100 Bridges: Promoting Skidder Bridges to Loggers and Foresters in Atlantic Salmon Watersheds

BACKGROUND

Interest in watershed management has grown significantly in recent years; however, USDA Forest Service research in this area goes back to 1905, and continues in forestry agencies and universities to this day. These efforts have resulted in increased knowledge and identification of Best Management Practices (BMPs) for the protection and enhancement of water resources. When properly implemented, BMPs have been shown to be effective in minimizing sedimentation to waterbodies and protecting the aquatic environment.

The Maine Forest Service (MFS) provides training in the use of these practices, monitors their use and effectiveness, and promotes the use of emerging techniques. As a participant in the Maine Atlantic Salmon Conservation Plan, MFS is promoting the use of temporary skidder bridges as a way of reducing the potential for sedimentation of salmon habitat during logging operations.

LOCATION

The project area will target seven watersheds in the Eastern and Central Coastal Basins where salmon spawning runs are critically low. These two sub-basins are the focus of Maine's Atlantic Salmon Conservation Plan and are listed as needing restoration in Maine's Unified Watershed Assessment. The Central Coastal Sub-basin includes the Sheepscot River, and the Eastern Coastal Sub-basin includes the Ducktrap, Narraguagus, Pleasant, Machias, East Machias, and Dennys Rivers.

ISSUES TO BE ADDRESSED

Documented declines in adult salmon returning to the streams and rivers of coastal Maine over the past 10 to 15 years have resulted in concern for the survival of the species. Reasons for salmon decline in these waters are complex and potentially include over-fishing, as well as habitat decline from conversion of forested watersheds to non-forested, non-point source pollution, water withdrawal for irrigation, and salmon farm aquaculture. Aquaculture poses the risk of diseases being transferred from farmed fish to wild fish. Interbreeding of imported strains of salmon with the native populations is also a concern.

While forestry is not generally considered a significant issue, timber harvesting can be a potential non-point source of sediment. Highlighting practices that can reduce the likelihood of impact to salmon habitat is an appropriate measure.

GOALS

The goal of the project is to increase the effective use of temporary skidder bridges by making bridges more readily available and, as a result, reducing the potential impacts of crossings, especially on small streams. MFS will accomplish this by increasing education efforts and technical and financial assistance to loggers.

METHODOLOGY

"Skidder bridges are cutting-edge technology," said Morten Moesswilde, Senior Planner of Water Quality, Maine Forest Service, about the benefits of the bridges. These small bridges are normally between 16- and 30-feet in length and are usually made of 8 by 8 hemlock timbers. Logging vehicles, such as skidders, use them to cross streams. The bridges are widely recognized as:

- Reducing potential adverse impacts by minimizing stream bank and streambed modification
- Minimizing or eliminating the need for fill
- Transporting and installing easily
- Being efficient, temporary, and reusable at other sites

Since 1999, the Northeastern Area and the Northeastern Area Association of State Foresters have sponsored a cooperative challenge grants program to promote watershed health and restoration through the conservation, restoration, and sound stewardship of trees and forests.

MFS will promote the use of temporary skidder bridges through workshops, technical information, and demonstration areas. The program implementation will consist of a three-phased approach:

1. **Program development/planning** – The MFS will develop promotional efforts and training workshops, and finalize administrative procedures. MFS will also develop four BMP workshops focused on stream crossings/bridge installation.
2. **Implementation** – MFS will present workshops on use and installation of skidder bridges, possible development of demonstration sites, and distribution of bridges for use by loggers and foresters in the watersheds. Existing demonstration sites showing the use of portable bridges may be found at the University of Maine in Orono, ME, and the Sid Emery Demonstration Forest in Alfred, ME.
3. **Monitoring** – MFS foresters will perform field inspections of skidder bridges and collect monitoring data. The monitoring data will document both BMP use and effectiveness in terms of sediment movement and delivery to surface waters. Comparison of BMP monitoring data from the project with data from other parts of the State will provide a basis for comparing results and success of the program. The review will answer questions such as:
   - Are skidder bridges preventing sedimentation?
   - Is shade being left to buffer water temperature and protect aquatic habitat?
   - Are project participants using other BMPs effectively?

Eligible participants must:

- Demonstrate prior participation in BMP training.
- Complete the training workshop on use of temporary skidder bridges developed by MFS for this program.
- Allow MFS to complete a 2-year periodic inspection of sites that use temporary skidder bridges.
- Permit on-site monitoring by MFS to ensure that the bridges are correctly installed and having the intended benefits.

Reimbursement: Participants may be reimbursed 50 to 75 percent of the cost of building or purchasing a bridge.

Distribution: Bridges will be available through county Soil and Water Conservation Districts.

PROJECTED OUTCOMES

- Increase in documented appropriate use of temporary skidder bridges on small streams in the salmon watersheds.
- Increase in continual appropriate use of temporary skidder bridges by loggers active in the salmon watersheds for at least 3 to 6 years – a bridge's typical usable life.
- Decrease in the number of valid logging-related water quality complaints in salmon watersheds.
- Documentation of reduced impacts to water quality on a watershed basis.
- Assistance to loggers in linking concepts such as harvest planning, watersheds, cumulative impacts to habitat, as well as providing direct protection to water quality.

PARTNERS

Project administration and implementation:

- Maine Forest Service

Participation, promotion, and monitoring effectiveness:

- Project SHARE (Salmon Habitat Restoration)
- Downeast Rivers Coalition
- Ducktrap Coalition
- Sheepscot River Watershed Coalition

Administration and storage of bridges:

- Washington, Waldo, Knox, Lincoln, and Kennebec County Soil and Water Conservation Districts

Training/workshop development and promotion:

- Maine's Sustainable Forestry Initiative

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