**Science Projects of the**

**North Atlantic Landscape Conservation Cooperative**

**April 2013 Update**

| **Project (*and lead P.I.*)** | **Status** | **Summary and recent developments** | **Cost** |
| --- | --- | --- | --- |
| **Coastal and Marine Projects** |
| **Forecast Effects of Accelerating Sea-level Rise on the Habitat of Atlantic Coast Piping Plovers and Identify Responsive Conservation Strategies***Sarah Karpanty, Virginia Tech* | Ongoing | Modeling relationship between sea level rise, beaches and habitat for Piping Plover to guide management decisions. Completed initial coupled hind cast plover and coastal change model, initial modeling on the future-cast model, and initial results on how varied conservation actions may impact patterns of piping plover habitat use and habitat change.  | $204,000 |
| **Application of the Coastal and Marine Ecological Classification Standards (CMECS) to the Northeast***Mark Anderson, TNC* | Ongoing | Consistent coastal and marine mapping for the North Atlantic. Work is underway to begin to calibrate the CMECS model at local, subregional, and regional scales. A GIS technician has been hired by TNC to work on the project with co-investigators at the University of Rhode Island and Mass. Department of Fish & Game | $130,000 |
| **Marine Bird Mapping and Assessment***Beth Gardner, NC State U.* | Ongoing | Creating a comprehensive map of marine bird distributions and risk assessments for the North Atlantic. Marine bird modeling initially was tested in a restricted area (Nantucket Sound), and is now being expanded. Seabird data are also being compiled. | $145,000 |
| **Consistent Coastal Mapping, National Wetlands Inventory – Coastal Update***CMI at Virginia Tech* | Initiating | Updating National Wetland Inventory quads for the North Atlantic LCC coast so that all coastal wetlands are mapped consistently. Initial work underway with short-turnaround (expected completion in the fall). | $102,600 |
| **Structured Decision Making for Sea Level Rise***Andrew Milliken & Tim Jones, USFWS* | Complete | Completed a Structured Decision Making (SDM) Workshop with a group of 10 partners to articulate a decision problem and objectives for applying information about sea level rise to decision-making. Results are now being used to guide a sea level rise decision model funded by the Northeast Climate Science Center and being developed by USGS and Columbia University. | NA |
| **Aquatic Projects** |
| **Forecasting changes in aquatic systems and resilience of aquatic populations in the NALCC: decision-support tools for conservation** *Ben Letcher, USGS* | Ongoing | Project to understand the impacts of climate change on stream flow, temperature and salmonid populations with an initial emphasis on brook trout. A website is in development to depict the stream flow models and how they are influenced by current and projected future climate. Demographic models have been developed at small (catchment) scales. Work is underway to develop large-scale brook trout occupancy/population models to complement more data-intensive demographic models. | $420,000 |
| **Refine NE Aquatic Classification System** *Arlene Oliviero, TNC* | Initiating | Agreement is being finalized to modify the Northeast Aquatic Classification and Map to include tidal influences on rivers and streams and to classify lakes | $25,000 |
| **Terrestrial Projects** |
| **Terrestrial Wildlife Models***Terri Donovan, UVM/USGS* | Complete | Species-habitat models for representative species were developed and integrated into Phase I of the Designing Sustainable Landscapes project | $90,005 |
| **Revise Northeast Habitat Classification Map for VA & MD***Mark Anderson, TNC* | Complete | Completion of the terrestrial habitat map in the coastal plain and Piedmont of Virginia and Maryland to be consistent with the Northeast Terrestrial Habitat Map. | $14,470 |
| **Permeable Landscapes for Species of Greatest Conservation Need and Representative Species***Mark Anderson, TNC* | Ongoing | Modeling and mapping regional connectivity of habitats for wildlife species. Land cover, including revised roads layer, is being finalized as a basis for connectivity analysis. Automated scripting of connectivity analyses have been tested. | $49,868 |
| **Extend Northeast Habitat Classification and Map to Atlantic Canada***Mark Anderson, TNC* | Ongoing | Extension of the Northeast Terrestrial Habitat Classification and Map into the North Atlantic LCC portion of Canada (New Brunswick, Nova Scotia, PEI, Southern Quebec). Work now underway. | $95,238 |
| **Priority Amphibian and Reptile Conservation Areas (PARCAs)***Priya Nanjappa, AFWA* | Ongoing | Identification of Priority Amphibian and Reptile Conservation Areas through mapping and modeling of amphibians and reptiles and the impacts of climate change. Species occurrence data for priority species have been obtained from most states. Analyses are being piloted for Maine, where all data have been compiled. | $315,944 |
