

**Year 1
of the Deer Management
Assistance Program (DMAP):
Profile of Enrollees and their Satisfaction**

**A Report to the
Bureau of Wildlife Management**

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Robert H. Holsman, Natalie Kaner, and Ben Beardmore
Bureau of Science Services





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Introduction: Two Studies, Two Objectives

The Wisconsin Department of Natural Resources (Wisconsin DNR) began implementation of a Deer Management Assistance Program (DMAP) during June 2014 in accordance with key recommendations of the Deer Trustee’s report. DMAP’s purpose is “to assist landowners with implementation of forest regeneration and deer hunting practices that emphasize property goals while considering the social and ecological impacts of white-tailed deer” (<http://dnr.wi.gov/topic/wildlifehabitat/DMAP.html>). Landowners enrolled 114 properties, covering 43,822 acres in 46 counties, in the initial year of the program to receive agency consulting services and resources, as well as consideration for reduced-price antlerless harvest tags in situations where white-tailed deer browse is impacting habitat quality. In advising the Wisconsin DNR to develop DMAP, the Deer Trustee report stated the potential for the program to improve communications and thereby increase trust and credibility with landowners and deer hunters throughout the state. Documenting participant satisfaction, as well as attitude changes resulting from DMAP participation, is important for evaluating the success of DMAP in achieving these outcomes. Formative program evaluation can also identify ways to adapt DMAP in the future to better serve the needs of customers and the agency.

To date, we have conducted two surveys of the first cohort of DMAP enrollees and this report summarizes the results of each effort. The first survey of the first-year enrollees included all individuals whose contact information was provided on all DMAP applications (Tiers 1, 2 and 3). These individuals were invited to complete an online questionnaire by the DMAP Coordinator in an email notifying them of their program acceptance. The e-mail included a

link to the pre-program assessment questionnaire. The response rate was 46%.

Our evaluation design considers DMAP participation and its suite of outreach services (including on-site habitat assessment) as a pseudo (non-random), experimental “treatment” for which certain outcomes will result. These outcomes include but are not limited to an improved ability among participants to understand and assess habitat quality, an improved awareness of scientific data collection, and positive attitudes and greater trust toward the Wisconsin DNR. The pre-program assessment survey was designed to capture baseline knowledge and attitudes of DMAP landowners and cooperators as their enrollment period began. Our intention is to survey these customers again at the end of three years (the length of the program) and compare their responses to some of their pre-program assessment survey answers to see if the program produces any change (Figure 1). For example, we plan to compare applicants in Tier 1 to those in Tiers 2 and 3 who receive more one-on-one interaction to see if there is a relative difference in the responses of these groups associated with the strength of treatment. Our hypothesis is that Tier 2 and 3 enrollees will show more change than Tier 1 applicants in their attitudes. A second hypothesis is that the attitudes of DMAP enrollees, regardless of participation tier, will differ from those of a control group of landowners that will be selected for a short survey in 2017.

In addition to evaluating the outcomes of DMAP over time, we wanted to gauge initial customer satisfaction following the first year to provide wildlife staff feedback that may benefit current implementation efforts. Consequently, we directed a second research effort in February and March



Figure 1. A pre-test, post-test pseudo-experimental design for the Deer Management Assistance Program, 2014-2017.

2015 to measure satisfaction with services provided to all Tier 2 and 3 DMAP participants. We sent all DMAP participants an e-mail with a link to an online questionnaire and sent reminder e-mails

to non-respondents again a week later. We sent paper copy questionnaires by mail to those that did not respond to the e-mail invitations. We received a 50% response rate.



Highlights of the Pre-program Assessment

- First year DMAP participants bring a good deal of experience to the table:
 - *Average of 22 years hunting the land(s) that they have enrolled;*
 - *81% have read materials on deer management techniques;*
 - *70% have had a forester walk their land in the past and 59% have participated in the Managed Forest Law program;*
 - *About half (49%) have attended a Conservation Congress spring hearing.*
- Twenty-nine percent of DMAP enrollees have no prior experience participating in government-sponsored conservation programs.
- The Wisconsin DNR website was far and away the leading (51%) information channel for finding out about DMAP.
- “Improving habitat for deer” was the leading goal shared by participants from a list of eleven choices; 96% rated it as “Very” or “Moderately important”.
- A majority of participants also indicated a desire to improve habitat for other game species including wild turkey (90%), grouse/woodcock (79%), and small game (76%).
- Many participants entered DMAP believing their properties contain “Good” (50%) or “Very good” (26%) white-tailed deer habitat.
- About half (49%) said their current habitat could support more white-tailed deer than it has now; 20% rated deer numbers as above the carrying capacity of the existing habitat.
- Participants bring fairly positive attitudes toward the Wisconsin DNR into their enrollment in DMAP including 90% who rated agency customer service to hunters and landowners with some degree of favorability.



Highlights of the Satisfaction Survey

- 93% of respondents rated their overall customer satisfaction with DMAP as “Very good” or “Good.”
- 85% were “Very satisfied” or “Satisfied” with the property visit by Wisconsin DNR staff.
- Written comments suggest a substantial educational impact of the interaction with Wisconsin DNR staff on property on issues ranging from timber management, deer browse, invasive species, and more.
- 78% of those who reviewed their management plans said they intend to implement all or most of the plan’s recommendations.
- Four out of five respondents said they would recommend DMAP to other landowners.
- Most DMAP participants prefer the current e-mail communications about every two weeks, though some think monthly updates are sufficient.
- Sign-up procedures, ease of access to MyDMAP, and a faster turnaround time for written management plans are a few areas where improvements can be made. For example, one third of the cooperators had not seen their property’s management plan at the time of the survey.



