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Subject: prep for ABG at Torreya Symposium March 1
Date: February 14, 2018 at 9:05 AM
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CB

Carrie -

Hello! I am the founder of Torreya Guardians and also the webmaster. Great to hear you are now fully working with ABG. (My records show that Jack Johnston donated 3 Torreya seedlings to you in 2015).

Two things:

1. TORREYA SYMPOSIUM - I see that ABG's new director of conservation is on the speaker list. I imagine that you and Ron Determann will be the staff members getting her up to speed on Torreya. Torreya Guardians is not on the speaker list, but one of our volunteer planters (Clint Bancroft, TN) will attend — if his mother is not dying at that moment.

Know that I have been updating the top-level pages on our Torreya Guardians website. Especially, see that I have made major changes in the "Efforts to Save" page, where I try to list/link all the major urls for the official ESA program and plan — and I feature your new Smithgall Woods video: http://www.torreyaguardians.org/save.html Feel free to suggest edits and additions to the ABG part.

I am working behind the scenes contacting in advance some of the symposium speakers (or their staff), trying to ensure that they are aware of some basic information about Torreya Guardians. I have had several contacts with Jason Smith (and in years past, too). I had a phone conversation with the director of research at American Chestnut Foundation, Jared Westbroeck. I have had several emails with Gregory Payton at Morton Arboretum (I met him in November when I passed thru Chicago and personally donated a Florida Torreya potted seedling to them).

I plan to contact E. O. Wilson soon via email today and I hope to speak with him via phone. He knew me back in the 90s before I retired from science writing.

I have been thinking a lot about the distinctions in what we can do as volunteers and what the official team may be leaning toward doing re Florida Torreya. My thoughts keep growing, but these seem to be the main ones I'd like to convey to you, and encourage you to convey to Emily Coffey as you see fit:

• **Paleoecology v. Pathology Paradigm.** Although Florida Torreya has been recognized officially as a glacial relict ever since its designation as an endangered species in 1984, as I look carefully through the documents, I see no evidence that any document considered moving it northward until Barlow and Martin 2004 paper in Wild Earth. I, of course, have been advocating and acting on this "paleoecological" perspective ever since. This contrasts with Mark Schwartz's (and now Jason Smith's) focus on "pathology" as the cause to confront. I agree that disease is the proximate cause, but unlike the plant pathologists in charge, I see proximate cause as embedded within the ultimate cause of climate change: peak interglacial as the problem in the 50s and now exacerbated by anthropogenic climate change.

• **Analogue species.** Until evidence can be shown that Fusarium torreyana is indeed an exotic (or that, whether exotic or not, it is capable of spreading northward into the old Torreya groves at the Biltmore (Asheville) and Harbison House (Highlands) in North Carolina, I suggest that American Chestnut is not the best analogue for judging how to help Florida Torreya recover. Rather, any of the Rocky Mountain conifers (pines, spruces) suffering largescale deaths by native bark beetles (carrying native fungi) should be the analogues. There is no doubt among USFS researchers out west that, while native beetles/fungi are the proximate cause it is a changing climate that is the ultimate cause — and they are therefore reconciled to having to replant with seed populations or species drawn substantially from the south.

• **Importance of Natural History Observations:** When I learned that E. O. Wilson will be a speaker (his autobiography is called Naturalst), I determined to produce something that I could draw his attention to that would be a convincing demonstration of the value of natural history observations in recovery team deliberations. Already I knew that the video I made of Jack Johnston and me documenting the health and seed shadow of the 90 year old grove in Highlands NC is very helpful in that regard. But I knew the most convincing observations are those that I made in 2005 on site visits to Torreya californica in the wild. Therefore I spent the last week, many hours, converting the photos I took in 2005 into a 2-part narrated video. I am going to recommend to Wilson that he watch that video. You can access both parts via the first entry on this page: http://www.torreyaguardians.org/comments.html

2. POSSIBILITY FOR ABG + TORREYA GUARDIANS COLLABORATION. I imagine that one commitment we all share is to not let any precious seeds go to waste. As they cannot be stored long-term, that means they must be grown ex situ on an official site or somehow distributed to volunteer planters. For a variety of reasons, I am the most strenuous proponent for "free-planting" Torreya seeds directly into regrowth forests, skipping the potted stage. Obviously, that can only happen when seeds are abundant — which they used to be for us until 2016. Do know that we now have a big circuit of volunteers in northward states who would be happy to plant as many seeds as we give them. Obviously, some will be predated by rodents if free-planted, but we have recent evidence that planting seeds 6 inches deep may be even better protection than placing flat rocks over them. My experience at our 2008 Waynesville site, in contrast, is that the trees really struggle if they are rootbound, so I would encourage ABG to never let your seedlings stay too long in the pot before getting them, somehow, into the ground.

• OPPORTUNITY - I am staying at a friend's home in **Big Canoe GA** till March 10. This gated community has vast community forest lands, the coolest portions of which contain hemlock being treated against adelgids. These ravines would provide terrific slopes for exploring right here in north Georgia habitat differences based entirely on slope aspect and height above creek depth. The community

exploring right here in north Georgia habitat differences based entirely on slope aspect and height above creek depth. The community already controls the deer population, so that would be another reason that torreya experiments — free planting seeds or outplanting potted seedlings right into forest plots — here could be ideal, and fully within the bounds of the existing recovery plan. **Would you like to come out here and explore the grounds** — and meet folks who could advocate for community agreement of an ABG experiment here?

Finally, I'll be speaking about Torreya Guardians to a biology class at Georgia College tomorrow and then returning to Big Canoe on Friday. Where do you live now?

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