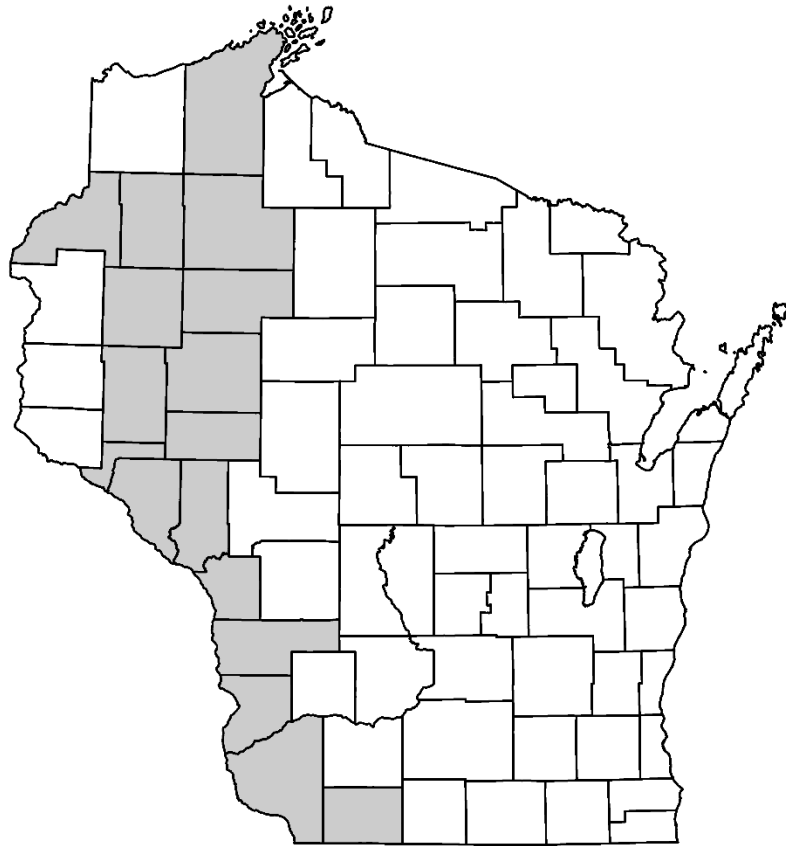


ENVIRONMENTAL ASSESSMENT

Wisconsin Cooperative Spongy Moth Program Slow-the-Spread

United States Forest Service, State & Private Forestry
Wisconsin Department of Agriculture, Trade and Consumer Protection



BAYFIELD, BARRON, BUFFALO, BURNETT, CHIPPEWA, CRAWFORD, DUNN, EAU CLAIRE, GRANT, LA CROSSE,
LAFAYETTE, PEPIN, RUSK, SAWYER, TREMPLEALEAU, VERNON, AND WASHBURN COUNTIES OF WISCONSIN

April 2022

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1.0 Purpose and Need for Action

1.1 Proposed Action

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) proposes a cooperative project with the United States Department of Agriculture, Forest Service, State and Private Forestry (Forest Service, S&PF) to treat outlier *Lymantria dispar* (formerly gypsy moth) populations in Wisconsin that are along an area referred to as the Action Zone (Fig. 1). Treatments are proposed on 57 sites in 17 counties totaling approximately 163,491 acres in 2022 (Tables 1 & 2, Fig. 1).

The proposed alternative is to treat sites with either the bacterial insecticide *Bacillus thuringiensis* subsp. *kurstaki* (Btk), or mating disruption (MD) treatments. The Btk would be applied twice in most cases, and three times at one localized dense *L. dispar* infestation (Grant31)—the first application would be applied from early May to mid-June. Follow up applications would occur 7–14 days after a first or second treatment. A small number of acres may be retreated if heavy rain occurs soon after application. There are 25 proposed Btk sites totaling approximately 14,237 acres (Table 1). One aerial application of mating disruptant would be applied between late June and late July on 32 sites totaling approximately 149,254 acres (Table 2).

A portion of the proposed Sawyer11 mating disruption block lies on National Park Service Lands. The remainder of the Sawyer11 block, the remaining 31 mating disruption blocks and the 25 proposed Btk blocks are comprised of private, state, or other public ownership. All of the proposed treatment acres are considered in this Environmental Assessment. However, the ownership status does require two separate decision documents, one for National Park Service lands, and one for private, state, and other publicly owned lands. See section 1.4 (Decisions to be made and Responsible Officials) for further clarification.

1.2 Project Objective

The objective of the Wisconsin Cooperative Slow-the-Spread (STS) Spongy Moth Project is to:

- Slow the spread and buildup of *L. dispar* populations that are located within or in very close proximity to the STS Action Zone in Wisconsin.

1.3 Need for Action

The STS program is a national program that aims to reduce the spread of *L. dispar* from its natural rate of spread of approximately 20 km/yr. to less than 8 km/yr. The STS program has identified and recommends the proposed sites be treated. The STS program includes a detailed protocol for selection and prioritization of treatment sites at the website: [Slow the Spread Program](#).

Lymantria dispar (Lepidoptera: Erebidae), is an exotic defoliator in North America. *Lymantria dispar* caterpillars are able to feed on the leaves of a wide variety of trees and shrubs. In the Great Lakes region, highly preferred hosts include oak, aspen, paper birch, basswood, and willow, all common tree species across Wisconsin. High numbers of *L. dispar* caterpillars can cause a substantial public nuisance and a reduction in tree growth and overall tree health. Following large outbreaks, some tree mortality can occur, especially when outbreaks persist in an area for two to three consecutive years. Widespread caterpillar outbreaks can alter water quality, wildlife habitat, microclimate, and soil fertility (SEIS, Appendix L).

**Table 1. Proposed Wisconsin *Lymantria dispar* Btk[†] treatment sites for 2022.
Blocks named by county.**

Block Name	Treatment	Dosage/acre ^{††}	Applications	Treatment acres
Buffalo1	Btk	24 CLU	2	493
Chippewa1	Btk	24 CLU	2	424
Chippewa2	Btk	24 CLU	2	918
Crawford1	Btk	24 CLU	2	388
Dunn1	Btk	24 CLU	2	1,302
Dunn2	Btk	24 CLU	2	2,384
Dunn3	Btk	24 CLU	2	378
Dunn4	Btk	24 CLU	2	726
Grant1	Btk	24 CLU	2	1,324
Grant2	Btk	24 CLU	2	426
Grant3	Btk	24 CLU	2	79
Grant31	Btk	24 CLU	3	251
Grant4	Btk	24 CLU	2	58
Grant5	Btk	24 CLU	2	599
LaCrosse1	Btk	24 CLU	2	54
Lafayette1	Btk	24 CLU	2	227
Lafayette2	Btk	24 CLU	2	109
Lafayette3	Btk	24 CLU	2	133
Lafayette4	Btk	24 CLU	2	132
Lafayette5	Btk	24 CLU	2	535
Lafayette6	Btk	24 CLU	2	594
Lafayette7	Btk	24 CLU	2	745
Pepin1	Btk	24 CLU	2	718
Rusk1	Btk	24 CLU	2	516
Washburn1	Btk	24 CLU	2	724
Total BTK				14,237

[†] Btk = *Bacillus thuringiensis* subsp. *kurstaki*

^{††} billion Cabbage Looper Units (CLU)

Table 2. Proposed Wisconsin *Lymantria dispar* mating disruption (MD) treatment sites for 2022. Blocks named by county.

Block Name	Treatment	Dosage/acre [†]	Applications	Treatment Acres
Barron11	MD	15g	1	8,437
Barron12	MD	15g	1	3,016
Barron13	MD	15g	1	7,101
Bayfield11	MD	15g	1	2,283
Buffalo11	MD	15g	1	4,062
Chippewa11	MD	15g	1	4,578
Chippewa12	MD	15g	1	3,002
Chippewa13	MD	15g	1	1,409
Dunn11	MD	15g	1	11,734
Dunn12	MD	15g	1	5,193
Dunn13	MD	15g	1	10,409
Dunn14	MD	15g	1	801
Dunn15	MD	15g	1	2,722
Dunn16	MD	15g	1	6,853
Dunn17	MD	15g	1	1,390
Dunn18	MD	15g	1	2,208
Grant11	MD	15g	1	7,110
Grant12	MD	15g	1	1,491
Grant13	MD	15g	1	3,181
Lafayette11	MD	15g	1	7,389
Lafayette12	MD	15g	1	1,130
Pepin11	MD	15g	1	3,710
Rusk11	MD	15g	1	8,395
Rusk12	MD	15g	1	2,029
Rusk13	MD	15g	1	8,059
Rusk14	MD	15g	1	1,382
Rusk15	MD	15g	1	2,654
Sawyer11	MD	15g	1	3,013
Trempealeau11	MD	15g	1	4,575
Trempealeau12	MD	15g	1	922
Vernon11	MD	15g	1	989
Washburn11	MD	15g	1	18,027
Total MD				149,254

[†]15 grams active ingredient disparlure

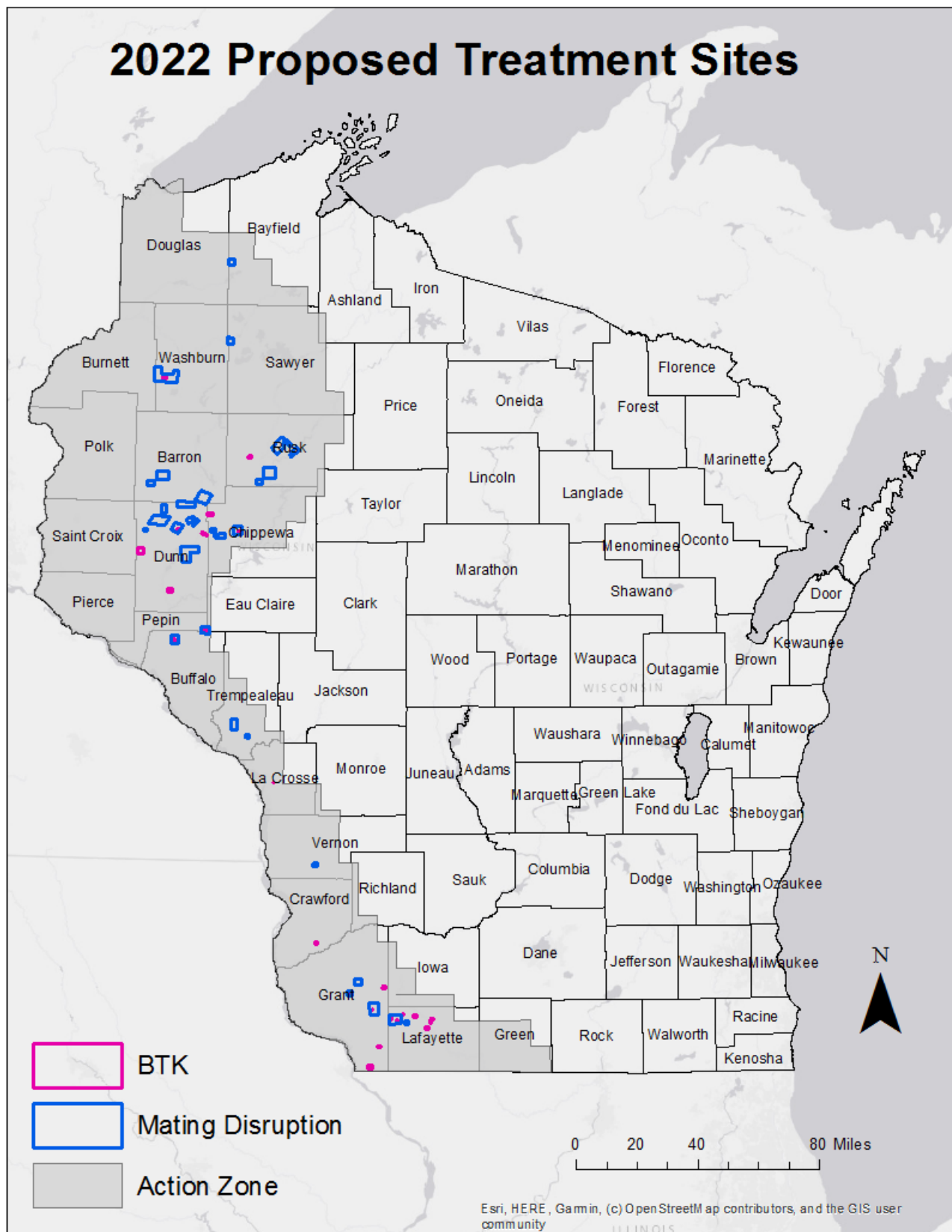


Fig. 1. Proposed Slow-The-Spread *Lymantria dispar* treatment sites for 2022 in Wisconsin and the 2022 Action Zone.

1.4 Decisions to be Made and Responsible Officials

The proposed alternative in this document requires participation by the Forest Service, S&PF, as a cooperator with the Wisconsin DATCP. The responsible official for the Forest Service, S&PF must decide the following:

- Should there be a cooperative treatment program, and if so, what type of treatment options should be used?
- Is the proposed action likely to have any significant impacts requiring further analysis in an Environmental Impact Statement (EIS)?

The responsible official for the Forest Service, S&PF is:

Gina Jorgensen, Field Representative
USDA Forest Service, State & Private Forestry
1992 Folwell Avenue
St. Paul, MN 55108

The responsible official for the Forest Service, S&PF will make a decision before early May to ensure timely implementation for an effective program that meets the state's objectives on state and private lands if an action alternative is selected. This decision is not subject to appeal. If there are no significant impacts, this will be documented in a Decision Notice and Finding of No Significant Impact (FONSI) or other appropriate decision document, issued by the responsible official. If significant environmental impacts are found and the project is to continue, an Environmental Impact Statement (EIS) would be prepared.

The responsible official for the National Park Service, Saint Croix National Scenic Riverway is:

Superintendent
National Park Service, St. Croix National Scenic Riverway
401 N. Hamilton St.
St. Croix Falls, WI 54024

The responsible official for the Saint Croix National Scenic Riverway will make a decision on National Park Service lands if an action alternative is selected.

Approximately 1,073 acres of U.S. Department of the Interior-National Park Service lands are proposed for treatment with mating disruption. These NPS acres are all within the Sawyer11 treatment block along the St. Croix National Scenic Riverway. While USFS S&PF and NPS will share the same EA, the NPS will issue a separate decision document for treatment on their lands, to be signed by their designated Responsible Official.

The responsible official for implementing the STS *L. dispar* program is:

Brian Kuhn, Acting Administrator
Division of Agricultural Resource Management
Wisconsin DATCP
P.O. Box 8911
Madison, WI 53708

1.5 Scope of the Analysis

Since 1996, the USDA has carried out its *L. dispar* management responsibilities through the Forest Service and Animal and Plant Health Inspection Service (APHIS) and pursuant to a programmatic decision based on a 1995 environmental impact statement (EIS) for *L. dispar* management. The Record of Decision (ROD) for that EIS was signed in January, 1996. It allowed three management strategies: suppression, eradication, and slow the spread. The 1995 EIS was updated with a final supplemental environmental impact statement (SEIS), titled “Gypsy Moth Management in the United States: A Cooperative Approach,” dated August, 2012. The ROD for the SEIS was signed by the Forest Service in November 2012. It maintains the three strategies of suppression, eradication and slow the spread. These strategies depend upon the infestation status of the area: generally infested, non-infested, and transition. The counties involved in this environmental assessment (EA) are all within areas considered non-infested or transition.

Implementation requires that site-specific environmental analysis be conducted and public input gathered to identify and consider local issues before any federal slow the spread projects are authorized and implemented. Site-specific analyses are tiered to the programmatic SEIS and documented in accordance with Agency National Environmental Policy Act (NEPA) implementing procedures. As part of the analyses conducted for the SEIS, human health and ecological risk assessments were prepared (SEIS, Volumes III and IV). The purpose of tiering is to eliminate repetitive discussions of the issues addressed in the SEIS (40 CFR, 1502.20 and 1508.28 in Council on Environmental Quality, 1992).

This EA provides a site-specific analysis of the alternatives and environmental impacts of treating *L. dispar* populations. The 57 proposed sites for treatment in 2022 include portions of Bayfield, Barron, Buffalo, Burnett, Chippewa, Crawford, Dunn, Eau Claire, Grant, La Crosse, Lafayette, Pepin, Rusk, Sawyer, Trempealeau, Vernon, and Washburn counties in Wisconsin. Land ownership is largely private with some state, federal, and other public ownership.

1.6 Summary of Public Involvement and Notification

The National Environmental Policy Act requires public involvement and notification for all projects utilizing federal funds that may have an effect on the human environment (40 CFR, 1506.6 in Council of Environmental Quality 1992).

The Wisconsin Cooperative Spongy Moth Program has been seeking public input since 1990. During that time, numerous public meetings have been held annually in areas of the state where treatments have been conducted. These meetings have been scheduled with public officials and the public.

In 2022, public meetings were not held due to concerns of COVID-19 transmission. Online video content was released in early March in concurrence with postcard mailings to property owners within and adjacent to treatment sites to provide a venue for public review and comment. The scoping process also involved numerous press releases, newspaper, radio and television news stories, and postings on the DATCP website for treatment information: ([DATCP Home Spongy Moth Aerial Spray \(wi.gov\)](https://datcp.wi.gov/Pages/Programs_Services/SMAerialSpray.aspx)) (https://datcp.wi.gov/Pages/Programs_Services/SMAerialSpray.aspx).

After the proposed treatment sites were chosen for 2022, press releases announcing the state’s plans were distributed. The first press release on March 9th announced the overall plans and invitation for public comment. A second press release in late April will announce the Btk treatments. A third press release will go out two weeks

before MD treatments begin. People also will be referred to the website or encouraged to call the program's hotline (1-800-642-MOTH). Phone calls to the *L. dispar* Hotline and e-mails received in the *L. dispar* Inbox were recorded and filed in the Administrative Record. During the spray season, each day's treatment plan, upcoming plans and treatment accomplishments are available on the hotline, the web, and via Twitter, Facebook, and the GovDelivery email system.

Packets of information about *L. dispar*, Btk, and MD would be mailed and/or emailed to county public health departments, sheriff departments, town chairpersons, county clerks, city and school administrators and other local officials before sending the press release. Additionally, these entities would be contacted one or two days prior to every treatment in their respective areas by email or phone.

During the course of the treatment season, DATCP's public information team responds to interview requests from media, including newspapers, and television and radio stations. Information about Wisconsin's *L. dispar* program also is distributed to the public at several large public events held throughout the year.

Information gathered from the public during 2022 and from public meetings held in previous years, along with material collected from resource professionals, industry, and environmental groups was used to develop issues and concerns related to this project. Two broad categories were developed: (1) issues used to formulate alternatives, and (2) other issues and concerns.

1.7 Issues Used to Formulate the Alternatives

Each of the major issues is introduced in this section. Discussion pertaining directly to each issue as it relates to the alternatives can be found in Chapters 2.0 and 4.0.

Issue 1. Human Health and Safety. Four major concerns exist under this issue: (1) the risk of an aircraft accident, (2) the risk of a pesticide spill, (3) the direct risk of Btk or MD exposure to humans, and (4) the effect of future *L. dispar* outbreaks on people.

Issue 2. Effects on Non-target Organisms and Environmental Quality. Will the use of Btk or MD affect organisms other than *L. dispar*? Also, the possible effects of spraying Btk or applying MD must be discussed in conjunction with the possible effects that might occur if *L. dispar* becomes established.

Issue 3. Economic Impacts of Treatment vs. Non-Treatment. *Lymantria dispar* outbreaks can have significant economic impacts due to effects on the timber resource, nursery and Christmas tree producers and recreational activities. Funding sources to pay for management of this insect will need to be developed. Furthermore, Wisconsin's treatment efforts will delay the detrimental impacts on other neighboring states. Those states and others, along with APHIS can impose regulatory restrictions on forest and nursery products and recreation vehicles to reduce the likelihood of long distance spread from known infested areas.

Issue 4. Likelihood of Success of the Project and the Wisconsin Program. (1) What is the likelihood of slowing the spread of *L. dispar*? (2) How does that likelihood affect the alternatives proposed?

1.8 Other Issues and Concerns

Other issues and concerns were used to develop mitigating measures, management requirements and constraints. The issues and concerns are posed as questions below and answered in Appendix A.

- How does Btk affect *L. dispar* and what happens to it in the environment?
- Are biological control tactics being considered in Wisconsin?
- What is done to maintain privacy for residents during post-treatment trapping projects on private property?
- Will children going to school be subject to spraying?
- Will Btk or mating disruptant spot car finishes and houses?
- What are the inert components in Btk formulations?

1.9 Summary of Authorizing Laws and Policies

Federal

Authorization to conduct treatments for *L. dispar* infestations is given in the Plant Protection Act of 2000 (7U.S.C. section 7701 et. seq.).

The Cooperative Forestry Assistance Act of 1978 provides the authority for the USDA and state cooperation in management of forest insects and diseases. The law recognizes that the nation's capacity to produce renewable forest resources is significantly dependent on non-federal forestland. The 2018 Farm Bill (P.L. 115-334, Sec 8 [16 U.S.C. 2104]) reauthorizes the basic charter of the Cooperative Forestry Assistance Act of 1978.

The Forest Service and APHIS cooperate on state *L. dispar* projects based on a Memorandum of Understanding (1989) between the two federal agencies.

The National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190), 42 USC 4321 et. seq. requires a detailed environmental analysis of any proposed federal action that may affect the human environment.

The Federal Insecticide, Fungicide and Rodenticide Act of 1947, (7 USC 136) as amended, known as FIFRA, requires insecticides used within the United States be registered by the United States Environmental Protection Agency (EPA).

Section 7 of the Endangered Species Act of 1973, as amended (16 USC 1531 et. seq.) prohibits federal actions from jeopardizing the continued existence of federally listed threatened or endangered species or adversely affecting critical habitat of such species.

Section 106 of the National Historical Preservation Act and 36 CFR Part 800: Protection of Historic Properties requires the State Historic Preservation Officer be consulted regarding the proposed activities. The State Historical Society of Wisconsin-Division of Historic Preservation has deemed treatment activities to not meet the definition of undertakings for their review process.

USDA Departmental Gypsy Moth Policy (USDA 1990) assigns the Forest Service and APHIS responsibility to assist states in protecting non-federal lands from *L. dispar* damage.

Executive Order #12898. Consistent with this Executive Order, the Forest Service considered the potential for disproportionately high and adverse human health or environmental effects on any minority or low-income populations. The proposed treatment sites have been determined based on *L. dispar* finds using STS protocols. The proposed treatment itself will have minimal effects, and it will not have disproportionate effects to any minority or low-income population.

State

DATCP has state statutory authority [ss.94.01 (4)] to conduct detection and control projects for plant pests in Wisconsin. As a cooperator, DATCP is responsible for program implementation, assessment and analysis. DATCP and the Forest Service will jointly conduct treatment and post-treatment evaluation.

Wisconsin endangered and threatened species within proposed treatment areas must be identified (ss. 29.604, NR 27).

Wisconsin state law requires an environmental assessment for the proposed use of pesticide or biological control agents (ATCP 3). This environmental analysis will meet the requirements of both federal and state environmental laws.

Aerial applicators must meet Wisconsin pesticide law (ATCP 29) to provide safe, efficient, and acceptable application of pesticides.

This project will be conducted in accordance with the National Pollutant Discharge Elimination System (NPDES) requirements and is operating under Wisconsin General Permit # WI-0064572-1 (Expires 30-Sept-2023) and is reissued annually.

2.0 Alternatives Including the Proposed Action

Alternatives are developed in this chapter. Some alternatives are eliminated from further consideration, while others are selected for detailed consideration.

2.1 Process Used to Formulate the Alternatives

The Record of Decision (ROD) for the SEIS that this document is tiered to maintains the three strategies for *L. dispar* management (eradication, slow the spread, and suppression) that were allowed in the 1995 *L. dispar* management EIS. Therefore, the Forest Service can assist in funding and carrying out slow the spread projects. The ROD for the SEIS adds the insecticide tebufenozide to the previous list of 6 approved treatments from the 1995 EIS. Therefore, in 2022 seven treatments can be considered for use in developing treatment alternatives under the slow the spread strategy: MD; mass trapping; sterile insect technique; and the insecticides tebufenozide, diflubenzuron, Btk, and Gypchek.

Information pertinent to developing alternatives for managing *L. dispar* in Wisconsin have been solicited from a number of groups: Wisconsin DATCP and DNR, University of Wisconsin, APHIS, Forest Service, other interested parties and the public (see 6.0 Persons and Agencies Consulted). In Wisconsin, management alternatives were developed and have been re-evaluated on numerous occasions since the early 1990s when *L. dispar* populations were becoming more widespread in the state.

2.2 Treatment Options Eliminated from Detailed Study

The following treatment options that were available under the SEIS were eliminated from consideration:

Diflubenzuron (Dimilin). The label for diflubenzuron (Dimilin) prohibits its use over wetlands and directly to water. Treatment sites contain ponds, lakes, marsh, rivers and/or wetlands. Therefore, Dimilin is not considered for this project. In future projects, it may be evaluated for use.

Tebufenozide (Mimic). The label for Tebufenozide (Mimic) prohibits its use over wetlands and water. Ponds, lakes, marshes, rivers and/or wetlands are present in some treatment areas. Therefore, Mimic is not considered for this project. In future projects, it may be evaluated for use.

Gypchek (Nucleopolyhedral Virus). Gypchek has been used in previous years in Wisconsin in some treatment locations. This viral insecticide is very specific to *L. dispar* caterpillars. Because of its specificity it is recommended for use on sites where *L. dispar* numbers are relatively high and rare butterfly or moth species are likely to be feeding as caterpillars. Gypchek is a possible alternative to Btk treatments on these types of sites. In 2022, none of the treatment blocks overlap with known locations of rare, threatened or endangered Lepidoptera and therefore Gypchek use is not proposed.

Sterile insect technique. The SEIS documents the use of sterile insects for elimination of isolated *L. dispar* populations. It also documents the obstacles of using this alternative: the limited release period; need to synchronize production of mass quantities of sterile pupae; and the logistical difficulties of repeated release over a 4-week period (SEIS, Appendix A, pp. 7-8). Giving consideration to these obstacles, sterile insect release is not considered for this project. In future projects, it may be evaluated for use.

