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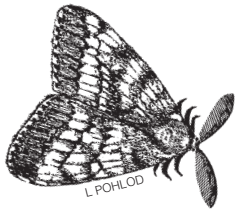

The Gypsy Moth and Methods of Control: Public Response to a Proposed Gypsy Moth Management Program

By Jordan B. Petchenik and Elizabeth Ivers

Introduction

The gypsy moth, *Lymantria dispar*, is a non-native species that defoliates and weakens trees, particularly oaks, during periodic outbreaks that occur in June or July. The moth was first introduced into eastern North America in the 1860s (Wisconsin DNR 2002). Through natural migration and accidental movement by humans, the gypsy moth spread slowly westward. In 1971, it was first detected in Wisconsin; the moth is now firmly established in 32 counties in eastern Wisconsin and has been found in nearly every county in the state (Wisconsin DNR 2002).

In the next few years, biologists anticipate gypsy moth populations in southeast Wisconsin to increase to levels that will result in severe tree defoliation and tree mortality. A widespread outbreak of the gypsy moth could have a significant impact on the Southern Unit of the Kettle Moraine State Forest (SUKM), one of the largest tracts of forested land in southeast Wisconsin.

As an initial step in developing a plan to manage gypsy moth infestation in the SUKM, social scientists with the Wisconsin Department of Natural Resources (DNR) conducted a series of focus groups to assess public response to various gypsy moth management alternatives. The study also gathered information on how the public might respond to a new gypsy moth management plan. This report presents participant reactions to five gypsy moth control options and concerns about spray notification. Two additional reports (Petchenik and Ivers 2003a, b) present participants' discussion of forest management issues related to the gypsy moth and participants' responses to questions about their tolerance for tree defoliation, tree mortality, and moth nuisance. More detailed information about the complete study and its findings can be found in Petchenik (2002).

Method

We used focus groups to assess forest users' opinions about gypsy moth management. Researchers typically use this technique to generate insights and ideas. Unlike survey research, focus groups allow participants to listen and respond to one another, as well as to the moderator. Focus groups also give participants a chance to think about and comment on their experiences and concerns. Where statistics are needed, researchers often use focus groups as a first step in developing a survey.

Staff sociologists from the Bureau of Integrated Science Services conducted five focus groups consisting of primary users of and residents within the SUKM (Table 1). Focus groups included a mix of men and women, with a total of 38 study participants.

Table 1. *User groups interviewed, focus group locations, and number of participants.*

User Groups Interviewed	Focus Group Location	Number of Participants
Mountain bikers	Madison	7
Day users	Madison	8
Horse riders	SUKM	8
Homeowners living near SUKM	SUKM	8
Campers	Milwaukee	7
Total		38

Focus group participants were asked to discuss a number of questions about gypsy moths and gypsy moth management. The focus group moderator guided the discussion through the following sequence of topics:

1. recent experiences with and attractions to the SUKM,
2. knowledge of and experience with gypsy moths,
3. tolerance for gypsy moth nuisance, tree defoliation, tree mortality,
4. preferred areas of the SUKM to be protected from gypsy moth damage,
5. effect a gypsy moth outbreak might have on future visits to the SUKM,
6. funding of gypsy moth suppression and its importance relative to other issues within the SUKM, and
7. preferred gypsy moth control method and concerns about aerial spraying.

Because participants in this study did not have extensive first-hand experience of gypsy moths, they were shown photographs and given background information to better understand gypsy moth management issues. We audio-taped each focus group and based our analysis on a verbatim transcript of each session. Illustrative quotations from focus group participants are presented throughout this report in *Italic text*.

For the portion of the study reported here, we gave participants in each discussion (except for homeowners, see below) five cards describing various gypsy moth management techniques. The text of each card included a brief explanation of the control method and a list of advantages and disadvantages of that method. We edited cards for clarity after the first discussion. We asked participants to carefully read the cards and put them in order of personal preference. A discussion of the pros and cons of each method followed.

Results and Discussion

Methods of Control

When asked to rank the five different gypsy moth management techniques in order of preference, the overwhelming majority of participants stated that they preferred the use of Btk to the other choices. A small minority of people chose Gypchek and several others chose mechanical control. The options of Dimilin and "doing nothing" were consistently ranked last.

