

Conservation Biologists Lag Behind Forestry Researchers in Assisted Migration for Climate Adaptation

4 March 2015 email from **Connie Barlow** to

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Main content of the email:

1. Introducing Conservation Biologists to **FORESTRY** researchers work on assisted colonization:

Since mid 2013 when I discovered that forestry research professional publications have a parallel publishing track record to the conservation biologists, I have pretty much set aside watching the endless debates within Conbio and have put my effort into learning and communicating with the forestry researchers. Forestry dialogue and concerns re AC are a separate universe to your own profession's. **The two paradigms are seemingly nonoverlapping** at the moment -- so maybe you can play a role in **alerting Conbio folks to what is going on in forestry**. To get a sense of how important the forestry work is, go to the url below and then scroll down till you see an image of the **IUCN guidelines** (I discovered those yesterday, thanks to an IUCN-related paper you were on, re "indigenous range" terminology in lieu of "historic range"). When you see the IUCN image, make sure you look at the 3-part image right below it, where key forestry researchers make their work accessible in a popular magazine to the landscaping profession.

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

On the above (now-lengthy) page I have a separate internal section on FORESTRY. Please do spend some time looking at the excerpts and abstracts of key forestry papers on assisted colonization. That will be fundamental for you and I to have any continuing dialogue on Florida Torreya and the work of Torreya Guardians, as when I discovered those forestry papers I found I had come home to family. In contrast . . .

2. **CONBIO papers**, compared to forestry papers, seem out of touch with these (to me) indisputable facts:

(a) The **ravages of climate change are inevitably burned into the system** already; they will happen, they are happening; and foresters are acting.

(b) **Trees with 30 year maturation times** (like Torreya) are not herbs or butterflies. They demand action well in advance of certainty. Thus **the pre-cautionary principle should be turned on its head** when it comes to forest trees. To wit, we know **paleoecologically that trees have been transiting hundreds of miles N-S over the tens of millennia of climate transitions** throughout the Pleistocene; we know by implication and by pollen that **very strange assemblages of species** have transited landscapes during those times -- and to no apparent harm. Ergo, **the burden of proof should reside on the shoulders of those who urge restraint and endless (still unfunded) study** before native trees can responsibly be moved northward.

(c) That **Torreya taxifolia is still being carried northward only by citizen activists**, using a legal loophole in the Endangered Species Act, should be a mark of **shame within the ConBio profession**. Everything about this species is a big "Yes!" for moving ahead with actual field experiments -- not more modeling and decision trees and irresponsible fear-mongering about potential "invasiveness" and "pathogens". That *Torreya taxifolia* might be able to **assume the niche of evergreen conifer** shading cool streams and streamlets in otherwise deciduous forests in the southern Appalachian Mtns -- a niche once occupied by our glorious **Eastern Hemlock (Tsuga) tree** but destroyed by the alien woolly adelgid -- means that rather than worry about possible unfair "competition" with the existing inhabitants, the biotic communities (including fish) will welcome *Torreya* with open fins and branches! And to worry that seeds gathered from parent trees already in North Carolina and then planted elsewhere in North Carolina might carry pathogens . . . well I am sure there are more potential pathogens on the boots I wore in northern Florida (*Torreya's* "indigenous" range) last month and that now tromp around with me in the southern Appalachians. I mean, really!

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Overall, please get a sense that **foresters are utterly practical**. Especially foresters in western North America (Alaska, Canada, USA, owing to persistent jet stream blockages that direct Arctic air to plunge south only in the eastern North America) see their dominant tree species being taken down by native pathogens -- native pathogens that trees stressed by climate change can no longer successfully fight. While the Audubon Society posted a website of all the bird species that are going to have to "move" north in the decades ahead, the foresters know that the big problem for birds is something that goes unstated: that **human-assisted migration will be required of our large-seeded forest dominants** (notably, oaks). Yes, temperate warblers will need to move into boreal zones in 50 years -- but what they will need to find in those boreal zones are temperate canopy deciduous trees -- not white spruce and balsam fir!

BOTTOMLINE: If y'all still are wringing your hands about *Torreya taxifolia* and arguing about what to do and then need hundreds of thousands of dollars in order to properly cross the t's and dot the i's on all the important study questions before any official action in the field is undertaken, then **a train wreck lies ahead. It is triage / tree-age time for Conbio folks**. Except for prairie and desert species of herbs and animals, everything depends on there being a decently **mature canopy** in all places where forest ought to be in the decades ahead. Just how is that going to happen? My wish is that everybody at the Conbio conference set aside half a day when they return home and just dabble in the titles, abstracts, figures, and links in the FORESTRY section of my Assisted Migration Scholarly Links page. Here is the direct link to the forestry section:

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

While you're at it, think about all the efforts in the 20th century to protect in place **Old Growth Forest Groves** and wilderness areas. . . Given climate change, there is no way for those groves in most places to persist for another half century! Have your conbio colleagues been thinking about that?! It is tree-age time!

May the forest be with you,

Connie Barlow
Founder, *Torreya* Guardians (and author of 2001 "The Ghosts of Evolution")