Mass trapping. This option was eliminated for three reasons. First, the cost of mass trapping is significantly higher than aerial Btk or MD applications. Second, the logistics for placing and maintaining nine traps per acre—the recommended number — over large infestations is extremely difficult. And third, control over large areas by this method is infeasible.

2.3 Alternatives Considered in Detail

Alternative 1. THE NO ACTION ALTERNATIVE

The Forest Service, S&PF would not cooperate with Wisconsin DATCP in conducting *L. dispar* Slow-the-Spread treatments in 2022. This would include no financial assistance for the treatment proposal. Local *L. dispar* populations would likely build and spread to surrounding areas. This is not a preferred alternative because damage and regulatory action would occur sooner than if the proposed alternative is selected.

Alternative 2. THE PROPOSED ALTERNATIVE

The Forest Service, S&PF and the Wisconsin DATCP would cooperate on 57 proposed treatment areas in 2022 — using Btk on 25 sites, and MD on 32 sites (Tables 1 & 2). The decision to apply Btk versus MD was carefully made through a series of detailed meetings by a panel comprised of experts from WI DATCP and the Forest Service, who considered the following with regard to each proposed treatment area: presence of *L. dispar* life stages (e.g. egg masses, pupal cases), numbers of male moths captured in traps, and previous treatments in the treatment area. Following those three guidelines, the panel of experts chose Btk over MD for a treatment area deemed to have a *L. dispar* population too high for MD to be a successful treatment. Btk and MD would be applied by low-flying fixed-wing aircraft.

This alternative proposes that cooperative efforts would be made by the Forest Service, S&PF for STS treatments on approximately 163,491 acres at 57 sites in 17 counties.

The bacterial insecticide Btk would be applied twice per treatment site at all but one site, and a third time at Grant31, a localized heavily infested subset of Grant1. The Btk applications are at a dose of 24 billion Cabbage Looper Units (CLUs)/acre per application in 64 fluid oz. Applications would be made in May to mid-June during the time period when *L. dispar* early instar caterpillars are feeding. A proportion of acres (estimated at 10–15%) may be retreated if heavy rain occurs soon after an application.

The MD application would be in late June to the end of July, prior to the flight period of male *L. dispar*. The MD is applied at a rate of 15g active ingredient per acre and is applied once per treatment site.

2.3.1 Mitigating Measures that Apply to Alternative 2

Under this alternative, measures would be taken to mitigate possible treatment impacts. Specific safety procedures and guidelines are presented in the 2022 Safety Plan - WI Cooperative Spongy Moth Program and are available from DATCP.

One of the primary functions of the Cooperative Spongy Moth Program in conducting aerial spray operations is to make sure the safest possible project is conducted and the least possible impact to non-target organisms occurs. To achieve these objectives, the following has been done or would be done if this alternative was selected:

- In-person public information meetings are normally scheduled in mid-March to inform the public about the proposed action, answer questions, and record any concerns (see section 1.6). Those meetings were cancelled due to the COVID-19 pandemic. Virtual content (in lieu of open house public meetings) has been posted on the DATCP website, and questions and concerns can be submitted by email or by calling the *L. dispar* hotline. Notification of these materials and an invitation to review and comment was made to elected officials and through news releases to local newspapers, radio and television stations. Additionally, postcards inviting review and comment on treatment plans were mailed to all residents on USPS carrier routes intersecting with treatment blocks.
- Residents who reside on USPS carrier routes that are within proposed treatment sites would be notified of the proposed action via direct mailing, approximately two to three weeks prior to application. The mailing would inform residents of the type of program that is planned.
- Information would include the type of aircraft to be used, how low the planes will be flying, the type of product to be used, why treatment is being done and a toll-free telephone number (1-800-642-MOTH) to call and website, [DATCP Home Spongy Moth \(wi.gov\)](https://www.wisconsin.gov/datcp/home-spongy-moth), to go to for more information and to address questions or concerns about any ongoing project activities.
- Residents would be given the option of obtaining advance spray notification by calling the 1-800-642-MOTH number, which will be updated daily with the next planned spray activities.
- Site visits to all treatment blocks would be conducted in March to identify potential or emerging aerial hazards (e.g. cellular towers or windmills) or public outreach concerns (e.g. schools or daycare centers). These locations are cataloged and incorporated into aerial applicator maps and PIO notification lists.
- During the spring semester of the school year (May and early June), aerial applications would be shut down from 7:15 AM–8:30 AM in Btk treatment blocks that are considered urban areas and have schools within the treatment boundary. There are no schools located within a Btk treatment block in 2022. MD treatments occur in late June–early July when schools are out of regular session.
- DATCP would have personnel at airports to ensure that the Btk and MD applications are occurring in accordance with label direction. In addition, aerial observers would be used to ensure that only designated areas are treated.
- Pilots would be thoroughly briefed on treatment site locations.
- Aircraft would be guided using differential global positioning systems (DGPS) with a real-time display. Near real time flight following software are used at the command center so program managers can monitor the spray program.
- Pilots would be instructed not to treat open water such as lakes, ponds and visible rivers. They are instructed to treat forested areas.
- Ground personnel would be equipped with two-way radios to communicate with observation aircraft, which can, in turn, communicate with spray aircraft.

- Spraying would be done in weather conditions that minimize drift.
- Label directions would be followed. Mixers, loaders and pilots would wear protective clothing when required.
- Tankers with pesticide at mix/load areas would be guarded and/or secured to prevent vandalism or tampering.
- Consultations with Wisconsin DNR Bureau of Natural Heritage Conservation (formerly the Bureau of Endangered Resources) and the US Fish and Wildlife Service were done to determine if treatment sites might affect state or federally listed threatened and endangered species. Results are discussed in Section 3.2.

2.4 Comparative Matrix Summarizing the Consequences of the Alternatives

ISSUE	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: PROPOSED ACTION
ISSUE 1 Human Health and Safety	With no federal funding, the state would still likely have a treatment program, though reduced in size. Therefore, the discussion under Alt. 2 would apply here as well. <i>L. dispar</i> itself can create health problems.	Risk to human health from Btk or MD is minimal. The risk of an aircraft crashing and/or a serious pesticide spill occurring does exist, but it is slight. Measures will be taken to minimize the chance of an accident.
ISSUE 2 Effects on Non-target Organisms And Environmental Quality	Future outbreaks would change some local forest ecosystems by reducing the oak and aspen components and opening stands to periods of increased light penetration. Some native insects would be directly impacted by loss of food and habitat due to leaf loss caused by <i>L. dispar</i> feeding.	MD is highly specific to the <i>L. dispar</i> . Btk would likely kill some non-target lepidopteran species in the treatment areas. However, this impact would likely be short-term since the proposed treatment areas should be re-colonized from neighboring untreated areas. No other non-target impacts should occur.
ISSUE 3 Economic and Political Impacts vs. Non-Treatment	Regulatory activity would need to be considered in infested counties. More widespread infestations would result in economic losses to the forestry and tourism industries. Funds will need to be obtained to deal with future suppression projects.	Since known populations are being treated, the need for quarantine restrictions would be delayed. Future projects are still likely and funding sources will need to be developed. Spray projects are often controversial and some complaints, comments and questions will circulate into the political and economic arenas.
ISSUE 4 Likelihood of Success of the Project and the State Program	<i>Lymantria dispar</i> populations would likely expand in any untreated area making future control more difficult and costly.	Treatment should result in success in the treatment sites. However, more infestations are likely to be found and new infestations will occur. This would likely result in future projects. Eventually this insect will become established across Wisconsin even if Alt. 2 is followed. However, statewide spread and buildup should be significantly delayed by following this alternative.

3.0 Affected Environment

3.1 Description of the Proposed Treatment Sites

All sites are visited in late winter to characterize land type, identify aerial hazard, and identify unanticipated site issues. All sites are overlaid with any potential conflicts, including towers, power lines, schools, registered organic farms, daycare centers, or deer farms (see Appendix B).

Table 3. Description of the 2022 proposed Btk and MD sites. Land use is divided into five general categories: agriculture (AG), forest (F), rural residential (RR), public land (PL), and urban (U). Site descriptions include further detail on land use, population density (High: H, Medium: M, Low: L), and the presence of schools.

Btk Sites				
Spray Site	Land Use	Population Density	Urban (Y/N)	Schools (Y/N)
Buffalo1	A/F	L	N	N
Chippewa1	A/RR	L	N	N
Chippewa2	A/F	L	N	N
Crawford1	F/PL	L	N	N
Dunn1	A/RR	L	N	N
Dunn2	A/RR	L	N	N
Dunn3	A/PL/RR	L	N	N
Dunn4	A/RR	L	N	N
Grant1	A/RR	L	N	N
Grant2	A	M	N	N
Grant3	A	L	N	N
Grant31	A/RR	L	N	N
Grant4	A	L	N	N
Grant5	A/RR	M	N	N
LaCrosse1	U	H	Y	N
Lafayette1	A/RR	L	N	N
Lafayette2	A	L	N	N
Lafayette3	A	L	N	N
Lafayette4	A	L	N	N
Lafayette5	A	L	N	N
Lafayette6	A	L	N	N
Lafayette7	A	L	N	N
Pepin1	A/RR	L	N	N
Rusk1	A	L	N	N
Washburn1	A/F/RR	L	N	N

MD sites

Spray site	Land Use	Population Density	Urban (Y/N)	Schools (Y/N)
Barron11	A/F	L	N	N
Barron12	A/F/RR	L	N	N
Barron13	A/F/RR	L	N	N
Bayfield11	F	L	N	N
Buffalo11	A/F	L	N	N
Chippewa11	A/RR/U	M	Y	Y
Chippewa12	A/RR	L	N	N
Chippewa13	A/RR	L	N	N
Dunn11	A/RR/U	H	Y	Y
Dunn12	A/PL/RR	L	N	N
Dunn13	F/PL/RR	L	N	N
Dunn14	A/RR	L	N	N
Dunn15	A/RR	L	N	N
Dunn16	A/RR	L	N	N
Dunn17	A/RR	L	N	N
Dunn18	A/RR	L	N	N
Grant11	A/RR	L	N	N
Grant12	A/RR	M	N	N
Grant13	A/RR	M	N	N
Lafayette11	A	L	N	N
Lafayette12	A	L	N	N
Pepin11	A/RR	L	N	N
Rusk11	A/F	L	N	N
Rusk12	F	L	N	N
Rusk13	F/RR	L	N	N
Rusk14	F/RR	L	N	N
Rusk15	A/F/U	H	Y	Y
Sawyer11	F/RR	M	N	N
Trempealeau11	A/F/PL	L	N	N
Trempealeau12	RR/U	M	Y	Y
Vernon11	A	L	N	N
Washburn11	A/F/RR/U	H	Y	Y

The majority of treatment sites occur on rural forested or agricultural landscapes with low population density. There are some sites with high population densities (Lacrosse1, Dunn11, Rusk15, and Washburn11) and these are addressed with specific attention to public information and treatment timing. Advanced treatment notifications

and outreach are sent directly to municipality, city, and public school officials in urban areas. Treatment operations are structured to time applications for the early morning, to minimized disturbance.

3.2 Threatened and Endangered Species

The Wisconsin DNR Bureau of Natural Heritage Conservation (WI BNHC) reviews the proposed treatment activities. The WI BNHC evaluates the program in regard to state and federally listed threatened and endangered species, as well as species considered rare or of special concern by the state, all cataloged in Wisconsin's Natural Heritage Inventory program. Copies of the correspondence with the WI BNHC are on file at WI DATCP. In the 2022 review, no required changes to the proposed treatment proposal were required or suggested by the WI BNHC.

Section 7 of the Endangered Species Act prohibits federal actions from jeopardizing the continued existence of federally listed threatened or endangered species or adversely affecting critical habitat of such species. This project is considered a federal action. To avoid any negative impacts to federally listed endangered, threatened, candidate species, or their critical habitat, the Forest Service, S&PF did consult with the US Fish and Wildlife Service (FWS). Individual treatment sites along with proposed methods were evaluated for potential concerns. An informal consultation between the Forest Service, S&PF and FWS determined that no adverse effects were anticipated for any federally listed species. Copies of the correspondence with the Forest Service, S&PF and FWS are on file at DATCP.

3.3 Cultural and Historical Resources

The National Historic Preservation Act provides specific guidance for the preservation of prehistoric and historic resources when federal actions may have an adverse impact on these resources. The Wisconsin Historical Society stated that the project, as described, should not affect any properties that are listed in, or known to be eligible for inclusion in, the National Register of Historic Places (Letter on file with WI DATCP, 2022).

4.0 Environmental Consequences

This section is the scientific and analytic basis for the comparison of alternatives. It describes the probable consequences (impacts, effects) of each alternative on selected environmental resources. We assume both federal and state agencies act in agreement in selecting the same alternative.

4.1 Comparison of Environmental Consequences of Alternatives Considered in Detail

Issue 1. Human Health and Safety

Alternative 1. For this alternative, there would be no cooperative project, therefore risk of an aircraft accident or human contact with the mating disruptant or Btk would not exist. However, future impacts by *L. dispar* to human health will occur sooner under Alternative 1 than if treatments are used to slow the spread of these *L. dispar* populations. *L. dispar* outbreaks have been associated with adverse human health effects, including skin lesions, eye irritation, and respiratory reactions (SEIS, Appendix L, pp. 3-1 to 3-4). *Lymantria dispar* caterpillars can become a serious nuisance that can cause psychological stress or anxiety in some individuals (SEIS, Appendix L, pp. 3-4 to 3-5).

Alternative 2.

Human exposure to Btk provides little cause for concern about health effects. A detailed analysis of the risks posed to humans by Btk, called Human Health Risk Assessment, was conducted for the SEIS (Volume III, Appendix F). "There is no information from epidemiology studies or studies in experimental mammals to indicate *B.t.k.* will cause severe adverse health effects in humans under any set of plausible exposure conditions" (SEIS, Volume III, Appendix F, p. 3-19). The only human health effects likely to be observed after exposure to Btk. involve irritation of the skin, eyes, or respiratory tract (SEIS, Volume III Appendix F, p. 3-19 to 3-32). "Given the reversible nature of the irritant effects of *B.t.k.* and the low risks for serious health effects, cumulative effects from spray programs conducted over several years are not expected" (SEIS, Volume III, Appendix F, p. 3-32). Glare and O'Callaghan (2000) provide a comprehensive review of *Bacillus thuringiensis*, including Btk. Glare and O'Callaghan (2000) conclude with this statement, "After covering this vast amount of literature, our view is a qualified verdict of safe to use."

The toxicity of insect pheromones used in mating disruption to mammals is relatively low and their activity is target-specific. Therefore, the EPA requires less rigorous testing of these products than of conventional insecticides. Risk to human health due to exposure to disparlure, the active ingredient used in *L. dispar* mating disruption applications, is discussed in the Disparlure Human Health Risk Assessment in the SEIS (Appendix. H, pp. 3-1 to 3-10). Once absorbed through direct contact, disparlure is very persistent in humans, and individuals exposed to disparlure may attract adult male moths for prolonged periods of time. This persistence is viewed as a nuisance and not a health risk (SEIS, Appendix. H, pp. 3-9). In acute toxicity tests, disparlure was not toxic to mammals, birds, or fish (SEIS, Appendix H, pp. 4-1 to 4-8) therefore no effects to human health are anticipated.

A slight risk of an accident always exists when conducting aerial applications. Btk may be applied either one or two times; MD uses one application. To further reduce this risk, a detailed work and safety plan is required prior to program implementation, which outlines guidelines for aircraft inspections, product loading, and conditions for safe applications.

The effect of *L. dispar* outbreaks on humans would be delayed using this alternative.

Issue 2. Effects on Non-target Organisms and Environmental Quality

Both alternatives would have impacts on forest ecosystems in Wisconsin.

Alternative 1 - The “no action alternative” would likely result in a more rapid build-up of *L. dispar* populations and defoliation of susceptible forested areas, especially oak and aspen dominated forests. In other parts of the northeastern U.S., *L. dispar* outbreaks have changed the structure of some forest ecosystems by killing a portion of the oak component and encouraging tree species that *L. dispar* caterpillars avoid, such as red maple (SEIS, Chapter 4, pp. 4-10). *Lymantria dispar* outbreaks in North America have not resulted in widespread loss of oak, rather a subtle change in many locations towards a more mixed forest. In Wisconsin forests, maples and white pine should become more prevalent as *L. dispar* caterpillars focus their feeding on oaks and aspen. The SEIS notes that *L. dispar* infestations generally result in tree mortality losses of less than 15% of total basal area, with much of this occurring in oaks that are suppressed or intermediate in crown position at the time of widespread defoliation (Appendix L, p. 4-1).

Lymantria dispar defoliation and subsequent tree mortality can affect non-target organisms. This is discussed in some detail in the SEIS (Appendix L, and Chapter 4, Section 4.3). Widespread leaf loss caused by the feeding of millions of caterpillars and the loss of some trees, especially oak trees, has a variety of impacts on the environment. Some of these changes are detrimental to certain species and other species are favored by what occurs during and after *L. dispar* outbreaks. SEIS Chapter 4 (Section 4.3) discusses changes to soil condition, microclimate, water quality, water yield, acorn production, and other environmental factors that are impacted by the loss of leaf tissue, the waste material produced by large number of feeding caterpillars, and the tree mortality that can follow outbreaks. Some species of mammals, birds, terrestrial invertebrates, fish and aquatic invertebrates are negatively impacted by *L. dispar* related feeding. Other species, however, are either not impacted or find conditions altered to their benefit. As an example, acorn production can drop during and immediately following an outbreak, and this can reduce populations of white-footed mice. However, dead trees favor some species of birds that use dead wood as nesting sites or locations to forage for wood or bark-infesting insects that thrive in dead and dying trees.

Alternative 2 – Using Btk and mating disruption is likely to maintain the forest condition in the short term (5–10 years) by eliminating *L. dispar* populations in the treatment sites, thus keeping populations from expanding and causing defoliation. However, in the long term (10–15 years), *L. dispar* will likely become more widely distributed in western Wisconsin even if this alternative is followed (See Issue 4).

“Btk may indirectly help in maintaining existing forest conditions, water quality, microclimate, and soil condition by delaying *L. dispar* population increases” (SEIS, Chapter 4, p. 10). The risk of Btk to non-target organisms is discussed in the SEIS in a risk assessment found in Appendix F, and in Chapter 4 (pp. 10-15). Adverse effects due to Btk are unlikely in mammals. Btk effects in birds, plants, soil microorganisms, or soil invertebrates other than insects are not of plausible concern. The U.S. EPA classifies Btk as virtually nontoxic to fish. No toxicity data are available on amphibians, though other strains of Bt appear to have low toxicity to this group. Btk does not harm garden plants. In fact, it is a common garden insecticide used against caterpillars such as the cabbage looper.

Btk has been shown to be toxic to several species of target and non-target Lepidoptera (SEIS, Appendix F). Btk selectively kills members of the insect order Lepidoptera that are actively feeding as caterpillars at or soon after the period of application, though not all non-target Lepidoptera are as sensitive to Btk as is *L. dispar* (SEIS, Appendix F). Outside of the Lepidoptera, the negative impact of Btk on other insect orders is minor (SEIS,

Appendix F). It is, therefore, more “selective” than many insecticides that kill a wider array of insects. However, concerns do exist over its possible negative impact on native caterpillars, which may occur in the proposed treatment areas. A detailed discussion of Btk and non-target Lepidoptera is presented in the SEIS (Appendix F).

Disparlure may indirectly help in maintaining existing forest conditions, water quality, microclimate, and soil condition by delaying *L. dispar* population increases (SEIS, Chapter 4, p. 19). The Ecological Risk Assessment for disparlure (SEIS, Appendix H) notes that there is limited data available on the toxicity of disparlure but based on available data the toxicity profile in terrestrial animals does not suggest that disparlure is likely to cause adverse effects at plausible levels of exposure. Disparlure appears to be essentially nontoxic to mammals and birds. In addition, it is not likely to cause toxic effects in aquatic species. Disparlure can disrupt mating in some closely related species of moths other than *L. dispar*. However, all these species are Asian or Eurasian, and not known from North America. There is no basis for asserting that mating disruption would occur in other non-target species in North America, including non-target insects, specifically native Lepidoptera.

Issue 3. Economic Impacts of Treatment vs. Non-Treatment

Alternative 1 – If no treatments were applied, the likely action would be to implement quarantine in many of these counties during the next year. Quarantine would regulate movement of firewood, logs, other timber products, mobile homes, recreational vehicles, trees, shrubs, Christmas trees, and outdoor household articles. This would create a financial impact to industries that deal with these products.

If current populations are not treated, they will continue to reproduce and grow in size. Defoliation would become noticeable in the future, but it would be difficult to predict exactly when noticeable defoliation would occur. Requests for federal assistance to suppress *L. dispar* would be likely when defoliation occurs. Suppression projects are generally more expensive in total dollars than eradication projects because much larger areas are treated. The economic impact to state budgets would increase, as responsible agencies would need to administer and fund these suppression projects.

Following defoliation, negative financial impacts are likely to occur for recreational industries such as resorts and campgrounds. Homeowners, private woodland owners, and forest-based industries could be impacted by *L. dispar* treatment costs, tree mortality, and adverse human health effects.

Alternative 2 – If treatments are applied, regulatory action is not likely for these counties during the next year and the impacts listed under Alternative 1 would be delayed. Economic analysis from STS demonstrated the use of Btk, mating disruption and other STS technology reduced the spread of *L. dispar* by as much as 60% (Sharov et al. 2002, p. 32). Assessment of the economic feasibility of STS shows that over a 20-year period, the Benefit-Cost Ratio is 3:1, under conservative assumptions (Sills 2007).

Issue 4. Likelihood of Success of the Project

Alternative 1 – Male moth trapping results and other surveys do indicate that *L. dispar* populations are spreading into previously uninfested areas of western Wisconsin, Minnesota, and Iowa. These populations are very likely to persist, grow, and expand if no treatments are done.

Alternative 2 – Significantly reducing or locally eradicating *L. dispar* populations within the treatment sites using Btk or MD is likely. However, eradicating *L. dispar* from Wisconsin is not feasible. This is due to many factors, including the widespread nature of the known populations in the state, and the fact that future populations are likely to infest the state from other generally infested areas. This would likely result in future projects. However, this alternative is much more likely to slow the spread and buildup of defoliating populations across the state than the Alternative 1. The STS program has been evaluated since 1990 and has reported significant and consistent declines in spread rate (Sharov et al., 2002; Sharov and Liebhold, 1998, Tobin et al., 2004).

4.2 Summary of Alternatives Considered in Detail

Alternative 2 offers the greatest probability of meeting the objective. The short-term impact that applications of Btk might have on local non-target Lepidoptera populations must be compared to the long-term impacts that *L. dispar* infestations will have on the food sources for other insects and vertebrates. By identifying potential habitats of rare lepidopterans and using MD applications in those areas, this project should limit its effect on “sensitive” non-target lepidopterans. MD treatments make up over 90% of the proposed treatment acres in 2022.

Some tree mortality, especially of oak (*Quercus* spp.), will occur if *L. dispar* becomes established. The long-term trend in future stands with *L. dispar* present would be away from oaks toward forests containing species less preferred by *L. dispar*. This would most likely mean more red and sugar maple and pine in many areas. Change in forest composition is likely. In some areas this change may have positive effects, in other areas, negative effects.

Alternative 2 delays the immediate economic impacts created by a possible federal quarantine, and it offers the best chance for slowing the spread and buildup of *L. dispar* populations in the state. Thus, the economic and nuisance impacts associated with *L. dispar* should be delayed over a longer time period. This should allow the orderly development of a well-balanced program.

4.3 Cumulative Effects

The Wisconsin STS program is large in scale, with approximately 163,491 acres being proposed for treatment in 2022. This relatively large scale of treatment acres is one reason to be concerned about cumulative effects. Cumulative effects are the incremental impacts of the action when added to past, present, and reasonably foreseeable actions. Repeated Btk treatments in adjacent years would make cumulative effects more likely. The program attempts to minimize that concern by using a combination of Btk, Gypchek, and mating disruption treatments. Mating disruption and Gypchek are very specific to the *L. dispar*, and therefore, no cumulative effects would occur with these treatments. Over the last five years, approximately 90% of STS treatment acres in Wisconsin have either been treated with mating disruption or Gypchek. In 2022, approximately 149,254 acres (91%) of the proposed treated acres will be mating disruption. No Gypchek acres are planned in 2022.

In Btk treatment areas, cumulative effects are unlikely to occur when areas are not retreated in consecutive years. Over the last five years, more than 99% of the total acres in treatment sites have not been treated with Btk in the following year. Retreatment acres of Btk in the subsequent year is not substantial and usually a result of treatment failure the previous year. Analysis of all the counties considered for STS treatments reveals that < 1% of

the total acres in these counties are proposed to be retreated in 2022 from sites treated in 2021. We conclude that cumulative effects are very unlikely based on the information above.

5.0 List of Preparers

Christopher Foelker, *Lymantria dispar* Control Unit Supervisor, Wisconsin Department of Agriculture, Trade and Consumer Protection, Madison, Wisconsin.

EA Responsibility: Lead development for Environmental Assessment.

Experience and Education: Six years as WI *L. dispar* program manager; Ten years of experience in forest insect pest management and research. PhD, State University of New York-College of Environmental Science & Forestry-Entomology; MS, Northern Arizona University-Forestry; BS, University of Wisconsin-Forest Science.

Nick Clemens, GIS/GPS Coordinator, Wisconsin Department of Agriculture, Trade and Consumer Protection, Madison, Wisconsin.

EA Responsibility: Block Editing, Mapping, Acreage Summaries.

Experience and Education: Over twenty years involvement with the Wisconsin *L. dispar* Program. Post-graduate studies at University of Wisconsin – Madison, B.S.: University of Wisconsin – Stevens Point, Geography.

Steven Katovich, Forest Entomologist, USDA Forest Service, Forest Health Protection, St. Paul, Minnesota.

EA Responsibility: Participated in writing and reviewing the Environmental Assessment.

Experience and Education: 30 years of experience with the Forest Service as an entomologist and two years with the Wisconsin Department of Natural Resources. Ph.D., University of Minnesota in entomology; B.S., University of Wisconsin - Stevens Point, Forest Management.

Patrick Engelken, Forest Entomologist, USDA Forest Service, Region 9 State and Private Forestry, Forest Health Protection, St. Paul, Minnesota.