***Bacillus thuringiensis var. kurstaki* (Btk).** Participants found Btk the most acceptable (or least objectionable) control method, chiefly because of environmental and economic concerns.

> *Btk was first; it seems the least dramatic. It has the fewest side effects on other organisms.*
>
> *Naturally occurring, low cost; there did not seem to be a lot of disadvantages to this one.*

Although Btk was the preferred control technique, many participants still had concerns about the pesticide and asked for more information regarding its effectiveness.

> *If you spray Btk, would you always have to spray or just spray once and [gypsy moths] are gone forever?*

Gypchek (*Nucleopolyhedrosis* virus). Several participants chose the virus Gypchek as their preferred gypsy moth management technique. The participants who preferred this method expressed concern about pesticides in the environment.

> *I chose Gypchek because it says here, 'It only affects the gypsy moth.' The other pesticides, I didn't agree with because they seem to do damage to other animals and there was potential for them to get into the groundwater supplies. Even though it's the most expensive, it seems to be the most effective. If we're talking about being proactive, this is the best choice.*
>
> *If you're going to do it you might as well do it right. If you can get them early in the spring that's probably the best thing, and this one didn't seem to be as hard on other things in the forest.*

Participants were concerned about the effectiveness of this management technique as well. A few participants also worried about potential problems for asthmatics.

> *It might not be as effective in some areas or as some other pesticides might be.*
>
> *My only concern was the allergic or asthmatic response in people and how long is the effect after spraying. Is it a day or two days? Would you have to close the park?*

Mechanical control. Several participants felt that mechanical control was the best way to manage gypsy moth populations, especially in the early stages of an infestation. Others expressed a preference for this method due to an aversion to pesticide spraying, but acknowledged that mechanical control wasn't a viable option.

> *I think that's where you would start. At this point I don't think there are that many [gypsy moths] out there. At some point you would have to progress to something else.*
>
> *I had mechanical control because I'm not real big on chemicals, but I changed it because where are you going to get the manpower to go out and check the traps?*

Dimilin/mimic. Many participants in the discussions found Dimilin to be the least preferred or most objectionable choice. Participants voiced strong concerns about its effect on non-target organisms and the environment. Participants in the horseback rider discussion were the most opposed to the use of this pesticide.

> *It affects birds and mammals, everyone. It's terrible. It kills every forage-feeding insect for the entire growing season. It's going to mess up everything in the water, crustaceans. It's napalm. You can't go in the environment after you treat it with this stuff.*
>
> *I'm very uncomfortable about it getting in the water.*

Despite opposition to this choice, a few participants acknowledge its advantages.

> *It's something that can work in a large area. The others seem like they are for small areas of containment.*

Do nothing. None of the participants chose "do nothing" as a preferred gypsy moth management option. Participants in the day user discussion were the most opposed to this choice.

> *It does not seem like an option to just let nature take its course.*

I weighed all the advantages and disadvantages and compared it to the Dimilin and I came up with 'do nothing' as my last choice. I kept thinking of the zebra mussels and we did nothing there.

Opinions on the General Use of Pesticides

Participants voiced a wide range of opinions about pesticide use in general. Some participants felt that pesticides are valuable for controlling unwelcome insects and safe to use. Other participants admitted that they did not know much about pesticides or were unsure about their safety and effectiveness. Some participants expressed deep concern about pesticide safety and did not consider pesticides an appropriate control method.

In an area as large as the state forest, and with today's better understanding of pesticides and the kind of controls they have, and you know what they affect, where they affect the DNA of different species, that is a better option and is going to be more effective in the long run.

I'm not familiar with what the chemical is [to control gypsy moths]. To me, the issue is if that chemical is something that's going to be harmful. If there is no danger to me or long-term harm to the environment, then spray it.

I'm pretty much against pesticides, too. People pretty much use them for everything. I think it's ridiculous.