| **Cross-cutting Projects** |
| **Designing Sustainable Landscapes, Phase 1***Kevin McGarigal, UMass Amherst* | Complete | Developing a set of models and tools to guide conservation decisions in the face of regional change from urban growth, climate change and other major drivers including impacts to representative species and ecological integrity. During the first phase of the project, the approach was developed in three pilot study areas: the Kennebec River watershed in Maine, the middle Connecticut River in Massachusetts and adjacent states, and the Pocomoke and Nanticoke River watersheds in Delaware and Maryland. Results presented and vetted with over 100 partners at workshops. | $435,000 |
| **Designing Sustainable Landscapes, Phase 2 (year 1)***Kevin McGarigal, UMass Amherst* | Ongoing | Expanding the assessments of change and conservation decisions on representative species and ecological integrity to the entire Northeast Region, incorporating regional sea level rise impacts, and fully developing the decision model. | $420,000 |
| **Decision support tool to assess aquatic habitats and threats in North Atlantic watersheds and coastal zone***Fritz Boettner, Downstream Strategies* | Ongoing | Compilation of distribution, status and threats of aquatic and coastal fish and their habitats in the watersheds and coastal zone of the North Atlantic LCC in close cooperation with Fish Habitat Partnerships. The agreement was finalized in February. Downstream Strategies is working with partners to identify stakeholders and to start planning an introductory workshop. | $250,000 |
| **Vulnerabilities to climate change of Northeast fish and wildlife habitats, Phase II** (through RCN grant program)*Hector Galbraith, Manomet; George Gay, National Wildlife Federation* | Complete (final review) | Second phase of regional climate change habitat vulnerability assessment. Work on the habitat vulnerability component of this project by builds on the Phase I work funded through a 2009 RCN grant – *final draft report complete*; coastal vulnerability is focused on the development of a report and database of ongoing projects by NWF as part of a collaboration on a *NEclimateUS.org* site with NOAA and other partners – *final draft report and draft database complete*; aquatic vulnerability is focused on coldwater fish – *final draft report complete*.  | $83,500 |
| **Use of a vulnerability index to assess species most likely to be impacted by climate change***P.I.: Bruce Young, NatureServe* | Ongoing | Regional climate change species vulnerability assessment. NatureServe developed an advisory committee, selected a list of 64 species for assessment including a mixture of foundational and representative species and species of high regional concern and begun species assessments.  | $100,399 |
| **Demonstration projects***Kelley Hart, The Trust for Public Land; Steve Walker, Maine Dept. of Inland Fisheries and Wildlife; George Gay, National Wildlife Federation* | Ongoing | Three projects underway to show the application of science tools developed through the LCC and RCN programs: 1) White Mountains to Moosehead Lake Initiative—Parcel Level Planning, Progress Tracking and Stakeholder Engagement to Advance Resilient Landscape Conservation; 2) Integrating Science into Policy: Local Adaptation for Marsh Migration; and 3) Utilizing Climate Adaptation Science to Prioritize and Amplify Landscape Scale Conservation Efforts in the Appalachian Forests of the North Atlantic Landscape Conservation Cooperative Geography | $60,000 |
| **Landscape Conservation Design and Synthesis***Steve Fuller, North Atlantic LCC* | Ongoing | Compilation, organization, synthesis, science translation and adoption for completed, ongoing and future projects including:1. immediate organization of existing data to make information more available;
2. synthesis of existing data to develop/compile landscape designs that will allow partners to map and prioritize focus areas for conservation;
3. translation of maps and other tools to make landscape design data useful at various scales and in various formats; and
4. assistance to ensure that science and tools are understood and consistently adopted and implemented in support of on-the-ground conservation.

GIS Analysts in the LCC and TNC are working with LCC staff, state and other partners. Initial focus on synthesizing information for the State Wildlife Action Plan Updates. | $60,000 |
| **Information Needs Assessment***Michael Terner, Applied Geographics* | Complete | Assessment and recommendation on an Information Management Needs Assessment (IMNA) for the LCC. Based on assessment, an evaluation of existing technologies, and the review performed by the IMNA contractor, the Information Management Team has determined that the best choice for an information management system  | $45,600 |