EA Responsibility: Participated in writing and reviewing the environmental assessment.

Experience and Education: 2 years of experience with the Forest Service as an entomologist, 1 year experience as a research technician at Michigan State University, M.S., Michigan State University in entomology; B.S., Washburn University, Biology.

6.0 Persons and Agencies Consulted

The Wisconsin Cooperative Spongy Moth Program has been ongoing since 1990. Multiple people have been contacted in years prior to 2022. The information, comments and concerns obtained from those people are still valid in many cases. Therefore, some of the names listed below were contacted well before 2022.

Individuals and Organizations Consulted for Technical Information

Pat Manthey, WI DNR

Cathy Carnes, USDI Fish and Wildlife Service (Retired)

Donna Leonard, USFS (Retired)

Tom Coleman, USFS, STS Program Manager

Andrea Diss-Torrance, WI DNR

Drew Feldkirchner, WI DNR-Bureau of Natural Heritage Conservation

Melody Walker, WI DATCP (Retired)

John Kyhl, USFS, Regional Pesticide Coordinator

Richard Reardon, USFS (Retired)

Stephen Nicholson, Valent BioSciences Corp. (Retired)

Jacques Dugal, Valent BioSciences Corp.

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APPENDIX A - Issues and Concerns not used to Formulate the Alternatives

How does Btk affect *Lymantria dispar* and what happens to it in the environment? Btk is a gram positive spore-forming, crystal-producing member of the bacterial genus *Bacillus*. The mode of action is complex. The larvae must ingest the Btk delta-endotoxin. The crystalline protoxin is dissolved and activated in the insect gut before exerting its effects. The high pH of the insect's gut and the insect's gut proteases dissolve and convert the inactive protoxin to an active toxin. The toxin then binds to specific receptors on the cells in the insect's gut. This disrupts the gut integrity and leads to the death of the insect from starvation and septicemia. A combination of bacterial infection and starvation usually cause the death of the larvae in 7-10 days. For a summary on Btk, a review article by Reardon et al. (1994)¹ specifically discusses Btk for managing *L. dispar*.

Studies indicate that Btk spores can persist in soil for several months depending on the soil type, soil flora, and other factors such as pH, moisture and solar radiation. Under favorable conditions, formulations of Btk that are presently available can remain viable against *L. dispar* on foliage for 7–10 days. Normally, however, Btk is quickly degraded by ultraviolet light and loses potency after 3-5 days. Btk rarely persists in aquatic environments for longer than a few weeks. A Btk environmental risk assessment can be found in the SEIS (Appendix F).

Are other biological control tactics being considered in the Wisconsin Cooperative Spongy Moth Program? A program of establishing natural enemies of *L. dispar* that could reduce the impact of this pest has been developed and is being implemented by the Wisconsin Cooperative Spongy Moth Program. Releases of parasites and a fungal disease of *L. dispar* have been done in Wisconsin since 1997. This program has been done largely in parts of the state considered infested with *L. dispar* (counties that are quarantined). Biological control is not a major effort in the eradication and STS programs because natural enemies are not considered a viable technique in eradication (eliminating) and slowing the spread of *L. dispar* populations.

Biological control agents are not released in Wisconsin without completion of a Wisconsin Environmental Assessment and finding of no significant impact by DATCP. If the biological agent is not present in Wisconsin, USDA-APHIS must also approve release.

What is done to maintain privacy for residents during post-treatment trapping projects on private property? Pheromone baited traps are used within the treatment sites to monitor success or failure. In many cases, this would entail entering private property to place and monitor traps.

Trappers will attempt to meet with residents at their door prior to setting traps. If a homeowner is adamant in not wanting a trap on their property, every effort will be made to place the trap in another location.

Will children going to school be subject to spraying? As discussed in the SEIS and in Section 4.1 of this document, Btk and mating disruption are considered safe for use around humans. However, since the potential for possible application onto school children exists, especially in urban areas during the time period when school buses are collecting students, measures have been prepared to reduce the likelihood of this occurring.

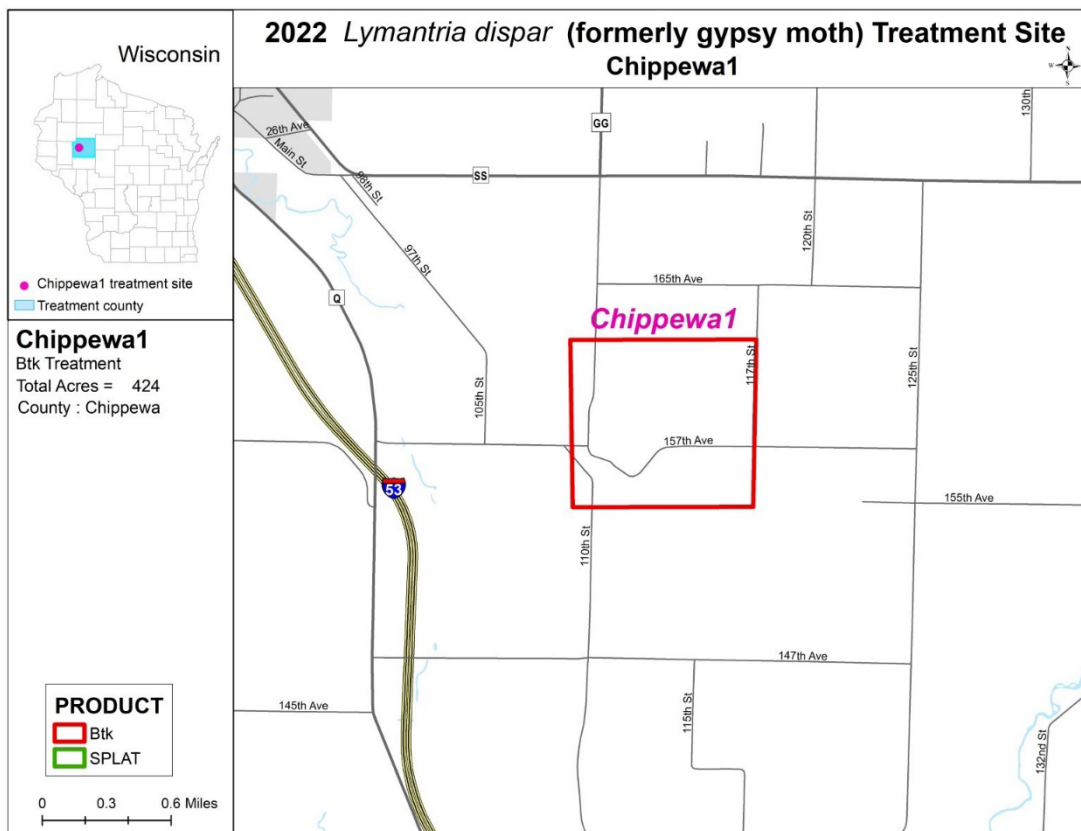
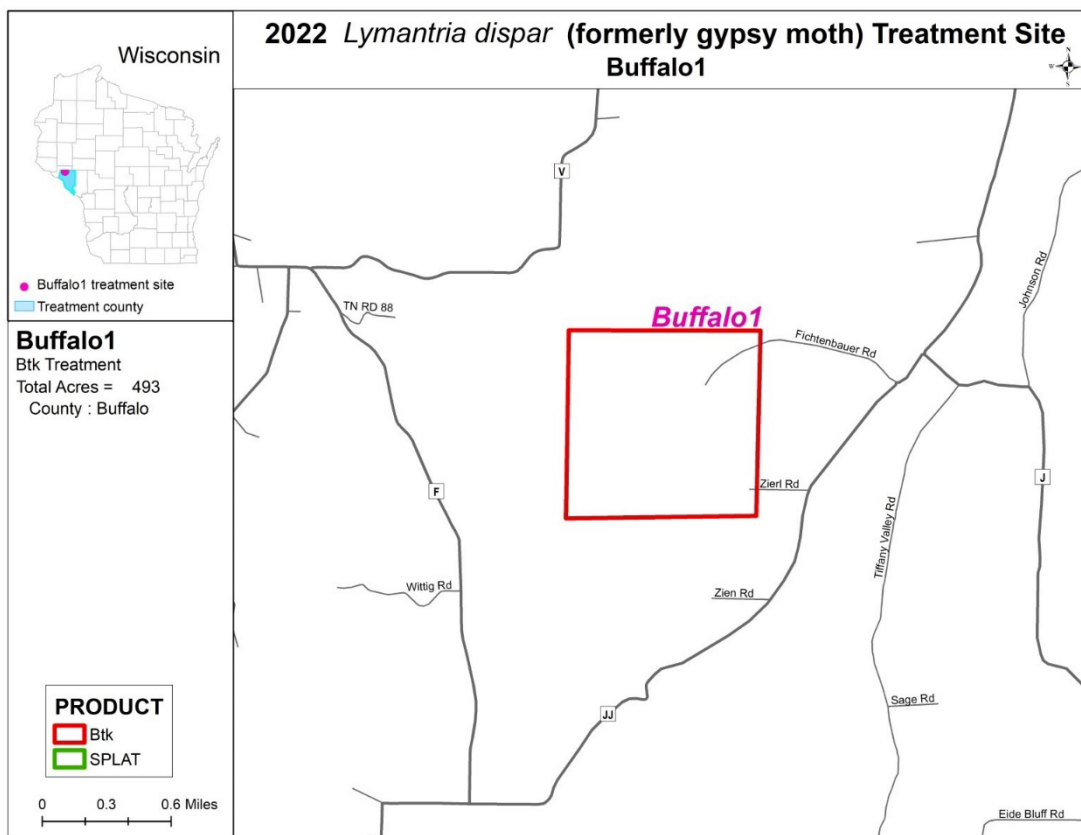
¹ Reardon, R., N. Dubois and W. McLane. 1994. *Bacillus thuringiensis* for managing gypsy moth: review. USDA Forest Service, National Center of Forest Health Management, FHM-NC-01-94, 32 pp.

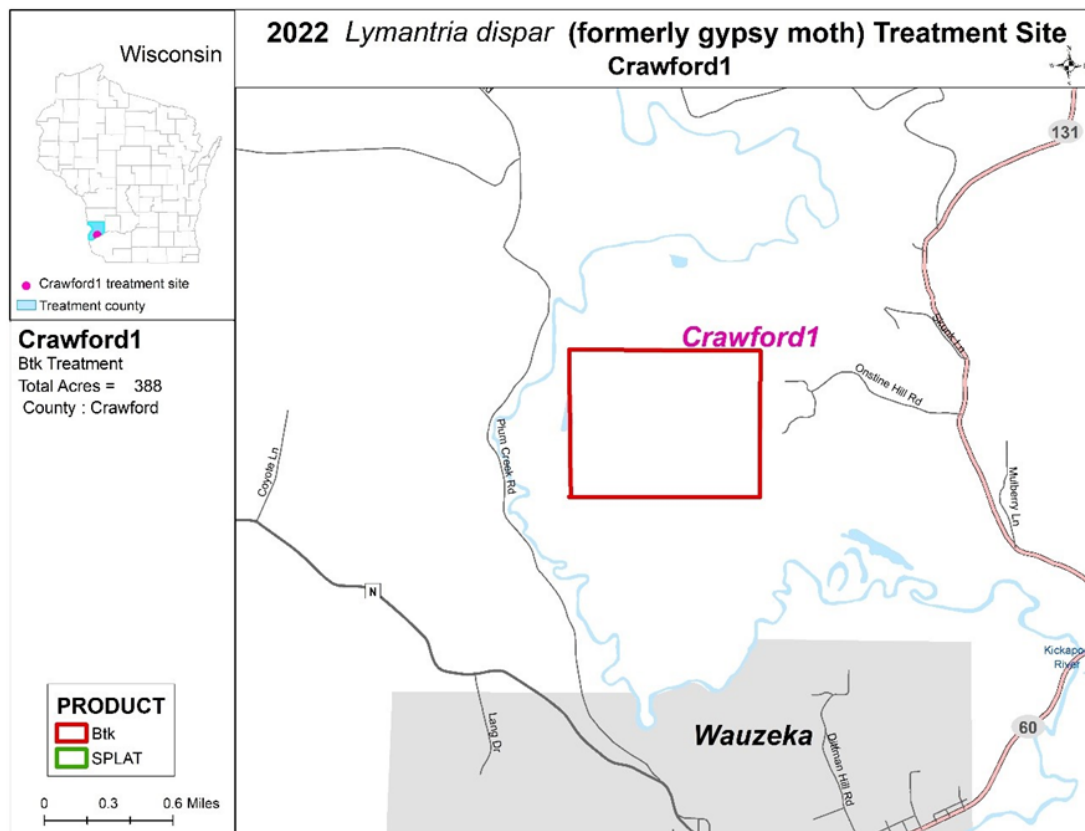
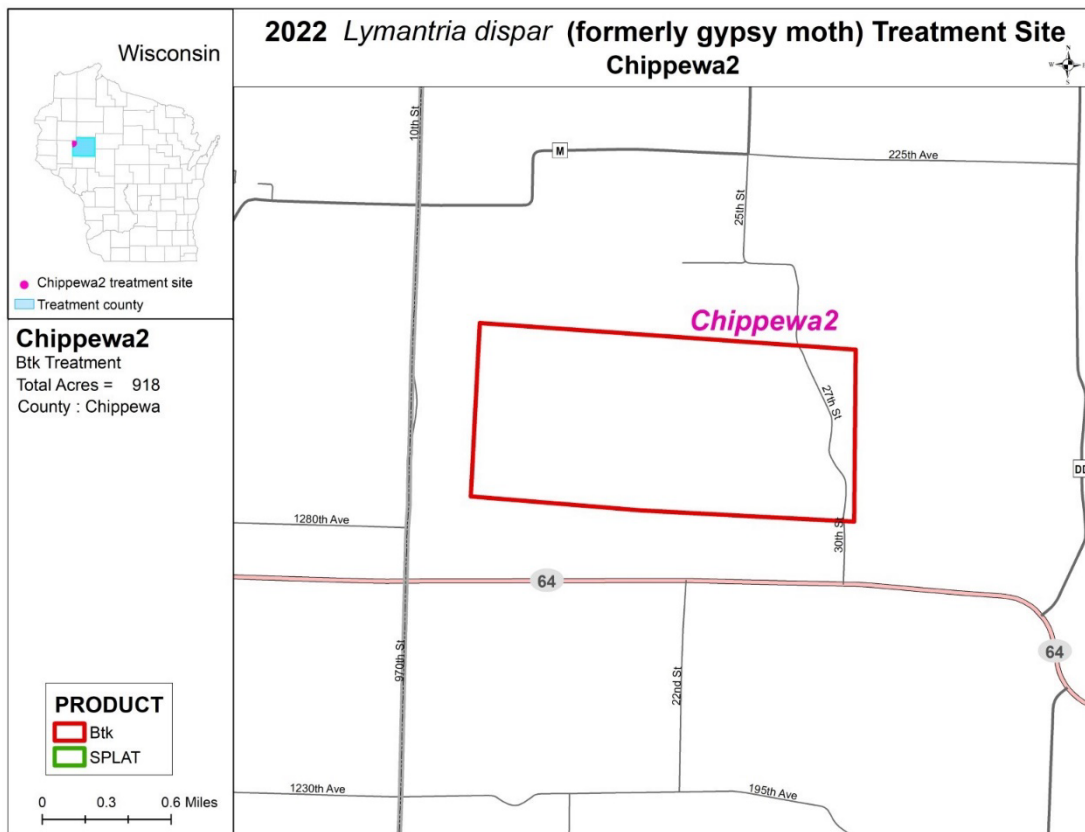
(Mitigating measure) During the month of May and the first week of June, aircraft operations will be shut down from 7:15 AM–8:30 AM in blocks with schools. Daily treatment operations will be complete prior to afternoon release of school children.

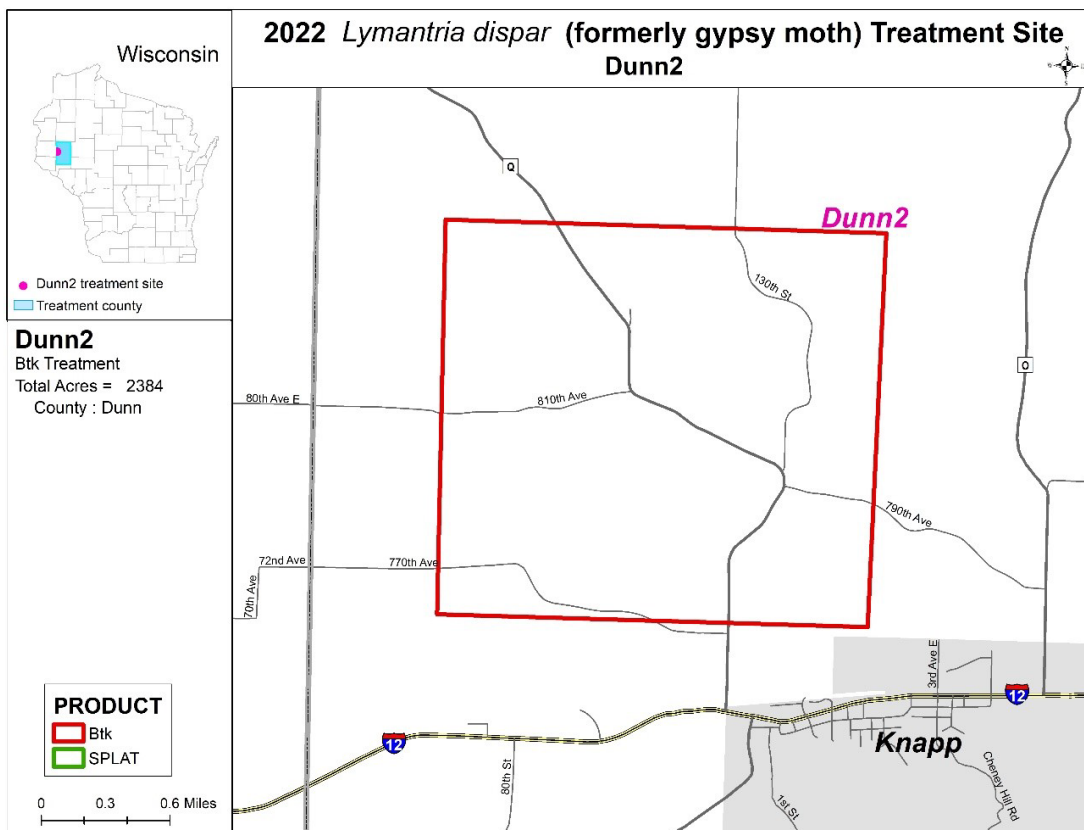
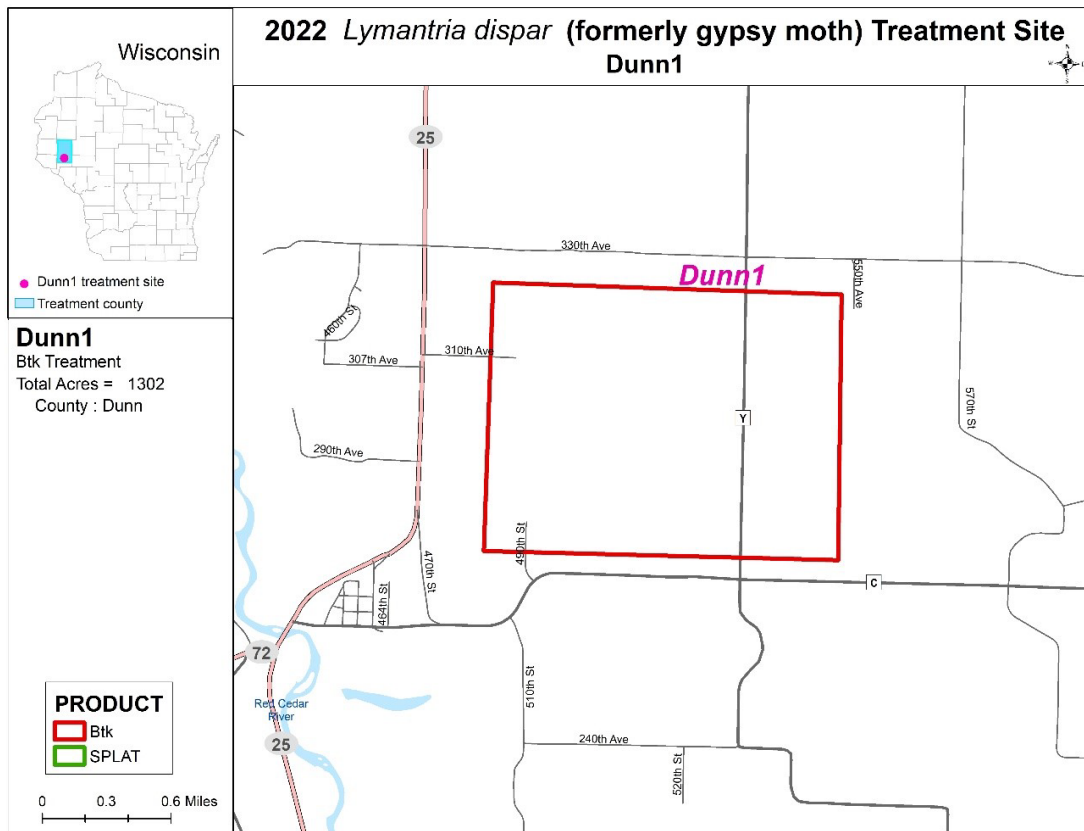
Will Btk or mating disruptant spot car finishes and houses? The products used in the WI *L. dispar* program with Btk and MD are not known to spot car finishes. The MD product manufacture recommends washing with a mild detergent and water to remove any droplets left on vehicles.

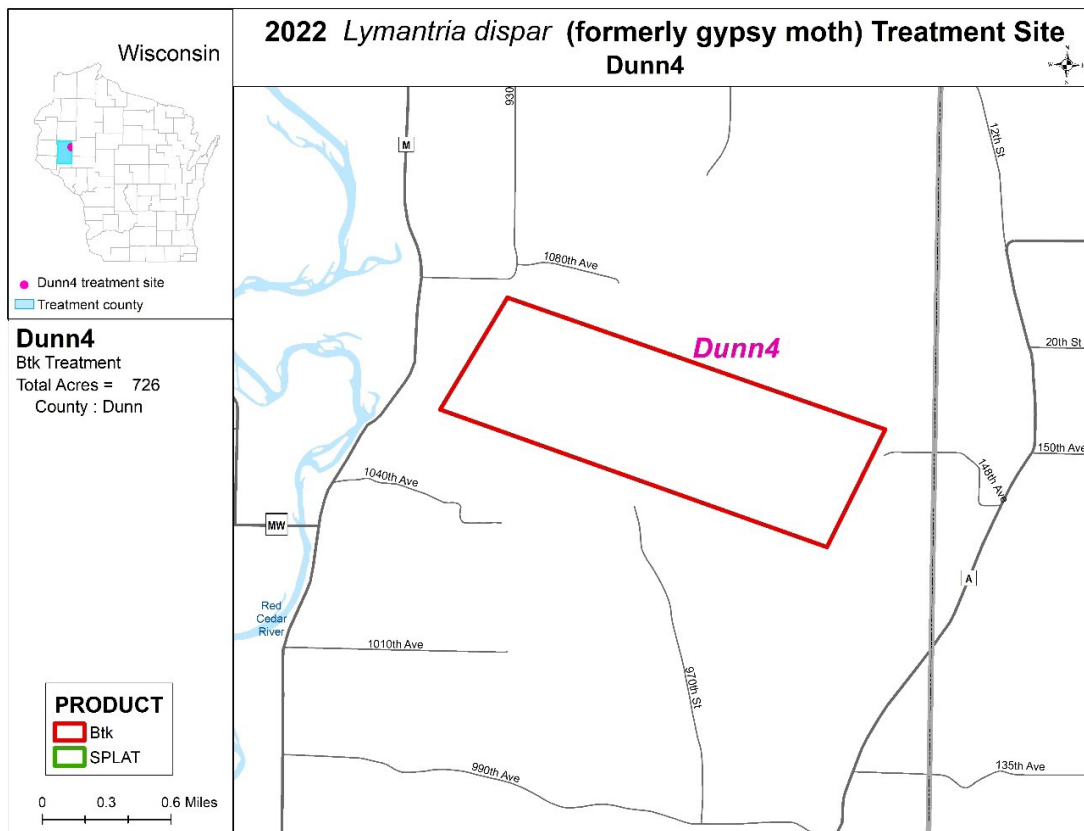
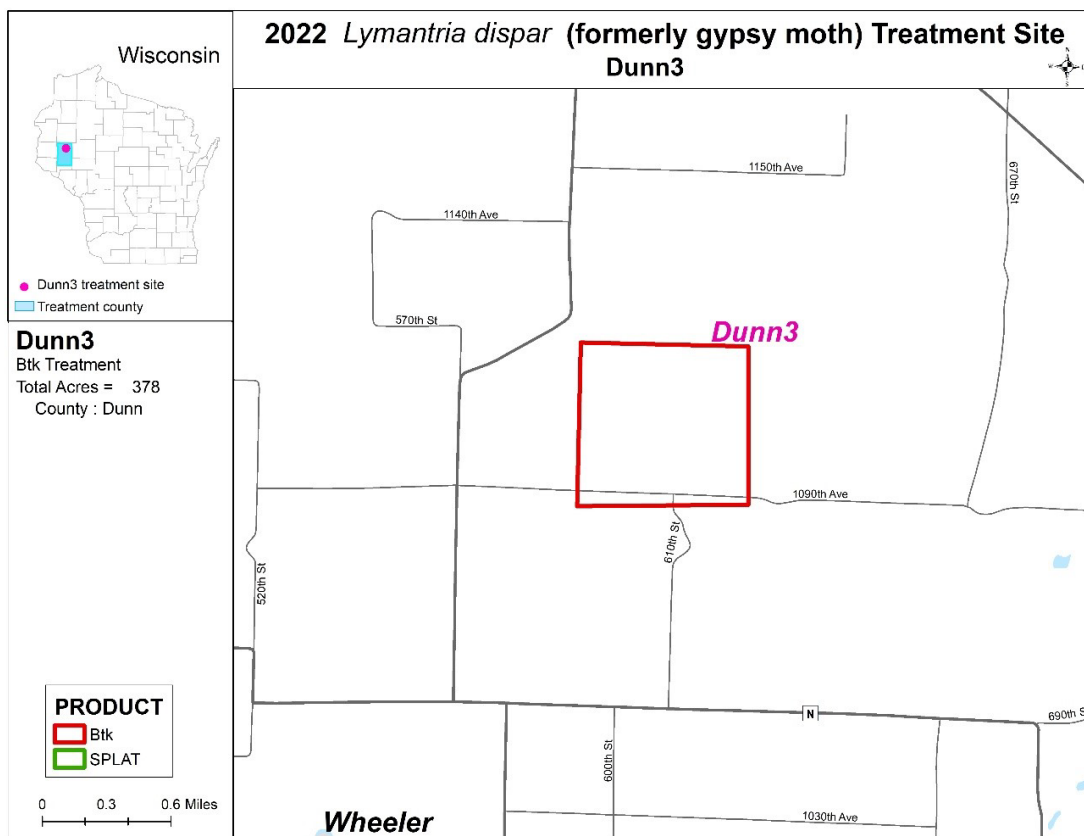
What are the inert components in Btk formulations? Products based on Btk contain a large percentage of bacteria and fermentation medium. However, they also contain additives that improve product stability and other desirable traits such as flowability. The additives are often referred to as an inerts. Most of the inerts are product specific and are considered proprietary information by the manufacturers of Btk products. Though not made public, the inerts are reviewed by the US EPA for safety purposes. Btk inerts are discussed in the SEIS, Appendix F (p. 3-14 and 3-15).

