

## **Technical Oversight Team Reviews**

### **Second Quarterly Report, 2013 – NatureServe Climate Change Vulnerability**

**Reviewer #1** - Are there additional documents to review on the website, or is it just the two attachments? I may be late in commenting if there are more documents – I'm in back-to-back fieldwork for the next few weeks. If it is just the two attachments then it seems that the delays in the revisions of the draft report and the selection of species and habitats have been acknowledged, and are being addressed, so I don't have any additional comments.

**Reviewer #2** - Here are a few comments regarding upcoming work based on 2012-04 Timeline Deliverables.

Page 3: Activity F. Vulnerability Assessment of Appalachian Species and Habitats (First and Second Qtrers FY2014)

“If no current range map exists, we will generate one using GIS and other data, including Element Occurrence information from natural heritage programs where appropriate.” Species modeling for species that have no range maps is not straightforward and expectations of accuracy and purpose come down to the practical need and expected resolution. For example, Little's tree species range maps are very coarse 0-1, yes-no maps that are drawn without respect to the density or frequency of a species within its range. Compare FIA Importance Values within that range using Iverson's Eastern Tree Atlas. If in this risk assessment process, species lacking range maps will be generated with the same 0-1 essentially county resolution, it is unlikely to tell us too much about their viability under novel stress given the complexity of habitat, species frequency and density within watersheds or counties.

How useful will the resolution of this vulnerability assessment be to answer the applied/management questions that should follow from such an analysis? A thorough presentation of that need should come first. Can habitat complexity, local refugia, uncertain density or frequency be addressed at coarse resolution? Yes, but not only with high resolution detailed habitat maps. Unnecessary time consuming effort can be spent fixating on details on one aspect of the problem while the “weakest link” in the risk analysis is at a decidedly coarser resolution for other aspects. I am a bit concerned that this may be headed in that direction given the grantee's plans to address snow depth changes and changes in fire frequency. Population responses to those require precise models and a formal mechanism to deal with uncertainties. How well are these species habitats known today across slopes and elevations? Do we really have any clue as to what are the thresholds in these drivers that will reduce say 50% of a species current range to contract? Details quickly become overwhelming, leading to endless caveats and assumptions.

There's nothing wrong with exclusively coarse scale analyses as long as they say something useful in the end that relates to known coarse resolution management problems such as the need for prioritizing coarse conservation areas in way that could help target easements toward unprotected populations that predictions suggest will likely be viable by 2050, or alternatively where active management related to restoration or engineering are likely to increase a species' viability on public lands, given coarse predictions of climate and associated stress.