Results from the Pre-program Assessment

Participant Background

The DMAP pre-program assessment survey garnered 107 completed responses and 69 partial responses from DMAP enrollees. Of these respondents, 97% were white-tailed deer hunters, and 3% said they were not. The average number of years respondents had hunted on DMAP land was 22 years. On average, a respondent's DMAP property had three people bow hunt on it in a typical year. When it comes to deer hunting during the 9-day gun season, seven people, on average, hunted on respondents' DMAP land.

Seventy-eight percent of respondents indicated that they were the primary contact on their DMAP application, compared to 22% who said they were

not the primary contact. One-third (32%) of respondents were part of an "individual property/multiple owner" enrollment category (Figure 2). Thirty-one percent were enrolled as a single owner of an individual property and 28% enrolled as part of a group cooperative. Only 5% of respondents were individual owners of multiple properties.

Taking into account all individuals participating in all three tiers of DMAP, the study population includes 350 individuals. Figure 3 provides a comparison of the distribution within the three tiers according to survey responses and actual program applications. There were slight differences between responses and applications owing mostly to the small percentage of individuals who were unsure to

Figure 2.
Respondents' self-reported category of DMAP enrollment.

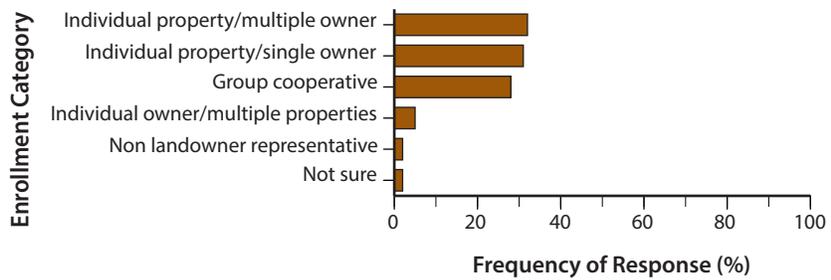


Figure 3.
Percentages (actual and reported) of respondents who participate in DMAP Tiers 1, 2, and 3.

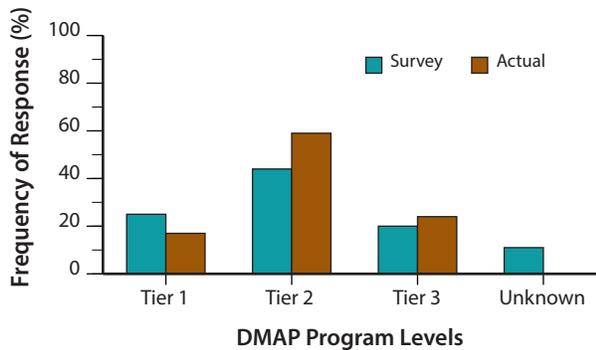
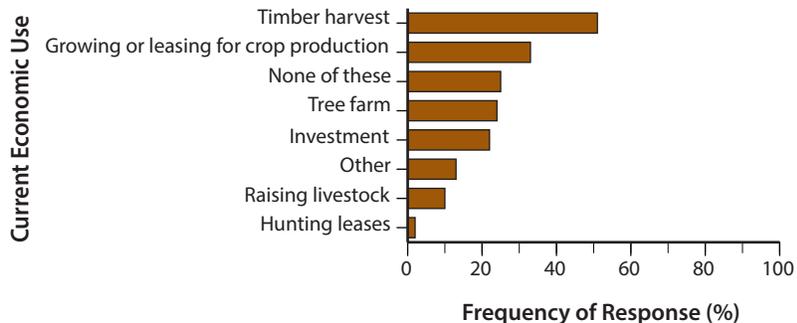


Figure 4.
Frequency of current economic uses for DMAP participants' land enrolled in DMAP. (Totals exceed 100% because respondents could check all uses that applied to their properties).



which tier they had applied. A plurality of respondents (44%) indicated they were participating in Tier 2. One-quarter (25%) reported being in Tier 1 and 20% indicated that they were participating in Tier 3. These numbers slightly underrepresent the enrollment levels of Tier 2 participants based on actual population numbers.

Figure 4 illustrates the varied economic uses that respondents practice on their land. Half of respondents (51%) used their land for timber harvest and a third grew crops or leased their land for crop production. Twenty-five percent of respondents do not use their land for any economically focused activities.

DMAP enrollees have been proactive in seeking advice or resources for their past land management activities. The most common approach, which four out of five of respondents have done (81%), is reading materials about habitat management (Figure 5). Majorities of respondents have also had a forester walk their land (70%) or have spoken with a forester about their land (58%). The past interactions with foresters reflect the high level of DMAP landowner involvement with the forest tax law programs (Figure 6). For example, a majority of respondents have participated in the Managed Forest Law or Forest Crop Law (59%). There is a segment of the respondent group (29%), however, that has not participated in any other management programs in the past.

Past Involvement with Deer Management in Wisconsin

There are numerous different ways to participate in white-tailed deer management in the state; Figure 7 shows the frequencies of respondent participation in these selected outlets. The most commonly

reported form of participation was attending a Conservation Congress spring hearing (48%). Over a third of respondents (36%) said they have submitted online deer hunter observations. The least frequent avenue of deer management participation was volunteering to be a hunter education instructor (11%).

There are many avenues through which the Wisconsin DNR worked to spread the word about DMAP (Figure 8). Half of respondents (51%) reported referencing the Wisconsin DNR website for information on the program. The second most common response was hearing about the program through friends or neighbors (25%). The “other” category was selected by 23% of DMAP enrollees. The majority of those offering a “write-in” indicated that they learned about the program from a personal interaction with a Wisconsin DNR employee.

