

APPALACHIAN LANDSCAPE CONSERVATION COOPERATIVE GRANT 2013 PROGRESS REPORT

Quarter: (circle one)

2013 1st

2013 2nd

2013 3rd

2013 4th

Grant Number and Title: **ALCC 2012-01 Stream Classification for Appalachian LCC**

Grant Receipt/Organization: The Nature Conservancy

Grant Project Leader: Dr. Mark Anderson

Were planned goals/objectives achieved last quarter? Yes

ALCC Conservation Need Addressed: Development of a stream classification system compatible throughout the Appalachian LCC as a platform to study ecological flow issues

Progress Achieved: (For each Goal/Objective, list Planned and Actual Accomplishments)

Goal 1) Host web ex for potential committee members and finalize team members

- Held introductory project calls April 19th and April 23 to explain the goals and methods of the project and recruit steering committee members; attended by 63 potential representatives
- Finalized steering committee of 40 participants
- Revised and finalized contract with Ryan McManamay, so that the contract is now directly with Ryan and not through Oak Ridge Lab. This was suggested by both parties as a more efficient way to go.

Goal 2) Prepare and implement monthly discussion on Stream Size, Ecoregions, and Geology,

Prepared materials and hosted first Steering Committee Call on June 5th : topics included a review of the Higgins et al. classification approach and an initial discussion of the project boundary, biogeographic stratification and stream size variables. Outcomes of call included as follows:

- Geographic Stratification: Strong agreement that higher level geographic stratification is a useful concept to include in our classification. Strong preference for making stratification attributes available for reaches, but not “hard wiring” them in as a part of the reach level classification type. The group was interested in having us code the reaches with several geographic stratifications including: WWF Freshwater Ecoregion, TNC Ecological Drainage Unit, Omernick Level III ecoregion, and HUC8 (which will allow queries by higher level HUC and USGS drainage basin queries). This multiple stratification attribution will allow flexibility in the use of higher level stratification in the future.
- Extent: Team preferred inclusion of the entire Ohio Basin given that most of this basin is within the Appalachian LCC. For the other eastern/southern/western boundaries, the team preferred a simple intersection of HUC8s that touch the Appalachian LCC plus the Marcellus Shale boundary.
- Size: Strong agreement that size is an important variable. Drainage area was the preferred measure of size because of its stability, current use by state programs, its ease of calculation, and it being able to be related to width and flow with regions specific equations. There was general agreement and support for the 7 size classes used in the Northeast and SARP work. There was discussion that the creek class (10-100 sq.km.) needed a bit more investigation which includes primarily wadeable streams where a lot of sampling effort has been focused. Some team members shared thoughts on additional potential thresholds (20 sq.mi.) and suggested further study of the available data could be helpful here. We also discussed baseflow index as an important variable which has some relation to size. Baseflow may be

covered more in our discussion of flow classes/flow stability with Ryan McManamay, and in our temperature modeling work, but baseflow may also merit being singled out as one of our top single classification variables in the future.

3) Follow up to Web Seminar and Discussion.

After the steering committee discussion we follow up the suggestions with the following tasks: 1) Compiled NHD Version 2 dataset for region; studied difference in divergence routed vs. non-divergent routed upstream drainage attributes in NHD Version 2 to settle on using the divergence routed measure for initial size classes. 2) Investigated various methods for accumulating attributes using the NHD Version 2 framework; call with GIS technical team of Erik Martin, Analie Barnett, Joey Wisby, and Arlene Olivero Sheldon. This accumulation will be necessary to build parts of the stream classification related to the temperature and pH model. 3) Compiled 10m DEM for southern and western portion of the project area in preparation for floodplain modeling. 4) Had call with PhD student intern Dylan Atlas-Harrison regarding his fall internship to assist with modeling stream physical and condition attributes within the APP LCC study area which will assist/inform our APP LCC stream classification project. 5) Revised project boundary map, 6) Had Call with Ryan McManamay and initial study of available biological datasets such as NRA, MARIS, Heriliy, EMAP, REMAP, WSA etc.

Difficulties Encountered:

None so far.

Activities Anticipated Next Quarter:

Goals for the upcoming Quarter include:

- Create 2-page information sheet on this projects
- Prepare and host second call to review results and finalize decisions from first call with respect to size, geographic stratification and project boundary.
- Prepare and host new materials for second call on topics of Geology and Flow modeling.,

Expected End Date:

January 2015

Costs:

Funds Expended Previous to this Report: \$2401.57

Amount of ALCC Funds Requested within this Report: \$3529.57

Total Approved Budgeted NALCC Funds: \$74,458.00

Are you within the approved budget plan? Yes

Are you within approved budget categories? Yes

Signature:



Mark Anderson

Director of Conservation Science

The Nature Conservancy, Eastern Division

Date: July 26, 2013