**Recommendation of Technical Review Panel to the North Atlantic Landscape Conservation Cooperative Steering Committee for funding project for the topic:**

***Conserving Important Habitat for Amphibians and Other Wildlife: Compilation of Vernal Pool Mapping Efforts across the North Atlantic Region***

Summary Recommendation

The Technical Review Panel and North Atlantic LCC Staff recommend that the Steering Committee select the proposal of the Vermont Center for Ecostudies and collaborators to receive the full $100,000 funding amount requested in response to the August North Atlantic LCC Request for Proposals (RFP).

Background

Vernal or seasonal pools are small, temporary bodies of water that can serve as critical breeding habitat for amphibians, reptiles, invertebrates, and other species. On April 10, 2013, the North Atlantic LCC Steering Committee approved the development of an RFP to address the high priority science need of compiling vernal pool locations across the Northeast. More specifically, the goal was to catalyze regional vernal pool identification work that ultimately could lead to a comprehensive dataset of vernal pool habitat in the Northeast. Such a dataset could serve a number of purposes that would contribute to conservation of vernal pool-dependent amphibians and other wildlife. North Atlantic LCC staff then worked with members of the Technical Committee and other partners, including members of the Northeast Partners in Amphibian and Reptile Conservation (NEPARC), to develop an RFP to solicit projects to address this science need. The primary tasks and deliverables of the RFP were to:

1. Compile a comprehensive GIS dataset of currently mapped vernal pool locations in the North Atlantic LCC region
2. Compile and describe the various mapping and certification approaches of the region
3. Where mapping has not been undertaken, prioritize areas for future mapping

On August 15, WMI announced the RFP (full details [here](http://wildlifemanagementinstitute.createsend4.com/t/ViewEmail/j/AC0EDDFD640B9A29/5D572EF44D99CE43C5EC08CADFFC107B)). Five proposals were submitted in response to the RFP, which closed on September 20.

Review Process

Scott Schwenk, North Atlantic LCC Science Coordinator, co-chaired the Technical Review Panel with Phillip deMaynadier of the Maine Department of Inland Fisheries and Wildlife. Collectively, the reviewers encompassed a wide geographic scope and range of expertise. Given the importance of state agencies as both a source of data and as users of the project results, we made an effort to enlist broad state participation in the review. The review panel consisted of the following 10 members:

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| **Reviewers** | **Organization** |
| Phillip deMaynadier (co-chair) | Maine Department of Inland Fisheries and Wildlife |
| Evan Grant | USGS, NE Amphibian Research and Monitoring Initiative |
| JR Jacobson | New York Department of Environmental Conservation |
| Mary Beth Kolosvary | Siena College; co-chair, NEPARC Vernal Pool Working Group |
| Jacob Kubel | Massachusetts Division of Fisheries & Wildlife |
| Mike Marchand | New Hampshire Fish and Game Department |
| BJ Richardson | U.S. Fish and Wildlife Service |
| Angelena Ross | New York Department of Environmental Conservation |
| Scott Schwenk (co-chair) | North Atlantic LCC |
| Scott Smith | Maryland Department of Natural Resources |

Following an initial screening by WMI, all five proposals were reviewed by each member of the panel. The reviewers scored the proposals according to a set of criteria listed in the RFP (see below) and were encouraged to provide narratives that explained their reviews. On October 29, once the written reviews were complete, the panel discussed the proposals by teleconference.

Results of the Reviews

While all of the proposals had merit, only three of the five were ranked as the top proposal by at least one of the 10 reviewers. These were the proposals from the Vermont Center for Ecostudies (VCE) (highest or tied for highest rank by seven reviewers), NatureServe (highest of three reviewers) and Paul Smith’s College of New York (highest of two reviewers). Based on average scores, the VCE proposal scored slightly higher than NatureServe, followed by Paul Smith’s College.