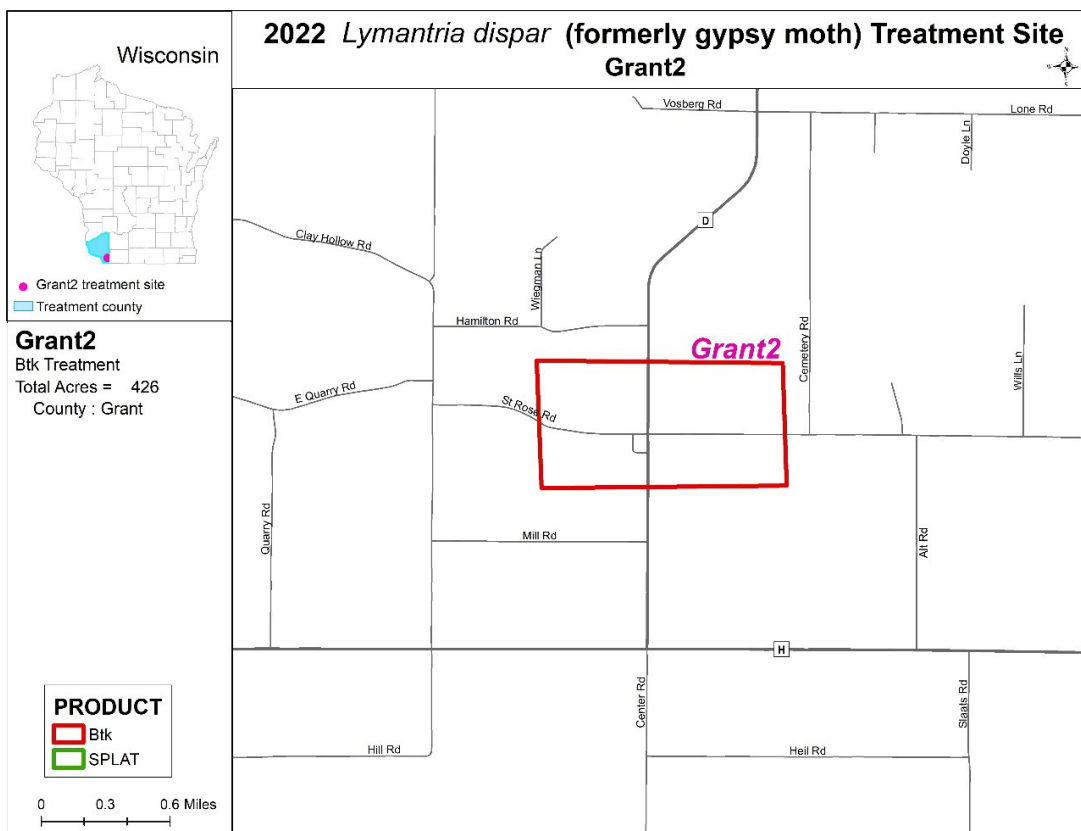
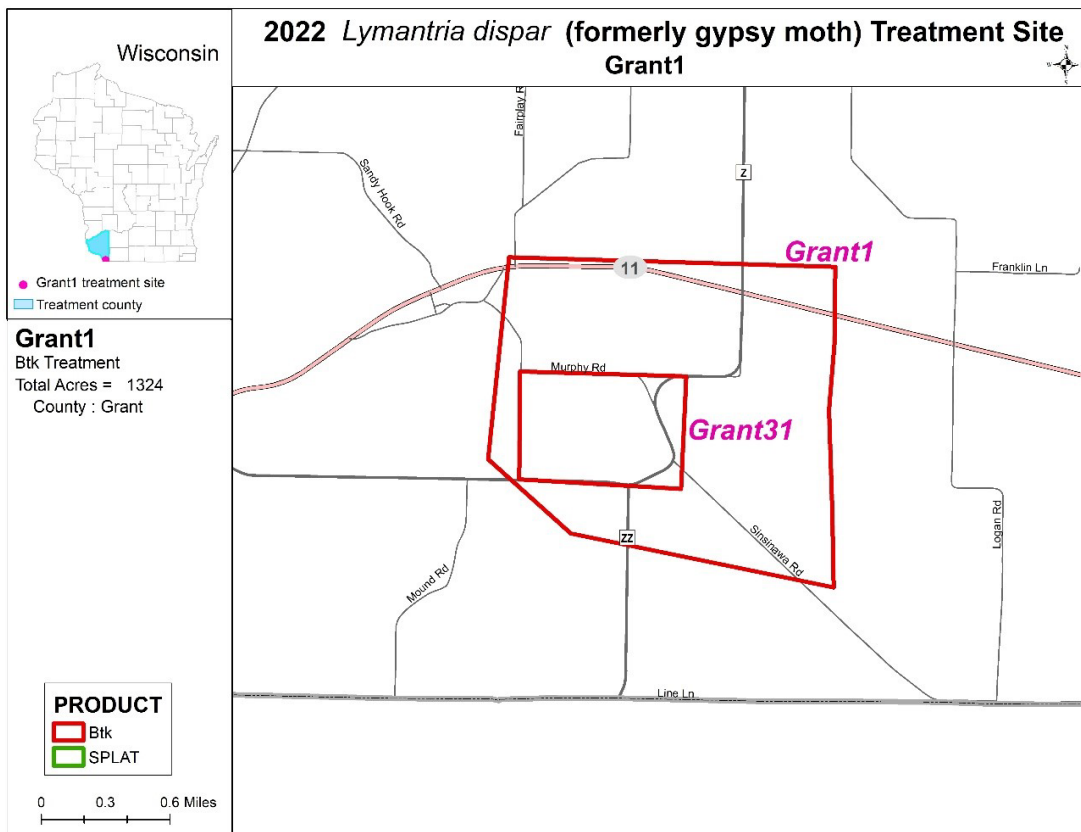
APPENDIX B - Maps of Treatment Blocks

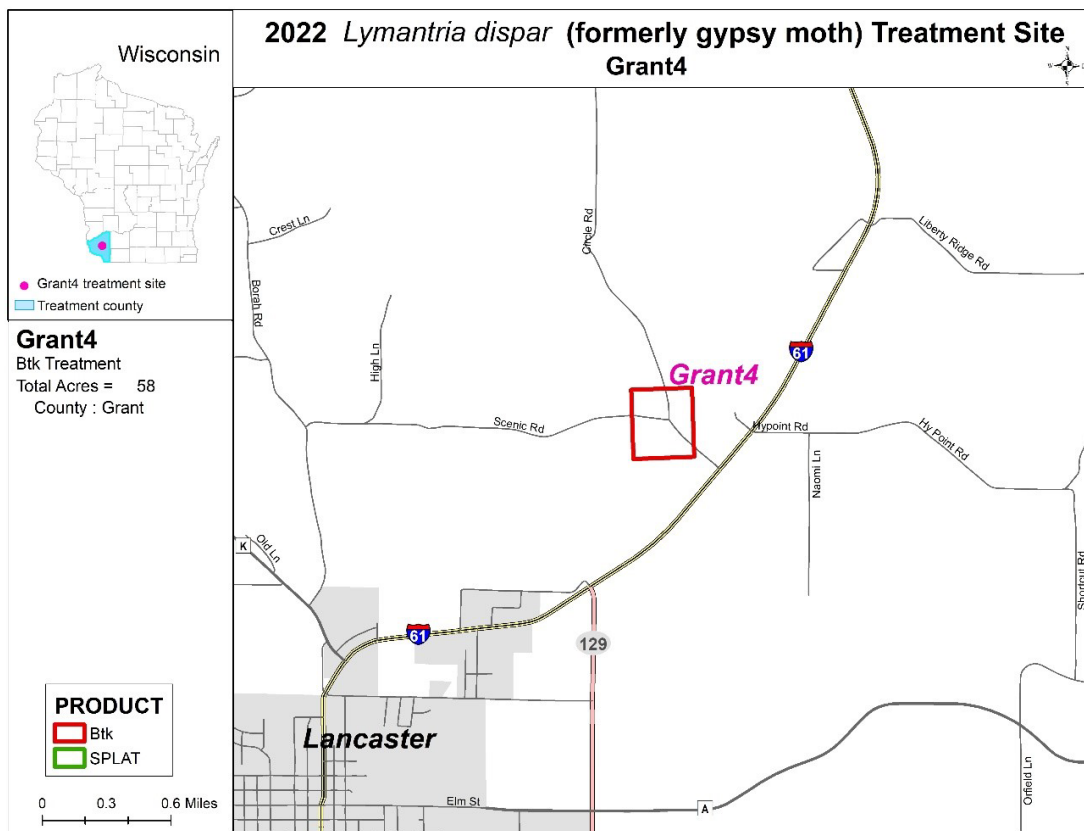
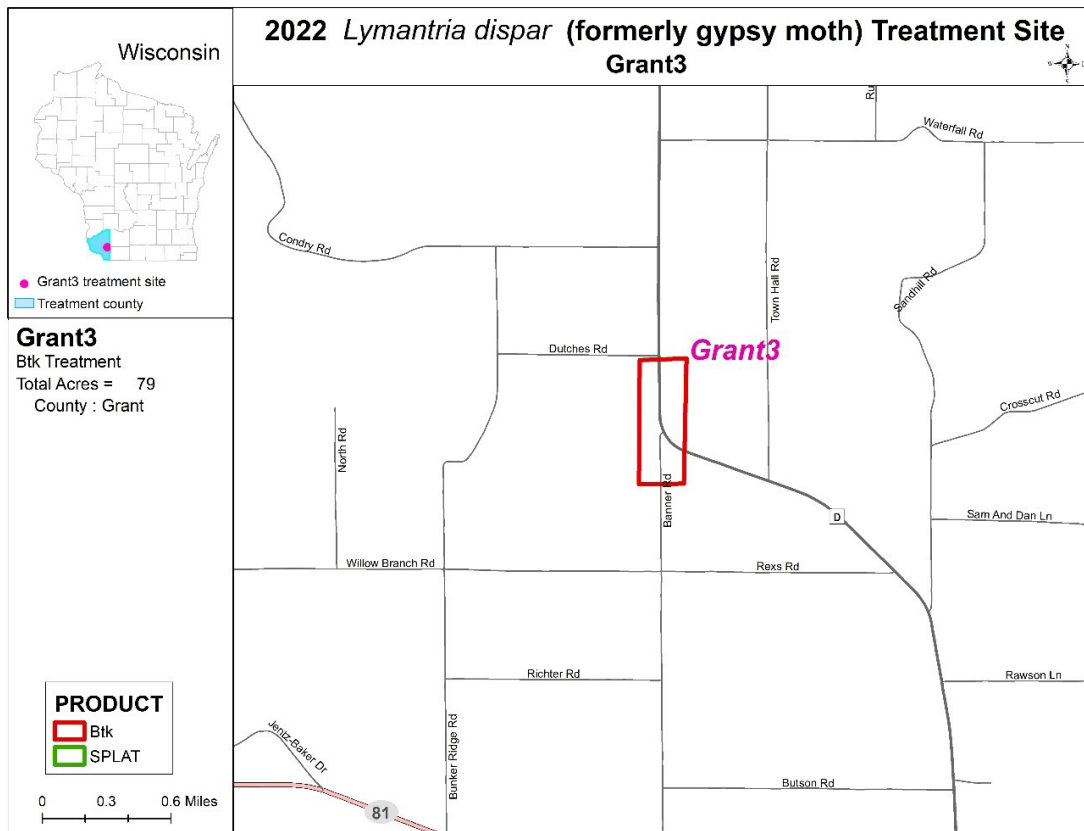


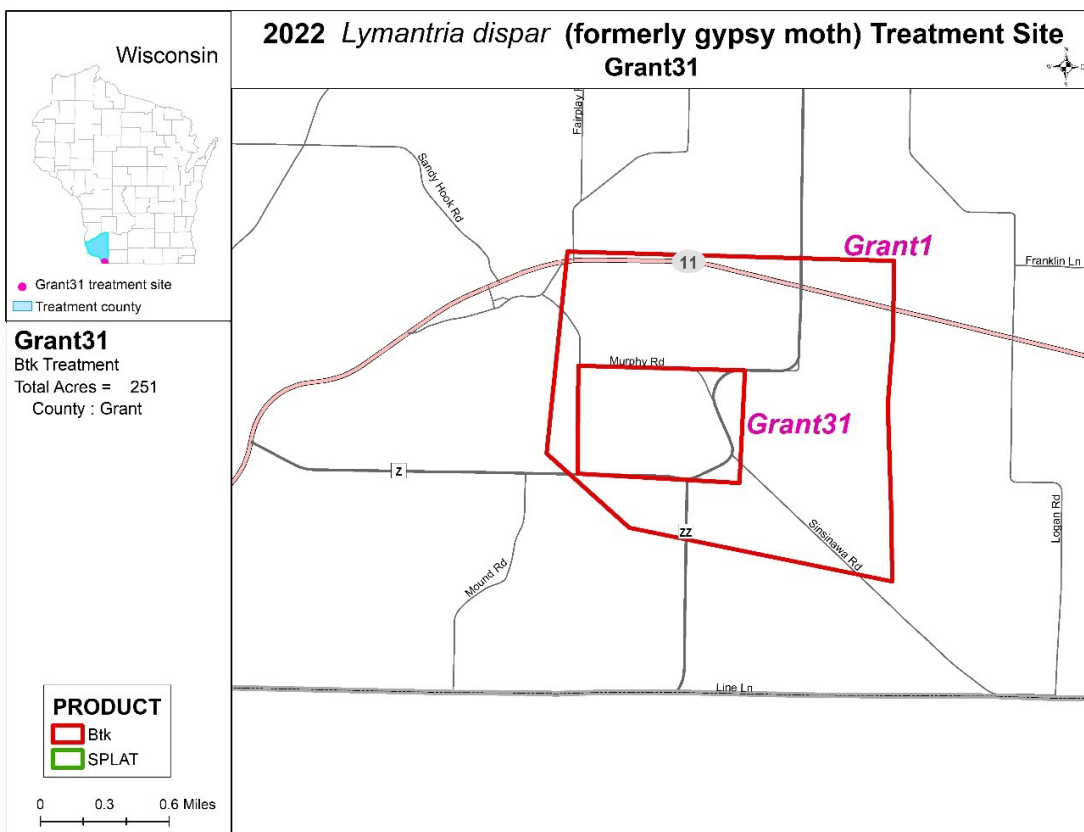
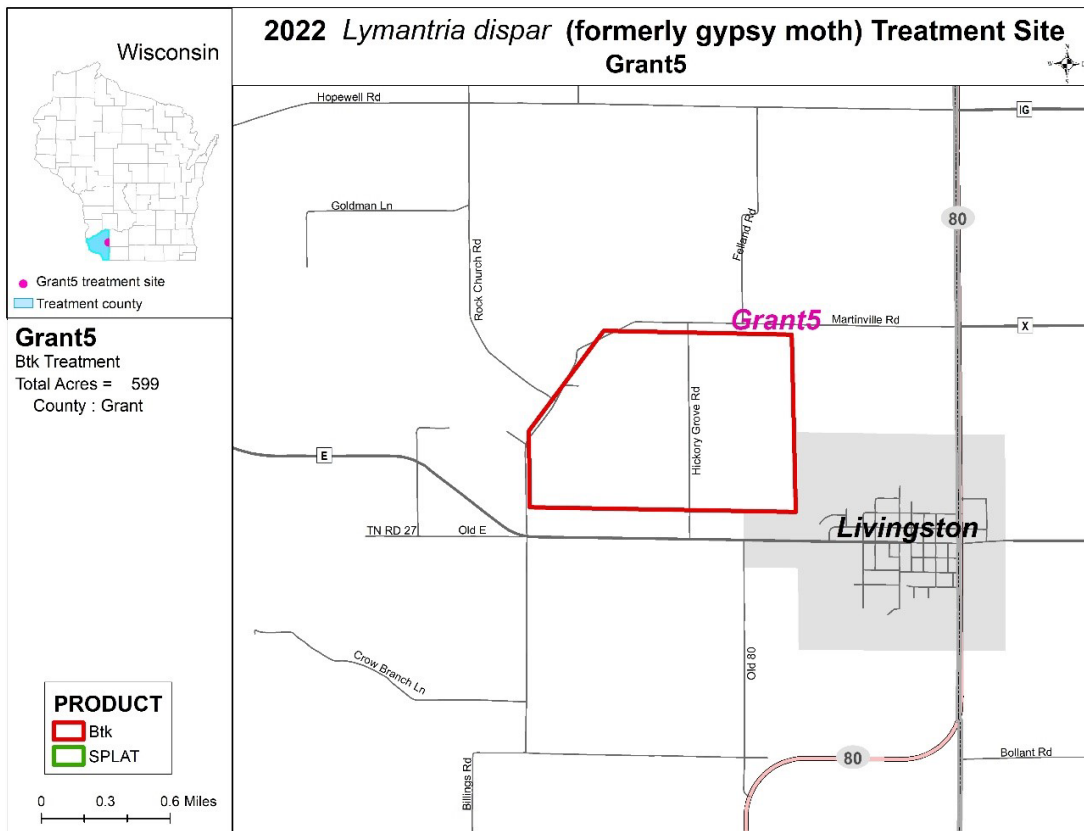


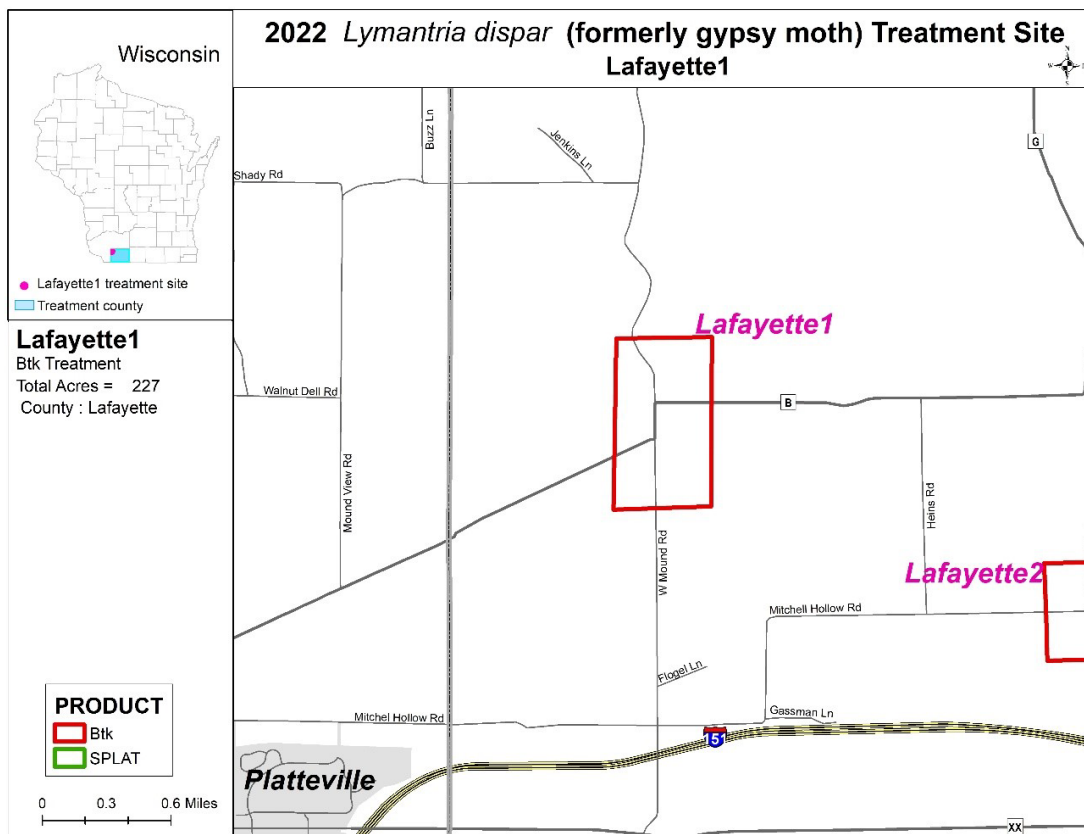
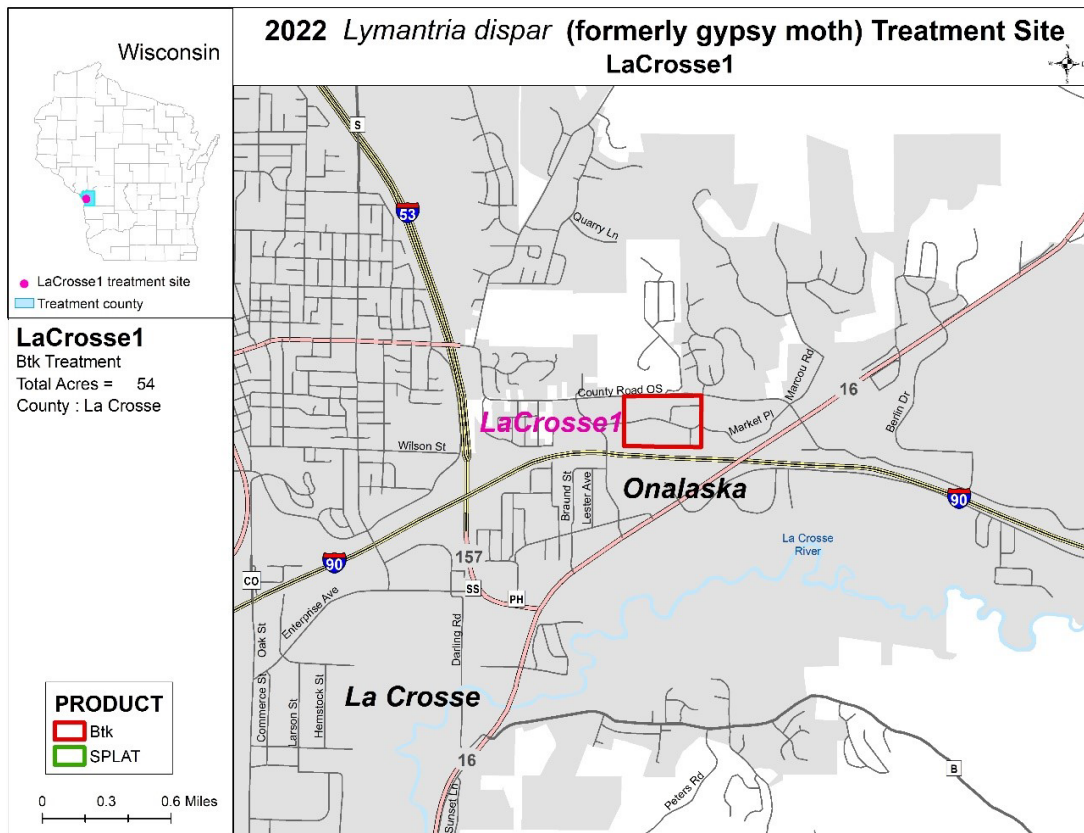


