MANAGEMENT-FOCUSED RESEARCH NEEDS OF MINNESOTA'S WILDLIFE MANAGERS – WETLAND MANAGEMENT ACTIVITIES

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SUMMARY OF FINDINGS

In order to determine areas of habitat management that Minnesota Department of Natural Resources (MNDNR) wildlife managers believed warranted research, the Habitat Evaluations Biologists conducted a survey of research needs. The majority of the managers who responded indicated that there was a need for research pertaining to wetland enhancement. In particular, they felt that there is a need to examine the effects of exotic species, such as narrow leafed cattail (*Typha angustifolia*) encroachment in wetlands.

INTRODUCTION

In response to requests from Wildlife Managers for help in evaluating the effectiveness of habitat management techniques, the MNDNR Section of Wildlife created a half-time position devoted to habitat evaluation and monitoring in each of the Farmland, Forest, and Wetland Wildlife Populations and Research Groups. Molly Tranel, Habitat Evaluations Biologist with the Farmland Wildlife Populations and Research Group, developed the original draft of the survey. Wes Bailey, Habitat Evaluations Biologist with the Forest Wildlife Populations and Research Group, and I helped with later drafts of the survey.

METHODS

The Management Focused Research Needs survey was sent to MNDNR wildlife managers, assistant wildlife managers, regional managers, and assistant regional managers by electronic mail on January 15th 2008 and reminders were e-mailed on January 31st. Managers were encouraged to fill the survey out alone or with their area office staff. This resulted in some surveys reflecting the opinion of one person, and others reflecting the opinion of an entire office (up to 3 people). All returned surveys were received by February 14th, 2008.

The survey consisted of a table outlining major management activities divided into wetland (Table 1), prairie, and forest habitat management activities. These activities were derived from the major expenditure categories that managers use to appropriate funds. Managers were asked to indicate ("Yes" or "No") whether each activity required evaluation in their management area. A list of specific examples was provided beneath each activity, with a space listed as "other" for respondents to fill in if they felt that techniques other than those listed needed evaluation. For each activity that respondents indicated required evaluation, they were asked to rank the provided examples starting with 1 as the most important. Molly Tranel will report on results of the prairie management activities section of the survey, Wes Bailey will report on results of the forest management activities section, and I report here on the wetland management activities section.

RESULTS

A total of 45 surveys was returned. Some offices filled out a single survey for the entire office, whereas each individual within an office filled others out. We used each returned survey as a respondent, with 1 to 3 individuals per respondent. Thirty-nine (87%) of the respondents indicated that at least one of the 5 wetland management activity categories needed evaluation (Table 2). Most respondents selected the wetland enhancement category (92%) as needing evaluation, followed by wetland habitat maintenance (74%), wetland restoration (62%), wetland water controls (59%), and wetland impoundment development (31%, Table 2). The most highly ranked management examples in each of the 5 wetland categories were cattail/exotic species management

(1.9), water level management (1.3), dugouts/scrape outs (1.4), species diversity of restored wetlands (1.5), and impacts on aquatic wildlife (1.6, Table 2).

Respondents were asked to provide “other” management activities that they felt required evaluation. Thirty-six responses were provided, some with more than one suggestion. The “other” management practice topics suggested for evaluation were: cost benefit/value of management treatments (8), moist soil unit/vegetation management (7), beaver (*Castor canadensis*) control (6), water control structures (5), impoundment management (4), unwanted fish control (3), overall waterfowl use/non-use (3), best management practices (2), invertebrate response to agricultural chemicals (1), upland waterfowl habitat in the forest (1), private lands wetland mitigation(1), removal of accumulated sediment in restored basins (1), and bog restoration (1).

