

Scope of Work for Data Needs Assessment, to Support Conservation Planning for the Appalachian LCC

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Background:

Systematic conservation planning is a rapidly maturing field in applied ecology. Numerous methods and data sources have been developed, serving multiple scales and conservation planning goals. There is an extensive academic literature, web presence, and track record of practical application to draw upon in order to conduct conservation planning for the Appalachian LCC.

We propose to review conservation planning tools, data needs, and integrative processes for the Appalachian LCC and provide packages of available data, as well as interpretive text. We will review ISC conservation planning goals and based on those, prioritize and justify gaps that need to be filled (e.g., through RFAs). We will apply conservation planning tools, using available data, to the AppLCC area and provide data products that result from those applications.

We define “tools” as software designed to support conservation planning (e.g., Marxan, Circuitscape), “data” as spatial (i.e., “GIS”) data as well as tabular or even text data that can assist in parameterizing an interpreting models (e.g., Table 1), and “processes” as decision making systems that evaluate, select, and integrate tools and data to address LCC-specific conservation planning goals (e.g., North Atlantic LCC “Designing Sustainable Landscapes”) (Figure 1).

We propose to rapidly produce an analysis of tools, data, and processes and deliver usable, open-source data products and identify critical new data needs, in a short time frame (i.e., early 2013). Extended time frame includes manipulating and producing new versions of critical datasets customized for the App LCC. We will also develop an AppLCC specific conservation planning process and execute portions of that process that are possible with available data. Lastly, as these become available, we will integrate Deliverables achieved through science needs projects funded by the AppLCC and currently underway.

Tasks, Deliverables, and Time Line

I. Initiation of in-kind support to the AppLCC staff doing analysis of existing ‘Processes’ of conservation planning frameworks (e.g., Designing Sustainable Landscapes (NALCC), Blueprint (SALCC), SE CAS (FWS Southeast Conservation Adaptation Strategy) [prior to this SOW].

II. Assessment of “Data” and” Tools” [SOW]

1. **Task:** Evaluate the 31 datasets listed in Table 1 for the following criteria A) coverage of Appalachian LCC spatial extent, and B) grain size (resolution) relevant to App LCC conservation planning (e.g., grain size > 10km may not be relevant for local-scale planning), C) quality of data (age, evidence of accuracy, completeness), D) quality of

documentation (completeness of metadata), and E) rank as to overall relevance for AppLCC conservation planning goals, based on the previous 4 criteria. **Deliverable:** Document describing process, data, data sources (e.g., Table 1), and how each of the datasets met each of the 5 criteria. **Timeline:** 3 months after initiation of contract.

2. **Task:** Assemble GIS data (shapefiles, rasters) resulting from (1E) and compile a geodatabase of the top-ranked datasets and metadata. **Deliverable:** Data will be packaged and delivered to AppLCC GIS staff in two formats A) individual shapefiles and rasters and B) compiled geodatabase. **Timeline:** 4 months after initiation of contract.
3. **Task:** Based on (Task #2) define what conservation planning purposes can be met with available, quality data, using available conservation planning software tools (Table 2). **Deliverable:** A document containing an annotated list of conservation planning tools, their functions, and relevance to AppLCC conservation planning goals. **Timeline:** 6 months after initiation of contract.
4. **Task:** Identify what conservation planning problems could be addressed with available software if data gaps were filled and what those data gaps are. **Deliverable:** A document describing A) how conservation planning in the App LCC could be improved, by development of specific datasets, B) estimate of cost, sources for each dataset C) one or two paragraph descriptions of new App LCC RFAs, that would meet those needs. **Timeline:** 7 months after contract initiation.
5. **Task:** Interpret uses of data and conservation planning tools by developing interpretive text and graphics for AppLCC web portal. **Deliverable:** A) Document containing text that describes data and tools and that can be posted to AppLCC webportal by AppLCC staff B) map images of data that can be posted to AppLCC webportal by AppLCC staff. **Timeline:** 8 months after contract initiation.
6. **Task:** Perform an analysis of existing or ongoing planning efforts being conducted by cooperators (SWAP and AFWA BMPs, JV, and/or other state and local partner conservation initiatives to be identified through communication with App LCC staff) to document them in a systematic framework that includes extent and grain size of effort, species and ecosystem goals, and landscape-level context, and to identify opportunities to integrate state and local-scale efforts into a regional conservation framework. **Deliverable:** A document that A) characterizes cooperating projects as to their extent, grain size, species and ecosystem goals, and landscape context, B) identifies opportunities to integrate cooperator projects to meet regional priorities, and C) identifies how the results of 1-5 may help support cooperator projects. **Timeline:** 12 months after contract initiation

(To help illustrate the contributions of this analysis to the broader goals of the Appalachian LCC, please see Appendix 1. which illustrates how this SOW will contribute to the data needs-related Tasks and Objectives as identified in the Appalachian LCC 5-Year Work Plan.)

Table 1. Preliminary assessment of available conservation planning data. Additionally, we found at least 21 pieces of software (“tools”), and numerous region-scale decision making processes. We will begin by addressing the aforementioned datasets while detailing their use in conservation planning software. We will expand our analysis to include additional datasets as necessary to address LCC goals.