

Volume 2, Issue 5 - Working Around Water

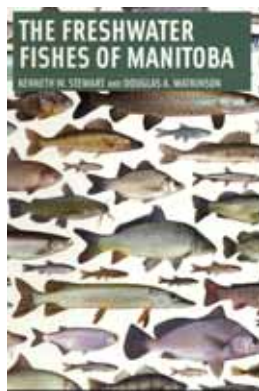
Introduction

Water and its interaction with soil and other biophysical elements of forests is essential for sustaining the health and viability of forest ecosystems over time. Water resources provide potable water sources for human and wildlife consumption, and provide habitat for a number of plant and animal species. Many activities associated with forest management can affect the quality and quantity of water sources and organisms that live in them. Over the last 10 years, LP Swan Valley has designed, implemented and improved their forest management practices through the application of research to help protect and minimize disturbance to aquatic habitats. LP, in conjunction with a number of leading-edge scientists and conservation organizations, is currently working on developing specific strategies and objectives for managing forests within watershed and riparian areas for the next long-term plan. LP is also developing a monitoring strategy and using predictive models to help evaluate the changes in water quantity over time as a result of forest disturbance. This newsletter highlights LP's best management planning and operational practices around water, and describes LP's involvement with the Forest Watershed and Riparian Disturbance (FORWARD) research project and the Ducks Unlimited Adopt-A-Class Greenwing Program.



Freshwater Fishes of Manitoba Publication

Released in May of 2004, *The Freshwater Fishes of Manitoba* by Kenneth W. Stewart and Douglas A. Watkinson, is a guide to the identification, distribution and biology of all 95 species of freshwater fishes in Manitoba. LP Canada, Ltd. contributed substantially toward the cost of its publication. (The only previous guide to Manitoba fishes was written by David Hinks in 1939 and published in 1943.)



Ken Stewart is a Senior Scholar at the University of Manitoba's Department of Zoology, where he taught for 34 years. He grew up on the banks of the Mississippi River in eastern Iowa where he acquired a lifelong interest in fish. He received a Ph.D. in Ichthyology (the branch of zoology devoted to the study of fishes) from the University of British Columbia, and has worked with fish in Manitoba, the Rocky Mountains, the Gulf of Mexico, the tropical Atlantic Ocean, the Northeast Pacific, Uganda and Thailand.

Doug Watkinson is a Fish Habitat Research Biologist with Fisheries and Oceans Canada at the Freshwater Institute in Winnipeg. He is from Manitoba and also has a strong interest in fish and fishing, as well as hunting. He has a M.Sc. in Zoology from the University of Manitoba and has worked with fish in Manitoba and across the Prairies to the Rocky Mountains.

Ken Stewart began working on this book 22 years ago by gathering data on the identification and distribution of Manitoba fishes. Doug Watkinson took most of the species illustration photographs and processed the pictures and maps into a publishable form. Both Ken and Doug worked on the text. The final process of compiling draft text, maps, species illustrations and habitat photographs began about four years ago. After the first draft was reviewed, producing the final version took about a year and a half.

This book is useful to a wide range of people including fish biologists, university and public school students and teachers, anglers and commercial fishers, and those with an interest in natural history.

Copies can be purchased at Chapters, McNally Robinson and the University of Manitoba Bookstore.

LP Water Crossing Management Overview

The following illustrates a series of steps involved in the planning, installation, removal and monitoring of LP's water crossings.

1
PLANNING FOR
WATER CROSSINGS



Area Planners conduct an initial forest road survey and identify the watercourses along the proposed route. Photos are taken at these proposed locations: upstream, downstream and across the watercourse.

2
STREAM ASSESSMENTS



All permanent and seasonal watercourses known to be fish-bearing or potentially fish-bearing are surveyed between the months of June to September. Information is collected on stream dimensions, velocities, pH, conductivity, substrate compositions, and instream cover habitat. In addition, benthic invertebrate and fish communities are sampled during the survey. The information is used to help design water crossing prescriptions for the Annual Operating Plan (AOP).

3
WATER CROSSING
PRESCRIPTIONS FOR
ANNUAL OPERATING
PLAN



The water crossing prescriptions within the AOP provide information on watercourse characteristics for all fish and non-fish bearing streams, beaver floods and seasonal swales that LP proposes to cross. It also provides information on the type of crossing proposed and rehabilitation activities that will be conducted once the water crossing is removed. Stream assessment summaries and digital photographs are also provided. All water crossing prescriptions are pre-mitigated with Manitoba Conservation, Department of Fisheries and Oceans (DFO) and the Canadian Coast Guard.

4
DEPARTMENT OF FISHERIES
AND OCEANS LETTER OF
ADVICE



Once the final submission of the AOP is approved, LP receives a Letter of Advice (LOA) from the DFO indicating conditions LP must follow during water crossing construction activities in order to be in compliance with the Fisheries Act.

5
CONTRACTOR TRAINING
FOR WATER CROSSINGS



On an annual basis, LP Contractors are provided training in best management practices for water crossings prior to the commencement of construction activities around water. The course emphasizes the importance of water quality and fish habitat protection and informs the contractors of the Fisheries Act.

6
WATER CROSSING
CONSTRUCTION AND
REHABILITATION
ACTIVITIES



Installation of a 60ft bridge and cribbing. Site rehabilitation began in early November of 2001 and involved terracing, willow wattle fencing and seeding with erosion control matting and straw mulch. Site fully regenerated after two growing seasons - last photo taken May 2003.

7
WATER CROSSING
MONITORING PROGRAM



LP conducts water crossing inspections on all active crossings and deactivated crossings twice a year. Inspections on deactivated crossings are conducted until they have regenerated to the point where loose soil material has been stabilized.

