**APPALACHIAN LCC**

**STATUS UPDATE APRIL 2013 – FY12 FUNDED SCIENCE NEEDS PROJECTS**

**1. Ecological Flows:** ***Development of a Hydrologic Foundation and Flow-ecology Relationships for Monitoring Riverine Resources in the Marcellus Shale Region***

The study will provide a report assessing availability of hydrologic and ecological flow model(s) suitable for the region, a georeference assessment of available ecological data to inform the ecological flow model(s), the application of the model(s) to anticipate how altered flow regimes will affect critical conditions, and a report that forecasts changes in hydrology and associated predicted biological responses in relation to different water resource development scenarios for critical watersheds.

**TOT Summary Assessment to Date:** *Overall the quarterly report documents a good beginning to this important and well-designed project, with reasonable progress on each of the objectives.*

The TOT members have provided extensive technical comments to provide information to the vendor, Cornell University, and improve this project’s deliverables. Primarily, suggestions for improvements focused on excellent coordination with other experts at each stage, especially the following:

 *You have tapped into the river classification work group represented by Dr. McManamay, but you should also be leveraging two other tremendous bodies of work that directly applicable:*

*1) Jim McKenna’s (USGS, Cortland NY) thoughtful development of river system classification spatial units and key attributes for New York rivers, through the Great Lakes Regional GAP pilot work over the past 10+ years.*

*2) Arlene Olivero’s (TNC Boston, colleague of Colin Apse) river classification framework for OH-WV to Maine to Virginia. This was done collaboratively with representatives from each state, and in coordination with J. McKenna’s work. This is a very strong classification and mapping framework, with some admitted weakness in terms of flow characterization. So your effort could build on this perfectly.*

*Your effort needs to do a thoughtful cross-walking of the strengths/weaknesses of these 3 approaches and toolkits; and then build the value-adding flow characterization accordingly.*

Currently, the project is on schedule and meets expectations.

**Vendor:** Cornell University

**Funds Expended to Date:** $11,518.00

**Total AppLCC Project Funds Commitment:** $153,206.00

**Completion Date:** April 2014

**2. Aquatic Habitat Classification:** ***A Stream Classification System for the Appalachian Landscape Conservation Cooperative***

This research will develop a hierarchical classification for stream and river systems and a GIS map for aquatic ecosystems within the Appalachian LCC. The study will include a report describing the methods used to evaluate and develop the classification system, a literature review of existing stream classifications, and a GIS stream data set

**TOT Summary Assessment to Date:** *The project appears to be just getting underway, so not much to comment on at this point.* (Vendor had requested a delayed start date of October 2012, and initial progress was slow due to other staff commitments.)

**Vendor:** TNC

**Funds Expended to Date:** $1,402.12

**Total AppLCC Project Funds Commitment: $**74,458.00

**Completion Date:** October 2014

**3. Energy Forecasts:** ***Assessing Future Impacts of Energy Extraction in the Appalachian Mountains***

Maps of wind, oil and gas, and coal development potential for the entire study area will be created. These maps and published projections from federal and state land management agencies will be used to model future build-out scenarios. Impacts of the build-out scenarios will be measured regarding habitat fragmentation of forest resources with a focus on the effects to biodiversity and water production for human populations. The study will also create a probability surface for land disturbance associated with large area surface coal mining and create a public web-based map server.

**TOT Summary Assessment to Date:** The TOT is very excited about this project, and TOT members have supplied critical coordination support to access updated and better quality coal seam data. The vendor has proposed an in-person meeting to update TOT members and discuss project details, however travel restrictions may preclude this. The project completion date may be delayed due to continuing efforts to secure access to much-improved data sources for development of coal and shale projections.

**Vendor:** TNC

**Funds Expended to Date:** $2,665.25

**Total AppLCC Project Funds Commitment: $**216,329.13

**Completion Date:** July 2013

**4. Climate Change Vulnerability Assessment***:* ***Support for Understanding Land Use and Climate Change in the Appalachian Landscape***

This research will compile climate change vulnerability assessments and other relevant information on vulnerable species and habitats, discern the various methodologies and criteria used in these assessments, and use a team of exert peer reviewers to recommend the most efficient, effective, and appropriate methods for adoption by the Appalachian LCC for conservation and adaptation planning. The recommended method will then be deployed, resulting in vulnerability assessments for a suite of key species/habitats selected in consultation with partners of the Appalachian LCC. A database will be created of the vulnerability assessments of selected species and habitat. The database will be easily accessible on the web.

**TOT Summary Assessment to Date:** TOT members initially supplied additional supporting literature and opportunities to collaborate with other on-going projects that would complement this one. The vendor, NatureServe, has assembled a very productive peer team to assist with project development, and held several conference calls and one in-person meeting with this group to launch the project successfully. Currently, the project is on schedule and meets expectations.

**Vendor:** NatureServe

**Funds Expended to Date:** $19,384.28

**Total AppLCC Project Funds Commitment:** $186,945.45

**Completion Date:** April 2014

**5. *Data Needs Assessment***

This research will produce an analysis of tools, data, and processes to deliver usable, open-source data products and identify critical new data needs, within a short time frame (i.e., early 2014). Extended time frame includes manipulating and producing new versions of critical datasets customized for the Appalachian LCC. A specific conservation planning process will also be developed and execute portions of that process that are possible with available data. Lastly, as these become available, this research will integrate deliverables achieved through science needs projects funded by the Appalachian LCC and currently underway.

**TOT Summary Assessment to Date:** [TOT assembled; first Quarterly Report due April 30, 2013.]

**Vendor:** Clemson University

**Funds Expended to Date:** None

**Total AppLCC Project Funds Commitment:** $74,191.10

**Completion Date:** February 2014

**6. *Web-Based Tool for Riparian Restoration Prioritization to Promote Climate Change Resilience in Eastern US Streams***

This research will develop and implement a user-friendly web-based tool to identify priority areas for riparian restoration in the context of predicted climate change at the appropriate scale needed by practitioners. First, a ‘shovel ready’ prioritization tool for managers facing immediate on-the-ground decisions will be developed. The research will then link directly to ongoing and future stream flow, temperature, and biological response modeling projects and decision support tools. In addition, a short article in a peer- reviewed journal detailing this project will be published.

**TOT Summary Assessment to Date:** [TOT assembled; first Quarterly Report/Final Report due August 30, 2013.]

**Vendor:** Forest Service/UMass

**Funds Expended to Date:** None

**Total AppLCC Project Funds Commitment:** $35,000.00

**Completion Date:** July 2013