6347) at  
> Biltmore Gardens knows of the tree- his wife was a roommate with a woman  
> who was "related" to the tree, possibly a daughter of the landowner. He can  
> give you more info-  
> As I remember , the tree was given to a NC Senator, but I cannot remember  
> details of over twenty years ago!..I remember the tree had numerous basal  
> sprouts(many dozens in a clump) that would make good cutting material. I  
> recommend dormant cuttings after a few hard frosts in the fall. Good luck  
> on the hunt for cuttings... Happy Trails, Lee  
>

>> [Original Message]

>> From: Connie Barlow <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
>> To: Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>; Leigh Brooks  
>> <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)>; Jack Johnston <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>  
>> Cc: T. Jefferson Morris <[abogado28144@hotmail.com](mailto:abogado28144@hotmail.com)>  
>> Date: 7/30/2007 4:22:05 PM  
>> Subject: Torreya - Any advice to Jeff?

>>

>> Hey Connie,

>>

>> Briefly, the Norlina site is in Granville County, near the Virginia line.

> I

>> spent a whole day there, and scoured the town in search of a Torreya  
>> Taxifolia. I even contacted the Agricultural Extension agent, and he  
> knows

>> of no such tree in or around Norlina. I would like to think the legend is  
>> true, but I tend to think that if there were once a T. Taxifolia, it has  
>> either been forgotten or removed by newer homeowners.

>>

>> Jeff Morris

>>

>> P.S. - How can I get some cuttings of a T. Tax. in NC within the next two  
>> weeks, for rooting purposes?

---

Hi Connie,

Thanks for letting me know about this. I doubt I'll be able to make it, but would like to notify some others. FYI, the Chattahoochee Women's Club has a small project with Atlanta Botanical Garden. A woman from the club contacted me last week to say Jenny Cruse (I think?) would be coming down from Atlanta to speak to the club next week and would be bringing three fungal resistant trees for them to plant as educational specimens. I was asked to help find locations on city property for the plantings, which we did over the weekend.

Thanks for your continued interest and work on behalf of TT!

Leigh

----- Original Message -----

From: "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: "Lee Barnes" <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>; "Jack Johnston" <[jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)>; "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)>; "Leigh Brooks" <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)>; "Linda McFarland" <[shortia56@hotmail.com](mailto:shortia56@hotmail.com)>  
Cc: <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)>  
Sent: Wednesday, April 07, 2010 3:13 PM  
Subject: USFWS redoing Torreya plan and wants Torreya Guardians represented

Hello Lee and Jack and Russ and Leigh and Linda -

Vivian Negron-Ortiz has communicated with me periodically in a very friendly way; she is in charge in the USF&WS of the plan for T tax as an endangered

species. Below is the email she sent me and a bunch of other official people. It would be great if at least one of you could attend and "represent" Torreya Guardians at the May 11 meeting in Panama City FL -- and then make sure you send me a little report so that I can post it online. I view it as a very good sign that they would choose to include us in the invitation.

Note on our Comments page that I have posted the gist of Vivian's email and also posted the existing species mgmt plan for T. tax -- which was done in 1986 (and which references Lee Barnes' work!) So it is great that they are doing a 5-year review and status. Here is the comments url:

<http://www.torreyguardians.org/comments.html>

Also scan down that page and see the amazing story of Michael Heim doing "Tertiary Rewilding" in northern Wisconsin -- including both T tax and Florida Yew!

Okay, here is Vivian's official email:

<[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)>  
Preventing extinction and Recovery of Torreya taxifolia  
Dear Interested Parties:

The Service would like to assemble a recovery working group of those currently working on, and knowledgeable about, the natural history of Florida Torreya. The goal of this working group would be to provide input and recommendations to prevent the extinction of this species and work toward recovery. Recommendations from the working group will be incorporated into the 5-year status review which is due in July 2010. I hope you will be able to join this working group.

This working group would discuss past, current, and planned activities and their relationship to the recovery actions stipulated in the Recovery plan. This is important to evaluate so we don't duplicate recovery efforts.

If you are interested in participating in this working group, please respond to me by 21 April 2010. Also, please advise me of other persons who should be included that I have omitted. I'm hoping to finalize the participant list by the end of this month, and propose to meet here at the Panama City Field Office in mid-May (May 11 or 12, or both if needed).

If you join the working group, please do the following prior to the meeting: read the Recovery Plan  
[http://ecos.fws.gov/docs/recovery\\_plan/FL%20torreya%20recov%20plan.pdf](http://ecos.fws.gov/docs/recovery_plan/FL%20torreya%20recov%20plan.pdf)  
<[http://ecos.fws.gov/docs/recovery\\_plan/FL%20torreya%20recov%20plan.pdf](http://ecos.fws.gov/docs/recovery_plan/FL%20torreya%20recov%20plan.pdf)> , bring a description of your current and future plans, and a summary of current research. In addition, please bring any survey or census data you have.

Thanks in advance for your consideration. I look forward to hearing from you.

Sincerely,

Vivian Negron-Ortiz

\*\*\*\*\*  
Vivian Negron-Ortiz, Ph.D.  
Botanist, U.S. Fish & Wildlife Service  
1601 Balboa Ave.  
Panama City, FL 32405  
850-769-0552 X. 231  
[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)

<http://www.fws.gov/panamacity/stafflist.html>

Leigh -

I apologize for taking so long to respond to your email. I am spending today cleaning up a long list of passed-over mail. Great points! Especially about the conflict between portraying *T. taxifolia* as hardy in colder climates at the same time as offering up warm-dependent tortoises as a disperser. I have slightly edited your email and added it, in order of its date, to the "comments" page on the *Torreya* Guardians website. Great to have your thoughts always on these matters.

P.S. Jeff Morris in NC recently got the first of his 10 seeds to germinate (of the 2005 Biltmore seed stock distribution).

For *Torreya*,  
Connie

On 3/13/07 1:15 PM, "Leigh Brooks" <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> wrote:

Hi Connie,

Intriguing hypothesis about the gophers, but I much prefer your earlier idea that there was some other seed disperser that has gone extinct. From my experience here in FL, the gopher tortoise and *T. taxifolia* just don't share the same habitat. The box turtle is the one inhabiting *T. taxifolia* grounds, rich and shady hardwood forests. The gopher prefers high, dry, sandy areas where they can easily dig long burrows.

I checked *The Fossil Vertebrates of Florida* edited by Richard Hulbert Jr. It says box turtles (*Terrapene carolina*) are common in Pleistocene beds, they are herbivorous and primarily terrestrial, they were more widespread in the past though never common, that gigantism is typical in Pleistocene coastal populations but the subspecies is extinct. Among land tortoises, besides gophers there were larger tortoises in the genus *Hesperotestudo*. Subgenus *Hesperotestudo* reached 2 feet, subgenus *Caudochelys* grew to over a meter. Both subgenera lived through the late Pleistocene. Evidence suggests early people in FL found giant tortoises and hunted them.

Now get this. "Giant tortoises are important paleoecologic indicators of relatively mild winter temperatures, as they cannot withstand prolonged periods of freezing. Their presence in Florida and elsewhere throughout the southern United States during the Pleistocene Epoch is seen as evidence that winter temperatures were actually on average milder during the so-called Ice Age than at present." We've seen how comfortable *Torreya* is in a colder climate, so maybe tortoises were not the main disperser for *Torreya*. Any other suspects?

In any case, if someone is going to test this, it seems it should be done on box turtle as well as gopher tortoise. Also, is there a reason for not using *T. taxifolia* itself if seeds are available for assisted migration?

Leigh Brooks

----- Original Message -----

From: Connie Barlow <<mailto:cbtanager@bigplanet.com>>

To: Bill or Euan Roxsburgh <<mailto:Bill@roxburghw.freemove.co.uk>>

Cc: Lee Barnes <<mailto:lbarnes2@earthlink.net>> ; Jack Johnston <[mailto:jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> ; David W. Steadman <<mailto:dws@flmnh.ufl.edu>> ; [dmj@flmnh.ufl.edu](mailto:dmj@flmnh.ufl.edu) ; [brinker@co.pinellas.fl.us](mailto:brinker@co.pinellas.fl.us) ; Leigh Brooks <<mailto:lbrooks2wd@nettally.com>> ; Brooks, Anthea <<mailto:a.brooks@unesco.org>>

Sent: Tuesday, March 13, 2007 9:46 AM

Subject: Re: *Torreya taxifolia* germination and missing disperser

Euan -

Thank you for the info on the germination of 1 of 10 seeds of *T. taxifolia*. Don't give up hope on the other nine! It is possible that *T. taxifolia* co-evolved with tortoises as dispersal agents, so the seed coat might be designed tough enough to get through an animal's digestive tract intact, so absent that acidic treatment it might take longer and variably among the seeds. I wrote a book, "The Ghosts of Evolution: Nonsensical Fruit, Missing

Partners, and Other Ecological Anachronisms," (Basic Books, 2001) in which I discovered, for example, that absent passage through a gut or physical scarring with a knife, the seeds of American honelocust (*Gleditsia triacanthos*) can take 3 years or more to germinate, and American Kentucky coffee tree (*Gymnocladus dioica*) can take 7 years. I found that when I scarred them with a knife in my kitchen, all viable seeds germinated in 3 days. Here are three on-line articles that I published about that book:

<http://www.thegreatstory.org/ghost.pdf>

<http://www.thegreatstory.org/avocado.pdf>

[http://www.thegreatstory.org/anachronistic\\_fruits/index.html](http://www.thegreatstory.org/anachronistic_fruits/index.html)

I AM TRYING TO LOCATE SOMEONE OR AN INSTITUTION IN FLORIDA interested in testing *Torreya californica* whole "fruits" on the large gopher tortoises in Florida, as in my 2001 book I surmised that the pulpy sarcotesta covering the seed might be an attractive food for the tortoise (which is known to eat the pulpy covered cycad seeds here). The experiment would not only test whether gopher tortoises find the fruit attractive but also whether passage through its gut affects germination success and timing. My hypothesis is that local extirpation of the gopher tortoise (and extinction of larger Pleistocene species of tortoise) by paleoIndians living in the tiny pocket refuge as the Ice Age waned may have prevented dispersal of *Torreya taxifolia* northward to its interglacial habitat in the southern Appalachian Mountains.

As to your *Torreya californica* seed inquiry, seeds are very sparse in the wild, except for the site near Santa Cruz where they are abundant. Also *Torreya californica* is a threatened species, so, as with *T. taxifolia*, we would need to find a private grower who is willing to share seeds. I haven't bothered to try to find any, because I haven't yet found someone to do the gopher tortoise test. But I will let you know of my supplier if that comes about.

NOTE: Check these pages on our torreya website, as I have posted your comment and mine:

<http://www.torreyguardians.org/rewilding.html>

<http://www.torreyguardians.org/comments.html>

Together for Torreya,  
Connie Barlow

On 3/10/07 5:51 AM, "Bill or Euan Roxsburgh" <[Bill@roxburghw.freemove.co.uk](mailto:Bill@roxburghw.freemove.co.uk)> wrote:

Hi Connie

It germinated in December 2006 outside in a pot the other 9 seeds sorry to say did not germinate. the seedling is now 2 inches high. I have one other clone here of *Torreya taxifolia*. Do you have access to seed of *T. californica* im trying to locate as many torreya species as possible. But some of the Chinese species are not in cultivation like *T. fargesii* and *T. yunnanensis*.

Regards

Euan

—

Hi Connie,  
Always fun to read what you're up to! Thanks for passing along this info.

The Chattahoochee Women's Club is interested in getting some of the trees from ABG. Their building is adjacent to Gholson Nature Park, and they could take on care of seedlings. I mentioned this to Angus Gholson, esteemed botanist here in Chattahoochee. He does not like the idea. He does not think any torreyas should be planted in this region. His reasoning is that

the fungus is still with us that caused the blight, and that as long as trees are here for the fungus to prey on, the habitat will not recover. He thinks people should wait until all the torreya here are dead, and presumably the fungus too, before trying to reintroduce them. Well, this caught me by surprise, I must admit. Never heard anyone say we shouldn't plant them in their native range. I have not yet communicated this story to anyone, not sure where to go from here. I don't want to upset him by going forward, but I don't think his view reflects scientific consensus. In fact, Schwartz recommends they be planted here rather than anyplace else. What do you think?

Interested in the liming of torreyas in FL when you post that.  
Thanks for all you do,

Leigh Brooks  
Chatthahoochee, FL

----- Original Message -----

From: "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
To: "Torreya-2" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Cc: "Connie Barlow" <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)>  
Sent: Friday, May 09, 2008 9:09 AM  
Subject: Torreya Guardians2 in Orion Magazine May

1. Orion Magazine article on Torreya Guardians
2. Audubon Magazine to cover Torreya Guardians
3. Rewilding possibility end of July in North Carolina?
4. Birth of PLANT GUARDIANS website

Hello Torreya Guardians -

(REPLY ONLY to [cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com))

This is Connie Barlow. The May/June issue of Orion Magazine contains an 8-page article by Michelle Nijhuis, titled "To Take Wildness in Hand." Subtitle: "While scientists debate how to help save species from a warming climate, others aren't willing to wait." The debate over assisted migration in a time of global warming is front and center, with the exemplar species being *Torreya taxifolia*. Why? Because, at the moment, Torreya Guardians is the only organization that not only has assisted migration on its agenda but is actually doing it. And the reason we are the only organization as yet that has stepped out is because we really aren't an organization: just a bunch of interconnected individuals with a website, undertaking individual and small-group actions in a fully bottom-up and spontaneous way. Any "real" organization would still be talking about the pros and cons and maybe beginning to construct an actual plan that would carefully and prudently guide the effort--that is, if the plan eventually was approved.