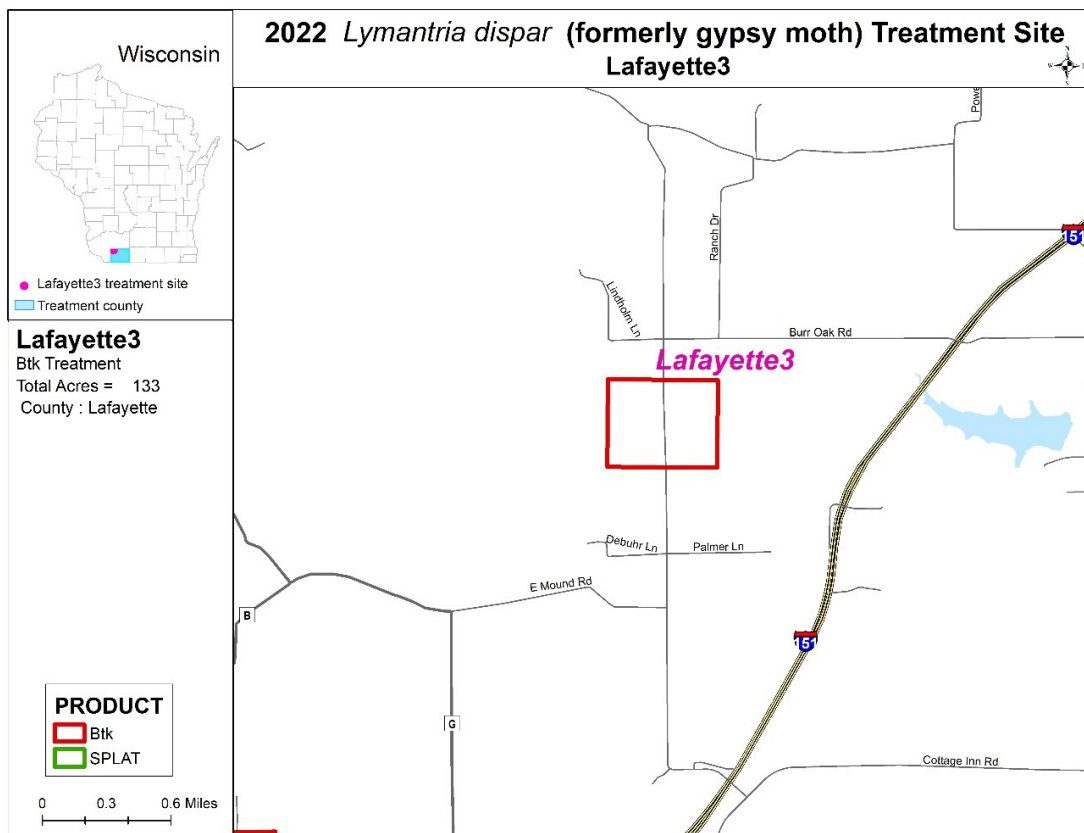
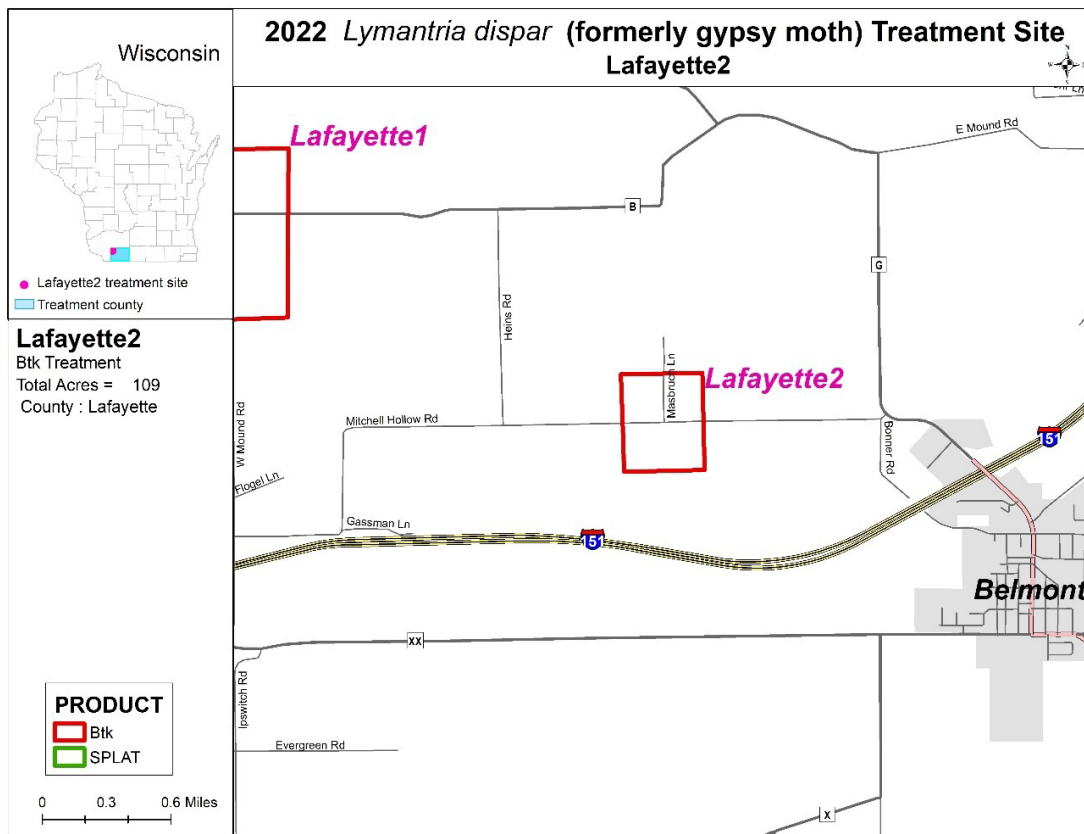


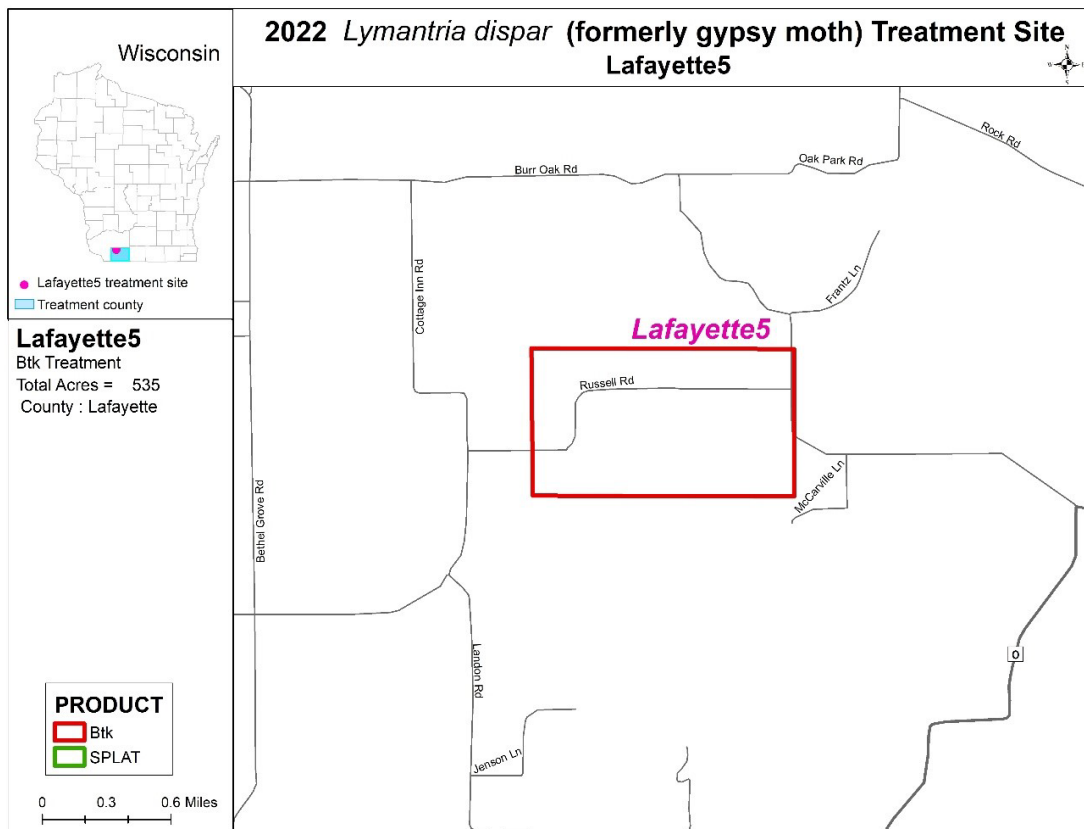
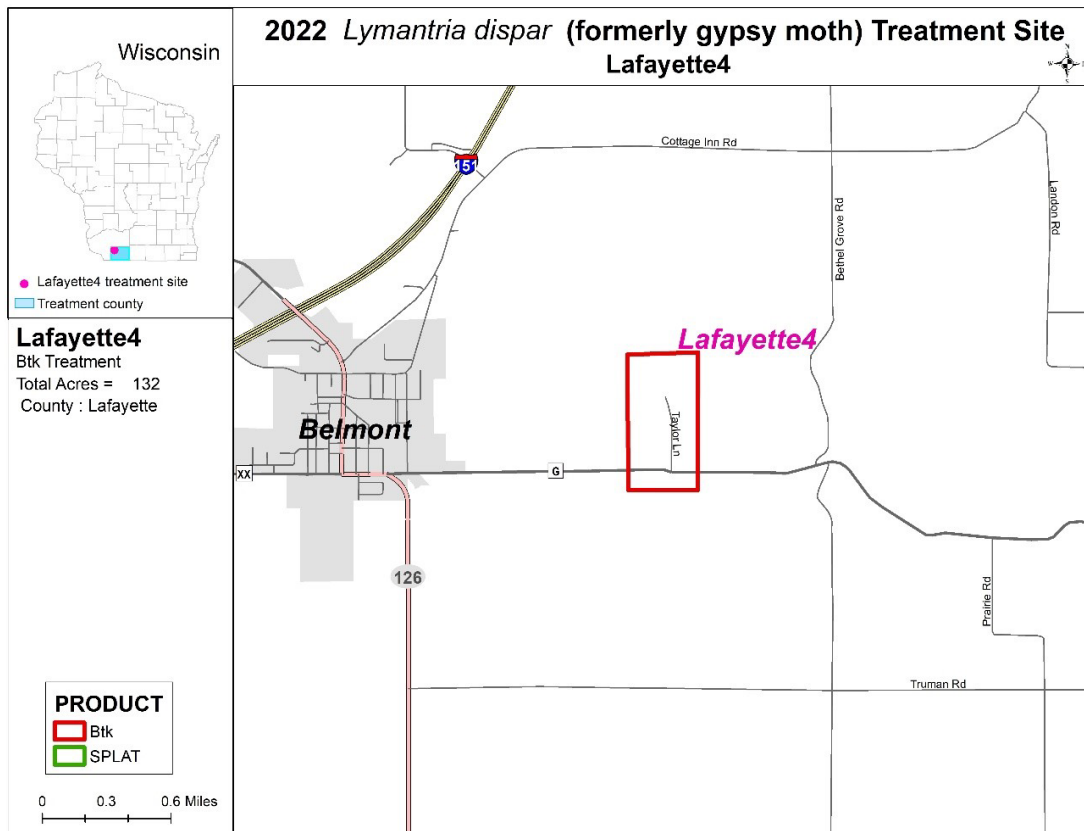


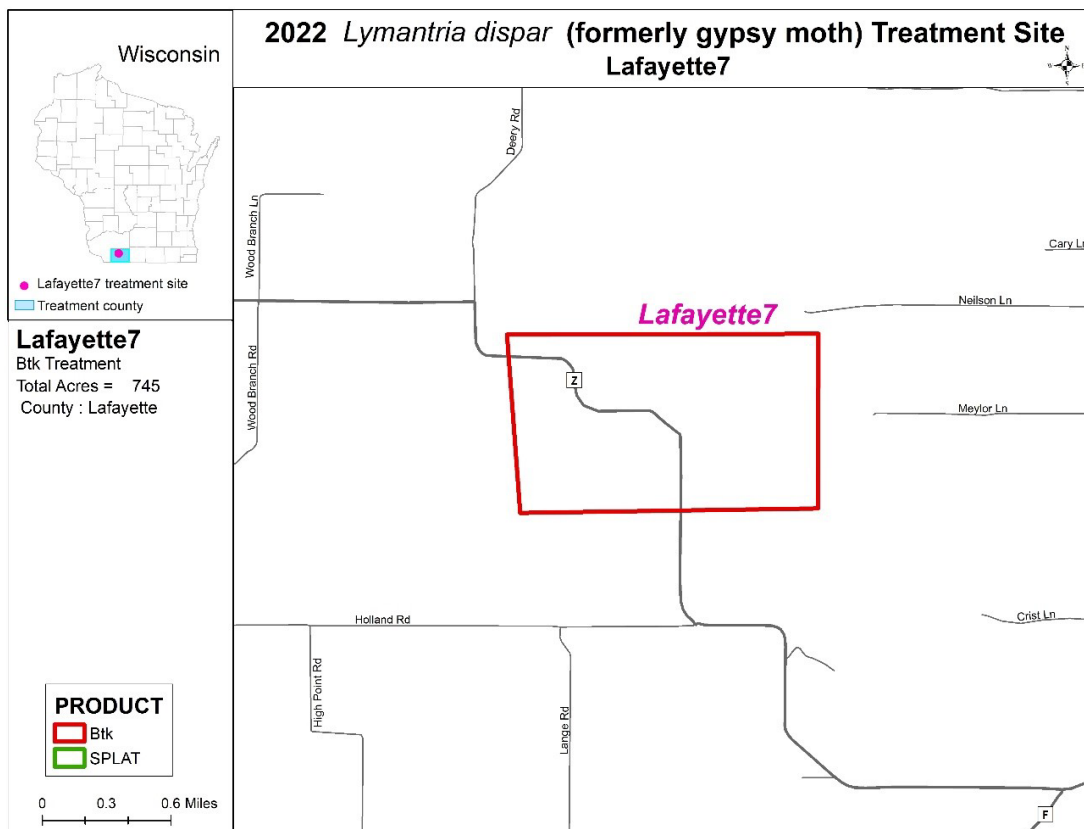
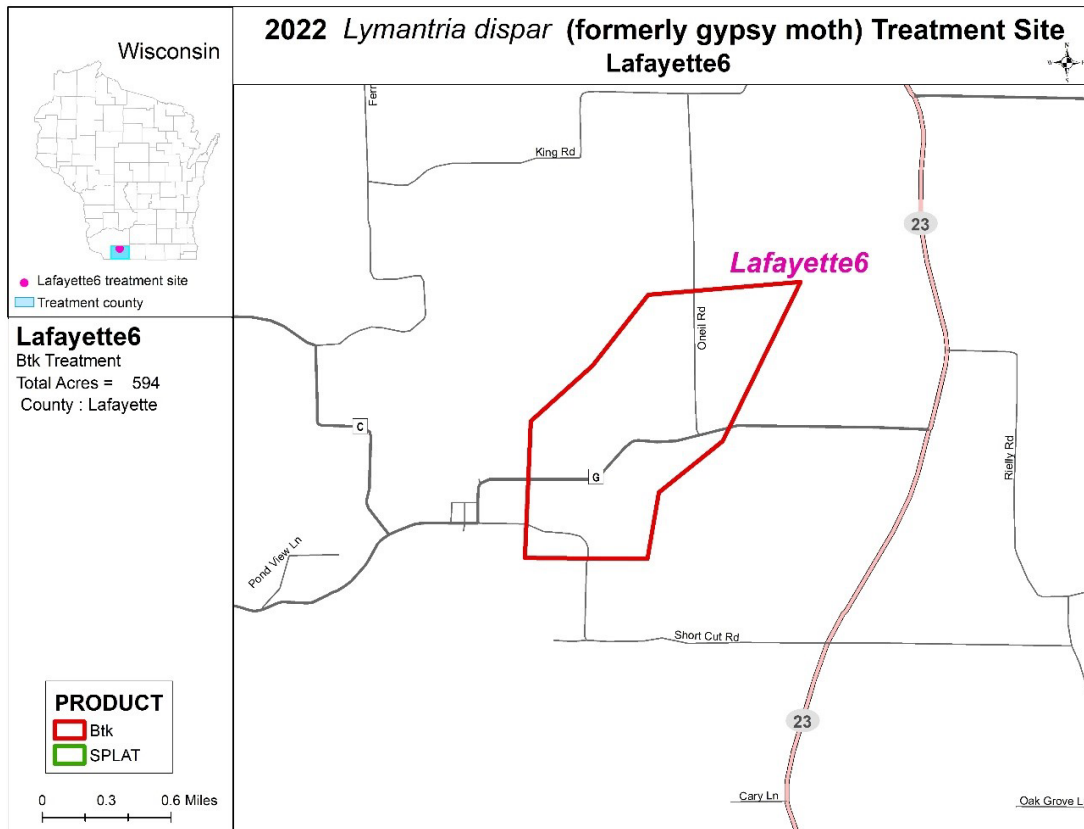


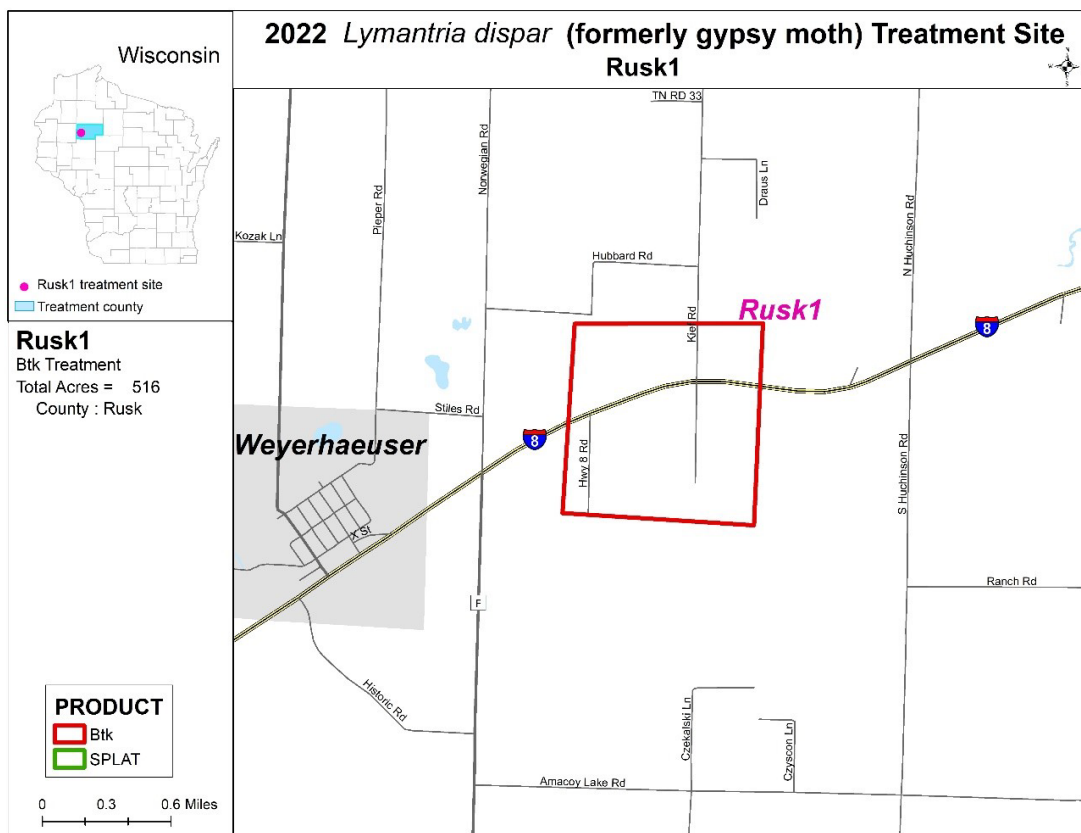
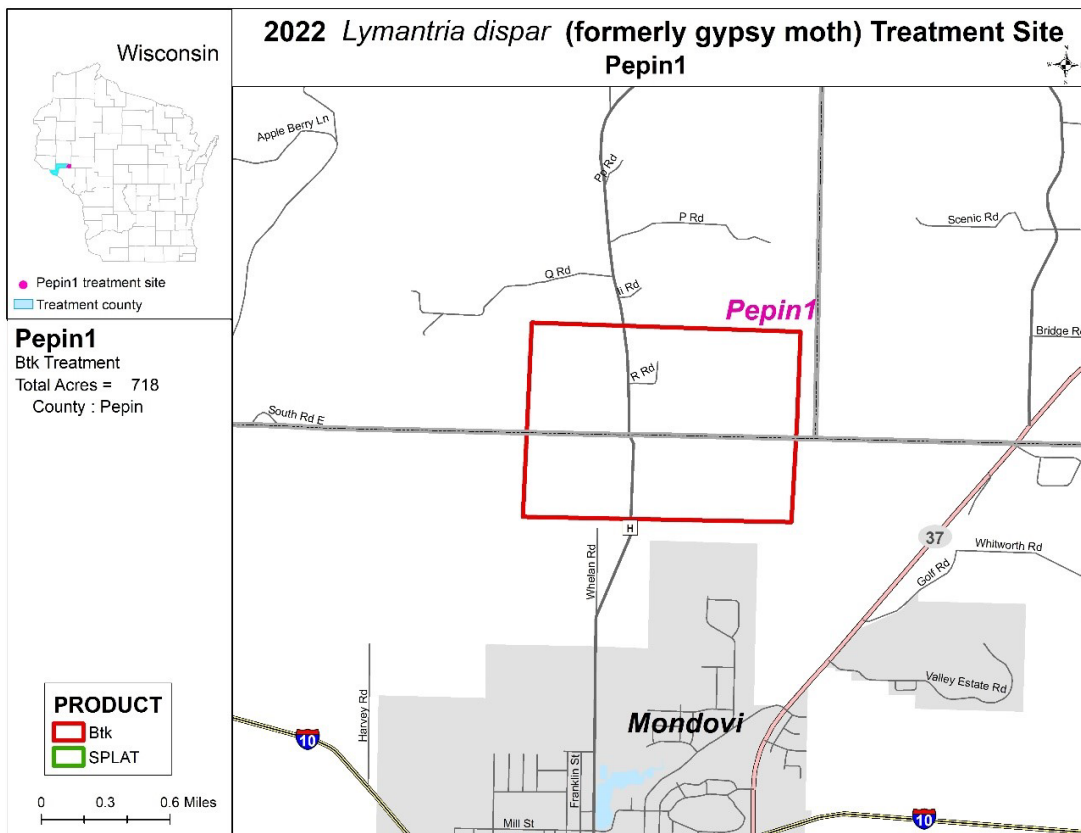


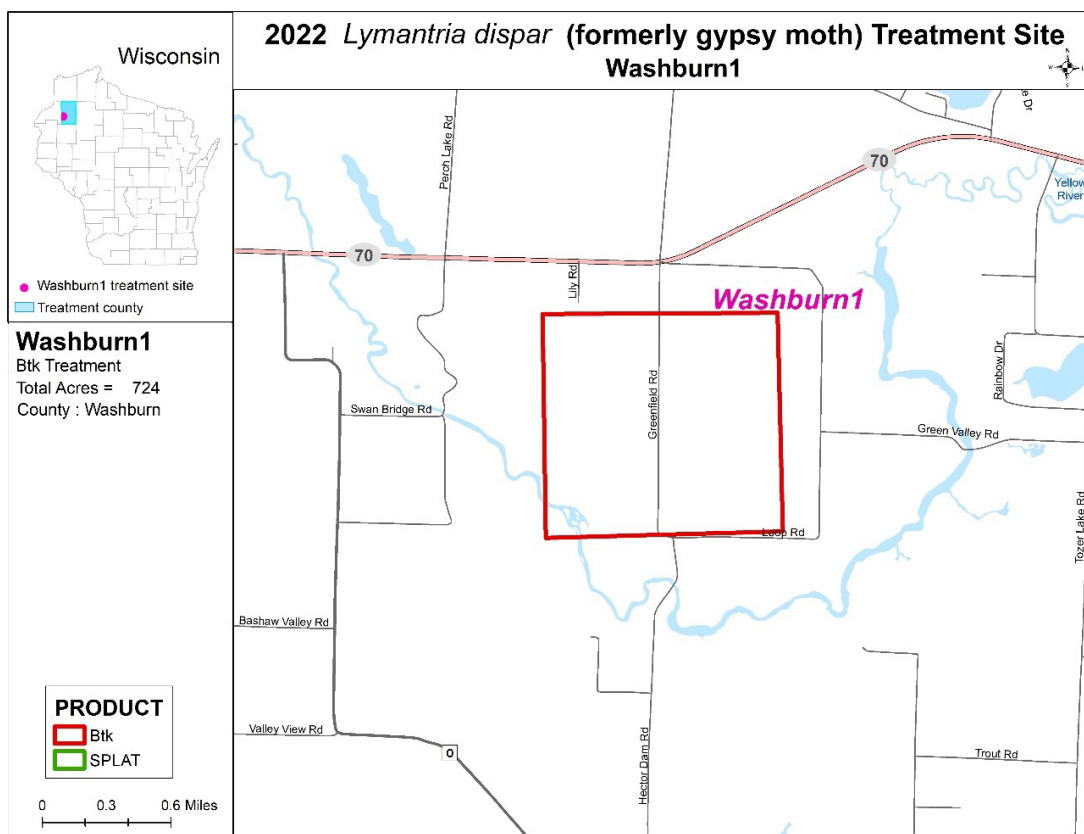


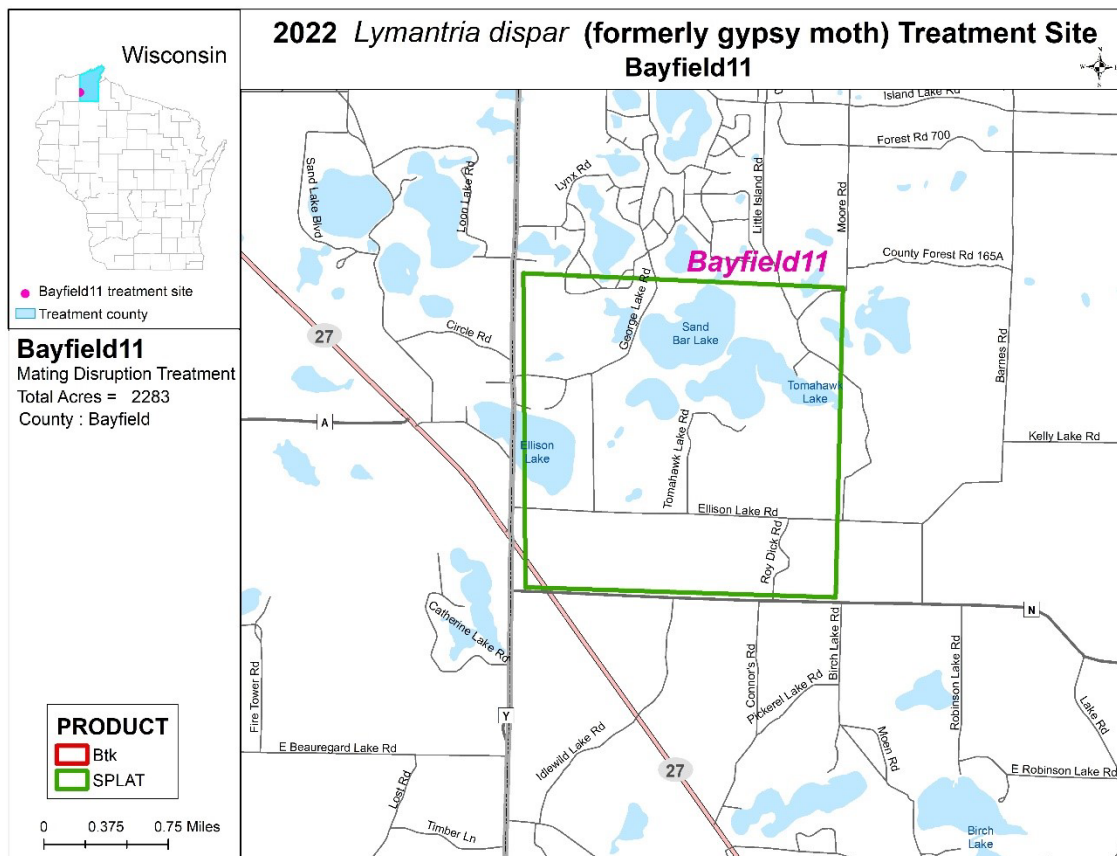
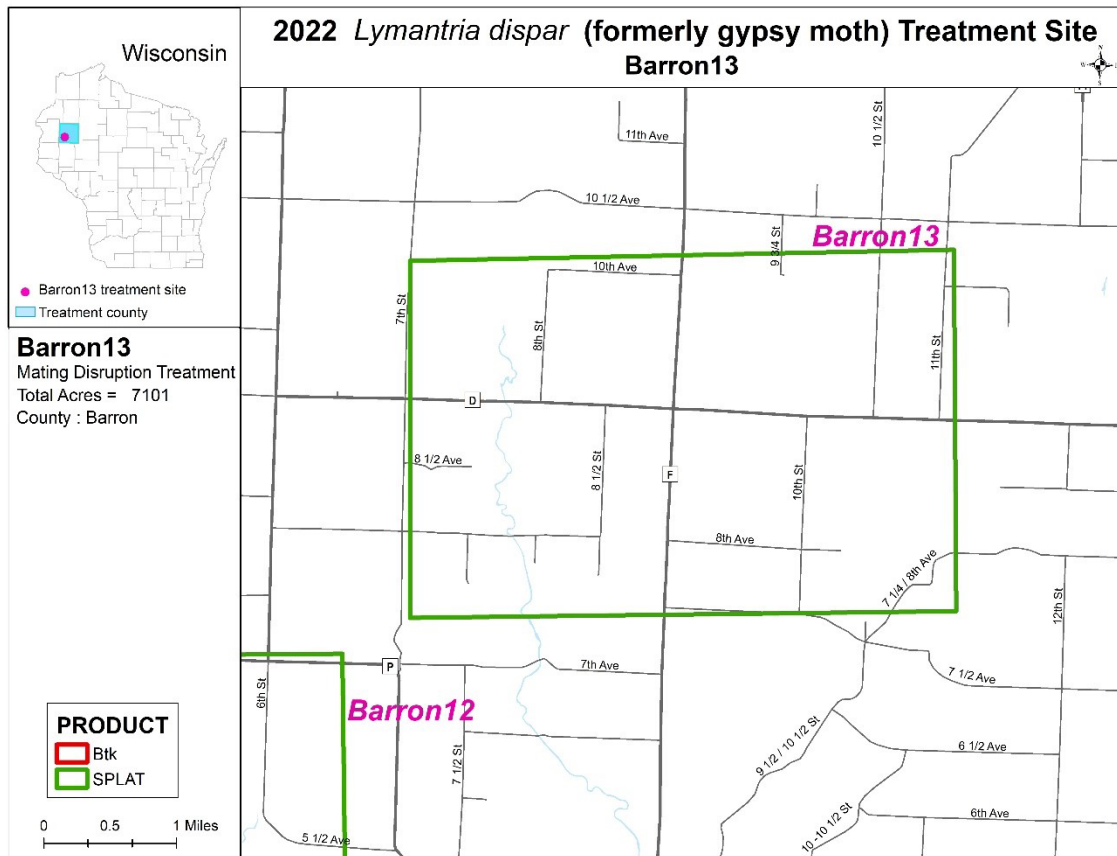