DMAP Goals and Landowner Interests

Respondents were asked to rate the level of importance of various potential reasons for deciding to participate in DMAP (Table 1). The most frequently cited reason was “*To improve habitat for deer*” (80% said it was very important). A majority of respondents also said that “*improv[ing] habitat for other wildlife*” was a very important reason for participating (68%). Two-thirds of DMAP enrollees indicated that “*increasing the number of deer*” was a “Very” or “Moderately” important reason for signing up. Furthermore, 61 percent of respondents said that “*decreas[ing] the number of deer*” was not an important reason for deciding to participate in DMAP. A majority (58%) also said that “*reduc[ing] damage to crops and landscaping*” was not a reason

Table 1. Responses to how important varying reasons are to respondent's decision to participate in DMAP.

Reasons For Participating	% Responding				
	Very Important	Moderately Important	Slightly Important	Not Important At All	Not Sure
Improve habitat for deer	80	16	2	2	0
Improve habitat for other wildlife	68	27	4	1	0
Learn more about deer ecology	47	33	17	4	0
Increase the antler size of harvested bucks	43	31	23	3	0
To monitor deer health	43	42	13	2	0
Increase number of deer	45	17	15	19	4
Improve relations with DNR	19	32	28	19	2
Improve relations with neighbors	11	29	26	34	1
Reduce damage to crops and landscaping	12	10	20	58	1
Have access to reduced price antlerless tags	8	14	23	52	3
Decrease number of deer	7	9	14	61	9

Figure 5.
Frequency of responses to the question "When it comes to seeking advice from professionals about your land, which of the following describe actions you have taken at any time in the past?" (Totals exceed 100% because respondents could check all uses that applied to them).

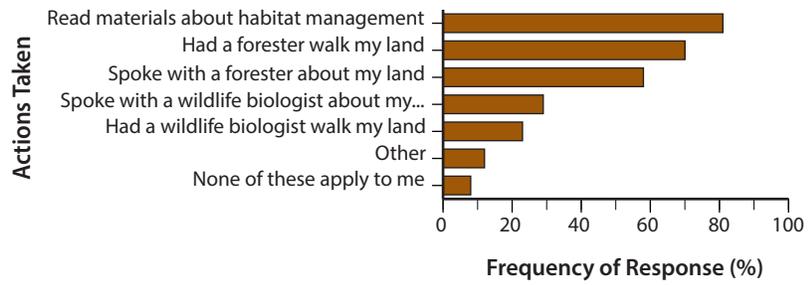


Figure 6.
Programs that DMAP participants have participated in at any time in the past.

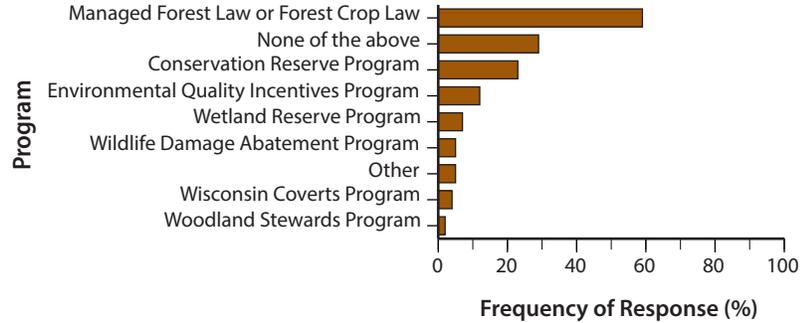


Figure 7.
Participation in varying forms of deer management at any time in the past. (Totals exceed 100% because respondents could check all forms of management that applied to them).

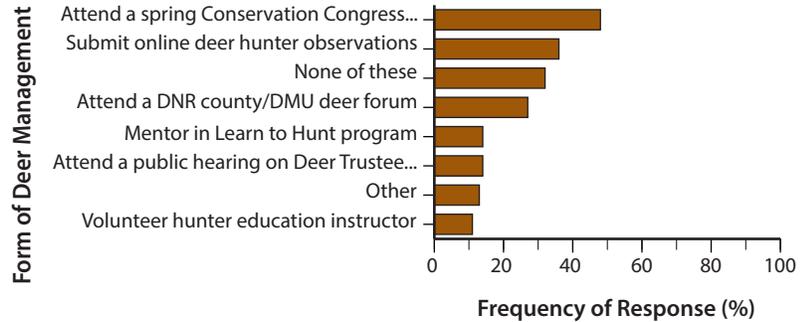


Figure 8.
Where DMAP participants heard about DMAP. (Total exceeds 100% because respondents could check all options that applied to them).

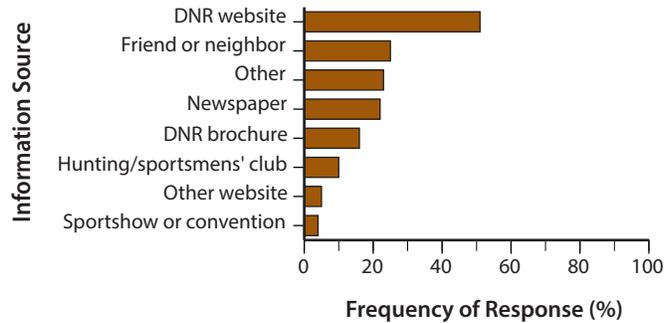
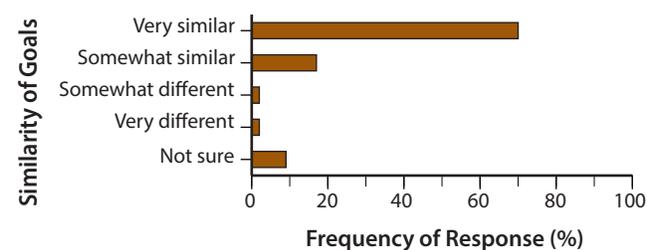


Figure 10.
Frequency of response to the question "How similar would you say your deer management goals are compared to the other people in your DMAP cooperative?" (Respondents who are not part of a DMAP cooperative did not answer this question).