If you are not a subscriber to Orion magazine, you can purchase the current issue in your local bookstore or do as I just did: go online and pay for a 10-issue digital subscription -- for just \$10 total. Here is the page for doing that:

<[http://www.orionmagazine.org/index.php/mag/orion\\_digital/](http://www.orionmagazine.org/index.php/mag/orion_digital/)>

Within one minute of my using my credit card to subscribe, I got an email reply that let me click to access the current issue: full-cover lovely pdf format, which you can also download and thus archive on your own computer (though it is 20 MB).

Anyway, it is a beautifully written article, and because Orion covers

environmental issues by attending to the human and subjective side of the matter, you will find some fun descriptions of and quotations by Torreya Guardians, in all our individual quirkiness: me, Jack Johnston, Lee Barnes, Bill Alexander. Plus Mark Schwartz who bridges in a very friendly way to "radicals" like me, while standing firm in the worldview of conservation caution and respect for the concept of native habitat (as it is currently understood). Also a Nature Conservancy site manager for *T. taxifolia* in Florida is interviewed and he, understandably, is a long way from venturing toward the bridge, so the controversy itself comes alive in these pages. Overall, I think the article will become a classic in environmental literature because it shows the human side of what happens during major worldview shifts and does so through the lens of the debate about a single species.

AUDUBON MAGAZINE: Months ago, a freelancer who writes occasionally for Audubon contacted me about doing an article on assisted migration, with Torreya as a focus. Knowing that the Orion article was already in process, I suggested focusing on Joshua Tree, another poster plant for assisted migration. Alas, nobody has yet adopted that tree for a citizen effort like ours, so they had to come back to me and Torreya. A photo shoot will probably be happening in this time block: July 30 - August 1. I believe that right now Audubon is figuring on showing up in Jack Johnston's backyard in northern Georgia, where he has 5 *T. taxifolia* planted that he purchased from the nursery in South Carolina that has its own seed stock. And that I will be there for the occasion.

I think we Torreya Guardians can give Audubon something far spicier. What about this:

REWILDING QUERY: Anybody besides me interested in buying up the rest of the South Carolina nursery seedlings and engaging is a real "rewilding" somewhere around Highlands or Cashiers NC (where Jack Johnston has a second home), and which would have been the recipient big-mountain ecosystem in past interglacials when *T. taxifolia* migrated back north, presumably by simply heading upstream? Rewilding would mean not a planting in someone's tended yard there, but planting in someone's "wild" forested property. After all, assisted migration implies that we believe that if we can just get the species there, it will already have what it takes to survive and reproduce on its own in its new home -- in the wild. We would, of course, initially plant the seedlings in places where slope, aspect, vegetational community and other characteristics inclined us to think the plants would feel as if they were in Eden, and locals would surely want to keep an eye on them, perhaps removing branches of neighboring trees that, over the years, might come to take over too much sunlight (a Torreya can survive and meagerly grow in almost total shade, but it needs sunlight to invest in reproduction). But, on the whole, we would be saying, "Okay, Friend, we think you'll like it here; now show us what you can do!"

Ideally, this "first rewilding action" would become a community event, something written up in the local paper, and where the landowner(s) could be proud of their contribution to the community and a species in need.

More, I'd love to see an organization of kids or teens involved in a big way--maybe girl scouts or boy scouts or "Earth Scouts", or a local person could start up a branch of "Earth Scouts" there (see: <http://www.earthscouts.org/>). They could be assigned in advance the task of absorbing the info on TorreyaGuardians.org, studying the photographs I posted there of the habitats where Torreya californica grows in the mountains, and being mentored by local adults there (e.g. Jeff Zahner (?), in addition to part-time resident Jack Johnston) And, of course, the private landowner(s) would pledge to grant that organization ongoing access to monitor and minimally manage the site.

Young folks would be crucial because, while Atlanta Botanical Garden is



superb at using advanced horticultural techniques in getting its potted orchards to produce early and fabulously, this grove of rewilded seedlings would be reproducing at a normal pace middle-aged or older folks (I'm 56) doing the planting likely would not be alive to watch the squirrels bury the first crop of seeds. We need to recruit the young folks now to step in to being "guardians" of these trees for the long-term. We need to give birth to a dedicated lineage of guardians for the long-term, who will pass on the experience, the verve, and the lore from one generation to the next.

Here's what I can contribute:

(1) ONE TORREYA SEEDLING. I have one lovely potted *Torreya taxifolia*, about 18 inches tall, that I've been carrying in my van (my husband and I are itinerant "evolutionary evangelists") every since Atlanta Botanical Garden generously gave me one of their seedlings after my tour of their *Torreya* reproduction effort there in December 2007. I've been waiting till our business carries us back to North Carolina, which will happen July 30, 31, and August 1 -- as I am determined to plant "my" tree there. But it needs partners; we need more seedlings.

(2) MONEY TO PURCHASE MORE SEEDLINGS. I can also contribute money to purchase all the rest of the seedlings from the Woodlander's Nursery in Aiken, SC. And I'd be happy to pay Jack Johnston for gasoline to drive there (that's where he purchased the *T. taxifolia* individuals he now has planted in his yard.) My husband's 2007 book, "Thank God for Evolution," has just been purchased by Viking/Penguin for reissue in hardcover next month, and some money is coming our way from that deal, a portion of which I can use in this effort.

(3) PLANTGUARDIANS.ORG WEBSITE. I will also be using some of that money to finally get a website up and running for a url name I published several years ago: "plantguardians.org". I do not have the time to run the website, but it will be in a form that anyone who is not computer-phobic will easily be able to learn how to serve as webmaster. (*Torreya Guardians* is written in straight html code by me, but now there are fabulous ways to make it possible for anybody to learn to be a webmaster.) *Torreya Guardians* will be the first link to that site, and I'll be asking the new webmaster to also post individual pages for *StewartiaGuardians* and *MountainCamelliaGuardians* that Jack Johnston has provided start-up information and organization for. Thus . . .

CONSERVATION ENTHUSIAST QUERY: If any of you wish to recommend an enthusiastic person (maybe someone just graduating from a conservation biology program, who is happy to live a simple life, has no family responsibilities yet, and thus can take on webmaster duties for very little pay), please let me know. They would need to be someone who goes, "Wow!, I'd love to do that!" and then would churn up all sorts of ideas for how they could get the word out and encourage individuals and groups to develop the content and the commitment for posting guardian webpages for other plants, one species at a time. I will continue with *TorreyaGuardians*, but I have a full-time job on the road and cannot do anything with *PlantGuardians.org*. The person needs to be a self-starter and a superb networker. And several of the pages now on *TorreyaGuardians.org* will get moved to that umbrella site: the page that lists online articles about assisted migration, plus our old "Standards for Assisted Migration" page, which is on the first page of entries when you google "assisted migration."

<<http://www.torreyaguardians.org/assisted-migration.html>>  
<<http://www.torreyaguardians.org/standards.html>>

Note: My initial vision of PLANT GUARDIANS is not so much for plants needing assisted migration, but putting in place a way to ensure that all species that need special support (notably, threatened and endangered species) will

continue to be attended to if and when our economy falls apart. Right now, we rely too heavily on professional paid scientists and horticulturalists to care for those species in our behalf. If the money dries up, we need the volunteer people-power, the expertise, and the internetted communication lines for citizen naturalists to immediately step into the void -- and to work together for nothing, in behalf of as many species as even one single individual steps up and pledges to take on. Torreya Guardians is a role model for the fact that, yes, this can be done.

Together for Torreya,

Connie Barlow

BTW: Periodically check out the comments page on our website to see what is happening. For example, you can learn about 2007 seed-crop distribution, how Atlanta Botanical Garden is now willing to donate seedlings to bona fide institutions -- even well beyond the borders of Georgia, to help ensure continuation and propagation of the species in insitutional plantings. I am also in communication with a Torreya cultivator in northern Florida who has had magnificent results saving dying trees there by "liming", and I will post that communication soon.

<<http://www.torreyguardians.org/comments.html>>

—

Hello Leigh -

Great to hear from you again. Thanks for the report! When I visited a *T. taxifolia* in the Florida panhandle planted on private land that was starting to yellow out, I sprinkled a lot of agricultural lime on the soil under its short canopy, and the owner reported to me that next season it was looking great again. A broader Q is this: If a plant species begins to struggle with global warming, how would we notice it? I suspect more sensitivity to drought and native diseases -- and recovery requiring supplemental watering and treatments such as lime.

Question for you: When I last visited the site in Torreya State Park, the young trees planted on the mowed lawn all looked fine. I also noticed that staff had put a wood fence around the tallest "wild" tree (about 30 or 40 feet into the forest on the south side of the lawn. How is that tall tree doing???? It is, of course, shaded by the canopy there.

Best,  
Connie

P.S. Mark Schwartz emailed me last week that he'd like to talk with me over the phone, but our schedules haven't allowed that yet.

I had fun doing a slide show on our assisted migration project and the larger issue at 2 venues here in Wisconsin during the past week: one at Schlitz Audubon Nature Center north of Milwaukee, and the other in a science class for students at Edgewood College in Madison.

On 10/18/08 7:13 PM, "Leigh Brooks" <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> wrote:

> Hi Connie,  
> Hope you are doing well. Thanks for the post.  
> In the article, Mark Schwartz says the Torreya's planted at the park out in  
> the sun are doing very well. That is no longer the case. I saw them last  
> week. The ones on the north side of the lawn are looking poorly. The ones  
> on the south side are looking very well. The only difference I can tell is  
> in the amount of sunlight hitting the plants. The ones on the south get  
> more shade from the tall trees behind them. Also, it may not be a fair  
> comparison with how the trees would do in the wild. These trees receive TLC  
> from park staff.  
> Leigh  
>

---

Hi Leigh -

I got a chance to talk with Mark Schwartz on the phone soon after your email, and I mentioned this to him. He was unaware of it. So thanks for sending it on. Interesting news on this front: This past week Lee Barnes and I visited the 21 seedlings we had planted in July on the Evans property 3400 feet in Waynesville. The 3 plants closest to the driveway (hottest, driest) looked stressed and in trouble. But all the rest further back in the forest look fabulous. I'll put up photos on the website soon. Mark had called me to advise that we might have planted the seedlings in too shady a region. But when I mentioned to him that the canopy is entirely deciduous, he agreed it would be a good experiment --- because California Torreya has to deal with evergreen canopy and even in Florida Torreyas are often under a pine canopy or have evergreen magnolia to contend with.

Together for Torreya,  
Connie

On 10/26/08 4:34 PM, "Leigh Brooks" <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> wrote:

Hi Connie,

I was mistaking about the planted trees at Torreya State Park that aren't doing well. I thought it was because they got more full sun, however Pam Anderson says this:

Prison laborers string trimmed the young Torreyas. It damaged all of them. I had Steve put a deep leaf mulch on the beds and instructed him to water them like crazy. I don't think lime is indicated as they grow in a very leafy organic soil which is usually about 6.0 on the pH scale. Decomposing leaves are a mitigating factor for holding pH at around 6.0. Pine needles take the pH to a lower level, usually around 4.5 - 5.0.

Strange an unfortunate story.  
Leigh

---

Connie,  
I'd love to help with this, but might not be able to get to it for while so wouldn't want to hold up progress. Didn't know about Ed Croom. Where does he live? Do you think he'd be able to write up what he knows and then we could review it and ask for clarification on anything else we think should be included?  
Leigh

----- Original Message -----

From: Connie Barlow <<mailto:cbtanager@bigplanet.com>>

To: [ed@croomia.com](mailto:ed@croomia.com) ; Fred C Fussell <<mailto:wewoka@knology.net>> ; Leigh Brooks <<mailto:lbrooks2wd@nettally.com>>

Cc: Jack Johnston <[mailto:jack\\_georgia@hotmail.com](mailto:jack_georgia@hotmail.com)> ; Lee Barnes <<mailto:lbarnes2@earthlink.net>> ; Russell Regnery <<mailto:russellregnery@mac.com>> ; Christina Larson <<mailto:LarsonStudio@cox.net>> ; Ron Determann <<mailto:rdetermann@atlantabotanicalgarden.org>> ; Schwartz, Mark <<mailto:mwschwartz@ucdavis.edu>>

Sent: Thursday, April 30, 2009 12:29 PM

Subject: Re: Big Torreya taxifolia in Columbus Georgia & Ed Croomia

To: Ed Croomia, Fred Fussell, and Leigh Brooks

Re: The last T. taxifolia in Columbus GA

Hello Ed et al:

This is Connie Barlow, webmaster and originator of

<http://www.torreyaguardians.org>

1. Ed: Would you be open to a phone interview by me (or, preferably, Leigh Brooks or whoever volunteers to record this history) so that "we" all could learn as much as you know about the historic *T. taxifolia* trees in Columbus and the history of their demise? I would like to post photos and a webpage on these trees (and the one that remains) on the Torrey Guardians website.
2. Is Leigh or Fred or Jack or Russell interested in taking on the job of conducting the interview and writing up a short synopsis of the situation with the Columbus trees?
3. Would Lee or Jack or Russ be willing to advise Fred on mineral supplements that might best help this one remaining tree fight *Phytophthora* and other diseases? I first learned about such supplements while doing a site visit to *Torrey californica* wild trees with Lee Klinger, founder of <http://suddenoaklifeorg.wordpress.com/about/>
4. JACK: Are you capable of getting healthy branchlets of the Columbus tree to root, and thus of getting the genotype into forms that can be planted, perhaps, with existing plantings in North Carolina in order to increase the genetic variability of those plantings?