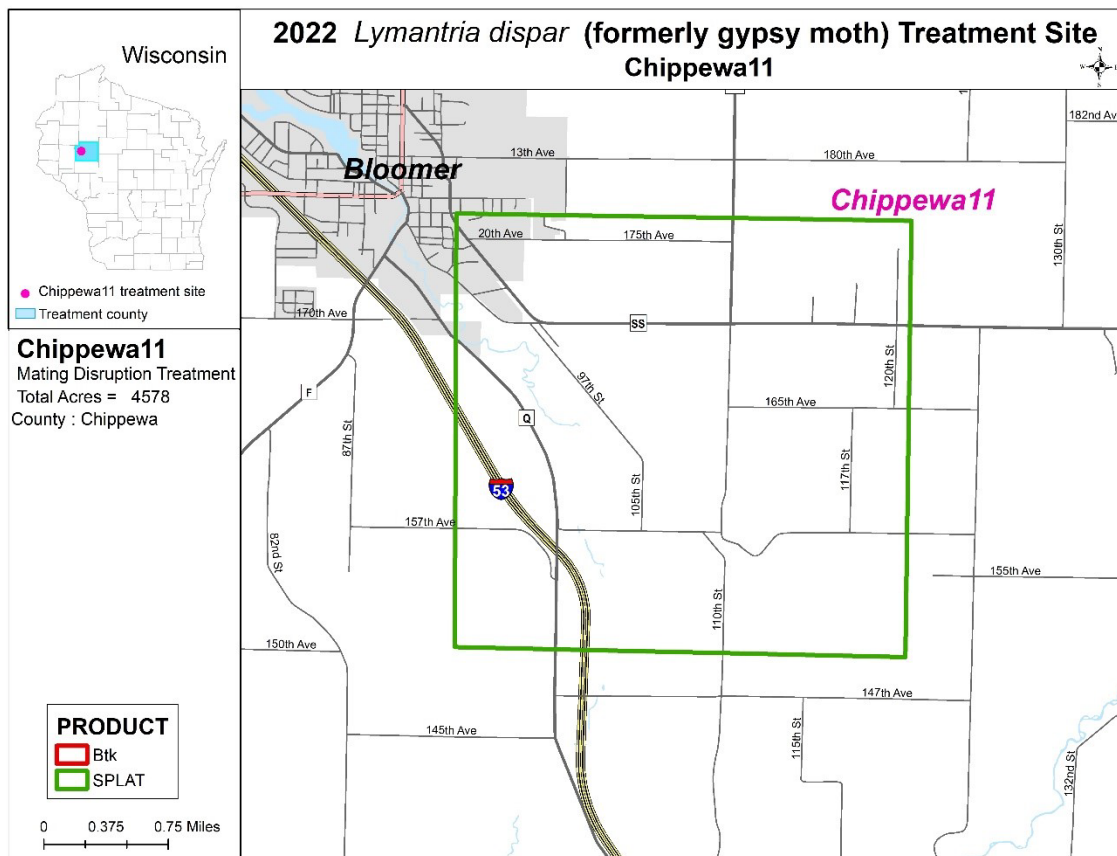
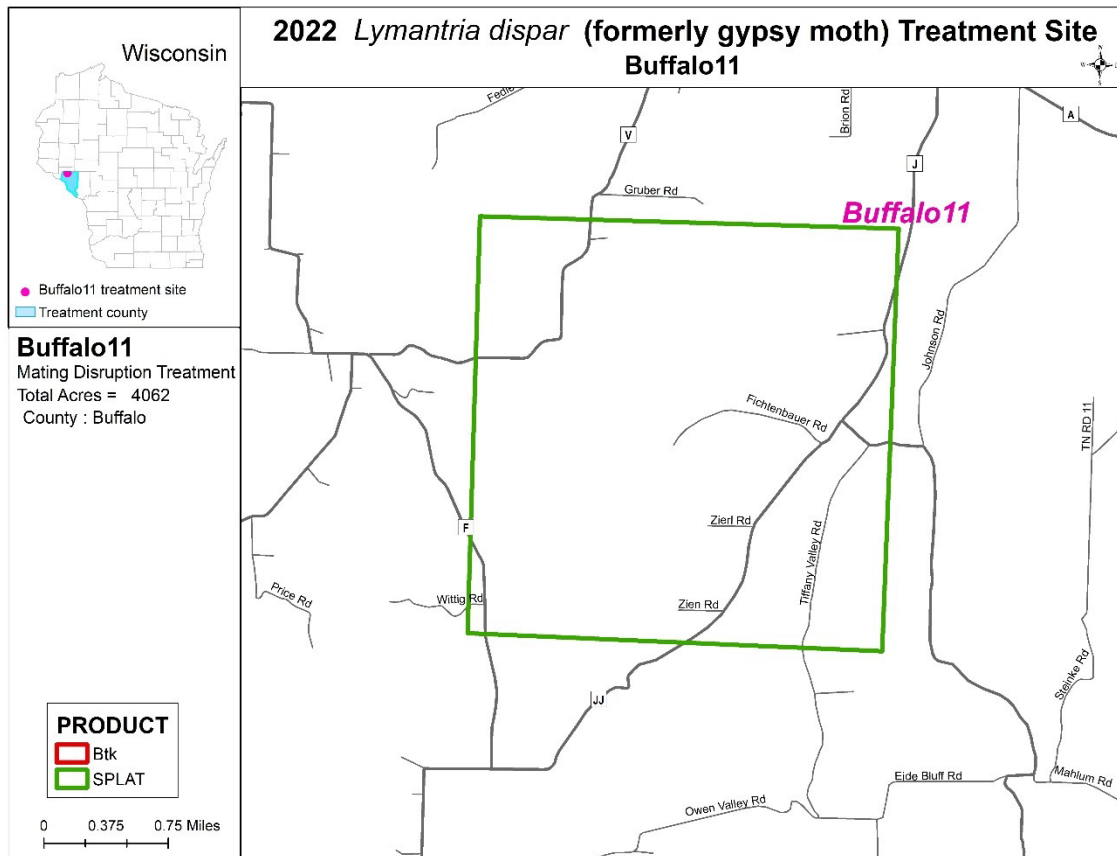


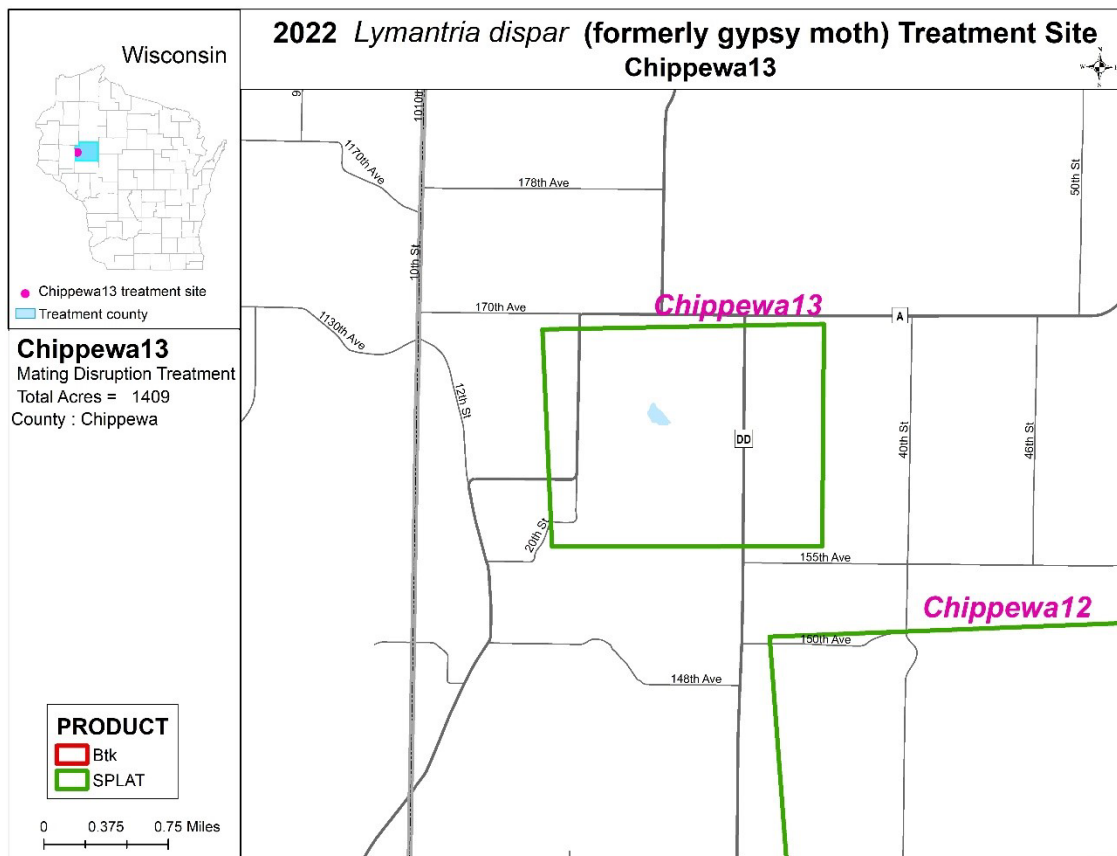
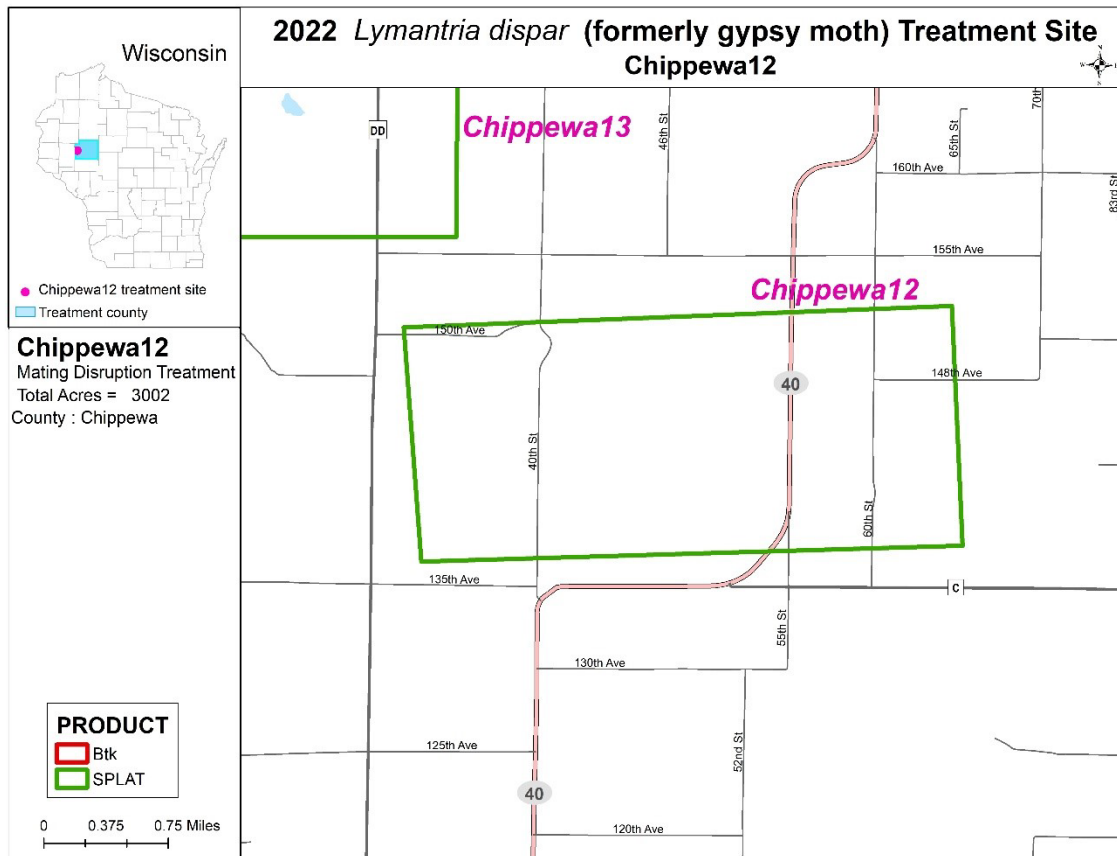


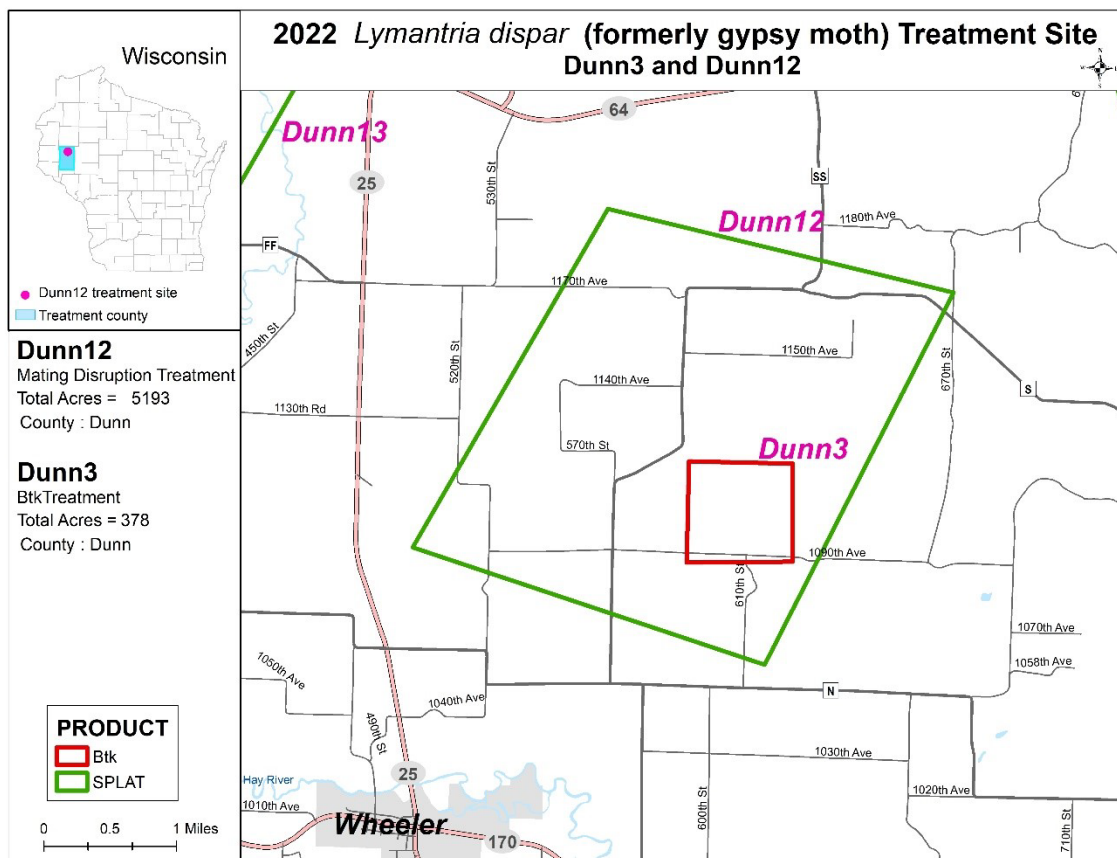
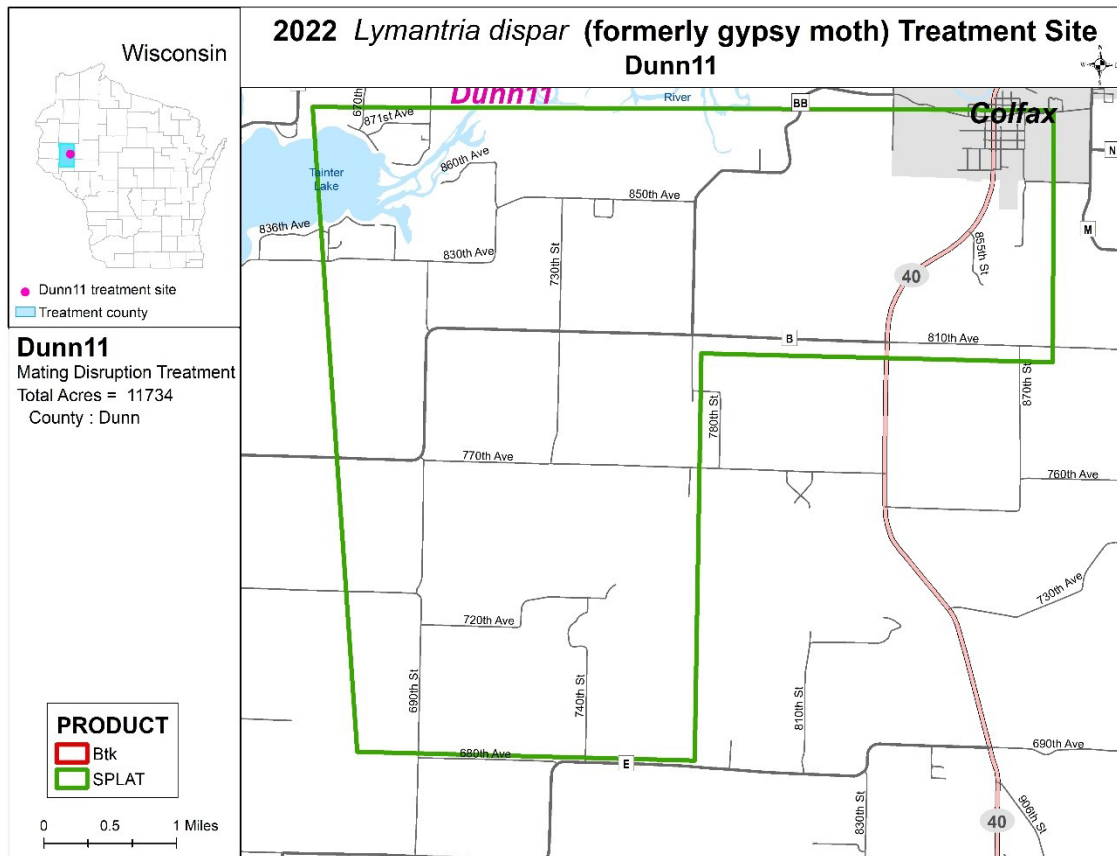


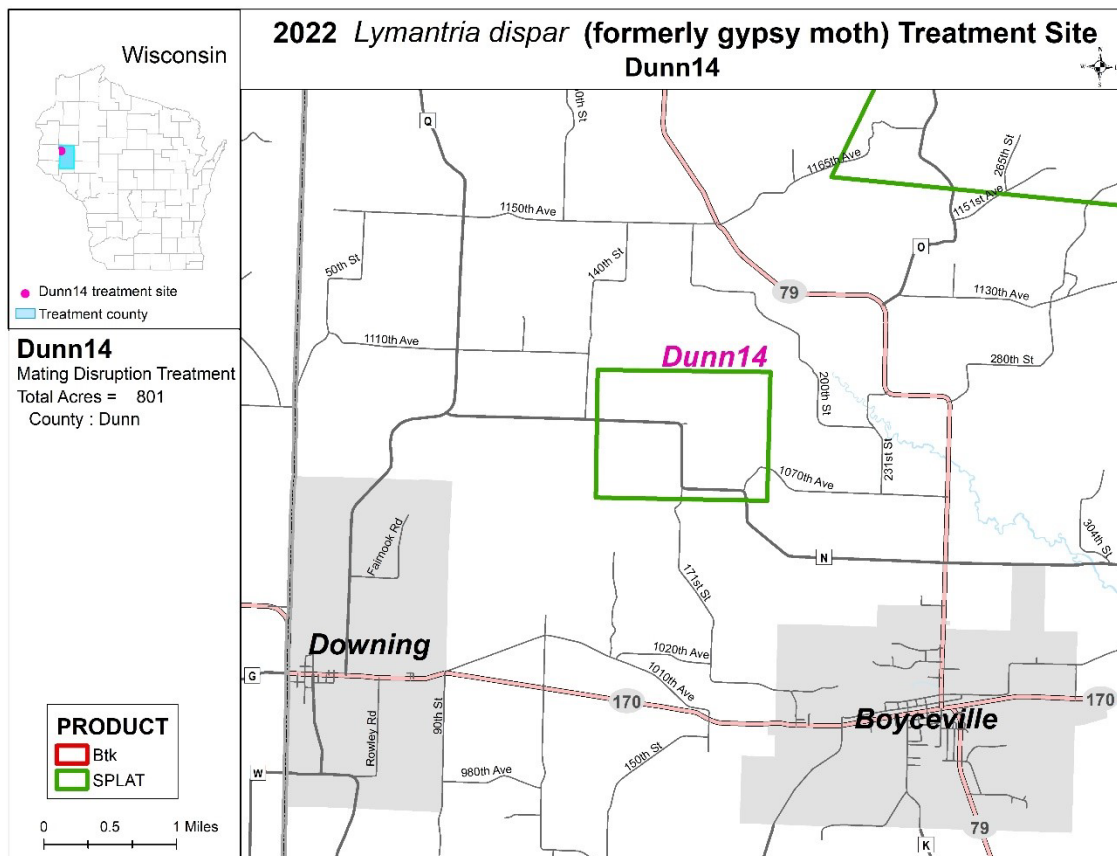
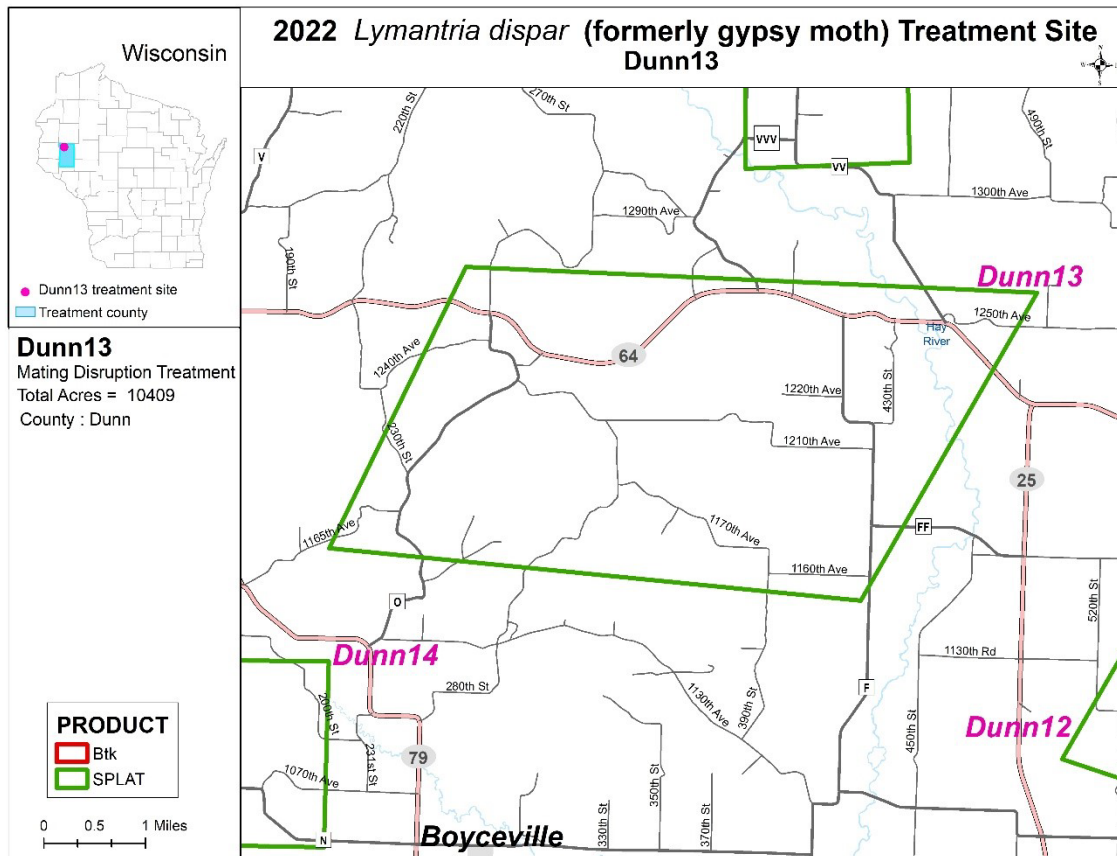