Spray Program Issues

Concerns about a spray program. Many participants were concerned about the long-term health effects on humans of any pesticides that might be used in a gypsy moth spray program. Specific concerns were also raised regarding the potential effects of a spray program on asthmatics, children, horses (by horseback riders), and private property (by homeowners). In addition, a few participants were concerned about the effects on non-target organisms in the forest.

Have they tracked people that have been sprayed to check their health?

I have asthma, so I don't want any spraying to occur unless I can be warned in advance.

[What is the] effect [of spraying on private property] on animals, livestock? What is it going to do to our water supply?

[What about] birds, other moths, butterflies?

Spray program notification. All participants stated that they wanted to be notified beforehand about any spraying.

We probably don't want our things out on the table when they are spraying. We want a window of time.

I would want to know prior to coming to the park. For me, I would be freaked out if they recently sprayed.

The amount of time prior to the spraying that was considered appropriate varied. Some participants needed to know only that spraying might occur in the forest at some time during the year. Others felt more comfortable knowing specific times when spraying was likely to occur.

Make it a general policy. Like, during these months we are going to spray for gypsy moths. Not so much on the exact days and times they are going to do it, but just as a general policy that they do spray.

We [horseback riders] need weeks [notice]. Many events are planned months in advance.

Spray program information. Participants felt that forest visitors should receive information about why the SUKM was being sprayed, including information about the need for spraying, potential human health risks, and the risks to wildlife.

We need to know if you guys spray on Thursday and we come out Friday and go camping and if I get it on my skin that it's not going to hurt me. And how do you spray? Do you spray when the campers are in the campgrounds?

When you inform people, it is important that you tell people the effects on wildlife.

Participants suggested numerous ways to get information to forest visitors. Many suggested that the best way would be through a handout at registration or when people buy trail passes and vehicle stickers. Other suggestions included: posting information at campground entrances and trailheads, informing users via a phone hotline, Internet web site, the automated campsite reservation system (i.e., Reserve America), newspapers, and direct mailings, and posting photos in high traffic areas like restroom facilities. It is also worth noting that many participants felt that photographs, similar to the ones used in the focus group discussions, would be an ideal way to communicate the potential impact of a gypsy moth infestation.

When you buy your sticker. Anyone coming into the park needs a sticker, so inform them then.

A trailhead area would be a good notification site.

I'd rather be notified by mail.

You can have pictures by the bathrooms showing if we don't spray, this is what can happen. Then the people will understand and they will allow it.

Homeowner Issues

Participants in the homeowner group were shown photos and given a brief description of several gypsy moth management techniques that could be used by private landowners to protect their property in the event of the gypsy moth infestation. These techniques included mechanical control methods, hiring a professional arborist, and participation in a local spray program. Throughout the discussion, participants expressed concern about gypsy moth problems on their land resulting from moth migration from the SUKM and raised many questions and concerns about gypsy moth control.

When discussing a more aggressive spray program, most homeowners felt that, in order for it to be effective, the government should take responsibility for organizing any gypsy moth control spray program targeting private land surrounding the

SUKM. Participants differed in their opinion about who should pay for such a program. Some participants stated that the state should pay for it, while others felt it should be paid for by the participating landowners. Opinions were also mixed concerning who should pay for a 250-foot buffer that would be sprayed into the forest to protect private land from infestation from the neighboring public land.

Management Recommendations

The focus group responses strongly suggest that the broader public would prefer that SUKM forest managers use Btk to control gypsy moths because of its lower cost and minimal impact on the environment. The participants' unanimity on the need for notification about spraying also strongly suggests that the majority of SUKM users would want forest managers to provide clear information concerning what area will be sprayed, why, and when. Opinions varied on the timing of notifications. Opinions varied also as to which avenues would best reach the public with information about gypsy moths and gypsy moth control programs. A quantitative study would provide more definitive data about the opinion held by the majority of SUKM users concerning these issues.

The focus group responses also suggest that the majority of homeowners living adjacent to the SUKM would want forest managers to organize any gypsy moth control spray program targeting private land surrounding the forest. Opinions were mixed concerning who would pay for such a program or pay for a 250-foot buffer that would be sprayed into the forest to protect private land. Again, a survey would provide clearer information about the opinion held by the majority of homeowners concerning these issues.

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