

Lee Metcalf National Wildlife Refuge

Lee Metcalf ISST

Accomplishments

Weed Species	Total Survey Acres ¹	Survey Acres Infested ²	Acres Treated ³
Black henbane	0	0.29	0.29
Bull thistle	0	0.06	0.06
Canada thistle	0	0.005	0.005
Dalmatian toadflax	8.46	0.01	0.01
Hoary alyssum	308.82	0.17	0.14
Houndstongue	3.85	1.31	0.70
Leafy spurge	0	0.03	0.005
Musk thistle	0	5.20	3.03
Oxeye daisy	108.80*	0.18	0.10
St. Johnswort	108.80*	0.25	0.25
Sulfur cinquefoil	108.80*	0.47	0.47
Yellow toadflax	1,379.88	6.28	5.87
Project Site Totals	1,809.81	14.25	21.02

¹ Area covered during the course of weed management activities regardless of presence or absence of target weed species as measured by perimeter in GIS.

² Area occupied by weed species within the survey area that does not contain the space between individuals or populations (i.e. net infestation size) as measured by GPS feature for monitoring and treatment combined, but areas in common not additive.

³ The area or subset of infested area that has received some form of treatment as measured by GPS feature.

* One survey area was searched for multiple species but this survey acreage was only counted once.

Highlights

Schedule

Dates	Project Type	Target Species	Size of Crew	Project Notes
27-May-2014 to 29-May-2014	EDRR Inventory & Monitoring Refuge Project Inventory & Monitoring	Hoary alyssum, Sulfur cinquefoil Houndstongue, Musk thistle, Bull thistle	5	Crew training this week while conducting surveys and treatment on EDRR species. Houndstongue, musk thistle and bull thistle also managed opportunistically.
31-May-2014	Community Event	Houndstongue, Musk thistle	4	See Lee Metcalf Weed Round up Report located under the "Community Events" section of the Strike Team annual report.
11-June-2014 to 12-June-2014	EDRR Chemical Treatment	Hoary alyssum, Oxeye daisy, St. Johnswort, Sulfur cinquefoil, Dalmatian toadflax	1 to 5	Crew size these weeks due to equipment maintenance, time off, administrative tasks, etc. Continued survey and treatment of hoary alyssum and began surveys in the Wildlife Viewing Area (WVA) for oxeye daisy, St. Johnswort and sulfur cinquefoil. Surveyed historic locations for mechanical treatment of Dalmatian toadflax.
19-June-2014				
30-June-2014 to 2-July-2014				
11-August-2014 to 14-August-2014	Refuge Project Inventory & Monitoring	Yellow toadflax	4	Started systematic surveys to inventory infestations onsite. Rainy weather and repairs slowed project efforts this week.

2-Sept-2014 to 4-Sept-2014	Refuge Project Chemical Treatment	Yellow Toadflax	4-5	Continued inventory of yellow toadflax and sprayed infestations found.
9-Sept-2014 to 11-Sept-2014				

Coordination and Cooperation

- ISST did not receive any treatment proposals from Lee Metcalf NWR for the 2014 field season. Therefore all projects completed were based on work done in previous years, recommendations submitted to Refuge Manager Tom Reed at season start up (Appendix A) and ongoing coordination with Refuge Manager Tom Reed.
- ISST Crew Leader Jessica Zarate also coordinated with the manager both in person and via email using the “Strike Team Expectation and Accomplishment Checklist” (Appendix B -F).
- ISST minimized use of ATVs for treatments on the refuge and use primarily for transportation and filling backpacks. ATVs were used only on roads and dikes up until the end of the season. The majority of work done was with backpack sprayers or mechanical treatment.
 - ATV use was approved for inventory and treatment of yellow toadflax given the extent of infestations on site.
 - Although appropriate use of ATVs was discussed with all crew members regularly and extensively before use on this site, some members of the crew did not adhere to ATV use policy and rode around gates and barriers. This created tracks that were then followed by the general public into closed areas creating an additional management burden for the refuge manager and law enforcement.
 - This incident was out of the ordinary for the Strike Team and unfortunate since ATVs are the best method for mapping and treatment when trying to cover large areas in a short period of time.
- ISST reduced impacts to the landscape when possible by managing multiple species at the same time. However, given the constraints of appropriate herbicide application and timing for effective treatment this could not always be done. Therefore some areas had to be covered more than once to effectively treat targeted species.