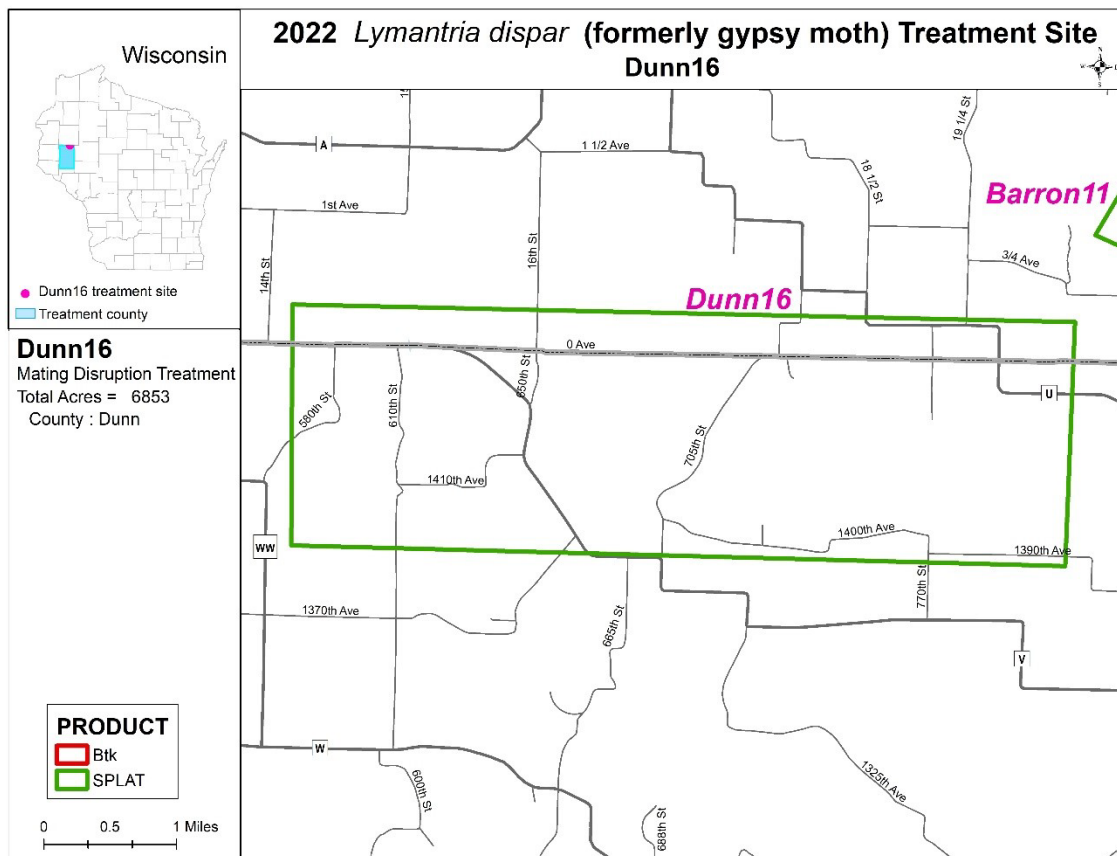
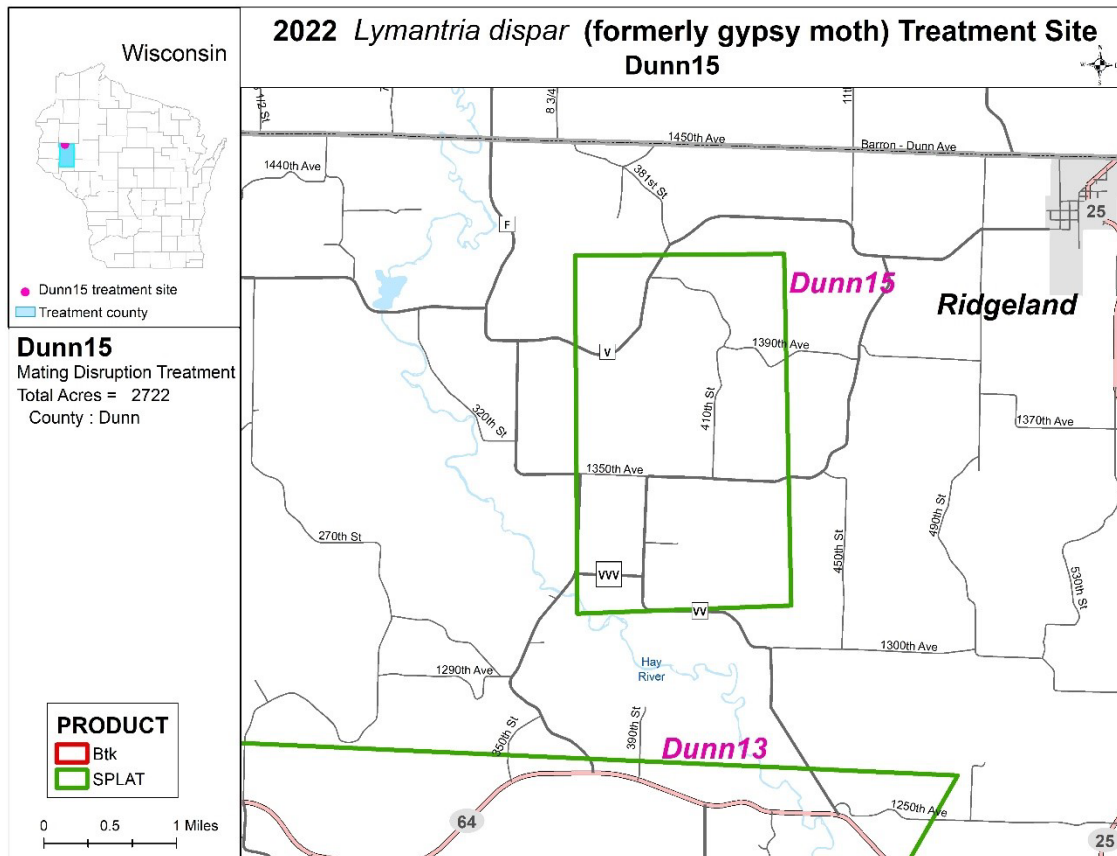


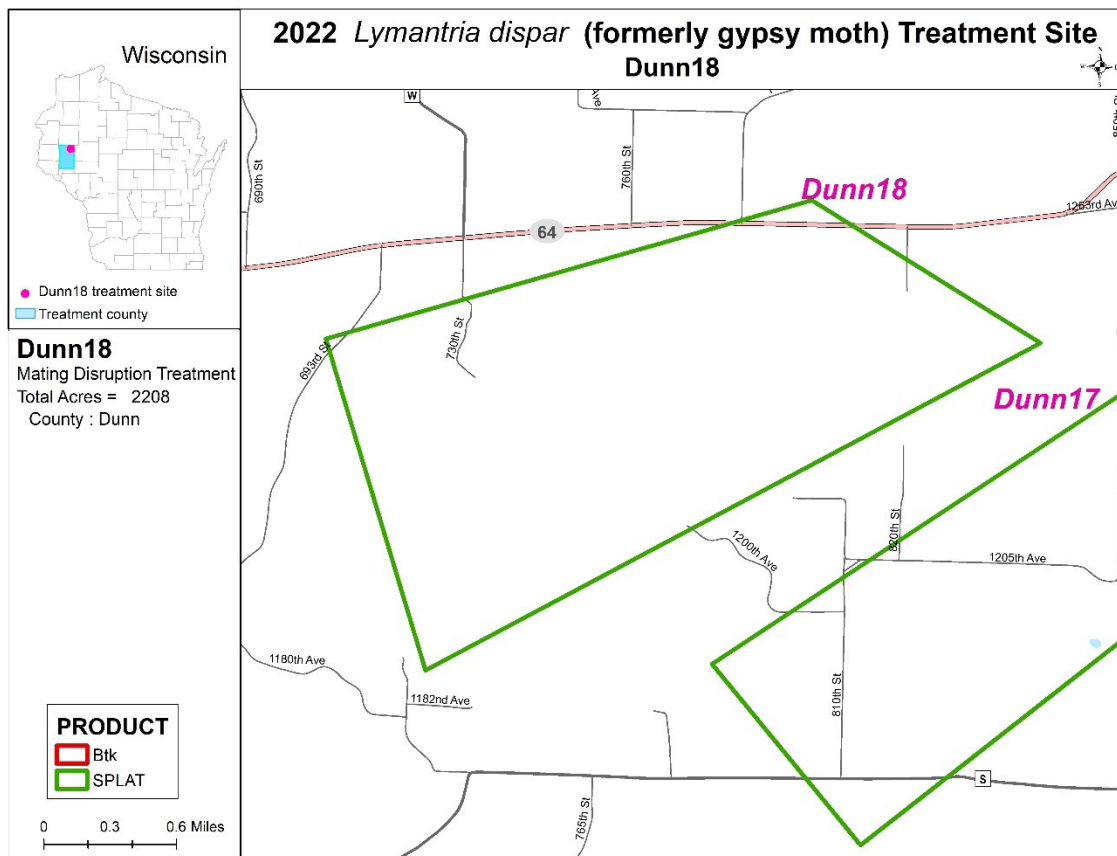
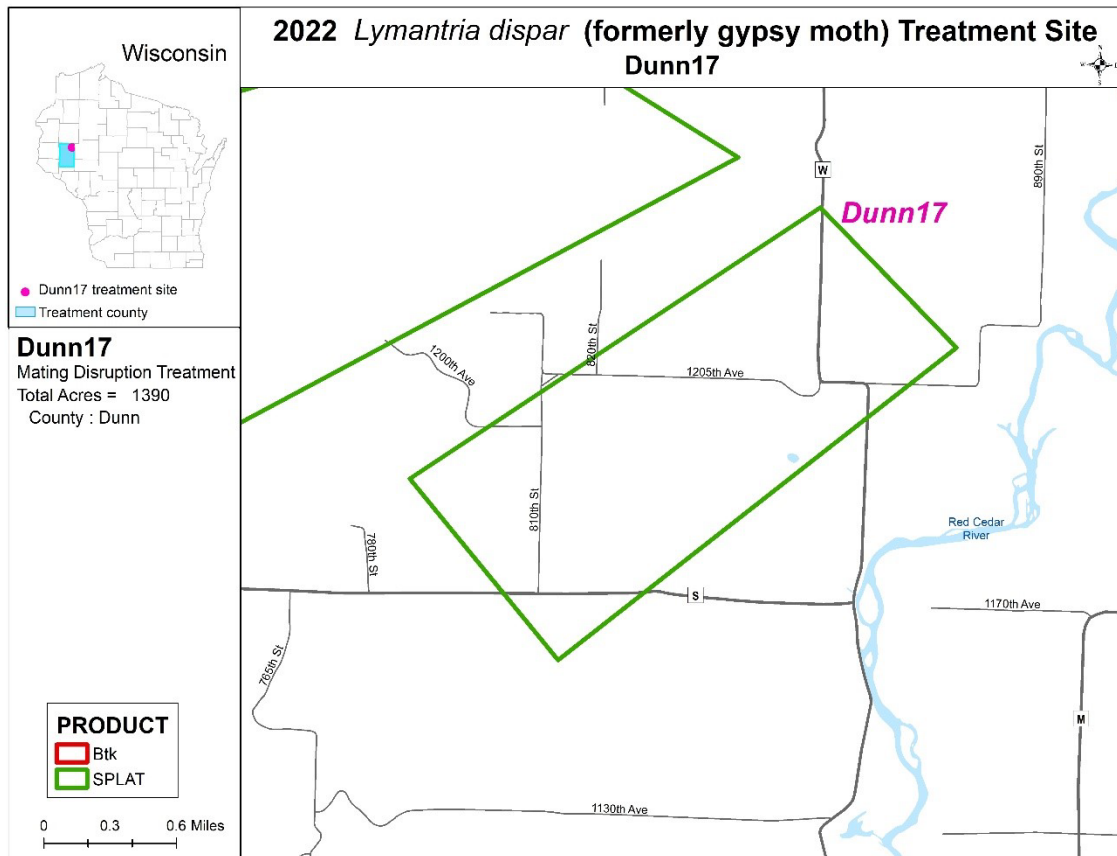


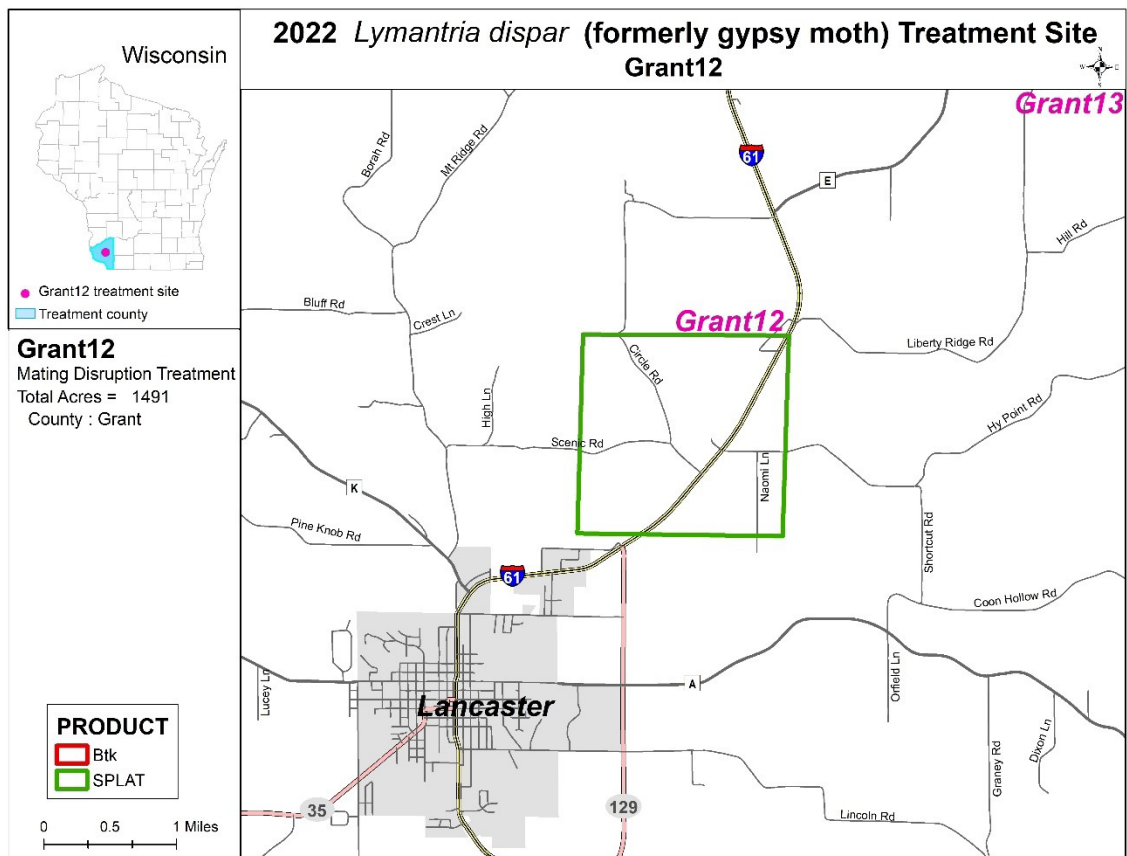
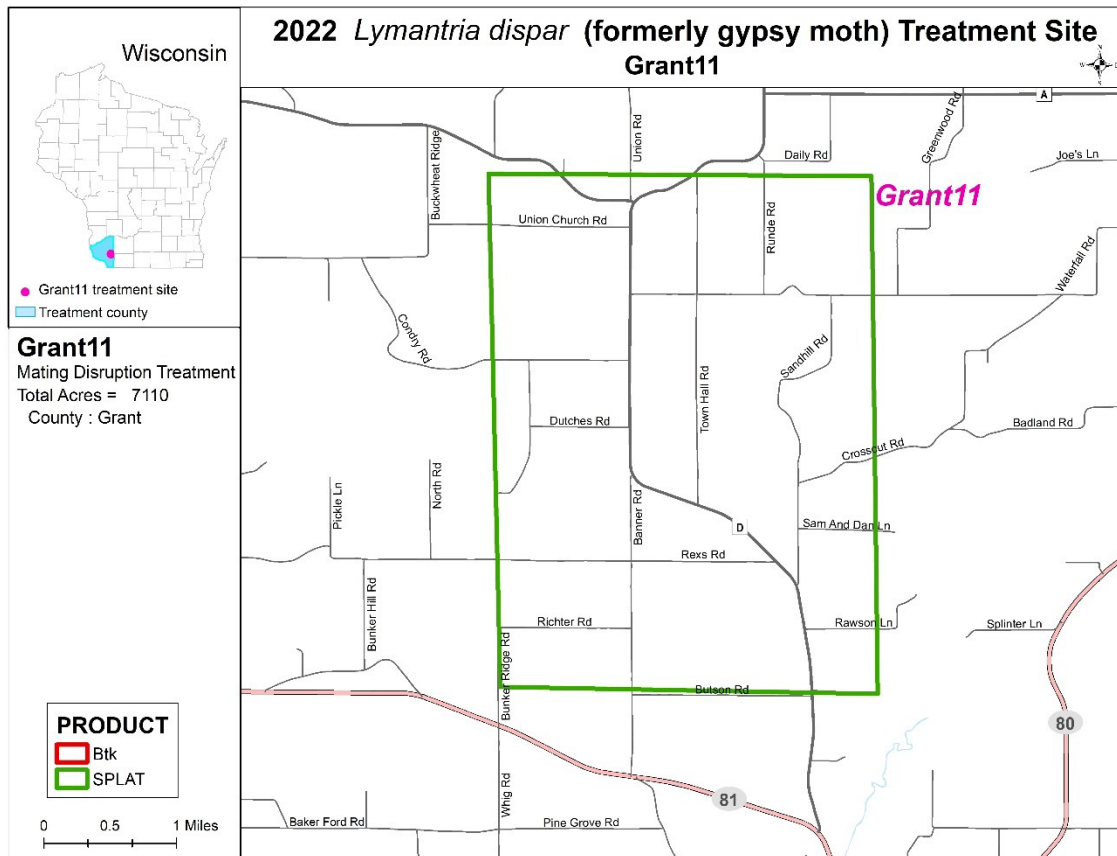


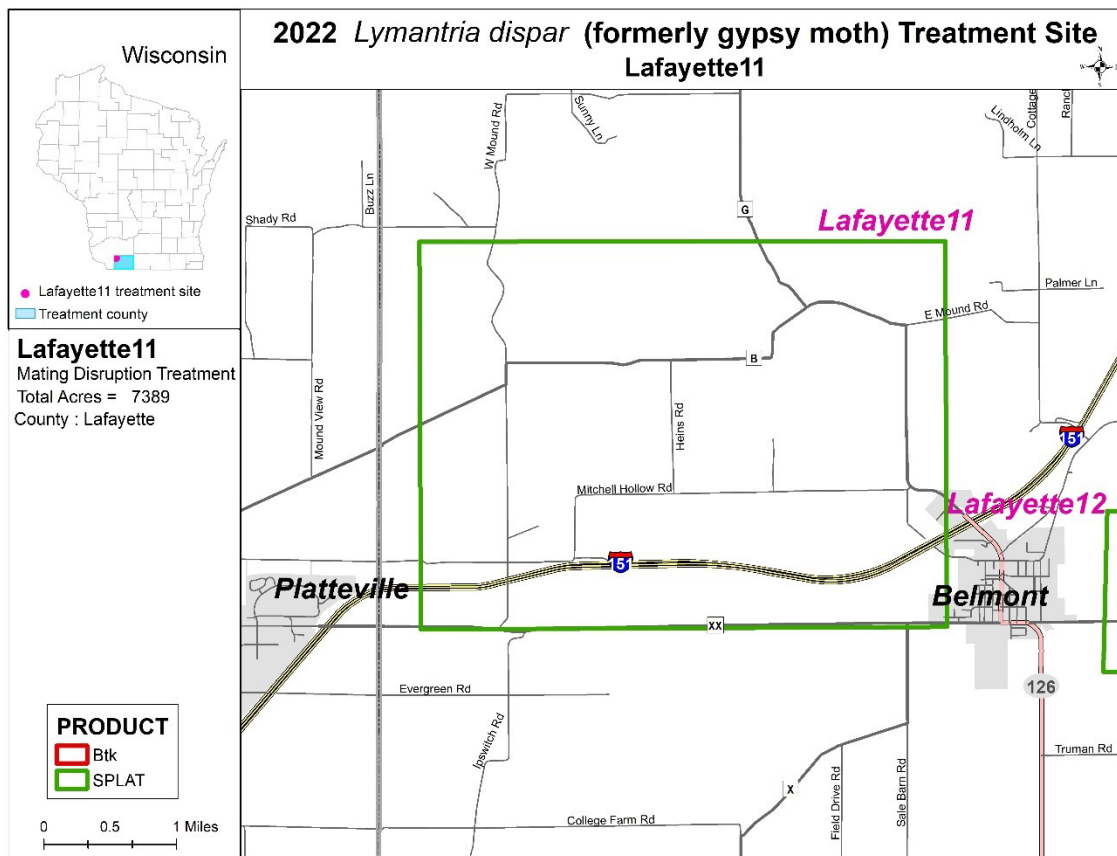
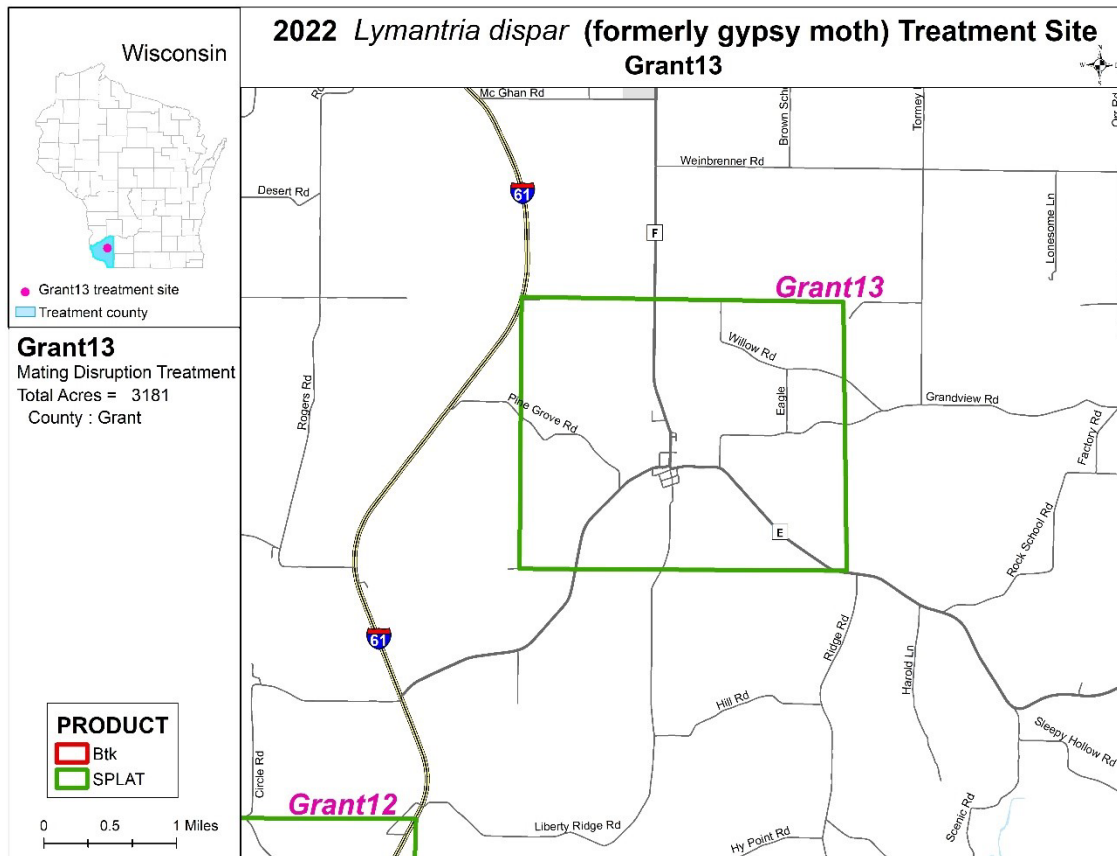