DISCUSSION

Most of the managers who responded to the survey believed that there was a need for research on wetland enhancement. In particular, there is a need to examine exotic species, such as narrow leafed cattail (*Typha angustifolia*), encroachment in wetlands. Many managers also wanted to learn more about moist soil, water level, and impoundment management. There was an interest in evaluating cost/benefits of management techniques, concerns about beaver and fish problems in wetlands, as well as questions about water control structures, and waterfowl use versus non-use of wetlands.

The survey allowed the 3 new Habitat Evaluations Biologists to learn from wildlife managers which of the wide range of habitat management issues in the state they would like evaluated. This will allow for informed discussions within the research groups as to where to focus evaluation efforts.

ACKNOWLEDGMENTS

We appreciate the effort of all of the wildlife management staff that completed the survey.

Table 1. Survey questions for wetland management activities with examples assigned to four activities.

Does it Need Evaluation? (Yes / No)	Wetland management activity	Rank (1 is the Highest)
	Wetland enhancement (All activities that enhance wetland habitats for wildlife.)	
_____	• Management of Aquatic vegetation	
	• Cattail/Exotic species management	_____
	• Aquatic seeding	_____
	• Bog removal at basin outlets	_____
	• Removal of unwanted fish (i.e., carp, bullheads)	_____
	• Other: _____	_____
		_____
	Wetland habitat maintenance (All efforts to maintain wetland wildlife habitat.)	
_____	• Fish barrier maintenance	
	• Water level management	_____
	• Minor dike/structure maintenance	_____
	• Other: _____	_____
		_____
_____	**Wetland impoundment development** (The development of a new wetland where none historically existed by constructing a dike and water control structure in the appropriate topographic area.)	
	• Dugouts/scrape outs	
	• Other: _____	_____
		_____
_____	**Wetland restoration** (The restoration of a drained wetland by the plugging of drainage ditches or removal of drain tiles. Note: may include the restoration of part of an original basin where full restoration is not possible.)	
	• Historical vs. current ecological functions	
	• Species diversity of restored wetlands	_____
	• Other: _____	_____
		_____
_____	**Wetland water controls** (The addition or rehabilitation of water control structures, fish barriers, dikes and related inlets and outlets that enhance the value of existing wetland habitat.)	
	• Impacts on aquatic wildlife	_____
	• Impacts on non aquatic wildlife	_____
	• Other: _____	_____

Table 2. Mean rank and frequency of wetland management activities and provided examples for each activity from the 2008 Management Research Needs Survey. A rank of 1 is most important, and 5 is least important. Frequency is the number of respondents that answered "Yes" for the Management practice divided by the total number of respondents who ranked each provided example.

Management Activity & Response		Provided Example	Mean Rank	Frequency
Wetland enhancement				
		Manage aquatic vegetation	2.4	72.20%
# Respondents	**39**	Cattail/Exotic species management	1.9	83.33%
# answered Yes	**36**	Aquatic seeding	3.3	58.33%
Percentage Yes:	**92.3%**	Bog removal at basin outlets	4.1	52.77%
		Removal of unwanted fish	2.4	66.67%
		Other		16.67%
Wetland habitat maintenance				
		Fish barrier maintenance	2.1	55.17%
# Respondents	**39**	Water level management	1.3	82.76%
# answered Yes	**29**	Minor dike/structure maintenance	2.5	58.62%
Percentage Yes:	**74.4%**	Other		20.69%
Wetland impoundment development				
		Dugouts/scrape outs	1.4	66.7%
# Respondents	**39**	Other		75.0%
# answered Yes	**12**			
Percentage Yes:	**30.8%**			
Wetland restoration				
		Historical vs. current ecological functions	2.0	70.83%
# Respondents	**39**	Species diversity of restored wetlands	1.5	79.17%
# answered Yes	**24**	Other		29.17%
Percentage Yes:	**61.5%**			
Wetland water controls				
		Impacts on aquatic wildlife	1.6	78.3%
# Respondents	**39**	Impacts on non aquatic wildlife	2.2	69.6%
# answered Yes	**23**	Other		34.8%
Percentage Yes:	**58.97%**			