Prevention and Education

- The Strike Team efforts typically focus on treatment of new invaders and smaller, satellite infestations. Finding and targeting infestations while they are small provides a higher cost benefit relative to treatment costs, and further enhances protection of the area.

Early Detection and Rapid Response

Dalmatian Toadflax

- All known locations of this species were surveyed in July and plants found were clipped in an effort to clip seed production.
 - Clipped flowers were bagged, tied off and disposed of in the trash.
 - The plants were not clipped all the way to the ground to help prevent a root spread response.
 - Remaining stocks did re-sprout and provided additional vegetation to absorb herbicide in the fall.
- During each of the surveys (summer and fall) historic locations were searched with the addition of a 25 meter buffer surrounding these locations to try and find additional Dalmatian plants.
- The single plant found growing in an opening of snowberry in 2013 was not found this season. No other Dalmatian plants were found during that season.
- Two patches in the northeast corner in areas treated prior to 2013 were treated this season.
- Toadflax moth (*Calophasia lunula*) caterpillars, a biological control agent, were found on the Dalmatian toadflax plants. They were removed and placed on adjacent vegetation during herbicide treatment application. All Dalmatian plants were sprayed in the fall with *Plateau* herbicide mixed with a non-ionic surfactant.

Hoary Alyssum

- Hoary alyssum is an annual that has multiple flushes in a growing season and tends to spread quickly when left unmanaged.
- Focused surveys for this species started at the end of May and continued to the end of June.
 - All historic areas where this species has been mapped were targeted resulting in over 300 acres covered on foot for this species the site.
 - This plant often comes up late May to early June but plants appeared to “late” this year and most patches were readily identifiable by mid –June.
- Because this species is a high priority the team continues to look for and treat this species whenever possible throughout the growing season.
 - It appears that targeting this plant with an aggressive treatment plan has been effective, even though acreages remained nearly the same as in 2013. Acres infested have primarily decreased since detection in 2010 when nearly 3.5 acres were found. Only 0.7 acres were found in 2012, 0.18 acres in 2013 and 0.17 acres this season.
 - There was a notable reduction in density of plants found and all patches were able to be managed mechanically this season. All treated plants that were flowering or developing seeds were pulled and bagged for disposal.
- As noted in the 2013 report, there are dense patches of hoary alyssum present near the south entrance of the refuge growing on the roadside of Wildfowl Lane. Coordination with the County and/or adjacent landowners to treat this infestation is recommended
 - To date, the Strike Team has not found this plant in this region of the refuge.
- Ongoing management of historic known locations should remain in place for several years to treat, monitor and prevent reinvasion.

Inventory and Monitoring

- A yellow toadflax inventory was a priority for this season and ISST covered over 1,300 acres on this mapping and treatment project.
 - Upland habitats and areas adjacent to known locations were the focus of surveys in an effort to determine the extent of this species onsite.
 - Prior to this survey, all historic locations in uplands were the result of incidental observations.
- A systematic survey for yellow toadflax species had not been completed in these communities until 2014.
- The team tried to cover the entire refuge this season but was unable to complete all riparian areas. These areas have been surveyed previously and infestations are known to be extensive.
- Other plants were inventoried and monitored on occasion this season but projects were primarily focused on treatment.
 - A few oxeye daisy plants (0.09 acres) and leafy spurge (0.025 acres) were incidentally mapped when found while surveying for yellow toadflax.
 - Houndstongue and musk thistle were often treated while conducting surveys for other target species. However when infestation became so large they were not effective to management mechanically or were impeding progress of work on target species infestations were monitored.
 - Even though houndstongue and musk thistle were not the focus of survey, they are priority species for management on this refuge and therefore included in monitoring and treatment when possible.



Cloudy and damp fall day at Lee Metcalf NWR. Photo by John Miskella.