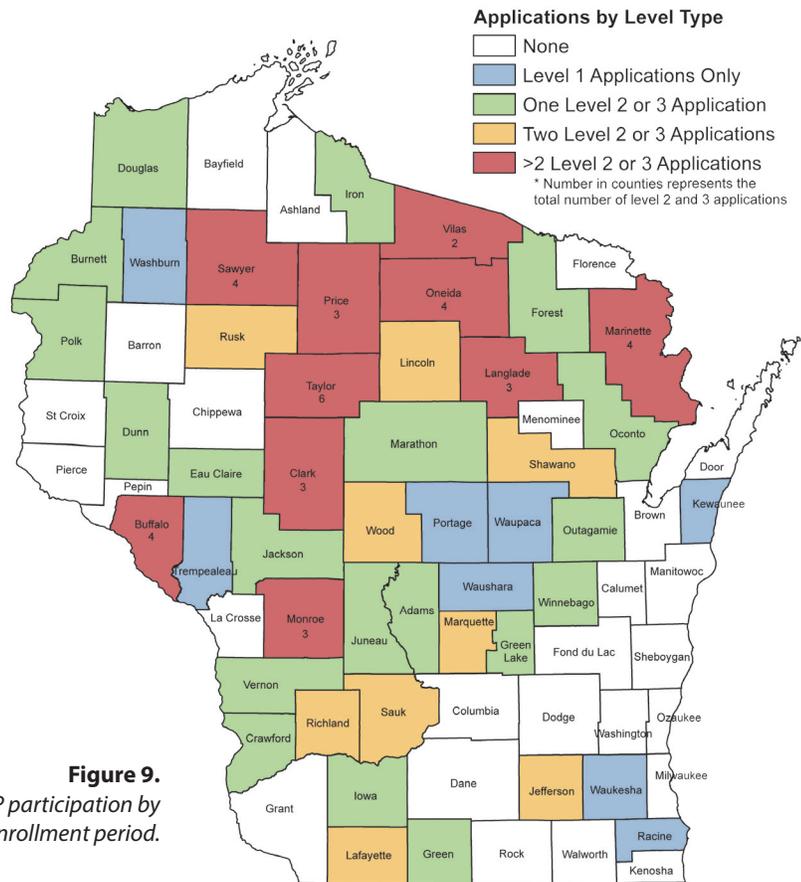


Figure 9.
Geographic distribution of DMAP participation by county in the inaugural enrollment period.

that they are participating. Expressed deer population preferences among these enrollees is certainly a function of their geographic distribution across the state of which the northern forest region was heavily represented among first-year DMAP property applications (Figure 9). Of respondents that are part of a DMAP group cooperative, a majority (70%) said that they share very similar goals with the members of their cooperative, and 17% said their goals are somewhat similar (Figure 10). Only 4% of respondents in cooperatives indicated that their goals were different from those of the other members in their group.

There are multiple challenges DMAP enrollees might face in achieving their deer management goals (Figure 11). A plurality of respondents cited “Too many predators” as a significant challenge to management. The least frequently cited challenge was “Too little hunting pressure on surrounding lands” (9%). Twenty-nine percent said that they do not foresee any significant challenges to management.

Managing lands through DMAP can have benefits for many species beyond white-tailed deer. Figure

12 shows responses of which other species participants would like to encourage on their property. Majorities of respondents hope to encourage wild turkeys (90%), grouse and woodcock (79%), and small game (76%) on their land. Over half would also like to encourage songbirds (52%).

Table 2 shows how influential varying indicators are in informing DMAP participants’ perceptions of the relative abundance of white-tailed deer on their land or in their area. The number of white-tails seen on trail cameras is majorly influential for 47% of respondents, and of medium influence for another 31% of respondents. Eighty-six percent of respondents typically put out trail cameras to monitor deer and other wildlife on their DMAP property, while 14% do not. Respondents also considered the amount of white-tailed deer tracks or droppings that they see as a major (41%) or medium (38%) factor, as well as the amount of buck sign (30% major influence, 51% medium influence). The least influential indicators are the number of dead deer seen on area roads and population estimates by university scientists (Table 2).

Figure 11.
The most significant challenges DMAP participants face in achieving their deer management goals on the land enrolled in DMAP.

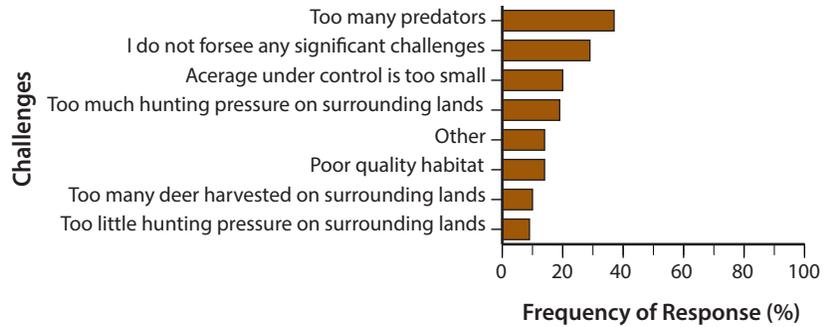


Figure 12.
Responses to which types of wildlife, in any, DMAP participants are hoping to encourage on their DMAP property.

