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FROG FENCE ALONG VERMONT RT. 2 IN SANDBAR WILDLIFE MANAGEMENT AREA COLLABORATION BETWEEN VERMONT AGENCY OF TRANSPORTATION AND VERMONT AGENCY OF NATURAL RESOURCES

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Abstract: The Sandbar Wildlife Management Area (SWMA) is on the northeast shore of Lake Champlain in Vermont. The wetlands of SWMA are bisected by US Rt. 2, an arterial highway with average daily traffic (ADT) of 10,200. There are hundreds of acres of wetlands and forested upland on both sides of Rt. 2. Wildlife commonly crosses the highway, which results in a high incidence of roadkill. Northern leopard frogs (*Rana pipiens*) are a significant portion of the roadkill. The Vermont Agency of Transportation (VTrans) in collaboration with the Vermont Agency of Natural Resources (VANR) installed silt fences as a barrier to keep animals off the highway. This is a short-term solution that also provided a test for the use of temporary fences to direct movement of animals. The long-term solution must include the installation of culverts and permanent fencing. A secondary benefit of the project was to promote the needs for wildlife crossing in Vermont through media coverage of the project.

Introduction

The Sandbar Wildlife Management Area (SWMA) is on the northeast shore of Lake Champlain in Vermont and is 70 percent lakeshore wetlands and 30 percent forested upland. SWMA is managed as a wildlife refuge. Hunting is prohibited, and there is no public access. SWMA is bisected by US Rt. 2, an arterial highway with average daily traffic (ADT) of 10,200. There are hundreds of acres of wetlands and forested upland on both sides of Rt. 2. Wildlife commonly crosses the highway, which results in a high incidence of roadkill on Rt. 2 in SWMA. During summer months, northern leopard frogs (*Rana pipiens*) are a significant portion of the roadkill. In addition, being an arterial highway, Rt. 2 is also a popular bike path for locals and bicycle tourists.

The roadkill problem is common local knowledge and known by the Vermont Agency of Transportation (VTrans) which manages Rt. 2, and the Vermont Agency of Natural Resources (VANR) which manages SWMA. In the fall of 2001, a concerned citizen who bicycled along Rt. 2 requested that VTrans address the roadkill issue in SWMA.

Problem Statement

The goal was to reduce roadkill of wetland species on Rt. 2 in SWMA, focusing efforts on northern leopard frogs (*Rana pipiens*). The solution needed to be inexpensive, effective, and, for the short-term, include no structural changes to the roadway.

Objectives

Over the past three years, a group of VTrans and VANR employees have been discussing ways to reduce roadkill, improve wildlife corridors, and increase driver safety in Vermont. Addressing roadkill on Rt. 2 in SWMA was an opportunity to test ideas in the field. The objectives of the project have evolved and expanded, since the effort got underway two years ago. The objectives for the project are to (1) form an interagency workgroup with public participation to develop short and long-term solutions to the problem, (2) test the effectiveness of using silt fences as barriers and directional devices for northern leopard frogs and other wetland wildlife, (3) promote the project as an example of interagency collaboration and VTrans stewardship of natural resources to the public through the use of the news media.

Funding source

The funding source is from the VTrans Environmental Section operating budget and the VTrans Operations Division. In 2002, \$550 for materials plus staff time was expended. In 2003, \$150 for materials plus staff time was allocated for the project. The long-term solution of installing culverts under Rt. 2 and constructing the permanent fence will cost several thousand dollars.

Methodology

An interagency project workgroup with public participation was formed to develop short- and long-term approaches to the problem. The proposed long-term solution is to install culverts under Rt. 2 and barriers along the roadway to direct animals to the culverts. The short-term approach is to install silt fences along a section of Rt. 2 and determine if the fences can function as effective barriers to reduce roadkill and directional devices for the animals. One-thousand feet of silt fence was installed in late June. An unfenced control area was defined. We left openings in the fences every 100 feet to allow animals that got beyond a fence to return to the wetlands. We defined 68 monitoring blocks in the fenced area and unfenced control area to be used to understand where animals were crossing. We conducted weekly surveys and counts of roadkill in the fenced area and the unfenced control area. We removed fences in early October.

To promote the effort to both the public and within the government, we contacted local news media about project and invited them to visit the site.



The Problem



Fence installation 2003



Weekly Data Collection



Media Coverage

Conclusion

An interagency workgroup with broad agency and public participation can be an effective tool for addressing wildlife crossing issues, results show that there was a 60 percent reduction in roadkill in the fenced area in 2002 and an 80 percent reduction in 2003. The improved success of the fence was due to a change in the fence openings. A funnel design was used in 2003 that had only a one-foot opening on the wetland side of funnel. The news media and public are interested and supportive of efforts to reduce roadkill. The project received extensive media coverage in 2002 and follow-up media coverage in 2003. News stories appear on three local television stations, one regional cable station, two radio stations, two Vermont newspapers, on Massachusetts newspaper and two Web sites.

The experiences from this project are being used by the VTrans Environmental Initiatives workgroup to advance other environmental projects that are not specifically required by state or federal regulation.

Acknowledgements: This project was sparked by an email from Lori Barg, a concerned citizen, who spoke out about the roadkill on Rt. 2. The project is a success due to the efforts of Mark Ferguson, a zoologist for Vermont Agency of Natural Resources, and Chris Slesar, an environmental specialist for the Vermont Agency of Transportation. I would also like to thank my supervisor, John Narowski, environmental services engineer, who allowed me to run with an idea.

Biographical Sketch: Nelson Hoffman is currently the environmental coordinator for the Vermont Agency of Transportation. He has been at VTrans for nearly four years. Prior to that, Nelson worked as a park ranger for the National Park Service. He also worked as an activist for environmental organizations.