- During inclement weather focused surveys of weeds continue and species are mapped and later treated when weather improves.
- Priority weeds are sometimes mapped only without treatment if they occurred in areas that were not suitable for herbicide application and/or were not able to be effectively controlled due to the infestation size or growth habit.
 - Some yellow toadflax patches were mapped only this season because they occurred in areas that may not be suitable for treatment with *Plateau* herbicide.



Storm coming in over the Bitterroot Mountains. Photo by John Miskella.

Management

Wildlife Viewing Area – Oxeye daisy, St. Johnswort and Sulfur Cinquefoil

- Starting in 2012, the Strike Team has conducted focused efforts to treat oxeye daisy, St. Johnswort and sulfur cinquefoil in the WVA.
- Per the herbicide label, all of these species can be effectively controlled using *Milestone* during their active growing period, so they were all targeted at the same time.
 - The manager approved treatment of weeds growing under brush and tree driplines which allowed for 100% of target weeds found to be treated. Care was taken to avoid overspray onto saplings.
- Prior to work in this area, signs are posted at the trail head and the information kiosk to notify trail users that herbicide was being applied. The sign included the herbicide used and date of application and was removed one to two days following application.
- This year the team surveyed the area using historic data going point-to-point searching an area 25 meter around these locations and new plants found spraying target species.
- Flooding hindered efforts early on and some areas had to be resurveyed after water succeeded. But some areas where oxeye daisy was present remained saturated and were not treated this season.
- All work in the WVA area was performed on-foot using backpack sprayers.
- The crew noted patches to be less dense than expected based on historic data. Additionally, infested acres mapped of these species as compared to previous years are slowly decreased. This may indicate populations are responding to management in this area.
 - Oxeye daisy in 2013 was 0.40 acres; in 2014 was 0.09 acres.
 - St. Johnswort in 2013 was 0.46 acres; in 2014 was 0.25 acres.
 - Sulfur cinquefoil in 2013 was 0.65 acres; in 2014 0.47 acres.

Leafy spurge

- Leafy spurge was not a priority species for inventory or treatment this season. The 0.005 acres treated was the result of clipping, bagging and disposal of spurge flowers from a new patch found on the east side of the refuge. This is the only known patch on the east side. All other spurge is known to occur on the west side of the refuge within the riparian habitat along the Bitterroot River.
 - The additional 0.025 acres were mapped northeast of the train trestle while surveying for yellow toadflax.
- Prior to 2014, this species has been targeted for management with little to no control obtained. Even under the best environmental conditions, adaptations of this plant like its waxy cuticle and extensive root system make it very difficult to control.
- On this site, lack of control may be resulting from several factors that may include but not be limited to:
 - Extensive seed bank from a long-establish infestation.
 - Annual flooding aiding in its spread by seed
 - Weather and timing of herbicide application (depending on the scheduling, plants may be too dry or not yet weakened by the onset of frosted)
- Leafy spurge is an aggressive invader and will not only exponentially expand and degrade the riparian habitat on the refuge but will also continue be a seed source for new infestations downstream if left untreated.
 - Continued efforts for controlling this species are recommended. Implementation of multiple control methods and adaptive management strategies will be required for successful removal and restoration where this species is present.

Yellow toadflax

- Over 1,300 acres were surveyed for yellow toadflax this season with nearly 6 acres treated in the late summer and fall.
- ISST estimates about 15 acres infested acres of yellow toadflax onsite based on the 6 acres mapped this year combined with nearly 9 acres mapped last year (most of which was within the riparian habitat not surveyed this season).
 - Several patches of toadflax were also seen on private land surrounding the refuge perimeter to the south and west of the refuge.
- At other sites ISST treats yellow toadflax with a tank mix of *Tordon* and *Distinct*. However, because the *Tordon* tank mix is not suitable for application on this refuge (due to its ability to readily leach through the soil) *Plateau* is currently used for treatment at this refuge.
 - *Plateau* is not ideal for control of yellow toadflax. This herbicide is known to primarily aid in the suppression of infestations rather than their control.
 - Unfortunately, there are not herbicides currently available that are well suited for good control that have low risk to the environment given the site conditions (shallow water table, loose, sandy soils and seasonal flooding in many areas).
 - The use of *Plateau* in many of the areas where these plants occur may pose a risk for water contamination through leaching. Because of this, other options for control need to be considered and utilized.
- Control of yellow toadflax infestations on the refuge will be long-term and costly given the extensive size and distribution of patches present throughout the site. Yellow toadflax is an aggressive invader and difficult to control. ISST recommends the refuge consider evaluating the infestation present and prioritize areas for treatment based on management goals. An adaptive management plan should be prepared to guide treatment and monitoring efforts over time.