Together for Torrey,  
Connie

On 4/30/09 11:12 AM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

>  
> Connie;  
>  
> Yes, there used to be three trees there, two died in about 1995. This is the  
> last one, as far as I know, in Columbus. It is nice to see Ed back thinking  
> about Torrey.  
>  
> Mark  
>

On 4/30/09 9:44 AM, "Fred C Fussell" <[wewoka@knology.net](mailto:wewoka@knology.net)> wrote:

Dear Connie,

My visitor (actually my tree's visitor) last Sunday afternoon was Edward Croom ([ed@croomia.com](mailto:ed@croomia.com)) who, indeed, is a direct descendant of Hardy Croom, or so I understand. He dropped by here because he'd read about the recent tornado that skirted our neighborhood a week or so ago and he wanted to see if the tree in our yard had survived.

I suggest that you contact Ed directly (I'm copying him on this) to discuss/learn what he knows regarding the history of this and other such trees in Columbus. I simply don't have enough knowledge or the necessary botanical vocabulary to make valid comments. Ed did tell me, however, that he remembers seeing at least two other specimens that were here on this block of Front Street up until several years ago.

Please continue to copy me on any correspondence regarding this topic, if you will. This is so much fun!!!

Sincerely,

Fred (Fussell - with an "F")

Fred C. Fussell  
538 Front Avenue  
Columbus, GA 31901  
studio 706-221-2271  
cell 229-314-9095

FROM LEIGH BROOKS:

Also, a long-time Torreyia Guardian, Leigh Brooks, Leigh Brooks <[lbrooks2wd@nettally.com](mailto:lbrooks2wd@nettally.com)> sent me the email below, so she might want to arrange a visit to your (and any other still-alive) Torreyia trees in your neighborhood.

Connie,

This sure is interesting! I had heard from knowledgeable botanists here in north Florida familiar with Torreyia taxifolia that there were some trees in the historic district of Columbus, two homes is what I remember hearing. In May 2002 my sister Anatheia visited and we did a road trip to see all the Torreyias we had heard of in the Southeast. We stopped at Columbus and searched the historic district very slowly street by street in the car, then a little on foot. Low and behold, we spotted a big tree! People at the house were sitting on the porch, so I talked to them about it. They had no idea what it was, but were nice and let me take photos. I left them a brochure from Apalachicola Bluffs and Ravines Preserve that had a bit about Torreyia. Just located the pics, black & white. They are labeled:

Torreyia taxifolia >45'H ~2'dbh lightening?  
Columbus, GA Historic Dst 538 Front Ave  
Photo: Leigh Brooks 05/02/2002

So, I have seen the tree in Fred's yard, and yes, it's T. taxifolia! A large one indeed. I am pleasantly surprised it is still living. The top and one side looked dead, probably from lightening.

Found my notes from the site. Some additional info. The residents said the dead branches happened in the last year. They had lived there 2 years and the tree was healthier back then. The remaining branches looked healthy. Some needles had fallen on the ground. It looked like it had like male flowers. There was yellow bellied sapsucker evidence (lines of small holes) throughout the trunk. Suckers and new growth were present. The trunk had some holes along the length, may be where branches fell or were cut? There was a historic sign with year the house was built: 1898.

I am fairly certain the tree and any others that may still remain in the historic district were planted when the homes were built. It is very close to the Chattahoochee River, and there was horticultural trade by steamboat back then. The age of the house and the size of the tree seem to reasonably correspond. The botanists here also say they were planted, though I can't remember the story.

Leigh Brooks  
Chattahoochee, FL

—

Hello Connie,

Nice to hear from you. Sorry for my slow reply.

I agree that all important work should be freely available. I understand that all USDA Forest Service publications are freely available - even in Canada! Unfortunately, we do not have the same policy in Canada. Some excellent work is being done at the USDA Forest Service's Pacific Northwest Research Station in Corvallis, trying to set up a free and open database of forest tree provenance test data from around the world. Work such as this will help analyses that attempt to determine appropriate assisted migration distance.

Thank you for moving the link to our AM project close to the top of your

webpage. Your work and the webpage have been a lightning rod for the subject and a call to action.

I have two technical papers that I am about to submit to journals. One is on the potential forest productivity impacts of not using assisted migration. The other is on developing seed transfer systems to better accommodate assisted migration. I will keep you informed.

I just heard about the following project that may be of interest to you.

<http://www.ubcbotanicalgarden.org/weblog/002932.php>

Best regards,

Greg

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]

Sent: Wednesday, January 13, 2010 12:06 PM

To: O'Neill, Greg A FOR:EX

Cc: Emma Marris

Subject: O'neill's work in BC on assisted migration

Hello Greg,

This is Connie Barlow of Torreya Guardians. I just really found out about the amazing work you are doing by reading Emma Marris's draft of her assisted migration chapter (I made many suggestions and already sent it back to her.) Wow! You folks are way ahead -- and better yet, because you are doing it in the least controversial ways that nobody could object to by taking lower altitude population seed stock and planting uphill -- planting you must do anyway because you are doing it on logged land. I mean, it isn't even a choice. Who could object?!

Anyway, so I finally got around to reading the Nature report Emma wrote on your work. I resisted when you initially sent me a pdf for my own viewing because I have this thing about believing all important work should be freely available online and that governments should be subsidizing the scienc journals instead of wars. So I was obstinate. But I just now read it as Janet Marinelli is doing last minute updates on the Audubon magazine article she wrote on our Torreya rewilding work in North Carolina. She was with us when we did it in July 2008, and an Audubon paid photographer was there too, and she wrote the article right away, but budget cuts at Audubon put off the article's publication, but it is now scheduled for May 2010 so she needed to update. I strongly recommended your work, and I changed my assisted migration articles page on my website to put yours right up near the top. Also, you will see that I posted a PDF of the Nature report on my own website. That is my responsibility. If Nature comes after me, I

will  
remove it. But it is so important for folks to see.

Make sure that when you go to my webpage listing it you hit refresh to ensure that you have the most up-to-date version:

<http://www.torreyguardians.org/assisted-migration.html>

And absolutely make sure you read the other posting besides yours that has a red alert because it is so important. Scroll down slightly to the one by Shirey and Lambert. Then keep Shirey informed of anything you do, as he is the dude who is chronicling the history of this thing. Here is his email, as he and I have had correspondence: Patrick Shirey <[pshirey@nd.edu](mailto:pshirey@nd.edu)>

And if you folks put anything else online on your own website that I can link to, make sure you notify me so I can get it on my page, which I suspect may hold its position as number 2 on google searches for assisted migration or assisted colonization, simply because google favors pages that distribute readers most widely to other websites.

As of yesterday, Emma still hadn't given birth.

Best wishes,  
Connie Barlow

—

Hi Connie,

FYI... another article about assisted migration out of Associated Press

<http://www.washingtonpost.com/wp-dyn/content/article/2009/07/19/AR2009071901189.html>

Regards,

Greg O'Neill

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]

Sent: Thu, July 16, 2009 11:53 AM

To: O'Neill, Greg A FOR:EX

Subject: Re: Torreya Guardians assisted migration update

Greg -

Thanks for the info. Not much to freely read, alas. If the pdf become available somewhere for me to link to, please let me know and I will be happy to do so. I was relieved that the May 2009 NAS paper is freely accessible on the web. Someday I hope that the financing will be figured out such that articles like the one you alerted me to are also freely available to all online, but we are not there yet.

Best wishes with your vital work,

Connie Barlow  
Torreya Guardians

On 7/1/09 7:49 AM, "O'Neill, Greg A FOR:EX" <[Greg.ONeill@gov.bc.ca](mailto:Greg.ONeill@gov.bc.ca)> wrote:

> Hello Connie,  
>  
> thank you for the links.  
>  
> I am attaching a recent editorial article in Nature on BC's Assisted  
> Migration Adaptation Trial (AMAT), for your interest. I doubt Nature  
> will give you permission to post the article, but you should be able  
> to post the link.  
> <http://www.nature.com/news/2009/090617/full/459906a.html>  
>  
> CBC TV filmed at two of our AMAT sites last week. They will run a  
> short (10 minute?) documentary on assisted migration some time this  
> summer.  
>  
> Best of luck!  
>  
> Greg O'Neill

---

Paul -

I have a subscription only to the public magazine, Conservation, not Conservation Biology, so I can't access the article. So, yes! Please do send me a photocopy:

May 20-23 we will be at this location, so that gives you a lot of time to get around to packaging and mailing it:

Connie Barlow  
C/o Spiegel  
2136 Timberidge Circle  
Dayton, OH 45459

Ahhh, the era of the Doll's House may be over. . . Fortunately, MK does a fabulous job with keeping up your yard plants in Tucson, so that is a mighty splendid place to set one's gaze.

Michael and I just finished 5 days of solid editing on his book, "Thank God for Evolution!" which will be out next fall. I ghosted the science chapters and sections, and helped with a lot of the rest. What a difference it makes for the author and editor to sit down together, in front of the computer, and one reads aloud one para at a time. We managed to knock off 3,000 words in the final manuscript, simply by deleting needless words. It is going to rock! And the cover is already designed and magnificent, plus he's got a gazillion blurbs already from folks of all walks of life and some very prominent too.

Evolutionarily yours,  
Connie

On 4/12/07 7:31 PM, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)> wrote:

> Connie, Have you seen the Current issue of Conservation Biology ,  
> vol. 21 (2) Apr. 2007? Perhaps you had some advance contact from CB  
> editors. Jason McLachlan and three others take off on our (your)  
> Torreya Guardian piece in their first sentence. I'll send a Xerox if  
> you send a mail address.  
>  
> I'm so gun shy from contrary archaeologists on my overkill views  
> that I look for trouble right away when I find a secondary  
> source. But McLachlan et al look genuinely pleased and supportive



- > and touch on other opportunities for more of the same.
- >
- > Should I send you a xerox and if so where?
- >
- > MK has eye trouble and I'm grounded so we are not going to the Dolls
- > House often these days and may sell it. Dave Steadman's new Univ.
- > Chicago Press book on island bird extinction is out and excellent,
- > good enough to upset Jared Diamond. Three times a year Dave comes
- > through to do bird watching on the Sonora side of the line.
- >
- > Best, Paul and MK
- >

Hey Paul!

We are in Scottsdale AZ right now, doing Unitarian gigs in Phoenix and Chandler this past Sunday and next, plus basically housesitting-- with a pool! Fabulous place to finish up the tedious work of the backmatter of Michael's book, Thank God for Evolution! I just finished doing an extensive index on it; took a week! Michael has lined up 4 Nobel laureates as book jacket endorsements, plus about 100 more endorsements that span the gamut. Michael is darn near unstoppable. And he's put together an amazing publicity team of professionals who are way discounting their rates because they think this book is it! You can check out the book's website here:

<http://www.thankgodforevolution.com>

His long list of edited blurbs is attached, in case you want to peruse that

After here, we head north to Salt Lake City, then back down to Colorado, so not venturing to the cooler realms of Tucson this year (it is quite hot here). So! You have really put together a manuscript. I knew you were dabbling with materials in that vein, but didn't know you had made such progress. So, with one book out of the way (I ghosted the science chapters and edited and copyedited it), I am freed up to take an easy look at yours. We will be at this address in Scottsdale till July 27, so you can send it here. And yep, you sent me a hardcover copy of Twilight when it came out.

Saw a nice bull snake in the yard today; came out after the decent rain I guess last night.

Connie Barlow  
C/o Jodi Floyd  
8630 E. Via Montoya  
Los Gatos subdivision  
Scottsdale, AZ 85255

On 7/14/07 8:40 AM, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)> wrote:

- > Hi Connie,
- >
- > Good to hear from you and about Torreya. NPR sounds good if they
- > stay with it.
- >
- > Not knowing any details I worried that the big fire recently on the
- > Florida-Georgia line might make trouble for native Torreya, although
- > nothing I read said that. Let me know if you hear more.
- >
- > I've drafted a new book for U. Arizona Press along the line of "Last
- > Child in the Woods" theme, with World War II in the background and
- > the last years of farming on in the piedmont of SE Penna before my
- > Uncle sold out to a pig farmer. Milking Holsteins was way too much
- > work for a family operation.
- >
- > Your life may be way too busy to take a look at my draft, but if you
- > think you might enjoy a peek I'll be glad to send it along. Doris
- > Kretchmer at UCPress has retired. She was a great help.
- >
- > I'm hopelessly forgetful. Did you and Michael receive a copy of

> "Twilight of the Mammoths..." Univ. California Press? Id not I will  
> send one pdq. Best, Paul

—

Paul -

Good to hear the history. I had forgotten that Simpson ever was in AZ. As to your book, how about converting your favorite chapter to pdf and emailing it to me? That way you can send it as an attachment over the internet. That's entirely how Michael communicated drafts back and forth with his editor: no paper, no disk. And the editor even made suggested corrections in red type on the electronic copy itself.

Here's how to do it-- provided you are in, or can save as, Microsoft Word.

Okay call up your document in MS Word and have it on-screen. Now go up to the "File" category in the top-menu and scroll down to "Print". Now your usual print screen will appear, but notice in the lower left corner a button for "PDF". Touch that and scroll down to "Save as PDF". Follow through with the instructions, then send me an email and attach that pdf file. Simple!

I saw one saguaro flower open on my morning walk. Although it was way up there I knew, because it was swarming with bees of all sizes.

