Watercourse Crossings in Agro-Manitoba: Assessment of Operational Statement Applicability and Development of a Management Approach

By: Jaime Clarke

A thesis submitted for partial fulfillment of requirement for the Degree

Master of Natural Resource Management (M.N.R.M)

Natural Resources Institute,
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES

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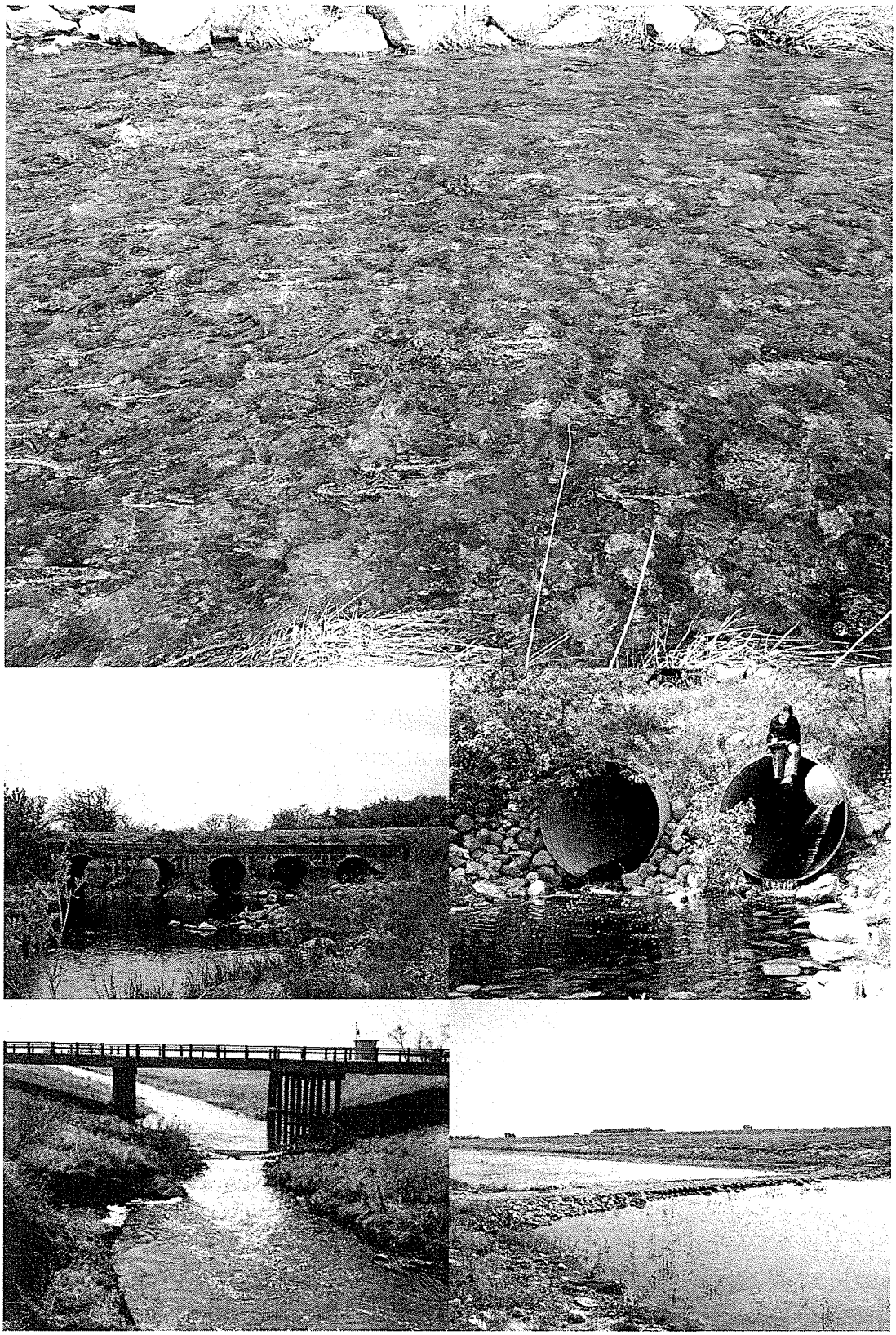
A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of Manitoba in partial fulfillment of the requirement of the degree

MASTER OF NATURAL RESOURCE MANAGEMENT



Frontispiece: Pictures of fish and road crossings within Manitoba

Source: Department of Fisheries and Oceans (2007a).

ABSTRACT

The purpose of this research was to assess the applicability of an operational statement (OS) and develop a management approach that the Department of Fisheries and Oceans Canada (DFO) could use to incorporate economic, ecological, and social elements to achieve good governance as it applied to watercourse crossing projects in agro-Manitoba that reflected stakeholder needs and mandates.

A small watercourse-crossing inventory was conducted in the Morris River sub-watershed to obtain data that was combined with existing provincial data on fish species composition and abundance, and federal habitat classification data, to develop a comprehensive integrated GIS-based map.

Interviews were conducted with representatives from federal, provincial, and municipal governments who have a direct role in, responsibility for, or knowledge related to watercourse crossings, including a private consultant with local area knowledge.

A thorough literature review identified the many elements involved with watercourse crossing projects and their management to provide an understanding of the underlying complex issues. Climate change data was also examined to identify additional impacts that could also affect the development and implementation of an operational statement for Class E habitats.

This research determined that an operational statement for watercourse crossing projects could and should be applied to low risk Class E habitats within parts of the LaSalle, Morris and Plumb River sub-watersheds and extended to parts of the Seine, Rat, and Roseau River sub-watersheds as well, to accommodate the growing numbers of watercourse crossing projects that are anticipated over the next few years. The development and use of this OS and integrated GIS - based watershed map constitute the management approach that DFO should follow.

The proposed management approach enables DFO to comply with its mandate while being sensitive to the provincial and municipal governments' needs and recognizing the importance of the economic and social needs of agricultural community. The approach has support from those interviewed, as it will enable DFO Fish Habitat Biologists to focus on protecting high quality fish habitat and alleviate pressure on DFO's referral system. On a provincial and municipal level, the approach could increase regulatory compliance and reduce overall costs. It could also aid in strategic budgetary and logistical planning when maintaining and replacing ageing watercourse crossing infrastructure by identifying sensitive watercourse habitat and potential sites where an operational statement could apply. Recommendations are provided.

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