Forest Watershed and Riparian Disturbance (FORWARD) Project

By Janice Burke, Research Associate, Lakehead University

The Forest Watershed and Riparian Disturbance (FORWARD) project was initiated based on an interest on the part of forest companies, including Louisiana-Pacific Canada Ltd., to link forest management practices with scientifically-based watershed management. Since the project was formalized in 2001, it has developed into a partnership between scientists from three Canadian universities (Lakehead University, University of Alberta and University of Saskatchewan), government, and several other stakeholders. The goal of the



Typical small FORWARD stream with Isco sampler.

FORWARD project is to model processes that link disturbance (wildfire and forest harvesting) to the quantity and quality of water leaving watersheds in the Virginia Hills in the Alberta Forest Management Areas (FMAs) of Millar Western Forest Products and Blue Ridge Lumber. For example, results to date already demonstrate that the hot fire that burned a large area of the Virginia Hills in 1998 caused an increase in nutrient and water movement out of burnt watersheds that has persisted for at least five years following the fire. Researchers expect to see a similar, though less dramatic response after harvesting.

The focal point for disturbance is forest soils. Disturbance of forest soils affects the movement of water (rain, snowmelt) over land and through soils, erosion, and nutrient cycling. These changes, which are mediated by the type and intensity of the disturbance and by soil characteristics, affect the

quantity and quality of stream water draining the watersheds. The role of the FORWARD project in the forest planning process is to predict disturbance-induced changes to ecological processes on various spatial and time scales, so that forest planners can use this information to manage these changes.

There are 14 study watersheds in the FORWARD project: two large watersheds (as part of the fire disturbance component) and 12 small watersheds. Four small watersheds were harvested in the winter of 2003/04 - two received 30-m buffer strips and two had no buffers. A fifth watershed was harvested in 2000. There are also two small burnt watersheds and five small reference watersheds in the study design.

The core program in FORWARD includes stream, soil, and vegetation field teams; water and soils laboratory components; and a modelling team. The core program is complemented by graduate student thesis projects. The collaborative academic-industry environment provides a productive learning experience for students while increasing our knowledge of the effects of harvesting and fire on water.

For more information, you can find FORWARD on the internet at forward.lakeheadu.ca

10 Millionth Tree !



LP Swan Valley Forest Resources Division has planted its 10 millionth seedling (1996-2004) at the Duck Mountain Forest Interpretive Centre as part of the 2004 Swan Valley Forestry Exhibition. Reforestation is an important part of the sustainable management of Forest Management Area # 3.

Pictured left to right: Matt Groener (Envirothon Student), Dick Walker (Duck Mountain Forest Interpretive Centre), Brittany Pierpoint (Envirothon Student), Barry Waito (LP), Marilyn Brick (MLA), Stan Struthers (Manitoba Conservation).

Ducks Unlimited Adopt-A-Class Program and Field Trips

By Kate Reid-Thorpe, Ducks Unlimited Program Facilitator

Grade 4 students in the Swan River area got their hands (and feet!) wet this spring while they learned about wetlands through Ducks Unlimited Canada's Adopt-A-Class Greenwing program. Over 400 students in 21 schools have been "adopted" through the generous financial support of Louisiana-Pacific Canada Ltd., Spruce Products and a coalition of other logging companies.

The funding provides teachers from communities like Benito, Bowsman, Birch River, Mafeking, and Pelican Rapids with valuable curriculum-linked lesson plans focusing on wetlands and forests. The health of these important ecosystems is vital to the economic stability of Canada and in particular the Swan River area. With additional funding from the J.W. McConnell Family Foundation, through its unique Green Street Program, 12 classes enjoyed hands-on learning through field trips to the Manitoba Forestry Association's Duck Mountain Forest Centre (DMFC) south of Minitonas.

From May 26 through May 31, 2004, approximately 270 students visited the DMFC for ½ day explorations of forest and wetland ecosystems including a series of active beaver ponds and mature boreal forest. The

field trip program was delivered by local educator Kate Reid-Thorpe, Duane Hudd from DU's headquarters at Oak Hammock Marsh, and LP technician Chris Hunt.

A highlight of each trip was the "critter dipping" station where students used dip nets and magnifying glasses to collect and examine the rich wetland life such as invertebrates, minnows, and frogs. Sightings of red squirrels, muskrat, myrtle warblers, several species of woodpeckers and waterfowl, plus signs of moose, deer, and grouse increased the students' awareness of the importance of these habitats to local wildlife.

The field trips also provided the opportunity for students to learn first-hand about the vital role that healthy wetlands play in providing flood control, biodiversity, erosion control, and surface water purification in the boreal forest. They enthusiastically shared tales of their wetland experiences while discussing the importance of these areas to humans for work, recreation, and a source of clean water.

Other Adopt-A-Class corporate sponsors in the Swan Valley area include Laurie Parker, George Dufresne, Ian McKay, The Loggers and Haulers Assoc., S & E Puchailo, Intermountain Logging Ltd., and Six Pac.

Thanks to the generosity of all the local corporate sponsors and the enthusiasm of the Adopt-A-Class students and teachers, Ducks Unlimited is looking forward to continuing to deliver this popular program next year.

For more information about the DU Adopt-A-Class program visit: www.ducks.ca



Students try their hand at "critter dipping".

Have a great summer
vacation!
Look for the next newsletter
in
** Fall of 2004 **

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Phone: 204-734-7703 Fax: 204-734-3646

Email: Swan.Comments@LPCorp.com

Mail: *LP Canada Ltd*

*P.O. Box 998 439 Westwood Road
Swan River, MB , Canada R0L 1Z0*

Or visit our website:

<http://www.swanvalleyforest.ca>