Connie

On 7/26/07 11:28 AM, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)> wrote:

> Connie,  
>  
> Yes, Simpson's "The Meaning of Evolution" was hugely  
> influential. Marian and I stopped by in New Mexico to visit him and  
> Ann when they were holed up on the Ghost Ranch, before they moved to  
> Tucson. "GG" was not especially personable unless one was a full  
> time vert paleontologist which I was not, nor Marian. I must have  
> told you that when the U. of A. dedicated the new "Gould-Simpson"  
> science building named for Larry Gould and GG Simpson the planners  
> thought it would be a great idea to have Stephen Jay Gould give the  
> main address, coming in from New York. GG Simpson would not have it  
> and the planning committee had to find someone else!  
>  
> Wildlife? We have never scored a bobcat but we have lots of  
> white-winged doves that love to eat extra kibbles we feed to a  
> cat. The cat is old and very slow for a cat and knows it is a  
> charity case. The doves respect its size but not much more.  
>  
> No, I didn't manage to send you my new book disc; I've already given  
> two to U. Ariona Press editors. Best Paul  
>  
> At 09:23 AM 7/26/2007, you wrote:  
>> Paul -  
>>  
>> Wow! Thanks for your historical perspective. On my sunrise walk this  
>> morning through this subdivision with a lot of native saguaro landscape  
>> intact, I came upon a bobcat! I followed it into our yard and watched it  
>> hop over the adobe wall on the other side. Because it rained last night,  
>> the cat left very clear orange mud 3-toed prints on the wall, where its hind  
>> legs were pushing up. It didn't seem to care about me. Alas, it got no  
>> rabbits in this yard. Rabbits and quail galore; I have never seen so many  
>> enmasse.  
>>  
>> As to the Simpson book, I just googled it and found it was published in  
>> 1955, so that would have been a hugely important book for you as a young  
>> scientist I imagine. I excerpted it in my "Evolution Extended" anthology.  
>>

>> I didn't check the mail yesterday, so maybe your new book manuscript came.  
>> I look forward to receiving it here in Scottsdale before we leave on Friday  
>> (tomorrow).  
>>  
>> Together in the Great Work,  
>> Connie  
>>  
>>  
>> On 7/20/07 5:47 AM, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)> wrote:  
>>  
>>> Connie and Michael,  
>>>  
>>> What a stellar endorsement!!! The SECULAR AND SACRED "gods" are  
>>> delivering and you two have certainly earned it. Even George Gaylord  
>>> Simpson's "The Meaning of Evolution" didn't come close to garnering  
>>> such support when it arrived. You are founding a new church of  
>>> evolutionary teaching of the gospels..  
>>>  
>>> Chandler and pool sounds like an ideal water hole. You can drive to  
>>> Flagstaff and head for the Snow Bowl up at 12,000 feet if cooler air  
>>> would help.  
>>>  
>>> I'd implore the Gods to keep smiling but how could they improve  
>> on all this?  
>>>  
>>> Bravissimo cubed!!!  
>>>  
>>> Paul and MK  
>>>  
>>> How soon will your first printing appear?

\_\_On 5/15/08 1:43 PM, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)> wrote:

> Hi Connie, You are doing great from the sound of  
> your message. I've managed to finish a book on  
> growing up the only of farm-raised  
> college-educated parents and working for an Uncle  
> on the Schultz family farm in World War II. My  
> Uncle would drive around his neighborhood  
> weekends to see how crops were doing in the fields of neighbors.  
>  
> I'M STILL RECOVERING FROM A FALL THAT CRACKED MY  
> HIP four months ago. I'm contemplating an  
> article on rehabbing elephants in the New  
> World; We had three families of proboscideans  
> here until people arrived. Keep up the great  
> work with Torreya! Abrazos, Paul.  
>  
> PS In my book I write about learning to do  
> field trips in place of Sunday School.

—

On 8/4/08 2:10 PM, "Paul Martin" <[pmartin@email.arizona.edu](mailto:pmartin@email.arizona.edu)> wrote:

> Hello Connie, That is GREAT news! Josh Donlan has been a Cornell  
> student with Harry Green. With the blessing of Carl ND JANE BOCK WE  
> HAD A WORKSHOP TWOYEARS AGO WITH A DOZEN "INTRODUCERS, TRANSPLANTERS"  
> AT A tED tURNER RANCH IN nEW mEXICO. dONT HESITATE TO GIVE MY BEST  
> TO JOSH AND TO hARRY FOR THAT MATTER. i DO A BUM JOB OF SENDING  
> E-MAIL LETTER COPIES. Abrazos. Paul and Mary Kay.  
>  
> At 06:24 AM 8/4/2008, you wrote:

>> Hello Torreya Guardians and friends -

>>

>> 1. TORREYA REWILDING. This is Connie Barlow, and I have great news. On 30  
>> July, 31 potted seedlings of Torreya taxifolia were rewilded into 2 natural  
>> forested areas near Waynesville NC, elevations 2600 and 3400 feet. A writer  
>> and photographer for Audubon magazine were on the scene documenting the  
>> effort. Long-time Torreya Guardians Lee Barnes, Jack Johnstone, and myself  
>> played the major roles in acquiring the seedlings, finding the land  
>> stewards, migrating the plants to the sites, determining exactly where to  
>> plant each, gathering other volunteers, and doing all the advance emails  
>> that go into coordinating such action. You can enjoy a PHOTO-ESSAY of the  
>> action at:

>>

>> <http://www.torreyaguardians.org/waynesville-rewilding.html>

>>

>> 2. PARADIGM SHIFTING IN CONSERVATION BIOLOGY. Owing in part to our work in  
>> leading the way on "assisted migration"/"assisted colonization", lots of  
>> conservation biologists are getting into the discussion. July 18 a 2-page  
>> Forum piece appeared in the journal Science, titled, "Assisted Colonization  
>> and Rapid Climate Change." I've been in communication with 2 of the  
>> co-authors, plus Jessica Hellman who was co-author of the key 2007 paper in  
>> the journal Conservation Biology. Hellman was one of the organizers of the  
>> pre-conference gathering on "assisted colonization" that is happening right  
>> now. She wrote me, "Just previous to the ESA meeting, we're gathering a  
>> group of conservation biologists, invasion biologists, lawyers, ethicists,  
>> and economists to form a working group that we think will have something  
>> meaningful to contribute to this issue. (The working group is being  
>> convened by myself, Mark Schwatz, Jason McLachlan, and Dov Sax.) To keep up  
>> on the academic papers and press reports on the topic of assisted migration,  
>> go to:

>>

>> <http://www.torreyaguardians.org/assisted-migration.html>

>>

>> I also have established email communications on this action with Josh  
>> Donlan, lead author of the two multi-author papers on "Rewilding" (which you  
>> can also access via the webpage above).

>>

>> Together for Torreya,

>> Connie Barlow

>> --

—

Connie,

Are Harry Green and Josh Donlan on your mailing list?

I'm not walking these days. I have finished an autobiog. about  
getting interested in birds and growing up in Penna., working on a  
farm for my Uncle in World War II. Walking 20 BLOCKS to school was a  
phenological education. vERY BEST., PAUL

At 08:35 AM 8/30/2008, you wrote:

>Chris -

>

>In the piece you are writing for The Boston Globe, I want to make sure you  
>are aware of what just came out in Nature: Title and subhead: "Moving on  
>assisted migration: Experts who once disregarded it as a nutty idea are now  
>working out the nuts and bolts of a conservation taboo: relocating species  
>threatened by climate change."

>

><http://www.nature.com/climate/2008/0809/full/climate.2008.86.html>

>

>This news report really struck my heart as to the magnitude of the paradigm  
>shift for conservation that may be underway. It was easy for me to just  
>attend to serving the needs of one very desperate species. But it is  
>frightening indeed to see where such action ultimately forces the  
>professionals to go in rethinking long-standing assumptions about how to  
>best serve the needs of biodiversity. I also really appreciated the way  
>that Pleistocene rewilding was linked to the paradigm, as I have always  
>viewed the work that Torreya Guardians is doing with Torreya as part of  
>Pleistocene rewilding -- that is, in asserting that Torreya taxifolia was  
>native to North Carolina in previous interglacial episodes and other warm  
>times.  
>  
>Best,  
>Connie Barlow

---

On 3/5/08 10:41 AM, "Peter Wharton" <[peter.wharton@ubc.ca](mailto:peter.wharton@ubc.ca)> wrote:

> Dear Connie,  
>  
> Thanks for the prompt response - the paper looks so, so interesting. May  
> have some questions in due course. Off to the Mamize National Panda  
> Reserve in s.Sichuan, the southern most panda reserve in China in early  
> April. Also visiting the nearby, new Yele Nature Reserve which also has  
> pandas. Lots of work on the fauna of these areas but little or no field  
> work on the vegetation. We are investigating the deciduous tree  
> magnolias, Magnolia sargentiana(see attach. image) and Magnolia  
> dawsoniana, which will be in flower when we visit. They flower before  
> the leaves. Working with the Sichuan University - prof. & students  
> investigating over the next few years on what pollinates these magnolias  
> and what disperses the seeds, plus general forest biodiversity surveys.  
> Hope to see pandas and some fine pheasants!  
>  
> Cheers,  
>  
> Peter

A. Peter Wharton  
Curator of David C. Lam Asian Garden

[peter.wharton@ubc.ca](mailto:peter.wharton@ubc.ca)  
Ph: (1) 604-822-5497  
Fax: (1) 604-822-2016

UBC Botanical Garden and Centre for Plant Research  
6804 SW Marine Drive  
Vancouver, British Columbia, Canada  
V6T 1Z4

<http://www.ubcbotanicalgarden.org/>

---

Connie, your worry about Torreya in Highlands is interesting.. Here is  
the key in Flora North America--since it includes mostly vegetative  
characters and since the cones you saw may have been immature, did you  
try keying the needles?

Two-year-old branches reddish brown; leaves 3-8 cm, flattened on adaxial  
side, with 2 deeply impressed, glaucous bands of stomates abaxially,  
emitting pungent odor when crushed; aril light green streaked with  
purple; California. 1 Torreya californica  
<[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=233501306](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=233501306)>

Two-year-old branches yellowish green, yellowish brown, or gray; leaves 1.5-3.8 cm, rounded on adaxial side, with 2 scarcely impressed, grayish bands of stomates abaxially, emitting fetid odor when crushed; aril dark green streaked with purple; Florida, Georgia. 2 *Torreya taxif*  
<[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=220013607](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=220013607)>olia

Peter

Connie Barlow wrote:

>Hello Torreya Guardians -  
>  
>This is Connie Barlow. August 2006 I gave a powerpoint presentation titled  
>"Rewilding Torreya Trees to Appalachia" at the Highlands Nature Center in  
>Highlands, North Carolina. While there, Lee Barnes and I made a site visit  
>to an 80-year old Torreya grove on private land. No documentation as to  
>species, and, unfortunately, the fruit shape appeared to me to be California  
>Torreya, not Florida Torreya (but I could be wrong). You can access a photo  
>essay web page of this site visit by going to:  
>  
><http://www.torreyaguardians.org/highlands.html>  
>  
>A few days later I was near enough to the Biltmore Gardens in Asheville to  
>pay a site visit there. I spent about 6 hours with the trees, carefully  
>examining each specimen and counting the seeds (just 55 this year, compared  
>with a total of 130 collected last year). You can access a photo essay of  
>that site visit too:  
>  
><http://www.torreyaguardians.org/biltmore-2006.html>  
>  
>Please note that the Biltmore field trip page will be posted for ONLY 2 MORE  
>WEEKS. After that, I will replace it with a very abbreviated page so that  
>seed thieves will not be able to use it to find the seed-bearing trees. I  
>will keep the full photo-essay on the website, but under a new name that has  
>no hotlink internal to the website, so that people can only access it if  
>they learn from me the direct link.  
>  
>I keep posting CURRENT NEWS on the LATEST IN THE SEED HARVESTING AND  
>REWILDING EFFORT on the rewilding page of the website. The newest entry  
>lists the organizations that received the 2005 seed harvest donated to  
>Torreya Guardians by the Biltmore Gardens. You can access that directly:  
>  
><http://www.torreyaguardians.org/rewilding.html>  
>  
>Together for Torreya,  
>Connie Barlow  
>  
>

--

=====  
Peter S. White email: [Peter.White@unc.edu](mailto:Peter.White@unc.edu)  
Department of Biology -- Campus Box 3280  
University of North Carolina at Chapel Hill  
Chapel Hill, North Carolina 27599-3280 USA  
Biology Phone: 919-962-6939 FAX: 919-962-1625  
NCBG Phone: 919-962-0522 FAX: 919-962-3531  
Home Phone: 919-967-4926  
Web information: [www.bio.unc.edu/faculty/white/](http://www.bio.unc.edu/faculty/white/)  
[www.ncbg.unc.edu](http://www.ncbg.unc.edu)

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On 8/30/06 8:28 AM, "Rob Nicholson" <[RNICHOLS@email.smith.edu](mailto:RNICHOLS@email.smith.edu)> wrote:

> Hi Connie, been on vacation. We no longer have any Torreya as I shipped  
> them all south where they can be put in the ground. We propagated about  
> 4 or 5 thousand of the cuttings so I felt we had done about as much as  
> we could. If a tenth of those survive to seeding size, I'll be happy. I  
> will be in a half day today and full days Thursday and Friday so you are  
> welcome to come by for a look but since our new director came on, my  
> research component has drastically been reduced so there is not much in  
> house in the way of conifers.  
> Regards, Rob N.

