

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

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SUMMARY OF FINDINGS

In order to determine what areas of habitat management warranted research and to design research projects that address these information needs, Minnesota Department of Natural Resources (MNDNR) Habitat Evaluations Biologists conducted a survey of research needs. The majority of respondents needed information on all categories for the prairie/ grassland portion of the survey: (1) prairie/grassland burns;(2) prairie/grassland management; (3) food plot establishment and maintenance; and (4) woody cover development. Prairie grassland management had the greatest interest (94%) of the 4 management activities. Woody encroachment management was the most common need provided in open-ended responses.

INTRODUCTION

MNDNR Section of Wildlife committed staff time and funding to expand efforts to experiment with habitat management techniques and evaluate their effectiveness at accomplishing wildlife habitat and population goals. Three habitat evaluation positions were created in response to requests from MNDNR wildlife managers for help evaluating the effectiveness of habitat management for wildlife in Minnesota's farmland, wetland, and forest regions. In order to determine what areas of habitat management warranted research and to design research projects that address these information needs, MNDNR's Habitat Evaluations Biologists conducted a survey of research needs.

METHODS

Surveys were sent to MNDNR wildlife managers, assistant wildlife managers, regional wildlife managers, and assistant regional wildlife managers (n=65) by electronic mail on 15 January 2008. Reminders were sent to non-respondents on 31 January 2008. No responses were accepted after 14 February 2008.

The survey was categorized into 3 parts: 1) forest management activity, 2) prairie management activity, and 3) wetland management activity. This report summarizes only the prairie management activity. David Rave, Wetland Wildlife Populations and Research Group, will report separately on the wetland management activities portion of the survey and Wes Bailey, Forest Wildlife Populations and Research Group, will report on results of the forest management activities portion.

We provided each survey recipient with a table outlining 4 major management activities for the prairie region (Figure 1). These activities represented the major expenditure categories that MNDNR wildlife managers use to track funding for habitat management. For each of the activities, we asked "Does it need evaluation?" and respondents replied "Yes" or "No". We provided a list of specific examples beneath each activity, and we invited respondents to list other activities. When respondents indicated the activity needs evaluation, they were asked to rank the importance of evaluation for each example with a rank between 1 and 5 (1 meaning most important). Managers were encouraged to fill the survey out alone or with the other staff in their office. Because some respondents completed the survey in collaboration with others in their area office, but did not clarify how many respondents the survey represented, we counted each returned survey as from 1 respondent.

RESULTS

Thirty-six respondents completed the prairie portion of the survey. Of these, the majority of managers were from Region 1 (n=12) and Region 3 (n=10), followed by Region 2 (n=8) and Region 4 (n=6).

Prairie / Grassland Burns

Thirty-six respondents answered the question on prairie/grassland burn activities, with 69% replying that this activity needs evaluation. Of these, 92% assigned a rank to seasonal timing of burns, resulting in a mean rank of 1.2. Ranked second was frequency of burns (mean=1.9), followed by firebreak development (mean=3.2) (Table 1). Twenty-nine percent of people who reported a need for information on prairie/grassland burn activities offered additional examples of information needs, such as effect of burns on controlling woody encroachment (n=5) and the need for information on maintaining sedge meadows associated with waterfowl lakes and limiting factors to getting burns done and corrective measures (n=1).

Prairie / Grassland Management

Thirty-six respondents answered the question on prairie/grassland management activities, with 94% reporting a need for information on establishing, maintaining, and improving grasslands for wildlife. This was the highest "Yes" response rate of the 4 management activities, suggesting very high manager interest. Of the 34 people who answered "Yes" to this question, 68% assigned a rank to convert cool season stands to native grass (mean=2.2, Table 1). Eighty-two percent assigned a rank to species diversity (% grass/forbs) (mean=2.4), and exotic species removal and/or prevention was ranked 2.8 (frequency= 71%). Twenty-six percent of respondents who answered yes to this question included their own examples: effects of trees and woody encroachment (n=4), haying of grasslands for biofuel harvest (n=3), impacts on forbs by herbicides used for noxious weed control (n=3). Assessment of past plantings, wildlife use of restored grasslands, forb establishment and maintaining diversity, and increasing insect abundance were all listed once (n=1).

Food Plot Establishment and Maintenance

Thirty-seven respondents answered the question on food plot establishment and maintenance activities, with 57% of respondents indicating this activity needs evaluation. Of the 21 people who answered yes to this question, 86% assigned a mean rank of 1.2 to necessity of food plots, (Table 1). Forty-eight percent assigned a mean rank of 2.5 to food plot maintenance and 3.3 to providing seed to landowners (frequency= 52%). Forty-three percent of respondents who answered yes to this question provided other examples: food plot location and size (n=2) types of food plots to plant. (n=2). The following examples were reported once: cost effectiveness where GMO (Round up Ready) crops cannot be utilized, purchasing grain from private landowners for waterfowl management, wildlife benefits assessment, keeping farming cooperators in small food plot practices on Wildlife Management Areas (WMAs), habitat/land costs of food plots, use of perennial seed bearing plants vs. annual grains, and seed mix/fertilizer.