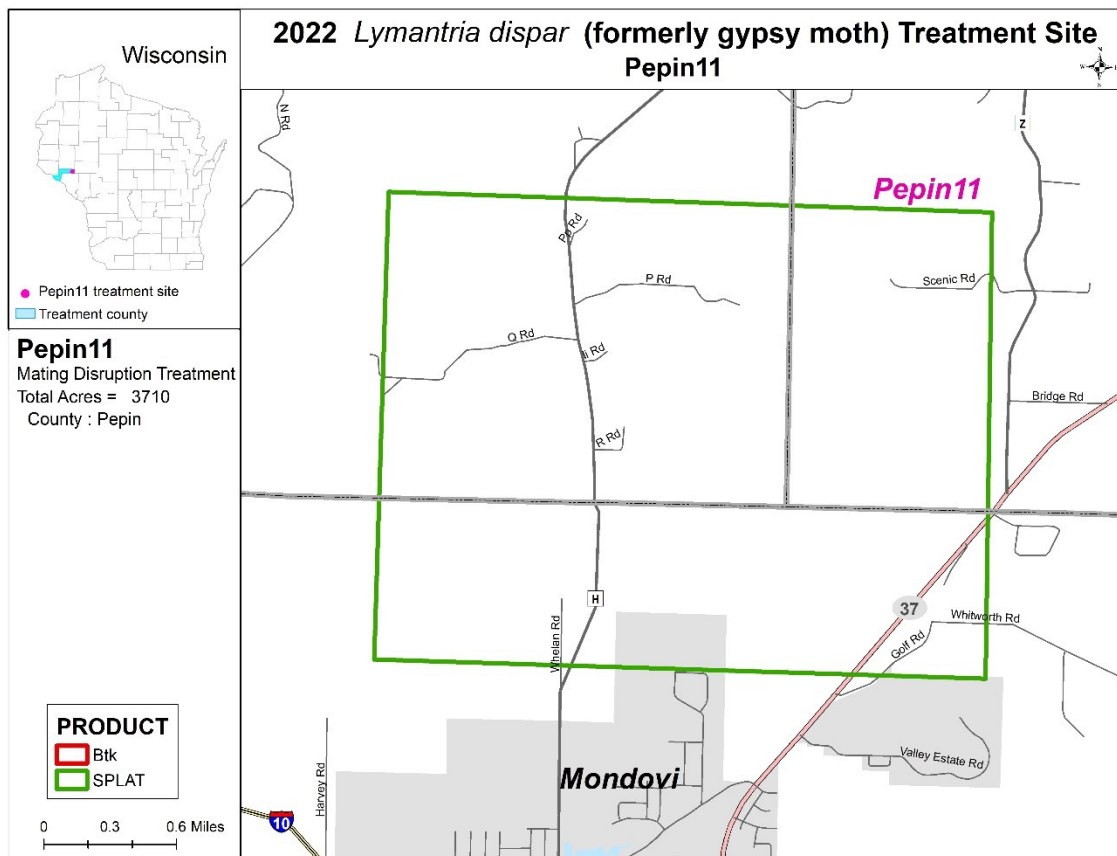
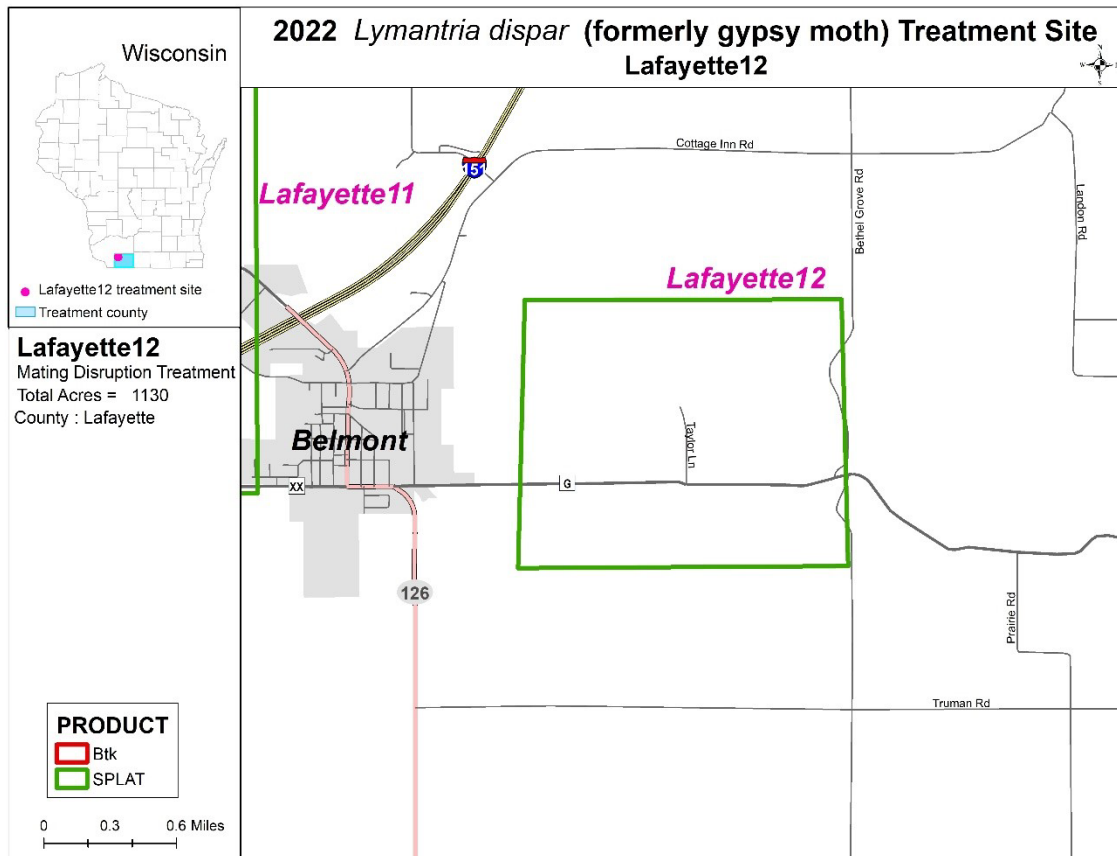


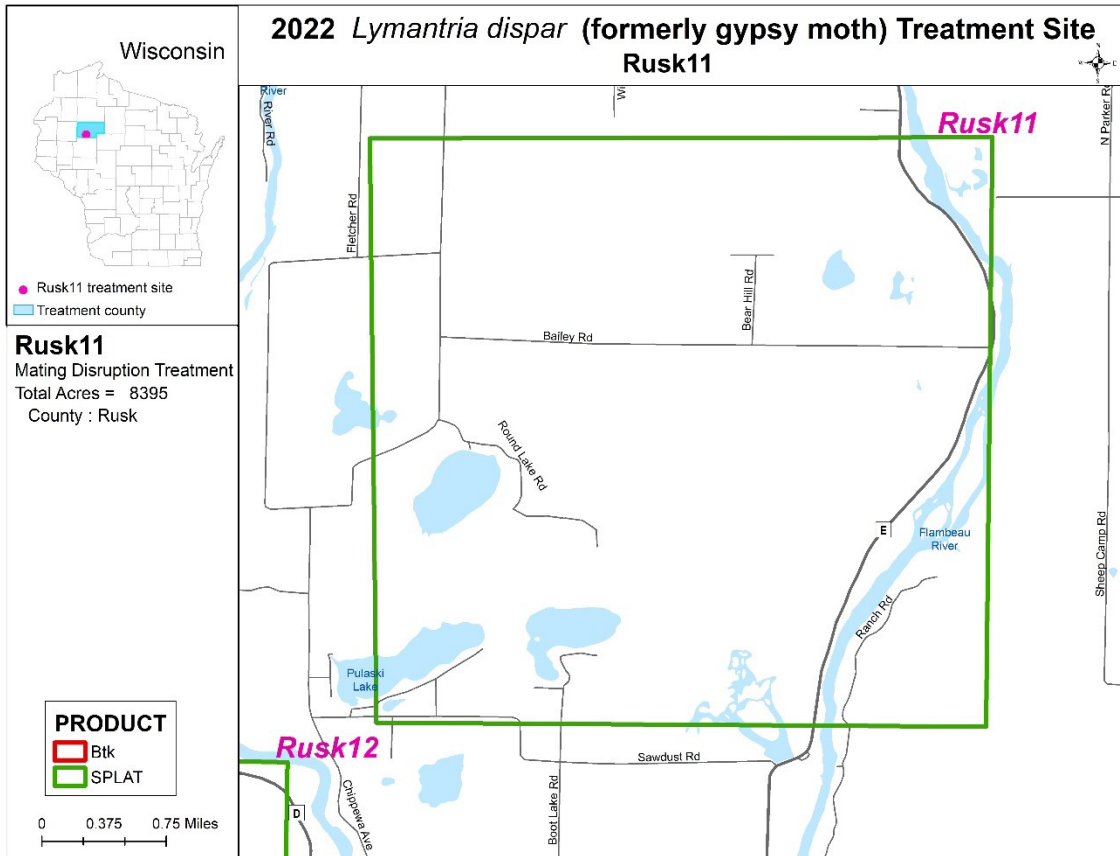




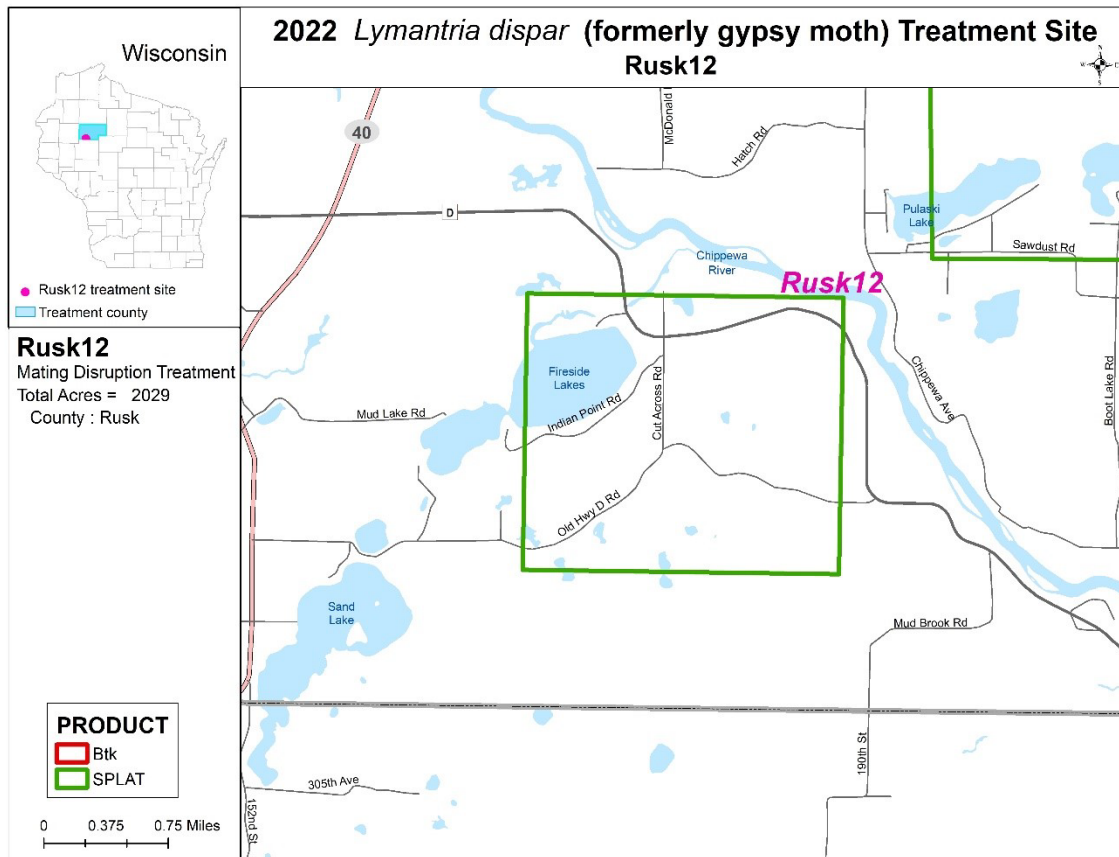


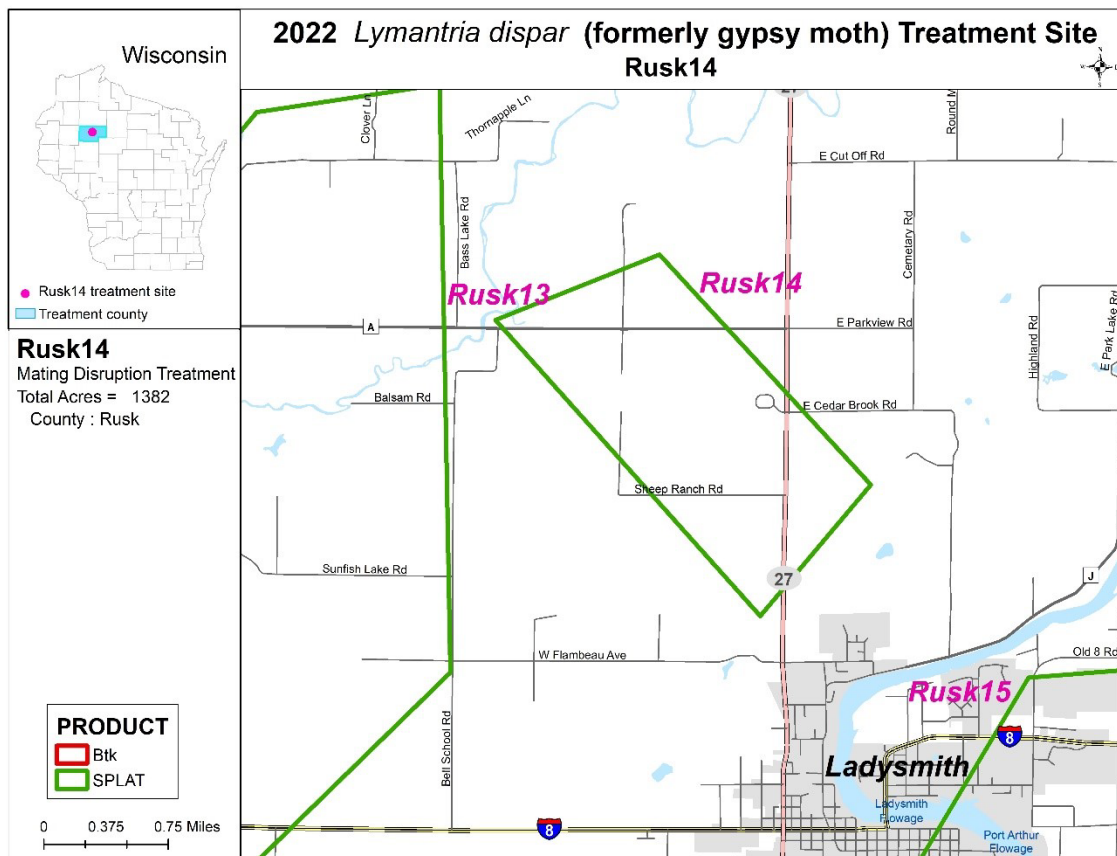
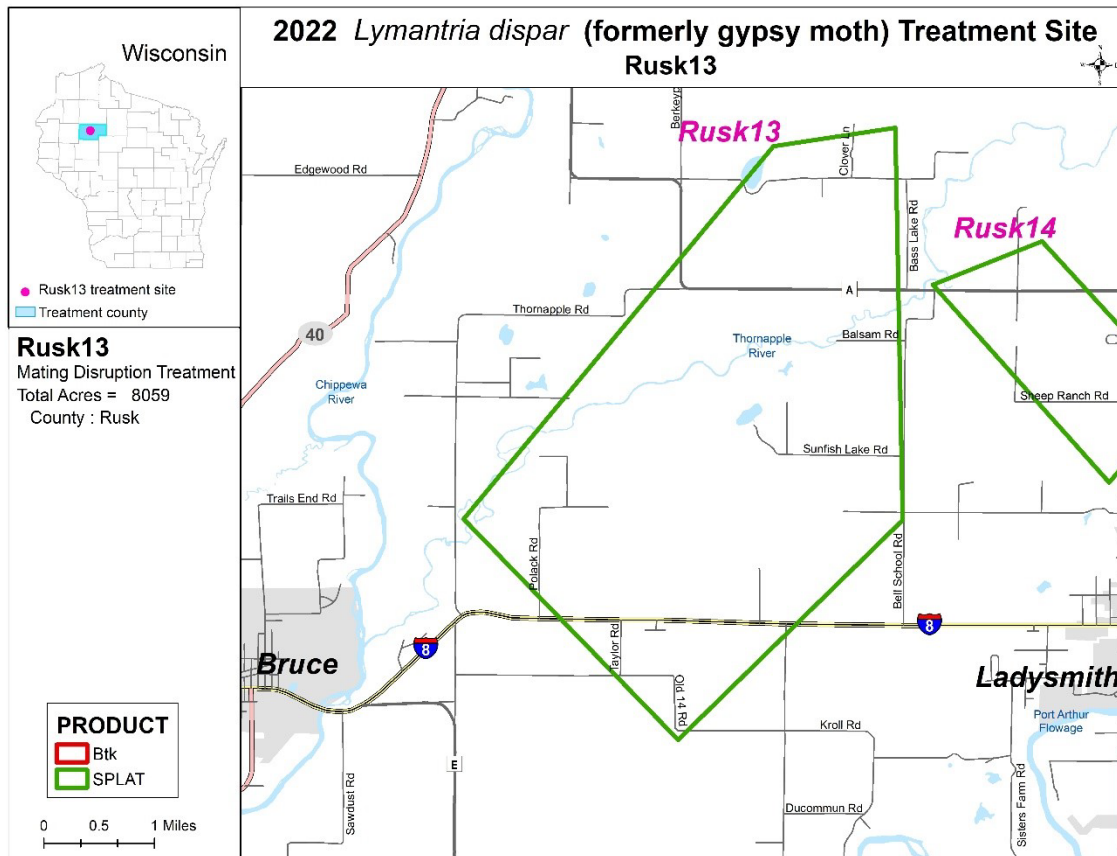


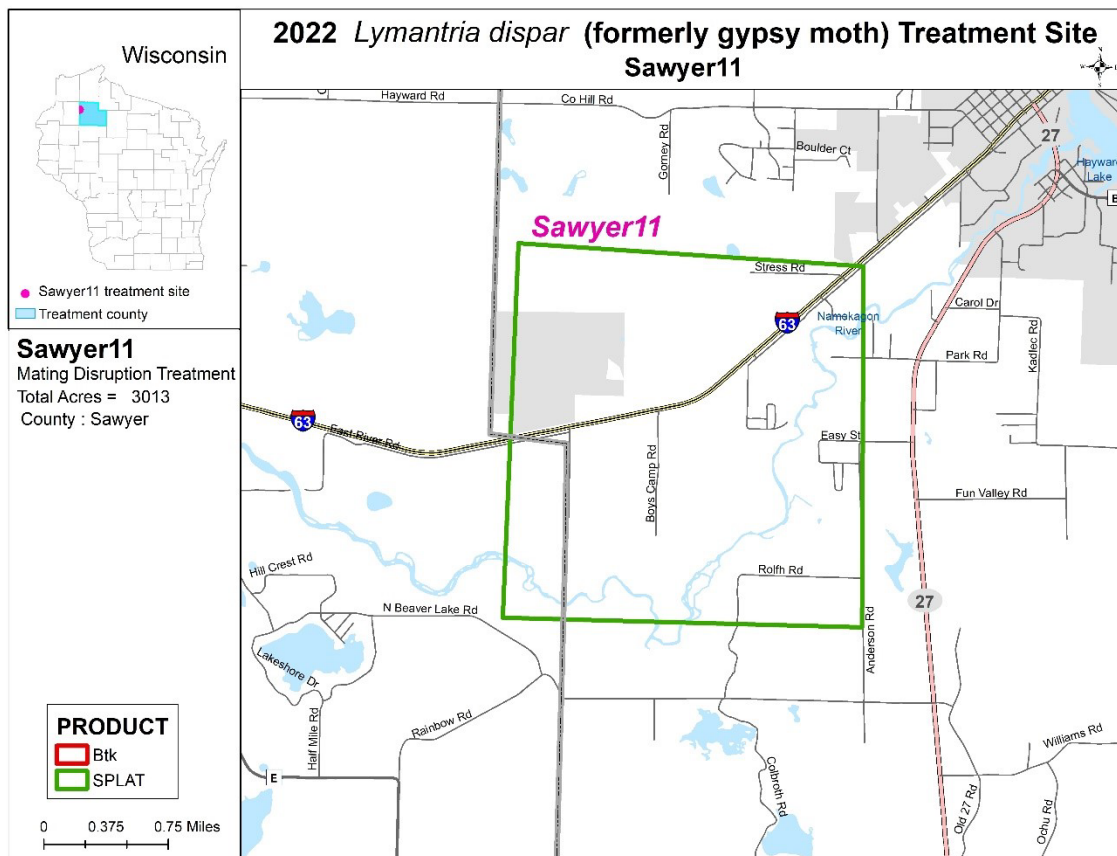
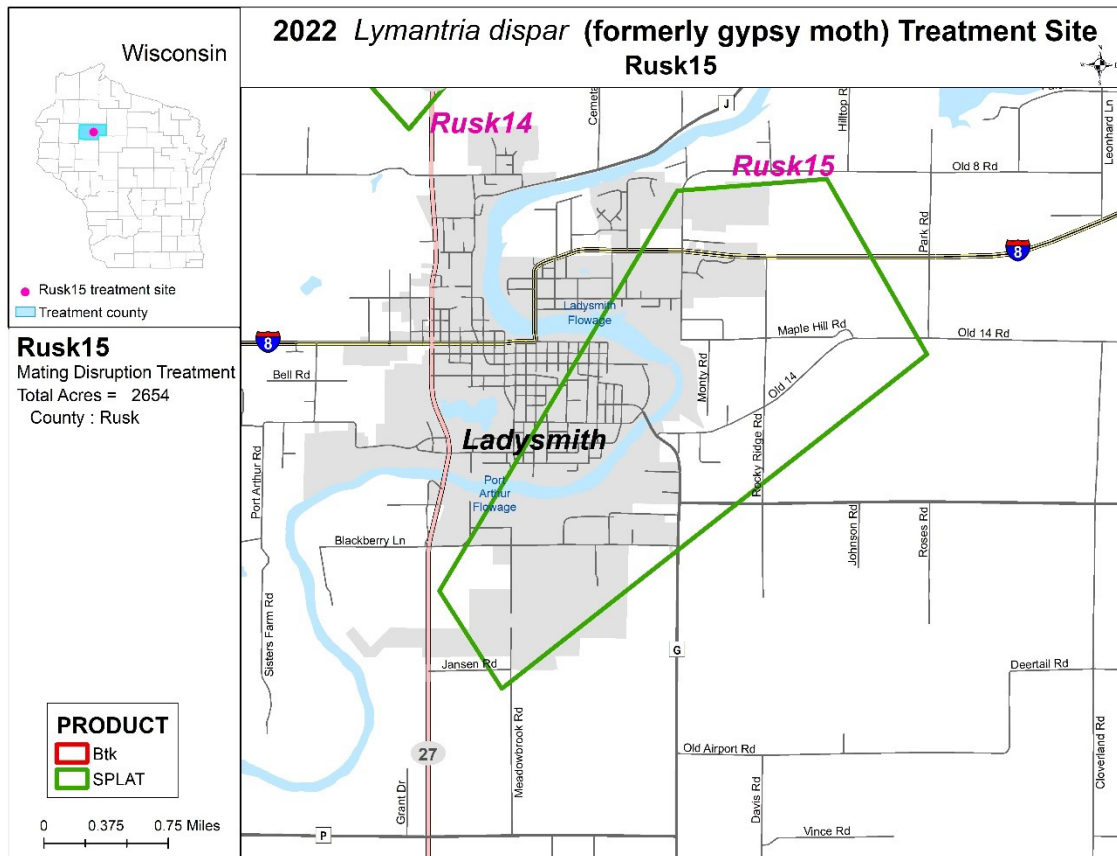


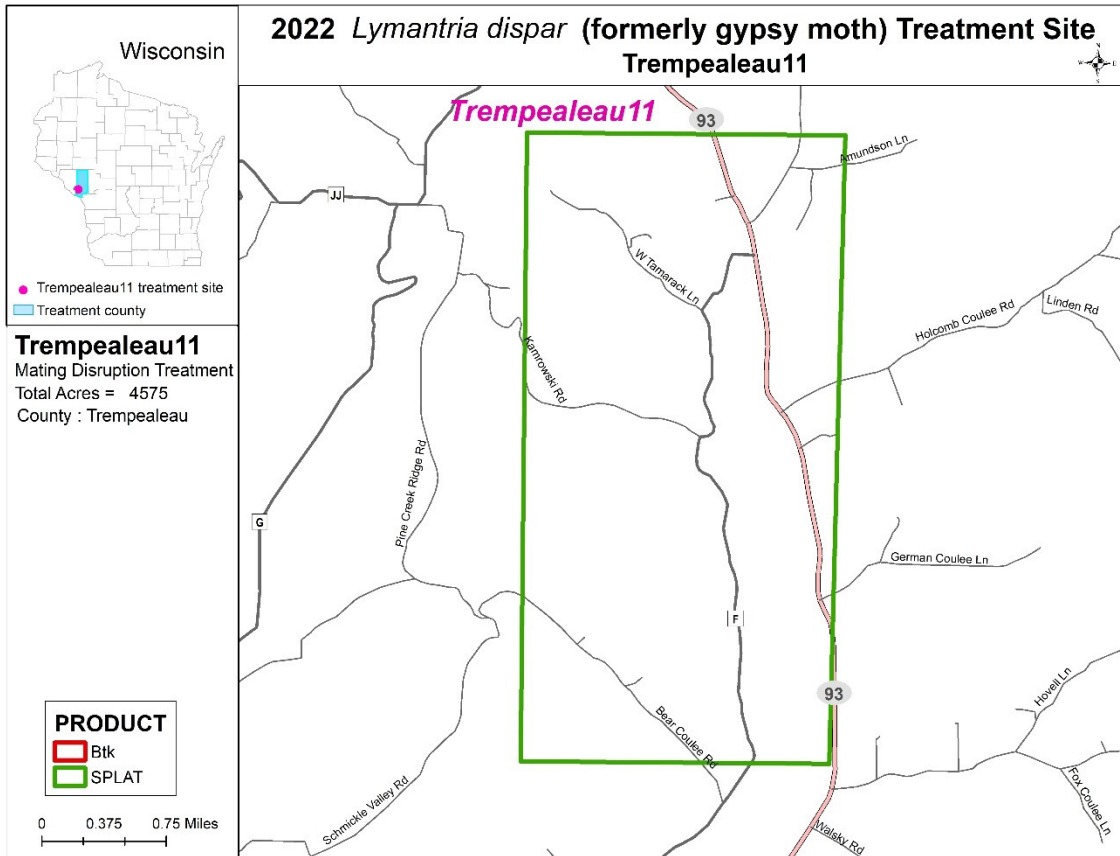


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