>

>>>> Connie Barlow <[cibtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> 8/27/2006 7:13 pm >>>

> Hi Rob -

>

> This is Connie Barlow, webmaster of TorreyaGuardians.org. I happen to  
> be

> near Great Barrington MA for all this coming week (week of Aug 27), and  
> will

> be then heading toward the southern coast of Maine on Sept 5. I would  
> love

> to stop by and visit you at Smith, to talk about Torreya taxifolia, and  
> to

> see the potted grove of clones of the Florida genotypes that Smith has,  
> I

> believe.

>

> See what I have been up to: I just made site visits to the Biltmore  
> Garden

> T. taxifolia grove and to a private grove of 80 year old Torreya sp.

> In

> Highlands NC. I have posted really cool photo-essays on the Torreya  
> Guardians website:

>

> <http://www.torreyaguardians.org/biltmore-2006.html>

>

> <http://www.torreyaguardians.org/highlands.html>

>

> I can be reached via this email or by cell: 425-760-9941.

> What is your phone number?

>

> Together for Torreya,

> Connie Barlow

---

Dear Connie,

I loved your Ghosts video on youtube--brilliant! Thanks for letting me know about it! I'll forward you message to Oliver. I think he would also enjoy seeing the video.

It seems like you've been super-busy doing many fascinating things. I am still at the Garden working on fern systematics and teaching every summer in Costa Rica.

Best wishes,  
Robbin

Robbin C. Moran

The New York Botanical Garden  
200th Street & Southern Blvd.  
Bronx, NY 10458-5126 U.S.A.

phone: 718-817-8663  
fax: 718-817-8648

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Friday, February 26, 2010 1:04 PM  
To: Moran, Robbin  
Subject: Ghosts of evolution and anachronistic fruit music video

Hi Robbin!

This is Connie Barlow. I was inspired to make a music video using photos of anachronistic fruits and the Ice Age mammals who used to disperse them. Check it out (titled "Ghosts of Evolution") on my YouTube channel:

<http://www.youtube.com/user/ghostsofevolution#p/u>

You can get to a PDF of the lyrics here:

<http://thegreatstory.org/songs/ghosts.html>

Also, if you aren't already grooving on the Symphony of Science music vids,

I am honored to introduce you to them:

<http://www.symphonyofscience.com/>

Finally, even though it geared only for western fossil sites, you should know about the terrific travelling exhibit at the Burke Museum on U Wash campus: "Cruisin the Fossil Freeway." I have been in the Seattle area for the past half year, and visited twice. It is the best and most playful and artistic museum exhibit I ever saw. And my own music video was inspired by the audio CD of music that I bought at the museum that accompanies the exhibit. The companion book by that title is also terrific. The exhibit is a collaboration bt artist Ray Troll and Denver museum paleobotanist Kirk Johnson.

<http://store.trollart.com/home.php?cat=9>

In fact, I just sent Kirk Johnson an email, suggesting that the Denver Museum construct a "Ghosts of Evolution" exhibit that uses their wonderful skeletons of sloths and mastodons and camels and places them in the context of the living fruits they helped shaped -- plus opportunities, of course, for kids to try to find the avocado seeds in fake ground sloth poop.

Lots happening with TorreyaGuardians. The Biltmore gave us 300 seeds from their fall 2009 harvest, and the article on our July 2008 rewilding effort in North Carolina will be coming out in the May issue of Audubon. Plus  
2



books underway will have chapters on assisted migration in them (the authors called me).

<http://www.torreyaguardians.org/>

Here is a pdf of my latest professional writing on this topic (though I much prefer doing videos!)

<http://www.thegreatstory.org/deep-time-lags.pdf>

Oh, feel free to alert OLIVER SACKS to my ghosts video; I think he would love it!

Best,  
Connie Barlow

—

Hello Robert -

Thank you for contacting us. I am cc-ing Torreya Guardian Lee Barnes, as he is in charge of collaborations for actual seed/seedling plantings. First, check out the Missouri Botanical Garden, as my understanding was that when the surviving individuals in the Florida Panhandle were sampled and the branchlets cloned in sets of three, one set went to Atlanta Botanical Garden (see my photoessay of their amazing propagations operation there at the below webpage), one set went to Smith College Botanical Garden (but greenhoused there, as Rob Nichols was one of the genotype hunters during that 1991 operation in Florida), and the third set went to the famous Missouri Botanical Garden. If they are doing even a fraction as well in preserving and propagating the genotypes as Atlanta is doing, they are probably swimming in seedlings.

If you find out anything interesting on their *Torreya taxifolia* program, one way or another, please let me know. Also, do know that it seems that the other 5-7 species of genus *Torreya* in the world (other than the Florida species, which I and others maintain got "left behind" in its peak ice-age pocket reserve) all live in mountainous terrain, where one can easily track climate change (*Torreya* has a very large "fruit" with one large seed in it) by moving up and down mountains, and in and out of ravines, and around north and south facing slopes, without having to zoom hundreds of latitudinal miles. (See my California *Torreya* photoessays on our website). Thus unless the botanical gardens are having a difficult time finding good places to plant seedlings raised in this effort, I would probably be hesitant to see any seeds we have access to go quite that far west, if we still have a lot of territory in the Appalachians (surely, their previous interglacial and pre-Pleistocene "native" range) with welcoming private landowners and botanical gardens.

Here is the photoessay page of the Atlanta Botanical Garden propagation effort. (Scroll down to see the photos.)

<http://www.torreyaguardians.org/propagate.html>

For Torreya,  
Connie Barlow

On 12/8/09 3:06 PM, "Robert Whitman" <[Robert.Whitman@GouldEvans.com](mailto:Robert.Whitman@GouldEvans.com)> wrote:

Hi, I was just reading up on Torreya and stumbled onto your website. I work with the directors of a few arboretums here in KC (zone 5b/6). Does it seem possible that the tree could be grown here? I read about one growing well in Philly at the Henry Botanic Garden. It would be interesting to test here, if possible. Our soils tend to be very high pH in areas.

Thanks,

**Robert Whitman ASLA, AICP, LEED A.P.**  
Associate Vice President / Landscape Architect  
**Gould Evans** | 4041 Mill St | Kansas City, MO 64111  
Ph: 816.701.5460 Fx: 816.931.9640

—

Connie, lets touch base on this. We are merely planting Torreya in a Botanical garden setting in NGA and a conservation Garden. Not integrated Into a natural area. Give me a call on 404-217-9535, thanks ron

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Friday, July 13, 2007 1:18 PM  
To: Ron Determann  
Cc: [mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu); Paul Martin  
Subject: News programs interest in Torreya taxifolia Atlanta Botanical

To Ron Determann, Atlanta Botanical Garden

Hi Ron -

This is Connie Barlow of Torreya Guardians. I just got a call from an NPR guy who wants to do a national news clip on Torreya taxifolia as the only thing really happening on assisted migration right now. It is part of the biggest subject series they have ever done: a year long thing on climate change. I told him that the biggest thing happening on that is really your institution's work with planting seedlings up in northern Georgia, the very southernmost Appalachians. So I sent him your way (and I sent two print reporters your way too.) I just wanted to give you the alert so that you can figure out in advance how you want to respond to him. Basically I said that even though T. tax is native to Georgia, it is just the tiniest bit in the SW part of the state that is the real "native" range, so that in my eyes, you folks are already doing assisted migration. Is that how you perceive it too? Am I going to get you into trouble by characterizing your effort that way?

I am cc-ing my coauthor, Paul Martin on this. And Mark Schwartz, as I am curious as to what Mark would suggest about how to view the Smithgall Woods plantings. Also, I suggested to an Orion Magazine journalist, who wants to do site visits, that your potted orchard in Atlanta Botanical is a great place to start, and then a visit to Smithgall Woods, and then on up to several place in North Carolina, with specific contacts I gave her for those places.

I will be interviewed for the NPR show next week it seems. The reporter is sending me a PDF of the Mark Schwartz et al professional paper in Conservation Biology, so I will have a chance to see the professional arguments finally.

Do let me know of anything you think I need to know, and that goes for Mark too. I can be reached at our cell phone: 425-760-9941

Together for Torreya,  
Connie Barlow

—  
Ron -

I apologize for taking so long to get back to my torreya volunteer work and respond to you. You mention below that you were "a bit taken back by the listing of me as an advisor." I finally figured out what you were referring to: the page that lists the people and institutions as advisors, so it was really easy for me to remove your name and Atlanta Botanical Gardens. I can understand the sensitivity on this, given that your program necessarily is doing all it can to work just within the 2 states that encompassed the plant's native range.

As to GPCA website info, I think I found what you were referring to: on the "save" webpage of Torreya Guardians I had excerpted from their webpage. But since I hadn't asked them for permission, I have now changed that to simply give a link. I am trying hard to have Torreya Guardians be as helpful a website as possible in behalf of the tree, without offending anyone, so I hope this latest change solves that problem. I'd rather hotlink to other sites anyway than lengthen this one.

For Torreya,  
Connie Barlow

On 12/19/07 7:15 AM, "Ron Determann" <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)> wrote:

>  
> Connie, It was nice to have you here. I have no problem providing the  
> guardians with all the info about propagation of these plants and such,  
> but was a bit taken back by the listing of me as an advisor. I would  
> like that to be removed. It could be stated as information obtained from  
> The Atlanta Botanical Garden, that's fine. Also I would encourage you to  
> get in touch with Jennifer Ceska regarding the use of GPCA website info,  
> thanks ron  
>  
> -----Original Message-----  
> From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
> Sent: Tuesday, December 18, 2007 2:42 PM  
> To: Ron Determann; David Ruland  
> Cc: Lee Barnes; Jack Johnston  
> Subject: Torreya Guardians draft webpage on Atlanta Botanical Garden  
> visit  
>  
> Hello Ron and David -  
>  
> Thank you so much for the tour of your T. taxifolia section at the  
> Garden a  
> few weeks ago. I finally compiled all my notes and photos on how ABG  
> goes  
> about propagating T. taxifolia successfully from both seeds and  
> cuttings,  
> and I posted those notes up on our Torreya Guardians website. Before I  
> announce this page to my list, please peruse it and let me know if I  
> need to  
> make any changes and corrections:  
>  
> <<http://www.torreyaguardians.org/propagate.html>>  
>  
> Together for Torreya,  
>  
> Connie

—  
Connie, thanks for the info and request. I will study this with our Research and Conservation director Dr Jenny Cruse-Sanders and we will get back in touch with you, ron

-----Original Message-----

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Monday, December 08, 2008 9:23 AM  
To: [sswartz@warren-wilson.edu](mailto:sswartz@warren-wilson.edu); [david\\_ray@tnc.org](mailto:david_ray@tnc.org); Ron Determann; Linda McFarland  
Cc: Lee Barnes; Schwartz, Mark; Jack Johnston; Bill Alexander  
Subject: Atlanta Bot Garden Torreya to nonprofits in Asheville NC?

TO:

€ Ron Determann, Atlanta Botanical Garden (Torreya taxifolia propagation)  
Ron Determann <[rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)>

€ Shawn Swartz, forest manager at Warren Wilson College, Asheville NC  
[sswartz@warren-wilson.edu](mailto:sswartz@warren-wilson.edu)

€ David K. Ray, Southern Blue Ridge Project Director, The Nature Conservancy  
[david\\_ray@tnc.org](mailto:david_ray@tnc.org)

€ Linda McFarland, codirector Corneille Bryan Native Plant Garden, NC  
Linda McFarland <[shortia56@hotmail.com](mailto:shortia56@hotmail.com)>

RE: Possible opportunities for nonprofits to assist endangered Torreya taxifolia tree (northern FL) in forests of mountainous NC

FR: Connie Barlow, [www.TorreyaGuardians.org](http://www.TorreyaGuardians.org)

---

Hello all -

Michael Dowd and I are in the Asheville NC area for about a month, house-sitting on a property where we, Lee Barnes, Jack Johnston, and others participated in the "assisted migration" ["managed translocation"] of 21 seedlings purchased from a plant nursery in South Carolina (Woodlanders) of the highly endangered Torreya taxifolia tree (Taxaceae) -- all legally done. (On that same day, we all participated in the assisted migration of another 10 T. taxifolia seedlings to Corneille Bryan Native Plant Garden, under the direction of Linda McFarland.)

This email is primarily to introduce Linda McFarland, Shawn Swartz, and David K. Ray (the latter met my husband, Michael Dowd, at a church program in Asheville recently) to Ron Determann, Atlanta Botanical Garden, who has a hugely successful propagation project, producing hundreds of Torreya taxifolia seedlings from cloned plant tissue of the original genotypes extant in native habitat along the Apalachicola River, FL in 1990. I have visited Ron's operation twice, with photos from those visits at:

<http://www.torreyaguardians.org/propagate.html>

A year ago, Ron told me he would be happy to SUPPLY NONPROFIT ORGANIZATIONS IN NORTH CAROLINA WITH T. TAXIFOLIA SEEDLINGS GRATIS as participants in safe repositories and breeding (technically, NOT assisted migration, as that action is not yet countenanced under the Endangered Species Management Plan for this species). You would have to check with him to find out whether the seedlings would be allowed to be planted in managed forests on your private properties; otherwise, you would have to purchase seedlings grown from private seed stock not subject to the ESA, as Torreya Guardians has done. (I am cc-ing Bill Alexander, Forest Historian at the Biltmore Gardens, as his group has supplied Torreya Guardians with seed from their mature Torreya taxifolia trees for each of 2 years in which a hundred or so seeds were produced there, but we haven't been very successful in getting those seeds to germinate.