Woody Cover Development

Thirty-seven respondents answered the question on woody cover development activities, with 68% of people replying it needs evaluation. Of the 25 people who answered yes to this question, 80% assigned a mean rank of 1.4 to effectiveness of plantings (Table 1), and 64% ranked planting techniques with a mean of 2.2. Fifty-six percent of respondents included additional examples: effects of woody cover plantings (WCP) on grassland birds (n=5), species composition of

WCP (n=4). Other topics listed once were: necessity for pheasants, reforestation on former agricultural land, WCP location and size, wildlife value of WCP, private land WCP cost effectiveness, and wildlife use/value.

DISCUSSION

More managers from the forested Region 2 (n=8) completed the prairie management portion of the survey than from the farmland Region 4 (n=6). Many respondents took advantage of the opportunity to discuss management activities in detail by providing their own examples or clarifying their point in the "Other" spaces. These comments were helpful in mitigating some of the limitations of the structured format of the survey. For example, woody encroachment management was the most common response in the open-ended "Other" spaces (n=10). This response received a mean rank of 1.3 (n=6), suggesting that this is a concern for management. Interviews conducted by the Habitat Evaluations Biologists with managers across the farmland region of the state confirm this need for research on the effectiveness of woody encroachment control methods such as fire, cutting, and herbicide application.

For many of the management activities, respondents commented that research has already been conducted on specific topics, but that a literature review or best management practices would be beneficial. Providing information in this type of format could assist managers in remaining current on grassland management techniques and research.

The majority of respondents needed information on the 4 categories: 1) prairie / grassland burns, 2) prairie / grassland management, 3) food plot establishment and maintenance, and 4) woody cover development. Prairie grassland management had the greatest interest (94%) of the 4 management activities. Thus, wildlife managers are in greatest need of information on establishing, maintaining, and improving grassland habitats for wildlife. Converting cool season stands to native grass and species diversity were the 2 most important needs under this activity. Many of the additional comments provided throughout the prairie/grassland portion of the survey expressed the need for more information not only on techniques for planting native grass stands, but on how to keep such stands established and healthy. Respondents further specified concern on how the control of thistles using herbicide affects forb success and diversity.

Table 1. Mean rank (1 most important, 5 least) and frequency (# responding "Yes" / total # respondents) of management activities and provided examples for each activity, from a survey of MNDNR wildlife managers, Jan 2008.

PRAIRIE / GRASSLAND BURN ACTIVITIES		
Provided example	Mean rank	Frequency
Seasonal timing of burns	1.2	92%
Frequency of burns	1.9	88%
Firebreak development	3.2	46%
Other		29%
PRAIRIE / GRASSLAND MANAGEMENT		
Provided example	Mean rank	Frequency
Convert cool season stands to native grass	2.2	68%
Species diversity (% grass/forbs)	2.4	82%
Exotic species removal/prevention	2.8	71%
Grazing	3.1	74%
Patch-burn techniques	4.0	68%
Other		26%
FOOD PLOT ESTABLISHMENT / MAINTENANCE		
Provided example	Mean rank	Frequency
Necessity of food plots	1.2	86%
Food plot maintenance	2.5	48%
Providing seed to landowners	3.3	52%
Other		43%
WOODY COVER DEVELOPMENT		
Provided example	Mean rank	Frequency
Effectiveness of plantings	1.4	80%
Planting techniques	2.2	60%
Other		60%

Does it need evaluation? (Yes / No)	Prairie Management Activity	Rank (1 is highest)
_____	Prairie/grassland burns (Prescribed burning to enhance/restore native prairie and other grassland communities and related wildlife habitat.) <ul style="list-style-type: none"> • Firebreak development • Seasonal timing of burns (spring, summer, or fall) • Frequency of burns (how long between burns?) • Other: _____ 	 _____ _____ _____ _____
_____	Prairie/grassland management (All efforts related to the initial planting of native prairie/cool season grasslands as well as efforts to improve existing stands of grass.) <ul style="list-style-type: none"> • Converting cool season stands to native grass • Species diversity (% grass/forbs) • Grazing • Patch-burn techniques • Exotic species removal and/or prevention • Other: _____ 	 _____ _____ _____ _____ _____
_____	Food plot establishment/maintenance (All efforts related to food plot establishment and maintenance.) <ul style="list-style-type: none"> • Providing seed to landowners • Food plot maintenance • Necessity of plots • Other: _____ 	 _____ _____ _____ _____
_____	Woody cover development (All efforts to establish and maintain woody cover for the improvement of farmland wildlife habitat.) <ul style="list-style-type: none"> • Planting techniques • Effectiveness of plantings • Other: _____ 	 _____ _____ _____

Figure 1. Selected questions on a survey sent to Wildlife Managers to assess information needs for habitat management in prairie/grasslands of Minnesota, Jan 2008.