Other Species Notes and Findings

- Species such as houndstongue, musk thistle, bull thistle, Canada thistle, and black henbane were not priority species for mapping or treatment this season. However, as time permitted during focused surveys for other species these plants were opportunistically mapped and treated.
 - Very little hoary alyssum was found this season, so during the hoary alyssum inventory several of these refuge priority species were targeted for management.

- Sulfur cinquefoil has been also previously been found in the northeast corner of the refuge. Therefore the team kept watch for this species in this area anytime work was done in this area but none was found.
- The team noted several nests found throughout the field season. Nest of unidentified waterfowl species, small songbirds, turkey, and pheasant were observed.
- A bull moose was seen just south to the “triangle intersection” in the north central region of the refuge.



Bull moose photographed at Lee Metcalf NWR on August 13, 2014. Photo by Charlie Holtz.

Herbicide Applied

- 0.01oz of *Escort XP* was used for treatment of houndstongue.
- 1.95 oz of *Milestone* was used for treatment of oxeye daisy, St. Johnswort and sulfur cinquefoil.
- 99.95 oz of *Plateau* was used for treatment of yellow toadflax.

Proposed 2015 Schedule

- Hoary alyssum has multiple flushes throughout the growing season and ISST recommends it remains a priority for control at any time it is detected. .
- Dalmatian toadflax monitoring of historic locations typically occurs the first week of July when this plant is flowering and they can be clipped. If plants are found, fall herbicide application in September is recommended.
- If treatment in the WVA remain a priority for oxeye, St. Johns and sulfur cinquefoil it should be scheduled for late June or early July when these plants are early in development and after flooding recedes.
- Leafy spurge and yellow toadflax should remain a refuge priority, but control will be costly. Therefore it is highly recommended an adaptive management plan and various control options are considered to most effectively restore these areas and meet management goals.



Great blue heron over refuge wetlands coming in to land. Photo by John Miskella.

Appendix A

2014 Proposed ISST Projects for Lee Metcalf NWR

Late May - early June

- Hoary alyssum – systematic transecting of previous areas (also look for this plant all season as EDRR species and treated whenever found via spray or handpull)
- Sulfur cinquefoil – NE corner (systematic transecting)
- Italian bugloss – S2 field and perimeter of cultivated fields where it's been previously known to occur. Last worked on this project in 2012.
- Houndstongue & Musk thistle – Not EDRR but refuge priority species. I want to treat around work area in maintenance yard. We could also go to any priority areas Tom has in mind as time allows.

Mid - June – July

- St. Johns, oxeye, sulfur cinquefoil in WVA – we covered systematically in 2013, so we could resurvey or do point-to-point
- Survey for Dalmatian toadflax and clip flowers

September - October

- Yellow toadflax in upland areas only outside of riparian areas. We have been doing only point-to-point in these areas because our time has been spent working on spurge and YTF along the river. I can't say if there has been improvement or not at this point, but I'm sure there is more out there than we know about.

Appendix B

Strike Team Expectation and Accomplishment Checklist

Arrival Interview

Station: Lee Metcalf NWR

Date of Visit: week of 5/27/13

Objectives and Priority Areas defined:

Species	Unit	Section of Unit	Inventory /Monitor	Treat	Chemical (ref or isst)
Hoary alyssum	Along East side of refuge	Cover same areas as 2012	Only in event we are unable to treat*	Backpack spray	Escort XP - refuge
Houndstongue	Headquarters	Around maintenance buildings and bunkhouse	No	Remove seed stalks, shoveling, backpack spray	Escort XP - refuge
Musk thistle & Bull thistle	East side of refuge	Will treat isolated plants when found while targeting other weeds	No	Shovel	N/A

Notes:

*areas will be monitored if unable to spray due to sensitive resources, weather, etc. or mechanical removal is not feasible

ATV Use: (define whether allowed, if partial allowance any restricted areas or travel directions, including only along fence line or not, only along two-track or if can systematically traverse project site, or if point-to-point treatment)

ATV use is permitted on existing roads, dikes and large trails. They may also be used in fields following the use of large equipment. ATVs may not be used in any fields prior to July 1 and after this date ATV use will need to be determined on a case-by-case basis as approved by the refuge manager.