To learn about what "assisted migration" is, and why it is so controversial, go to this webpage that I maintain that provides quick access to all the online-available professional papers and media reports:

<http://www.torreyaguardians.org/assisted-migration.html>

The article I coauthored (2005) initially proposing assisted migration for *T. taxifolia* -- not so much as a refugee from climate change but as a returning native that, for some reason, had been otherwise unable to migrate on its own back to the Appalachians from the "pocket reserve" in northern Florida, where it and so many other species of our eastern deciduous forests hung out during the peak of the glacial advances, can be read at:

<http://www.torreyaguardians.org/barlow-martin.pdf>

The article expressing caution about such effort that was published at the same time in the same place, by Mark Schwartz, who is one of the scientists working with *T. taxifolia* under the Endangered Species Act (and is now one of the leaders of the cross-disciplinary effort to development management guidelines for "managed translocation" <[http://www.nd.edu/~hellmann/MRWorkingGroup/Managed\\_relocation.html](http://www.nd.edu/~hellmann/MRWorkingGroup/Managed_relocation.html)>) can be accessed at:

<http://www.torreyaguardians.org/schwartz.pdf>

Mark Schwartz is also coauthor of the key paper (Conservation Biology) that brought the debate over assisted migration to the conservation community as a whole in 2007:

[http://www.nd.edu/~tmarsico/McLachlan\\_et\\_al\\_2007\\_Conservation\\_Biology.pdf](http://www.nd.edu/~tmarsico/McLachlan_et_al_2007_Conservation_Biology.pdf)

Lee Barnes is the Torreya Guardian who coordinated the two sets of plantings, assisted migration, of *T. taxifolia* in July 2008. He lives in Waynesville:

Lee Barnes <[lbarnes2@earthlink.net](mailto:lbarnes2@earthlink.net)>  
828-452-5716

Linda McFarland was Lee's contact at Corneille Bryan Native Garden, where 10 seedlings were planted. She has expressed interest in helping other NC native gardens/forests learn about possible opportunities for working with *Torreya taxifolia* in whatever ways the Atlanta Botanical Garden might sanction such participation.

For photo-essays of the 2 actual plantings in the Waynesville NC area this past summer, visit these webpages. Note that I, as webmaster, have also added individual webpages for each of the 31 planted seedlings, so that we can keep track of their individual progress, and include lots of plant-specific and season-specific photos. Go to:

<http://www.torreyaguardians.org/waynesville-rewilding.html>

Make sure you click on the links at the bottom of that page to access more site and seedling-specific photos and commentary. When you get to the individual trees, make sure you click on "Celia" and "Charles Darwin" in order to see some photos of Torreyas with snow cover.

For those considering planting *Torreya taxifolia* in NC forests, I highly advise you visit the photo-essays of my own visits to wild habitats of the sister species in California, *Torreya californica*. There you will see the kind of mountain habitats that all 4 or 5 other species of genus *Torreya* apparently live in (hence my, and Bill Alexander's earlier, idea that *Torreya taxifolia* got stuck in its peak-glacial preserve, and that during interglacials it is truly a temperate mountain species.)

<http://www.torreyaguardians.org/california.html>

You can access photo essays of the *T. taxifolia* at Biltmore Gardens via:

<http://www.torreyguardians.org/north-carolina.html>

Some of the correspondence on the rewilding effort that comes my way can be accessed at:

<http://www.torreyguardians.org/comments.html>

NOTE:

1. Watch for the March 2009 issue of Audubon magazine, as there will be an article in there by Janet Martinelli, who (with a photographer) was onsite for the first assisted migration effort (at both sites in Waynesville)

2. Around December 15, a reporter and photographer for a North Carolina wildlife magazine will be led by Lee Barnes on a tour of the *Torreya taxifolia* plantings in Waynesville.

Together for *Torreya*,  
Connie Barlow

—

On 9/17/08 2:54 PM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)> wrote:

> Dear Connie,  
> I planted 10 of the Woodlanders' *Torreya* within a week or so after I helped  
> with the Wayneville plantings. In general, all that Woodlanders had left were  
> smaller plants (a season younger?) than what we planted as a group so it will  
> be hard to compare the fate of the two groups, at least for the first couple  
> of seasons. I used approximately a cup of hydrated lime per planting. Until  
> we had rains from the tropical storm Faye I was watering my 10 every couple of  
> days. But now at least there is considerably more naturally occurring  
> moisture in the ground and I have cut back on the hand watering. These 10 are  
> either along a forest edge or grouped further out into the sun of an old  
> pasture/meadow. It will be interesting to see which do better. All ten show  
> are showing at least some new growth, some more than others but it is too  
> early to make any generalizations re edge vs open. All ten have wire 'cages'  
> to help me identify where they are and keep the occasional animal from running  
> over the seedlings. I clothes-pinned rectangles of fiberglass window  
> screening to the south-west quadrant of the cages to moderate the late  
> afternoon sun until they harden off.  
> I'm glad you have a little more info on the origin of the Woodlanders parent  
> plants; something I was missing.  
> Keeping my fingers crossed for the future!  
> Russ  
>  
> On Tuesday, September 16, 2008, at 01:41PM, "Connie Barlow"  
> <[cbtanager@bigplanet.com](mailto:cbtanager@bigplanet.com)> wrote:  
>> Hi everybody -  
>>  
>> This is Connie Barlow. Lee Barnes drew a measurement grid on white  
>> posterboard and then photographed each of the 10 seedlings we planted at  
>> Corneille Bryan Native Garden. He sent me the photos and now I have created  
>> a SEPARATE WEBPAGE FOR EACH SEEDLING, and have posted these on the *Torreya*  
>> Guardians website.  
>>  
>> As each seedling's progress is monitored in the years to come, those who do  
>> the monitoring can submit reports and photos on a tree-by-tree basis, and  
>> the pages will then be kept up-to-date.  
>>  
>> Lee tells me that this fall he will take photos against the grid of the rest  
>> of the seedlings (planted at Sara Evans' property).

>>  
>> You can peruse these new webpages by going to this webpage and then  
>> scrolling to the bottom, where you can click on each individual plant:  
>>  
>> <http://www.torreyaguardians.org/waynesville-1.html>  
>>  
>> QUESTIONS:  
>>  
>> Russell - Are you still planning to purchase seedlings from Woodlanders  
>> Nursery and plant *T. taxifolia* on your property?  
>>  
>> Janet Manning / Linda McFarland - How do the seedlings look at Bryan Native  
>> Garden  
>>  
>> Sara - How do the new trees look on your property?  
>>  
>> Lee - Have you had to do any supplemental watering of plants, or have the  
>> rains been good enough?  
>>  
>> Jack - How are your 2007 Smithgall Woods seedlings doing that you sprouted  
>> this year? Have you gone to Smithgall Woods yet to try to collect more  
>> seeds?

—  
Hi Russell -

Great questions! Hazel's book, *Forests in Peril*, is a big part of what propelled me to move forward with the intellectual arguments for taking action with respect to migrating the *Torreya*. I don't think I mention it on the website, as I don't post my own personal story there, but I did recently post a 5-star review about in on Amazon -- and it is the only review anyone has posted there.

Your Q about her absence of mention of *Torreya*, *Franklinia*, *Stewartia* has some important answers. First, pollen is retrieved in time-correlated sequence from the layers in undisturbed bogs. Very few macrofossils from anything other than a bog species would ever get there. So pollen is all there is to figure out who was nearby at different times. Next, wind-pollinated plants are the major players in pollen samples, for obvious reasons. The plants that invest in relatively few large flowers, that are insect rather than wind pollinated and that grow beneath a wind-sheltered canopy like *Franklinia* and *Stewartia*, would not be expected to even show up in the pollen record. Finally, and this is hugely important and something I only learned from my coauthor Paul Martin, and so we wrote:

Because *Torreya* pollen is indistinguishable from the pollen of yews (*Taxus*), bald cypress (*Taxodium*), and cypress (*Cupressus*), known fossil occurrences of this genus are limited to macrofossils (seeds, leaves, and secondary wood), and these are sparse. There are no known Cenozoic fossils of *Torreya* in eastern North America. The most recent macrofossils identified as the genus *Torreya* in eastern North America are upper Cretaceous, and these were unearthed in North Carolina and Georgia—hence, our suggestion that assisting *T. tax* to rewild in North Carolina would be assisting the return of a deep-time native.

Note, the above appears in an article proposing assisted migration for *Torreya* that Paul and I published. PDF of it at:

<http://www.torreyaguardians.html/barlow-martin.pdf>

Finally, on tracking down the Delcourts: impossible. I met them both in their shared office at U. Tenn Knoxville just two weeks before they were retiring, not just from their jobs but from their careers. They were heading off to some rural place down south to put all their energy into raising their teen girls. I remember admiring some papers in their vast library and Hazel offering to give me anything I wanted. Alas, I had given away my own library a couple years earlier when my husband and I started living permanent on the road, travelling in a van.

Together for *Torreya*,  
Connie

On 1/21/09 11:42 AM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)> wrote:

> Dear Connie,  
> I just read Hazel Delcourt's book that I think you must have  
> recommended on your web-site and I thoroughly enjoyed the read. I  
> came away with a better appreciation for events post-Pleistocene. I  
> do have a question that I think may be of relevance: in the Delcourts'  
> various fossil pollen vs time histograms there is a conspicuous and  
> complete absence of some of our favorite (currently) relic species,  
> e.g., Torreya, Franklinia, Stewartia. Off the top of my head several  
> possibilities come to mind: 1.) the paleobotanists don't recognize  
> these pollen, 2) their pollen isn't well preserved in the fossil  
> record, 3) these genera just don't produce much pollen, 4) OR Torreya  
> et al. haven't been major players in the eastern forests for a long  
> time. I wonder if they may have already been relic species prior to  
> the last ice-age, left over from pre-Pleistocene glacial periods? If  
> nothing else, I would have guessed that Torreya seeds would have made  
> pretty good intact fruiting body fossils (considering for example how  
> well whole spruce cones are apparently preserved). It is interesting  
> to me that I have always assumed that at some point within the last  
> 20,000 years these 'minor' species probably had a recognizable place  
> 'at the table', but perhaps not...perhaps they were relics even long  
> before.  
> I thought of writing a note to Dr. Delcourt, however, unfortunately  
> neither she nor her husband are any longer listed as part of the  
> faculty at UT Knoxville and I haven't been able to find and email  
> address elsewhere. Any suggestions for either email address or  
> additional hypothesis?? Interesting stuff to think about!  
> Cheers, Russ

—

Russ -

The persimmon seeds have been in the van the whole time, so ambient air temp. Coldest was the month we spent in Waynesville in November.

Thanks for the update on your Torreya trees. I am cc-ing Lee Barnes so that he can compare notes with the Torreya trees that browned some in Waynesville.

Best,  
Connie

On 2/2/09 6:06 PM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)> wrote:

> Dear Connie,  
> Just to let you know, the persimmon seeds arrived today, thank you  
> very much! Have these little fellows/gals spent much time in the cold  
> already?  
> By the way, our ten Torreya seedlings, most of which I planted in  
> rather 'exposed' positions, seem to be doing okay now in their  
> shelters (plastic flower pot with the bottoms cut out). I see no  
> further browning and if anything they may be more green than earlier  
> this winter, despite some reasonably cold weather (e.g., -2F), snow,  
> etc. I will try to remember to take some photos for you soon.  
> Cheers, Russ  
>  
> On Jan 28, 2009, at 5:31 PM, Connie Barlow wrote:  
>  
>> R -  
>>



>> Okay, I just put a bunch of seeds in an envelope for you. Will mail  
>> tomorrow. Make sure you use a knife to scar each seed past the  
>> tough coat,  
>> so that they will germinate in year 1.  
>>  
>> Let me know how they go! Oh, they like sun.  
>>  
>> C  
>>  
>>  
>> On 1/26/09 4:42 PM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)> wrote:  
>>  
>>> Dear Connie,  
>>> Wouldn't it be cool if the various sweetness vs pucker-power of  
>>> persimmons was, not only related to the extent of Fall frosts, but  
>>> was  
>>> somehow related to what the expected disperser for a population of  
>>> persimmon was meant to be; i.e., do the different tasting persimmons  
>>> target different dispersers? I wonder how much difference taste  
>>> makes  
>>> a difference to a bear or a fox (or human)? I read somewhere where  
>>> the Cherokee name for persimmon translates to "pucker mouth".  
>>> I'd love to try your persimmon seeds. If you want, we could even  
>>> trade seeds...I have a bunch in the fridge which I know came from  
>>> tasty fruit from along the Little Tennessee, some of which I hope to  
>>> plant out this year (or next depending on germination during season  
>>> #1).  
>>> My mailing address is:  
>>>  
>>> 365 Cold Mountain Road  
>>> Highlands, North Carolina  
>>> 28741  
>>>  
>>> Cheers, Russ  
>>>  
>>>  
>>> On Jan 26, 2009, at 3:08 PM, Connie Barlow wrote:  
>>>  
>>>> R -  
>>>>  
>>>> I heard from locals in Ohio that the critters (re: foxes) wait  
>>>> around ripe  
>>>> persimmon trees, waiting to hear a "plop" and then running over and  
>>>> grabbing  
>>>> it. Ditto with Durian fruits and elephants in Asia. I've seen  
>>>> several  
>>>> examples of fox turds with persimmon. One thing to remember about  
>>>> persimmons: some I've found in the wild have been fabulous  
>>>> tasting!!!  
>>>> Others horrible, and not even frost will improve them. I'm actually  
>>>> carrying around some persimmon trees from a wild female in central  
>>>> Tennessee  
>>>> whose fruits were big, ripe, and falling and not a bit chalky in  
>>>> August in  
>>>> very, very hot weather. I have never tasted a persimmon so good.  
>>>> Then I  
>>>> stopped by another tree I saw in eastern Virginia in October. It  
>>>> still had  
>>>> its fruits and even after I froze them they still were too chalky  
>>>> and not at  
>>>> all moist to eat. So make sure you have good stock!  
>>>>  
>>>> I'd be happy to send you the good persimmon seeds, by the way, if  
>>>> you send

