



January 2, 2012

From: **Dr. Tom Langen, Dept. of Biology, Clarkson University**
To: **St. Lawrence River Research and Education Fund**
Re: **Final Report**

It is my great pleasure to provide a final report for the project **Wildlife Barrier for Reptiles & Amphibians along New York State Highway 68 at Upper and Lower Lakes State Wildlife Management Area**, which was funded by the *St. Lawrence River Research and Education Fund*. Below is a summary report on the project. Also submitted are a conference paper that reports on the project, and a set of talk slides on it.

1) **Summary of Accomplishments**

The objective of this SLRREF funded project was to install and evaluate a wildlife barrier fence along a 550 m section of a highway (New York State Highway 68) bisecting a wetland with Upper and Lower Lakes Wildlife Management Area. An additional goal was to provide educational activities to the partners and the public on the negative impacts of roads on turtles and other wildlife, and methodologies to reduce these negative impacts. Other partners in the project included Clarkson University, State University of New York – Potsdam (SUNY Potsdam), the New York State Department of Transportation (NYSDOT), the New York State Department of Environmental Conservation (NYSDEC), the New York State Police, the Environmental Technician Program of the BOCES Seaway Technology Center, the St. Lawrence County Youth Conservation Corps, and the National Fish & Wildlife Foundation. During the period of the grant, the fencing was installed, monitoring was completed for three seasons (preconstruction, construction, post-construction), an educational kiosk was designed and installed, and educational activities were done for partners and the public.

2) **Project Activities, Results, and Accomplishments**

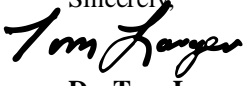
- Active partner participation in this project has included the New York State Department of Conservation (NYSDEC), New York State Department of Transportation (NYSDOT), New York State Police, St. Lawrence County BOCES Environmental Technician Program, the St. Lawrence River Research & Education Fund (SLRREF), Clarkson University (Biology, Communication, and Civil & Environmental Engineering Programs), the St. Lawrence County Youth Conservation Corps, the National Fish & Wildlife Foundation, and the State University of New York - Potsdam. Over 850 person-hours among at least 80 people were donated as sweat-equity to this project.
- The National Fish & Wildlife Foundation provided a matching grant of \$8,550 for this project. NYSDOT provided a \$10,000 contract to monitor another herpetofauna barrier project at Tupper Lake, which served as co-project to the SLRREF – funded project at Upper & Lower Lakes WMA.
- Field-work (routing, post-driving, fence installation (550 m / side, 1100 m total)) was done (1) by the St. Lawrence County BOCES Environmental Technician Program (a vocational high school program) on five work mornings in October-November 2008, three work mornings in March-April 2009, and three work afternoons in October 2009 and (2) by the St. Lawrence County Youth Conservation Corps for two 5-day weeks (5 hours per day) in July 2010. Around 60 high-school students and four teachers participated in the work. Supervision was provided by Project Director Tom Langen and three Clarkson students, and two personnel from NYS Dept. of Transportation. A NYS Police Officer oversaw traffic safety during the work period.
- A five-member team from the Clarkson University project-based class Professional Communication completed work with Tom Langen on the design of educational signage. The students also designed a fold-up brochure on the project. The six signs were installed on a three-panel educational kiosk at Upper and Lower Lakes Wildlife Management Area boat launch area, constructed by NYSDEC in spring 2010.

- In summers of 2009, 2010 and 2011, a total of six Clarkson University undergraduates provided periodic fence maintenance (repairs and vegetation management) and weekly monitoring of turtle road mortality along fenced road segments and comparison unfenced sites.
- Project Director Tom Langen presented two talks based in part on this project at the Northeast Transportation and the Environment Conference (October 2008, Winnepesaukee NH; September 2010, Amherst MA), and the Northeast Partners for Amphibians & Reptile Conservation Annual Meeting (June 2009, Watkins Glen NY). He also presented a talk based in part on this project at the New York State Museum & Biodiversity Research Institute. This was broadcast over computer, and watched (remotely) by transportation agency personnel and others across the country (April 2009). He reported on some results of the project twice at the International Conference on Ecology & Transportation (September 2009, Duluth MN; August 2011, Seattle WA). One conference paper was published from this talk. He presented on this project at a special road symposium at the *American Society of Ichthyologists and Herpetologists* (July 2010, Providence RI), and at the New York State Wetlands Forum (March 2011). As partner outreach, Project Director Langen has done presentations and site visits for the New York State Department of Transportation, the BOCES Seaway Technology Center, SOAR, various high school environmental or biology classes, and various universities.
- The New York State Department of Transportation (NYSDOT) is ‘taking ownership’ of the project, in the sense that they tout it at agency meetings and workshops as one of their positive ‘green projects’ for environmental management and partnership stewardship of New York Highways. We anticipate future support for monitoring and maintenance or extension of the project. Project Director Langen has been contacted to consult with numerous agencies on wildlife fencing for turtles, including the New York State, Nebraska, and Texas Departments of Transportation; the New York State Parks; and the Ontario (Canada) Provincial Park Service.
- Preliminary analyses of the monitoring data indicate that low fences are effective at reducing turtle road mortality, but there remain problems with turtles bypassing around the ends or gaps in the barriers.

3) Remaining Tasks

- Complete data analysis on the fence effectiveness monitoring, and publish a summary research paper on the research.
- Complete chapter section on wildlife barriers for turtles to appear in a new book on road management for small animals (contracted with John Hopkins Press, to appear in 2013).
- Continue annual vegetation management and fence repair.

I appreciate the support of the St. Lawrence River Research & Education Fund for this project. SLRREF is credited in all talks on the project, and its support is acknowledged on a panel of the educational kiosk at Upper & Lower Lakes WMA. As you can see, the project has been successful as a conservation measure, and a mechanism for environmental education, and as a research project and demonstration to inspire and guide other, similar projects.

Sincerely

 Dr. Tom Langen
 Dept. of Biology
 Clarkson University



Images of installation of the SLRREF – supported wildlife fence project at Upper & Lower Lakes State Wildlife Management Area.



Press coverage of the SLRREF – supported wildlife fence project at Upper & Lower Lakes State Wildlife Management Area.



An informational kiosk providing information on the SLRREF – supported wildlife fence project at Upper & Lower Lakes State Wildlife Management Area.