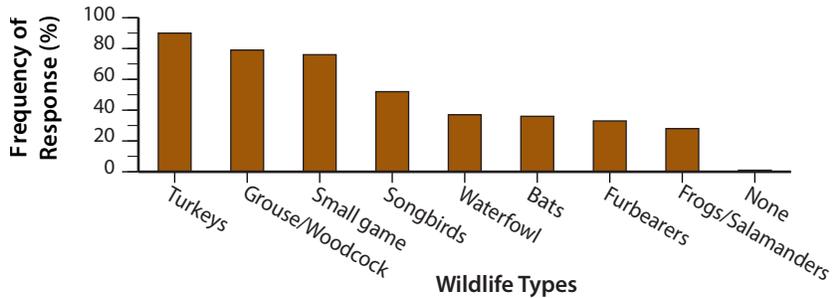


Figure 13.
DMAP participants' rating of the quality of habitat for deer on their property enrolled in DMAP.

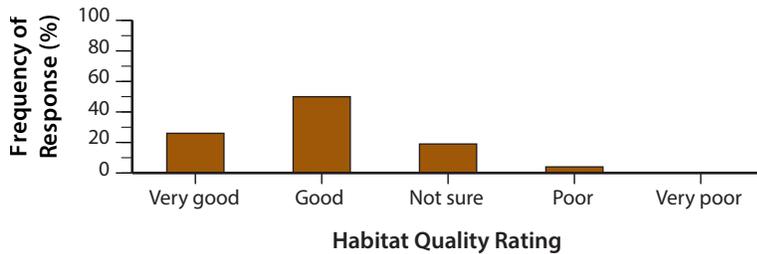


Figure 14.
DMAP participants' opinions on the current size of the deer population in relation to the carrying capacity of the habitat.

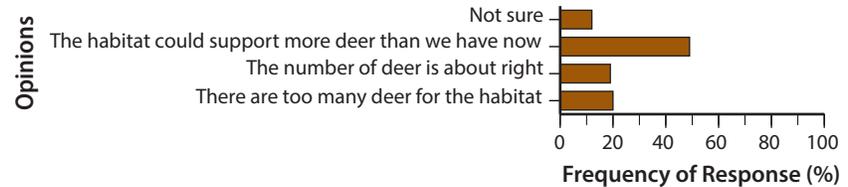


Table 2. Responses to how influential various indicators are on respondents' perception of the number of deer in their area.

Indicators	% Responding				
	Major Influence	Medium Influence	Minor Influence	No Influence At All	Not Sure
Number of deer on trail camera pictures	47	31	11	7	4
Amount of deer tracks or droppings	41	38	18	2	1
Amount of buck sign	30	51	16	2	1
Number of deer I see opening weekend	26	40	26	7	1
Other	28	23	12	8	28
Opinions of my hunting partners	15	35	35	13	1
Population estimates from DNR	11	35	32	20	3
Number of dead deer on area roads	8	25	43	25	0
Population estimates from university scientists	5	27	38	24	6

Rating Deer Habitat on DMAP Land

A majority of respondents rated the quality of their DMAP property as “Very good” (26%) or “Good” (50%) habitat for white-tailed deer (Figure 13). Only 4% of respondents rated their land as “Poor” deer habitat, and no respondents thought their land was “Very poor” habitat for deer. Respondents were asked to compare the current size of the deer population on their DMAP property to what they perceive the land’s carrying capacity to be. Forty-nine percent of respondents said that they think their DMAP land could support more white-tailed deer than it currently supports (Figure 14). The frequency of respondents indicating that they believe the number of deer is about right (19%) was similar to the frequency of those that think there are more deer on their land than the habitat can support (20%).

We also asked respondents to indicate whether they perceive white-tailed deer to be causing damage to trees and shrubs, preventing seedling and sapling regeneration by browsing, or damaging crops in the area where their DMAP land is located (Figure 15). Pluralities of respondents said that damage to trees and shrubs (46%) and damage to seedlings and saplings (40%) are “Not a problem at all.” Thirty percent of respondents said that crop damage is not at all an issue and 34% said that it is a “Minor issue” on their DMAP land.

Opinions about Wisconsin DNR Deer Management

Respondents also provided feedback on their impressions of the Wisconsin DNR (Figure 16). A majority of respondents (65%) felt positively, while 13% felt negatively, about the Wisconsin DNR’s role as a habitat manager for white-tailed deer in the state of Wisconsin. Just over half (55%) of respondents also felt positively about the Wisconsin DNR’s role in managing the size of the white-tailed deer population in the state. Over a third (35%) felt negatively about the Wisconsin DNR in that role. Regarding the Wisconsin DNR providing service to hunters and landowners, a large majority (90%) felt positively about the agency’s role. Only 4% felt negatively.

These generally positive results are a mixed blessing from a research design perspective. On one hand, they suggest that people who were initially drawn to the program tended to be people who already view the Wisconsin DNR’s deer management program with some credibility. On the other hand, those pre-existing attitudes may make it harder to measure positive change resulting from program participation when the post-program survey is administered because there is in essence “less room” for improvement.

Figure 15.
DMAP participants’ opinions on the extent to which deer are causing damage on their DMAP land.