>>>> me your address.  
>>>>  
>>>> C  
>>>>  
>>>> P.S. My 2001 book: The Ghosts of Evolution: Nonsensical Fruits,  
>>>> Missing  
>>>> Partners, and Other Ecological Anachronisms (Basic Books) has  
>>>> persimmon as  
>>>> being only mildly anachronistic. Pawpaw is more so, but what  
>>>> pawpaw is  
>>>> missing is pollinators! Got to plant them near horse turnds and cow  
>>>> pies in  
>>>> order for the dung beetles to be there pollinate them. So pawpaw is  
>>>> missing  
>>>> both its big dispersers and its crucial pollinators. Fortunately,  
>>>> they  
>>>> spread clonally, and some clones may be thousands of years old.  
>>>>  
>>>> C  
>>>>  
>>>>  
>>>> On 1/21/09 4:19 PM, "Russell Regnery" <[russellregnery@mac.com](mailto:russellregnery@mac.com)>  
>>>> wrote:  
>>>>  
>>>>> Connie,  
>>>>> A second note in the same day! I have been trying to catch up on  
>>>>> some reading and I have been reading some of your on-line  
>>>>> manuscripts. Someone made the suggestion that persimmons may be  
>>>>> one  
>>>>> of the trees may have had a prehistoric transport mode for seed  
>>>>> dissemination that has been lost. I planted a native persimmon  
>>>>> recently (not far from the Torreya) and was concerned that there  
>>>>> may  
>>>>> not be other persimmons in the valley for optimal fruit  
>>>>> 'setting' (I  
>>>>> hadn't recognized any local persimmons...that's why I was  
>>>>> planting my  
>>>>> lone tree). Well, the question of whether or not there are local  
>>>>> persimmons was subsequently, and elegantly, answered in a large  
>>>>> pile  
>>>>> of bear scat that appeared near one of our apple trees...it was  
>>>>> full  
>>>>> of persimmon seeds. I planted the bear scat...we'll see if they  
>>>>> germinate. It makes me laugh to myself that the bears know where  
>>>>> the  
>>>>> persimmon trees are even if I don't. It will be interesting to see  
>>>>> if  
>>>>> the germination from the scat is better than seeds which I have  
>>>>> tried  
>>>>> to clean from ripe fruit that I gathered and have put in peat  
>>>>> moss in  
>>>>> the fridge for the winter.  
>>>>> On a walk this last Fall with folks from the Land Trust for the  
>>>>> Little Tennessee along the river, west of Franklin, I saw the same  
>>>>> thing: bear scat with lots of persimmon seeds, as well in coyote  
>>>>> scat  
>>>>> near a persimmon tree with ripe fruit. It looks like the bears and  
>>>>> coyotes are as fond of persimmons as I am...except I spit out the  
>>>>> seeds and try to keep them for planting in a more 'civilized'  
>>>>> manner.  
>>>>> Best wishes, Russ

—

Mark -

Great! Give me a call at 5:30 to 6:00 eastern time today (I am on central time right now, so that's 4:30 to 5:00 my time). Or, if you get crunched today, next week is fine too. My cell:

850-420-8002

Connie

On 10/16/08 11:42 AM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

> Connie;  
>  
> I would like to talk to you on the phone for a moment regarding the  
> torreya rewilding. This week is a bit swamped unless you have some time  
> late this afternoon (ie, ~5:30-6:00PM eastern). Next week is pretty  
> good.  
>  
> 530-752-0671  
>  
> -----Original Message-----  
> From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
> Sent: Thursday, October 16, 2008 9:39 AM  
> To: Torreya-1  
> Cc: Connie Barlow  
> Subject: Torreya Guardians in October 12 Boston Globe  
>  
> Hello Torreya friends!  
>  
> This is Connie Barlow. October 12, a lengthy investigative news report  
> on  
> "assisted migration" ran in the Boston Globe, and Torreya Guardians was  
> mentioned usefully as providing a stimulus for conservation biologists  
> to  
> address this issue square on.  
>  
> I have provided a direct link to the article on the webpage that I keep  
> current with links to all key papers and news reports on the issue of  
> assisted migration. You will find the Boston Globe article as the  
> second  
> entry there:  
>  
> <http://www.torreyaguardians.org/assisted-migration.html>  
>  
> P.S. For all of you who obtained seeds from Torreya Guardians from  
> either or  
> both of our two occasions for seed distribution, I'd be grateful to hear  
> a  
> progress report on whether any of those sprouted and how they are doing.  
> I  
> would like to post a new webpage with those stats on it, as Torreya  
> Guardians needs to demonstrate that, even though we are a dispersed  
> group of  
> volunteers, we can nonetheless keep decent records that will be  
> trackable  
> for scientific analysis in the future. Thanks!  
>  
> Together for Torreya,  
> Connie Barlow

—

Connie;

Thank you for your thoughtful response to that. I appreciate your not working in the western US.--Mark

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Tuesday, November 25, 2008 9:45 AM  
To: [Callahanseeds@gmail.com](mailto:Callahanseeds@gmail.com)  
Cc: Schwartz, Mark; Lee Barnes; Jack Johnston  
Subject: Re: Torreya taxifolia in Oregon

Hello Frank -

Thank you for your interest in helping this endangered species. Torreya Guardians has received one other offer of private lands for growing Torreya taxifolia along the Pacific (that was in California) and, while we appreciate the offers to help, we are careful to work with landowners only east of the Mississippi or on a separate continent. The reason is that Torreya californica is the Torreya species on your side of the continent, and we don't want to encourage any mixing of pollen types. Its northernmost outpost in the Coast Range is not far from the Oregon border, so in the decades and centuries ahead, California torreyia may be looking up in your direction.

Together in the Great Work,

Connie Barlow  
Torreya Guardians

P.S.

In a couple months I'll have up online a broader website, [www.plantguardians.org](http://www.plantguardians.org), in which anyone can post interest in a particular genus and species and see who shows up to trade information and ideas.

On 11/21/08 2:28 PM, "[Callahanseeds@gmail.com](mailto:Callahanseeds@gmail.com)" <[Callahanseeds@gmail.com](mailto:Callahanseeds@gmail.com)> wrote:  
I need to link with you folks for seeds of T. taxifolia. We are presently growing these trees in Oregon and have limited seed production. We have land to grow this species. Contact us at Callahan Seeds POB 5531 Central Pt. OR 97502 - 541-855-1164 [callahanseeds@gmail.com](mailto:callahanseeds@gmail.com) Frank Callahan

—

Connie;

You are not being paranoid about pollen mixing. It would be VERY BAD to mix pollen. This is what caused the de-listing of the Dusky Seaside Sparrow: the pure genotype was lost (owing to intentional cross-breeding because of there being 6 males and 0 females). Nonetheless, if a listed species is hybridized out of existence, then the species will be delisted. That is not good. We KNOW that some nurseries are not as careful as they should be. We have no idea what interested collectors do. This is why I think it is very dangerous to advocate volunteer citizen groups to take on the task of translocating species for conservation and why I am opposed to what Torreya Guardians does. I think that, despite good intentions, these efforts can result in more harm than good. I am not so worried about Torreya Guardians, per se. But the promulgation of these efforts to other species can have disastrous effects on biodiversity. Please be very careful about who you suggest what to in this regard. I, for one, do not want free-wheeling interest groups for all 5000 rare taxa in the US.

Mark

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Tuesday, November 25, 2008 12:38 PM  
To: Schwartz, Mark; Ron Determann; Brandon Keim; Camille Parmesan; Chris Thomas; Dennis Hansen; George Mustoe; Hugh Possingham; Jessica Hellmann; Josh Donlan; Mac Hunter; Mauro Galetti; Vivian Negron-Ortiz  
Subject: Assisted migration Q and plant nursery decisions

TO: those professionally working with Torreya taxifolia and T. californica  
AND TO: people published on the assisted migration controversy

FR: Connie Barlow, Torreya Guardians

RE: Question about how we should handle citizen/propagator questions like the one below

Hello all. Please read the emails from the bottom up. This is absolutely something you must address in the policy work on assisted colonization/migration going on now. I tend to be very conservative about the prospects of mixing pollen from sister species. What can be done to enlist nurseries — not just citizen groups, like Torreya Guardians — to try to participate responsibly in helping imperiled plants? Or am I just being too paranoid about pollen mixing?

Together for Torreya,  
Connie Barlow

--

Hi Mark -

Audubon has finally committed to publishing the article that Janet Marinelli wrote on her attending our July 2008 Torreya seedling planting in Waynesville. Will be published May Audubon.

Lee Barnes filed a comment on January 14 this year of 1 of the Waynesville seedlings looking like it died. You can see his comment here:

<http://www.torreyaguardians.org/comments.html>

This seedling's page has some snow shots:

<http://www.torreyaguardians.org/trees/waynesville-2-celia.html>

Here are other seedlings pages with snow shots:

<http://www.torreyaguardians.org/trees/waynesville-2-udall.html>

<http://www.torreyaguardians.org/trees/waynesville-2-mollison.html>

<http://www.torreyaguardians.org/trees/waynesville-2-julia.html>

<http://www.torreyaguardians.org/trees/waynesville-2-audubon.html>

<http://www.torreyaguardians.org/trees/waynesville-2-darwin.html>

<http://www.torreyaguardians.org/trees/waynesville-2-joanna.html>

For Torreya,  
Connie

On 2/11/10 1:52 PM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

Connie;

So, how are the trees planted in 2008? Are they doing well?

All the best,  
Mark Schwartz

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
Sent: Thursday, February 11, 2010 1:44 PM  
To: Lee Barnes; 'Bill Alexander'  
Cc: 'Jack Johnston'; Schwartz, Mark; [rdetermann@atlantabotanicalgarden.org](mailto:rdetermann@atlantabotanicalgarden.org)  
Subject: 300.Torreya seeds from 2009 Biltmore harvest distributed by Torreya Guardians

You can access the list of recipients and their projects of the 2009 seeds donated by the Biltmore Gardens to Torreya Guardians. Lee Barnes filed this report in February 2010, as he was in charge of seed preparation and distribution.

I created a new web page for this report:

<http://www.torreyaguardians.org/2009-seeds.html>

This page is also accessible via one of the top links in the Current Status of Rewilding Project page:

<http://www.torreyaguards.org/rewilding.html>

For Torreya,  
Connie Barlow

—

Mark -

Great response. May I share it with Vivian Negron-Ortiz? I will respond myself to a few points you make here in a later email to you. But I have some feelers out first to those who somewhat or fully share my perspective, and so I want to first hone some new arguments. The big picture which this Torreya question reveals in microcosm just keeps getting bigger . . .

For Torreya,  
Connie

On 5/12/10 8:58 PM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

Connie;

I was not able to attend the meeting on Torreya taxifolia. As you know, I have written on assisted migration as well as on rewilding T. tax.

Let me first say that I deeply appreciate your efforts to be public and above board on your efforts. That is courageous and much needed in this whole discussion.

Nevertheless, I believe that we have a very, very , very large problem on our hands if all citizens who are interested in moving stuff around feel empowered to do so. We have to be judicious about the movement of organisms from one place to another. There is already an incredibly large and robust under-the-table set of activities moving species of all sorts because individuals think that they would like to see something where it is currently not.

I am certainly NOT you of such behavior. But, you can see the problem of invasive species that has the potential of being exacerbated by unregulated, undocumented, unplanned rewilding. For this reason. I strongly believe that we should only engage in such movements when there is no other course of action available to avoid extinction. And, this is not the case in T. taxifolia. We have time. We have opportunities to try in situ conservation. I believe that conservationists should prefer that solution. I believe that they generally do. Hence your feeling of being a lone voice. To some extent, you are.

Thus, you are likely to meet resistance simply because people see assisted migration as an option of last resort. I understand that your motivation or rewilding torreya emerges from a different place. Nevertheless, you should understand what motivates these conservationists: protecting species from extinction: all species. And impacts of species into recipient ecosystems have not, historically, been trivial, and are not likely to be in the future.

If I were you, I would begin preparing, for example, to defend arguments to extirpate torreya from the Carolinas if you end up successful in establishing it there. I certainly wont be involved in that, but I bet that there are plenty in the Carolinas who would see torreya as an invasive species to be eradicated at all cost. Their worldview of nature is, like yours, a valid one.

All the best,  
Mark

From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]

Sent: Wednesday, May 12, 2010 12:08 PM

To: [Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)

Cc: Schwartz, Mark; Ron Determann; [JSanders@atlantabotanicalgarden.org](mailto:JSanders@atlantabotanicalgarden.org); [emcroom@olemiss.edu](mailto:emcroom@olemiss.edu); [jceska@uga.edu](mailto:jceska@uga.edu);

[jasons@ufl.edu](mailto:jasons@ufl.edu); Patrick Shirey

Subject: Torreya taxifolia recovery plan group and Barlow's advocacy of assisted migration

May 12, 2010

To: Vivian Negron Ortiz, Botanist, U.S. Fish & Wildlife Service

Re: Connie Barlow recommendations to Torreya taxifolia working group process  
(follow-up to the 11 May 2012 conference)

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Dear Vivian:

Thank you for inviting the citizen group, Torreya Guardians, to participate in the Torreya taxifolia Recovery Working Group meeting you led yesterday. I listened/participated by phone the entire day, and I felt that you were genuinely inviting ideas and opinions from me as an informal representative of a deeply concerned and active segment of the public.

