

Request for Proposals
New Hampshire Natural Heritage Bureau
Ecological Integrity Assessment

The State of New Hampshire, Department of Resources & Economic Development, Division of Forests & Lands, Natural Heritage Bureau (NHB) is requesting proposals for the conduct of an Ecological Integrity Assessment (EIA) in southeastern New Hampshire (NH). NHB anticipates the contractor will conduct 20 to 25 days of field assessments and 7 to 10 days of post-field write-ups and form completion. Proposals must include a daily rate and information detailing relevant experience. NHB will issue a not-to-exceed contract.

The principal goal of this project is to expand our knowledge of the location and condition of critical and at-risk wetlands in southern NH to facilitate regulation and conservation. This project will improve regulatory, non-regulatory, and land conservation activities in southeastern NH by 1) adapting and developing a multi-level EIA method to quantify the status of known critical and at-risk wetlands; 2) identifying additional priority wetlands and benchmark reference sites through inventory and analysis; and 3) communicating project findings to regulatory, non-regulatory, and land conservation activities. The information and descriptions collected by the Contractor will help provide NHB with critical information needed to fulfill these goals. Contractor duties are as follows:

1. Attend training sessions to review the use of NHB field forms. Participate in joint site visits to adjust the accuracy of field estimates (plant cover and strata assignments) and ensure consistent data collection. Conduct replicated data collection at a subset of sites. After 1-2 weeks of fieldwork, provide to the Principal Scientist comments on the study design and the logistics of data collection: based on your experience to date, do you see any problems with consistent and accurate data collection or possible problems with future interpretation of the results? In addition, meet with the Principal Scientist as needed to discuss any issues that arise during field work to ensure that any adjustments are used consistently by all field workers.
2. Use NHB forms for documenting data. These include the **Level 2 EIA Form**, **EIA Stressor Checklists, Form 1** (a Standard Releve Form, version "Form1_2008"), **Special Plant Survey Form** (for rare plant populations, version "Document 4: Jun 02"), an electronic **Element Occurrence Information Form**, and as needed the **Rapid Reconnaissance Form** (Version "FormRecon_2008").
3. Plan field survey routes in advance to cover specific destinations, surveying primary targets (potential high quality wetlands), and maximizing the potential for data collection in wetlands of medium and lower priority.
4. During the field survey, collect data at specific locations considered representative of the surrounding natural community based on observations and interpretation of community composition and structure. As appropriate, collect data whenever there is an apparent change in wetland community type, or there are significant changes in apparent ecological condition, as evidenced by changes

- in physical structure or species composition. Use your knowledge and experience to identify the portions of the study area which are most interesting ecologically, and focus attention on these locations (i.e., rare or uncommon communities, or large, high-integrity examples). Modify the specific route of travel to investigate small-scale habitat conditions not apparent from landscape analysis.
5. In the field, on the appropriate form assign wetlands to broad hydrogeomorphic setting categories, such as landscape setting, landform, water flow path, and water body types defined by the U.S Fish and Wildlife Service (Tiner 2003).
 6. On the appropriate form, record soil data (e.g., horizon depths, average texture, and color; presence of mottling; description of organic layer, etc.) and water pH measured with a pH tester calibrated each day before use in the field.
 7. Use a GPS unit to geo-reference all observation points. Use an "average" option to collect a minimum of 50 points for each waypoint. Annotate each observation point/GPS point with the natural community or system (following Sperduto and Nichols 2004; Sperduto 2005), rare plant species, or other feature observed. If a community does not match well to a NHB community name, indicate that there is no good match and provide an *ad hoc* name. Download waypoints to a GIS point shapefile and tracks to a GIS line shapefile. Review where GPS points appear on a USGS topographic map background and identify any clearly inaccurate locations (e.g. due to signal bounce from water surfaces).
 8. For each rare plant population (NH endangered or threatened species), complete a **Special Plant Survey Form** to include data on population size, condition, and landscape context; if a natural community releve was completed, reference the releve on the form. Collect a voucher specimen (to be given to NHB) if the rare plant population is large enough. If the population is too small to collect a specimen, take a diagnostic photograph accompanied by a descriptive account of diagnostic features. For all “watch” and “indeterminate” species, at a minimum obtain a GPS point and briefly describe the population on a **Rapid Reconnaissance Form** or **Form 1**.
 9. To the extent possible, provide an annotated digital photograph for each exemplary natural community and rare plant occurrence. In particular, at each GPS point collected take a photograph if it would illustrate a feature not yet photographed. Record the photo ID assigned by the camera on the appropriate form.
 10. Map the extent of all exemplary natural communities using data collected in the field, aerial photographs, and/or other resources. Submit mapped polygons as ArcView shapefiles or on relevant copied portions of 1:24,000 topographic maps.
 11. For locally significant natural communities (not exemplary but otherwise worthy of note) not documented using **Level 2 EIA Form**, **EIA Stressor Checklists**, and **Form 1**, briefly document with a **Rapid Reconnaissance Form** using NH NHB natural community names and GPS locations. Do *not* complete **Element Occurrence Information Forms** for locally significant natural communities.

12. For each exemplary natural community, exemplary system, and rare plant population, write a brief description (half of a page or less) on the occurrence (EODATA) and the general area where the occurrence is located (GENDESC), using an electronic **Element Occurrence Information Form**. Follow the style and format used in examples provided by NHB. EODATA for a rare plant includes number of individuals, vigor, evidence of reproduction, and area occupied. For communities, include dominant species, tree size or age, structure of the vegetation, etc. GENDESC for species includes associated species and the local community. For communities, include physical features (topography) and adjacent communities. When available, include information on local land use. Assign viability (or Element Occurrence) ranks based on size, condition, and landscape context for all exemplary natural communities, exemplary systems, and rare plant populations.
13. When using the **Element Occurrence Information Form**, provide recommendations when possible, based on science and professional judgment, for actions (e.g., invasive plant control, trail re-routing) that based on threats observed in the field may be necessary to maintain or enhance the viability of any exemplary natural community, system, or rare plant population. To the extent practicable, recommendations should be specific, detailed, and/or quantifiable.
14. Submit all forms and maps, both hardcopy and electronic, to NHB no later than October 20th or at a later date if agreed upon by NHB.

Email proposals to Bill Nichols at bnichols@dred.state.nh.us , or mail them to: DRED-NHB, PO Box 1856, Concord, NH, 03302-1856. The deadline for submissions is the end of business 16 June 2009. NHB will announce the award on 19 June 2009. The State of New Hampshire reserves the right to reject any and all proposals.