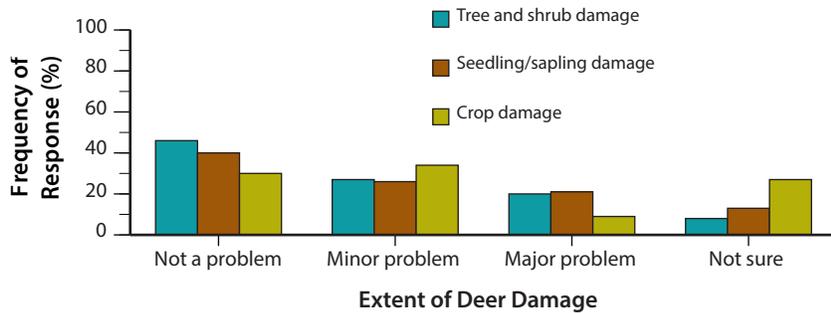
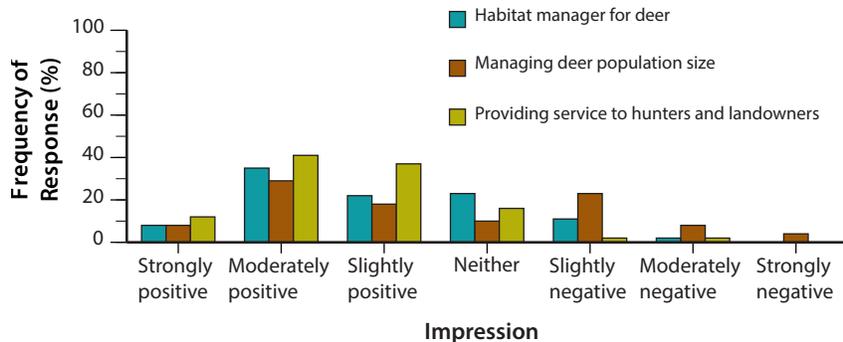


Figure 16.
DMAP participants’ impression of the Wisconsin DNR in its varying management roles, including as a habitat manager for deer in the state, its role in managing the size of the deer population in the state, and its role in providing services to hunters and landowners in the state.





Results of the Satisfaction Survey

The following section reports findings of our online survey of all individuals whose contact information was listed among Tier 2 and 3 properties in DMAP's inaugural year.

DMAP Online Resources

The DMAP experience begins with an automated online application process. The majority (69%) of Tier 2 and 3 respondents rated the process as "Very easy" or "Fairly easy" to sign up (Figure 17). We received about a dozen comments with suggestions for improving the sign-up process including, simplifying the application fee payment system and streamlining the website. Some respondents also suggested providing a pen and paper alternative to signing up online.

DMAP participants create their own MyDMAP accounts where they can access technical information on white-tailed deer ecology, nutrition, habitat and other wildlife information that is regularly updated by Wisconsin DNR staff. Fifty-nine percent of respondents said that the MyDMAP database was "Very easy" or "Fairly easy" to use and navigate (Figure 18). Approximately one in six did not use the MyDMAP database.

Of those that did access resources provided in the database, 88% said the resources were "Very" or "Somewhat useful" (Figure 19). We received about two dozen suggestions for other kinds of information desired by participants. Two themes were apparent in the comments: participants want more detailed how-to advice on habitat management (including for other wildlife) and they want that advice to be specific to local climatic and physical conditions.

One-on-One Site Visits

DMAP's core strength lies in its potential to foster partnerships with private landowners through personal relationships. Results from the initial round of property visits by Wisconsin DNR staff highlight this potential. About seven out of 10 respondents were "Very satisfied" with their site visit from agency staff and another 20% were "Somewhat satisfied" (Figure 20).

We asked participants to tell us the "single, biggest thing they learned" in their interaction with Wisconsin DNR staff during their property visit. The responses were wide ranging, but reoccurring

themes included white-tailed deer impacts to habitat and forestry resources, detection and identification of invasive species, and availability of food resources as a limiting factor. The comments suggested that DMAP site visits are meeting the educational objective of the program.

Property Management Plans

In addition to the site visit with Wisconsin DNR staff, the other hallmark of Tier 2 and 3 program services is the development of a tailored, management plan with specific recommendations to assist landowners in meeting their goals for white-tailed deer and other wildlife. At the time of the survey, seven in 10 (69%) DMAP participants had been provided with their management plan. Among those respondents, 85% said the plan was well organized and easy to read (Figure 21) and 82% said it contained "Very" or "Somewhat useful" information (Figure 22).

Three-quarters of those who had received and reviewed their property management plan intended to implement "All" or "Most" of its recommendations (Figure 23). Cost (63%) and lack of time (60%) were leading constraints for implementing plan recommendations among DMAP participants (Figure 24). It follows then that several of the written comments suggested including more information on cost sharing and funding options as future resources for DMAP.

Communication Preferences

During the first year, the DMAP Coordinator sent brief twice a month e-mails to participants to give progress reports, program news, and prompts about new resource postings on MyDMAP. According to the survey results, the majority of participants would like these regular, e-mail updates to continue. Fifty-five percent chose the two-week interval over longer options (Figure 25) and e-mail was endorsed as a communication channel by 89% (Figure 26).

Promotional Word of Mouth

About four out of five (82%) Tier 2 and 3 participants told us they have already spoken to other landowners about DMAP. Most (77%) DMAP enrollees said they would be willing to recommend that others enroll, while about one in five are reserving their judgment (Figure 27). Several participants suggested

Figure 17.
Convenience ratings of the online application sign-up among Tier 2 and 3 participants.