I was heartened that so many of the group had read the Shirey and Lambert paper, and thus were well acquainted with, what I regard as, the best single, objective overview of the controversial issue of assisted migration for endangered species (including a review of legal actions already taken, e.g. those by Torreya Guardians). I was disheartened, however, to listen to group members respond one-by-one to your query as to whether the management plan update should include any actions or pilot tests of translocation other than the existing range of ex-situ repositories in institutional settings of potted seedlings and cloned parent genotypes. What I heard is that I was the only voice speaking in favor of any departure from the current plan in this regard. Hence my attached pdf document in which I attempt to make a case for including the translocation option in the official update, not only to assist in the recovery of this particular endangered species, but also as an opportunity for the USF&WS to make a shift (for all its recovery work) to a "deep-time perspective of native habitat." The title of my submission:

The Torreya taxifolia USF&WS Recovery Plan Process  
An Opportunity to Shift to a Deep-Time Perspective of Native Habitat

This pdf can also be accessed online:

<http://torreyaguardians.org/barlow-2010.pdf>

Perhaps the key contention I make in this 8-page document is one that nobody else, to my knowledge, is making. It is the essence of the paradigm shift that has already been made on the leading edge of conservation biology, and which I am suggesting for this particular management plan. Here it is, as it appears on p. 6 of the pdf:

Overall, I suggest that **deciding whether *Torreya taxifolia* (a.k.a. Florida Torreya) is native to northern Florida or to the southern Appalachians makes no more sense than deciding if the Arctic tern is native to the arctic or to the antarctic.** (This bird species breeds in the Arctic and "winters" along Antarctic seas.)

A deep-time ecological perspective leads inevitably to this: **Genus *Torreya* has a species in eastern North America that is native to northern Florida during peak glacial times and that is (most likely) native to the southern Appalachians during peak interglacial times.** In between those "seasons" it is in transit (slowly, owing to its large seed that depends on squirrels to disperse).

I would be happy to communicate by email or phone with any of the above-named recipients of this email who wish to support or refute the arguments I pose in the enclosed document.

Please know that I have a number of published books, papers, and book chapters that also establish some professional credibility for me in this topical area. You can view that cv and links to my online-accessible publications via my other professional website that I maintain (the substance of which is my current livelihood):

<http://thegreatstory.org/CB-writings.html>

Evolutionarily yours,  
Connie Barlow  
850-420-8002

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On 5/13/10 12:16 PM, "Schwartz, Mark" <[mwschwartz@ucdavis.edu](mailto:mwschwartz@ucdavis.edu)> wrote:

>  
> Sure. Be my guest. I almost copied her myself on that, but decided in the end  
> that I was writing to you. So, if you would like to share it with her, that  
> would be great.  
>

> I much appreciate your conviction in your mission combined with a sustained  
> willingness to discuss the broader implications with folks who do not  
> necessarily share the mission. It is the path to civil discourse; something  
> altogether too rare these days.  
>  
> Mark  
>  
> -----Original Message-----  
> From: Connie Barlow [<mailto:cbtanager@bigplanet.com>]  
> Sent: Thu 5/13/2010 6:37 AM  
> To: Schwartz, Mark  
> Subject: Re: Torreya taxifolia recovery plan group and Barlow's advocacy of  
> assisted migration  
>  
> Mark -  
>  
> Great response. May I share it with Vivian Negron-Ortiz? I will respond  
> myself to a few points you make here in a later email to you. But I have  
> some feelers out first to those who somewhat or fully share my perspective,  
> and so I want to first hone some new arguments. The big picture which this  
> Torreya question reveals in microcosm just keeps getting bigger . . .  
>  
> For Torreya,  
> Connie

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On 11/3/08 9:03 AM, "[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)" <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)> wrote:

>  
> Dear All,  
>  
> I'm the lead recovery botanist for the Florida Panhandle with U.S. Fish &  
> Wildlife Service. My main task is recovery of 10 federally listed species.  
>  
> One of the ten species is Torreya taxifolia. Since you have done  
> outplantings, I would like to know if you have look carefully the roots.  
> Have you seen globular swellings (vesicles), or a net of mycelia around the  
> roots? Any help is appreciated.  
> .  
>  
> Thanks for taking a moment on this.  
>  
> \*\*\*\*\*  
> Vivian Negron-Ortiz, Ph.D.  
> Botanist, U.S. Fish & Wildlife Service  
> 1601 Balboa Ave.  
> Panama City, FL 32405  
> 850-769-0552 X. 231  
> [Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)  
> <http://www.fws.gov/panamacity/stafflist.html>

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Vivian -

Thank you for your careful response, which is echoed by the comments I got from two others, all 3 of which I have posted on the "comments" page of the TorreyaGuardians website:

<http://www.torreyaguardians.org/comments.html>

P.S. I am house-sitting right now the property we planted 21 T. taxifolia seedlings on in western North Carolina, 3400 feet. As we planned, even though we planted them under full canopy, because the forest is entirely deciduous, the little Torreya's have been eating up the fall sunlight and look fine. I even have some nice snow photos of them, eg:



<http://www.torreyguardians.org/trees/waynesville-2-darwin.html>

<http://www.torreyguardians.org/waynesville-2.html>

Together for Torreya,  
Connie Barlow

On 11/25/08 4:31 PM, "[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)" <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)> wrote:

> I appreciate the conservation efforts in the recovery of *T. taxifolia*.  
> However, interspecific hybridization should be avoided between these two  
> species (or other species in the genus); their genetic integrity should be  
> maintained. I don't recommend translocating *T. taxifolia* to the West; the  
> native range of *T. californica* should be completely avoided. If *T.*  
> *taxifolia* 'migrates' due to climate change it should be toward the East.  
> Also, species introduced into non-native areas may disrupt 'native' species  
> assemblages that are already impacted by environmental change.  
>  
> Preferable, a careful reintroduction scheme should be followed.  
>  
> Sincerely,  
>  
> Vivian Negron-Ortiz

—  
Vivian -

I am cc-ing the two Torreya Guardians who sometimes have access to seeds. But I suggest you contact Ron Determann at Atlanta Botanical Garden, as they often have a ton of seeds and I suspect they may be very interested in that work.

We appreciate your working on *T. taxifolia* as part of your broader focus on endangered plants in the state of Florida.

Best wishes,  
Connie Barlow

On 10/5/09 8:08 AM, "[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)" <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)> wrote:

Dear Connie

I have a request.

Dr. Lydia Rivera, plant pathologist from the Univ. of Puerto Rico currently examining soil-borne pathogens of *Torreya taxifolia* from both FL and GA, would like to get seeds to conduct in-vitro pathogenicity tests. I was wondering if you have seeds and would like to donate some to her. She would like to get about 30 seeds to replicate the study at least 3 times.

Please let me know if this is possible.

Thanking you in advance.

Vivian Negron-Ortiz

\*\*\*\*\*  
Vivian Negron-Ortiz, Ph.D.  
Botanist, U.S. Fish & Wildlife Service

—

Hello Vivian -

This is Connie Barlow of Torreya Guardians. None of our core group has volunteered to participate in person, so how about doing what a lot of groups do now (also helps with carbon emissions): plan for a chunk of time in which us off-site interested parties can all call into a conference line to report on what we are doing and to respond to individual questions. Or Skype us in.

Several more parties to invite (all cc'd above) would be:

Bruce Rinker, who is working with *T. taxifolia* plantings with his students at a private highschool in Virginia

Mike Heim, who is working with *T. taxifolia* and *Taxus floridana* plantings on his property and with highschool students on the Ojibwe reservation in northern Wisconsin! To learn about his work, go to this url and scroll down to where you see his name in a title (Feb and March postings):

<http://www.torreyaguardians.org/comments.html>

Here is a photo-essay I just put up on his plantings, which he will flesh out into a full story when the school year ends:

<http://www.torreyaguardians.org/wisconsin-heim.html>

Peter White at U NC Chapel Hill, in charge of the arboretum (I don't have his email)

Bill Alexander at the Biltmore Gardens in Asheville

Josh Donlan - Cornell; lead author on the Pleistocene Rewilding papers and who likes to follow the assisted migration debate.

Really important to have Mark Schwartz on the call, of course, especially for his California Torreya experience. So if he can't be there in person then important to Skype him in for part of the time.

If a conference call or Skype option is available, I would do my best to get our key hands-on Torreya Guardians (Lee Barnes, Jack Johnston, and Russell Regnery) on the call.

Together for Torreya,  
Connie Barlow

P.S. Next month's issue of Audubon has a photoessay of our 2008 plantings of Torreya into Waynesville NC sites.

On 4/5/10 1:29 PM, "[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)" <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)> wrote:

Preventing extinction and Recovery of *Torreya taxifolia*

Dear Interested Parties:

The Service would like to assemble a recovery working group of those currently working on, and knowledgeable about, the natural history of Florida Torreya. The goal of this working group would be to provide input and recommendations to prevent the extinction of this species and work toward recovery. Recommendations from the working group will be incorporated into the 5-year status review which is due in July 2010. I hope you will be able to join this working group.

This working group would discuss past, current, and planned activities and their relationship to the recovery actions stipulated in the Recovery plan. This is important to evaluate so we don't duplicate recovery efforts.

If you are interested in participating in this working group, please respond to me by 21 April 2010. Also, please advise me of other persons who should be included that I have omitted. I'm hoping to finalize the participant list by the end of this month, and propose to meet here at the Panama City Field Office in mid-May (May 11 or 12, or both if needed).

If you join the working group, please do the following prior to the meeting: read the Recovery Plan [http://ecos.fws.gov/docs/recovery\\_plan/FL%20torreya%20recov%20plan.pdf](http://ecos.fws.gov/docs/recovery_plan/FL%20torreya%20recov%20plan.pdf) <[http://ecos.fws.gov/docs/recovery\\_plan/FL%20torreya%20recov%20plan.pdf](http://ecos.fws.gov/docs/recovery_plan/FL%20torreya%20recov%20plan.pdf)>, bring a description of your current and future plans, and a summary of current research. In addition, please bring any survey or census data you have.

Thanks in advance for your consideration. I look forward to hearing from you.

Sincerely,

Vivian Negron-Ortiz

\*\*\*\*\*

Vivian Negron-Ortiz, Ph.D.  
Botanist, U.S. Fish & Wildlife Service  
1601 Balboa Ave.  
Panama City, FL 32405  
850-769-0552 X. 231  
[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)  
<http://www.fws.gov/panamacity/stafflist.html>

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Josh -

Excellent that you, as lead author of the 2 Pleistocene Rewilding papers, which take a deep-time perspective, will be submitting comments on the ESA *Torreya taxifolia* management plan update. I had totally forgotten about how translocation of endangered condors and ferrets already do set a precedent in favor. You can reach Vivian at:

The USF&WS lead on *Torreya* is: <[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)>

Vivian Negron-Ortiz, Ph.D.  
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[Vivian\\_NegronOrtiz@fws.gov](mailto:Vivian_NegronOrtiz@fws.gov)  
<http://www.fws.gov/panamacity/stafflist.html>

For *Torreya*,  
Connie

On 5/13/10 9:40 AM, "Josh Donlan" <[jdonlan@advancedconservation.org](mailto:jdonlan@advancedconservation.org)> wrote:

Hi Connie,

Thanks for the note, update, and your efforts for *Torreya* and advocating ecological history in conservation efforts in general. I really like the idea of a new Leopold Report. And I am sorry to hear, but not surprised, that is strong resistance to an AM approach to *Torreya* with the service. (You should ask them about condors in the Grand Canyon and ferrets in Mexico - both projects the Service supported and managed).

I am happy to write a letter to the lead (Vivian?) urging her to consider a pilot project for AM with *Torreya*. Can you send me her contact details.

Thanks,  
Josh

On May 13, 2010, at 8:51 AM, Connie Barlow wrote:

May 13, 2010

Fr: Connie Barlow, founder of *Torreya* Guardians

To: Jessica Hellmann, Camille Parmesan, Patrick Shirey, Josh Donlan

cc: Vivian Negron-Ortiz (USF&WS person in charge of plan update for management of *Torreya taxifolia*)

cc: Estella Leopold (paleobotanist, emeritus Univ Wash)

cc: the 4 journalists/writers who have done long pieces on assisted migration: Janet Marinelli, Emma Marris, Michelle Nijuis, and Jim Robbins

Re: Assisted Migration and the USF&WS management plans for endangered species: A call for a new "Leopold Report" equivalent and for you folks to make it happen, plus news on the May 11, 2010 recovery plan meeting (USF&WS) for *Torreya taxifolia*

Dear Jessica, Camille, Patrick, and Josh -

As you know, I keep up on both the academic papers and the media reports on the issue of assisted migration, and I post an annotated list of these with links updated on my website: <http://www.torreyaguardians.org/assisted-migration.html>

My sense is that, despite the necessary objective and measured language that Jessica, Camille, and Patrick use in your pivotal and crucial professional papers and conferences, of all the USA participants in this issue, you three seem to have the most "fire in your belly" for moving ahead with assisted migration/colonization/translocation in some responsible way — and that the fire is that you know in your bones that at least some species or genotypically distinct populations do, or will soon, absolutely require such unprecedented assistance for their continuation. (Else, we resign ourselves to giving them loving and costly care until they go extinct in the wild, not unlike our service to the extreme elderly in nursing homes. *Torreya taxifolia* is a poster-plant for that default path, as it is now being coddled in precisely that way in its historically native range in northern Florida.) . . .