In their written comments, reviewers recognized the VCE proposal for its proposed engagement of partners, its thorough description of how vernal pool data would be compiled, and its long-term commitment to the project through the development of a Vernal Pool Data Cooperative. Reviewers were intrigued by VCE’s proposal to demonstrate the use of LiDAR data to identify vernal pools but were concerned about the feasibility of applying such an approach across the full LCC region. Reviewers recognized NatureServe for drawing upon the strength of state natural heritage data in identifying vernal pools and for including eastern Canadian provinces in the project. Reviewers recognized the Paul Smith’s College proposal for the strength of its modeling component. However, some reviewers also questioned the potential value of the NatureServe and Paul Smith’s College modeling results given substantial challenges in modeling vernal pools across a large and heterogeneous region.

Eight reviewers participated in the teleconference to discuss the proposals. Following discussion, participants unanimously agreed to recommend that the VCE proposal be selected. Reviewers noted VCE’s experience in mapping and compiling vernal pool data, their ties to regional experts, and their proposed commitment to sustain the work rather than delivering a static product.

Recommendations for Improving the Final Agreement

If the recommendation to select the Vermont Center for Ecostudies proposal is accepted, the reviewers recommended that the following issues be considered before the North Atlantic LCC accepts a final agreement (recognizing these issues must be addressed within the constraints of available funding):

* In consultation with the North Atlantic LCC, VCE should develop an advisory or oversight committee for the project
* VCE should consult state natural heritage staff and NatureServe as potential sources for vernal pool mapping data
* As part of their effort to demonstrate use of LiDAR data in vernal pool mapping, VCE should provide information (preferably a detailed regional map) about the availability of LiDAR data across the region that is of sufficient quality or resolution for vernal pool mapping.
* VCE should provide solutions or recommendations to the NALCC for how to maintain functionality and currency of the Vernal Pool Data Cooperative after the life of the project.

Supplemental Information: Proposal Review Criteria

1. Degree to which the project addresses the priority themes and products described in the RFP announcement.
2. Scientific and technical merit.
3. Programmatic capability and feasibility. Are project objectives/goals clearly defined, measurable, and connected to specific milestones/deliverables and timelines? Will/can proposed methods accomplish/produce the project’s objectives/goals, deliverables, and timelines?
4. Engagement of partners.
5. Demonstration that products will be accessible and useful in conservation and resource management decision-making.
6. Degree to which project builds upon, rather than duplicates, existing efforts.
7. Geographic scope.
8. Leveraging of other resources (not required but encouraged).

Supplemental Information: Proposal Description by

Vermont Center for Ecostudies

Principal Investigator: Steven D. Faccio, Vermont Center for Ecostudies

Other collaborators: High Branch Conservation Services; University of Vermont

We propose to compile a comprehensive GIS dataset of known and potential vernal pool locations in the NALCC region. Through a series of meetings and workshops with state agency staff, academics, NGOs, and others involved in vernal pool research and conservation, we will share information about the project, learn what geospatial data exist, and determine where data gaps occur. To ensure the participation of key collaborators, we will selectively offer travel support, compensation for significant, privately held geospatial data, and co-authorship on publications. We will also seek input from participants on the development of a regional framework for coordinating vernal pool data—the Vernal Pool Data Cooperative (VPDC). This database would provide a framework to organize observational and geospatial data on vernal pools, provide tools for data analysis and visualization, and include a metadata library cataloguing the original data sources. Cooperators will be able to upload geospatial and other data to the VPDC database through an online tool that allows contributors to set restrictions on data use. We will also compile and describe all the coordinated vernal pool mapping efforts in the region in a technical review document. Finally, we will develop a method to identify potential vernal pools using Light Detection and Ranging (LiDAR) technology and object-based image analysis (OBIA), a technique that focuses on meaningful landscape objects rather than individual pixels. To demonstrate the feasibility of the OBIA approach we will examine two pilot sites with well-developed vernal pool databases and where high-quality remote-sensing data exist (e.g., Vermont and New Jersey). Models will be field-verified using known vernal pool locations. This is a 2-year project that will begin Jan. 2014.