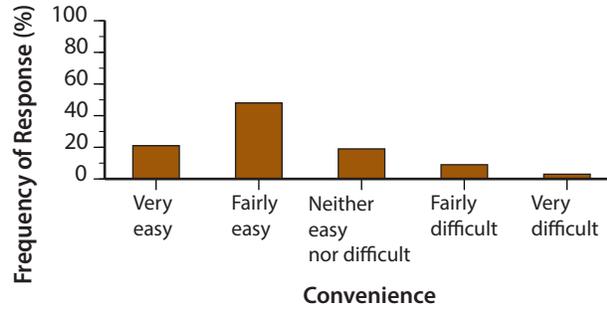


Figure 18.
Frequency of ease of use ratings of the MyDMAP database among Tier 2 and 3 participants.

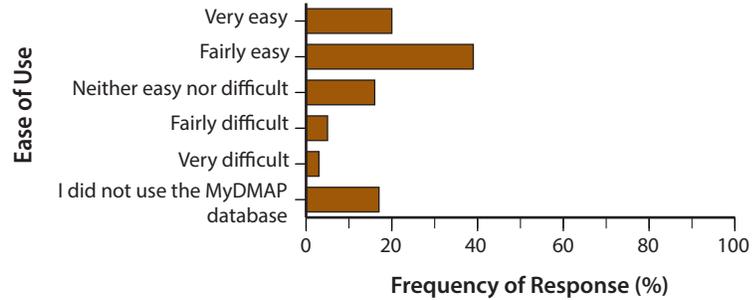


Figure 19.
Ratings of usefulness of the information resources posted on the MyDMAP website.

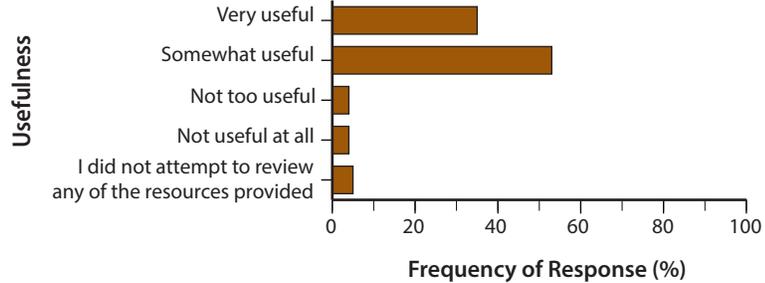


Figure 20.
DMAP participants' satisfaction with Wisconsin DNR staff property visits.

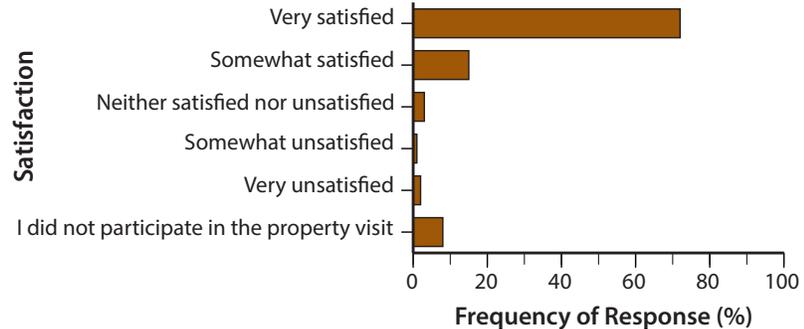


Figure 21.
Responses to the question "Was the written plan provided to you well organized and easy to read?"

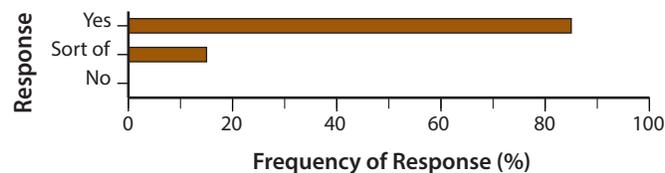


Figure 22.
Ratings of usefulness of the recommendations in the property management plan (Those who had not received their plan skipped this question).

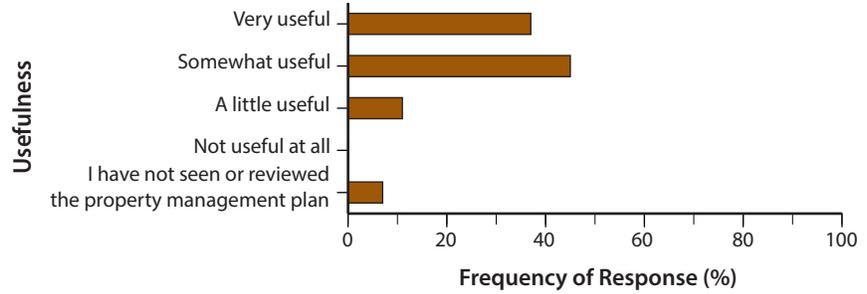


Figure 23.
DMAP participants' intention (frequency of category selection) to implement recommendations contained in management plan.

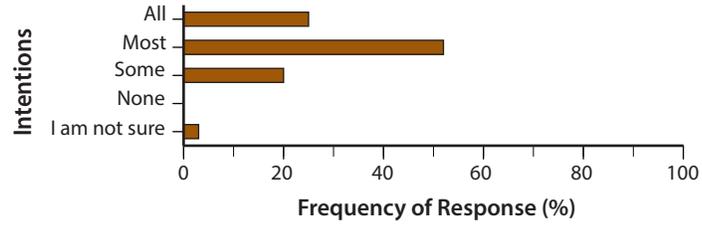


Figure 24.
Constraints to implementation of plan recommendations identified by DMAP participants (Respondents could check more than one response).

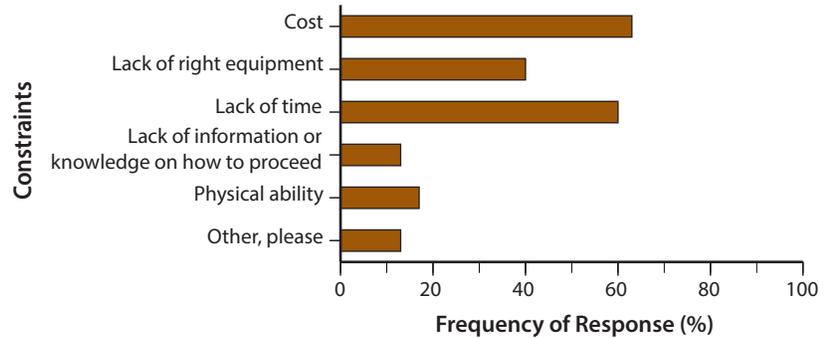


Figure 25.
DMAP participants' preferences for frequency of updates from Wisconsin DNR regarding DMAP.

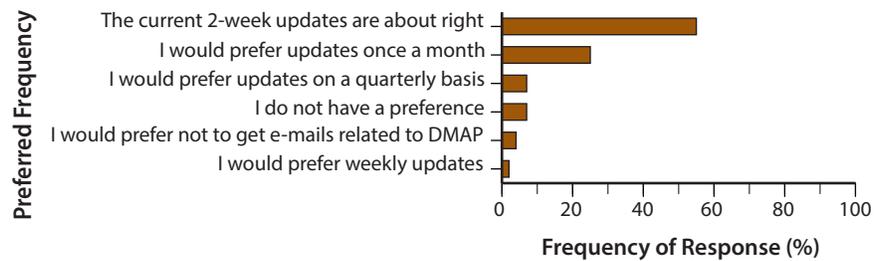


Figure 26.
DMAP participants' preferences for the type of delivery channel of DMAP news and updates among participants. (Respondents could indicate more than one type).

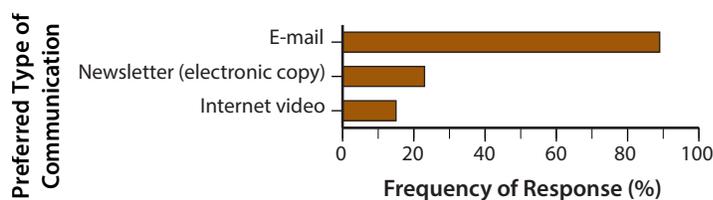


Figure 27.
Responses to the question “Would you recommend that other landowners become involved with DMAP?”

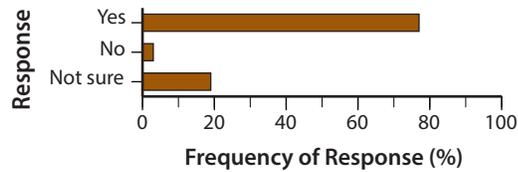
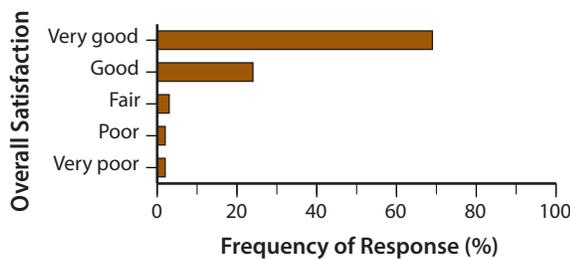


Figure 28.
Frequency of overall customer satisfaction ratings among DMAP participants with their 2014 enrollment.



making printed materials or brochures available to them to share with neighbors. Others suggested local meetings as possible venues for recruiting additional participants.

Overall Rating of Customer Satisfaction

Tier 2 and 3 participants were asked to provide an overall rating of customer satisfaction following the initial year of DMAP. Ninety-three percent rated the Wisconsin DNR performance as “Very good” (69%) or “Good” (24%) (Figure 28). Written suggestions for improving the program included improving the website to provide better ease of access, a more rapid delivery of the written property plan, and continued follow-up and technical support for plan implementation.

knowledge about habitat quality. Other open-ended comments suggest a few areas where staff can tweak the program to further meet customer needs.

As the program’s research team, we have already adapted our evaluation approach slightly based on the experience of the first year. A review of names and addresses of the non-respondents indicates that many had out-of-state addresses, while others shared the last name and/or address of another person who had responded to the online survey request. These patterns suggest that the lower response rate may be partially attributed to individuals who are really “paper participants”— i.e. people who were listed as associated with a property by the primary applicant but do not consider themselves active cooperators. A couple of primary contacts have also noted that this situation is present in their communications with us. We plan to differentiate the primary contacts from others in future analyses.

After consultation with the DMAP Coordinator and others, we have begun to solicit online survey participation through separate e-mails rather than including a request with the landowner agreement signature process as was done during the first year. This change will enable us to more effectively track responses and should lead to higher response rates. We also made a couple of modifications to the pre-program assessment questionnaire to refine areas where additional clarity was needed without sacrificing our ability to compare responses between cohorts.



Conclusions

The design, organization, and implementation of DMAP represented one of several significant changes to Wisconsin’s deer management program in 2014. Survey results suggest that the Wisconsin DNR was largely successful in meeting participant needs in spite of the compressed timeline for rolling out the program. Furthermore, the collective responses to open-ended comments about the site visits and property management plans serve as a preliminary indication that interaction with agency staff and their expertise is having a productive effect on landowner



Wisconsin Department of Natural Resources
Bureau of Science Services SS/7
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