Other access issues, conflicts, etc...:

Station or Site Manager (or

Acting): _____ Date: _____

(back has Exit Interview)

Exit Interview

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Completed (yes or no with explanation)
Hoary alyssum	Along East side of refuge	Cover same areas as 2012	Only in event we are unable to treat*	Mechanical	No, see notes below. Small patches were found and all found were removed.
Houndstongue	Headquarters & areas where surveyed for hoary alyssum	Around maintenance buildings and bunkhouse	No	Remove seed stalks, shoveling, backpack spray	Treated all isolated and small patches found. Large patches were monitored if all could not be treated.
Musk thistle & Bull thistle	East side of refuge in areas where surveyed for hoary alyssum	Will treat isolated plants when found while targeting other weeds	No	Mechanical	Treated all isolated and small patches found. Large patches were monitored if all could not be treated.
Sulfur cinquefoil	East side of refuge in areas where surveyed for hoary alyssum	NE corner and other areas surveyed	No	Yes	Yes, none found.

Notes:

Not all historic areas were able to be surveyed this week, so we will continue working on this species when we return in a couple of weeks. The northeast corner, south east triangle and most of the field north of the maintenance area were completed. The southern-most fields were started also. We completed all areas where plants were found last season. Very few hoary alyssum plants were found but several houndstongue and musk thistle patches were managed and/or monitored.

Concerns with Project:

None.

Site Manager (or Acting): _____ Date: _____

Appendix C

Strike Team Expectation and Accomplishment Checklist

Arrival Interview

Station: Lee Metcalf NWR

Date of Visit: 11-12, 19 of June 2014

Objectives and Priority Areas defined:

Species	Unit	Section of Unit	Inventory /Monitor	Treat	Chemical (ref or isst)
Hoary alyssum (Houndstonuge, Musk and Bull thistle will also be treated incidentally)	Along East side of refuge	Cover same areas as 2012	Only in event we are unable to treat*	Backpack spray	Escort XP – ISST
Sulfur cinquefoil, St. Johnswort, Oxeye daisy	Wildlife Viewing Area (WVA)	Point to point surveys with a 25-30M buffer based on historic data	No	Backpack spray	Milestone –ISST

Notes:

*areas will be monitored if unable to spray due to sensitive resources, weather, etc. or mechanical removal is not feasible

ATV Use: (define whether allowed, if partial allowance any restricted areas or travel directions, including only along fence line or not, only along two-track or if can systematically traverse project site, or if point-to-point treatment)

ATV use is permitted on existing roads, dikes and large trails. They may also be used in fields following the use of large equipment. ATVs may not be used in any fields prior to July 1 and after this date ATV use will need to be determined on a case-by-case basis as approved by the refuge manager.

Other access issues, conflicts, etc...:

None.

Station or Site Manager (or

Acting): _____ Date: _____

(back has Exit Interview)

Exit Interview

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Completed (yes or no with explanation)
Hoary alyssum	Along East side of refuge	Cover same areas as 2012	Only in event we are unable to treat*	Mechanical	Yes, see below.
Sulfur cinquefoil, St. Johnswort, Oxeye daisy	Wildlife Viewing Area (WVA)	Point to point surveys with a 25-30M buffer based on historic data	No	Backpack spray	No, not enough time to complete entire area. Also many areas were flooded and inaccessible.

Notes:

These projects were worked by 1-2 crew members on these dates. All areas where hoary was found to be present in recent years was surveyed and plants found were treated. However since time at the refuge is limited not all areas covered in 2012 for hoary were able to be resurveyed since treatment of weeds in the WVA is a higher priority over monitoring. The WVA project during the week of June 30th when the crew returns to the site.

Concerns with Project:

None.

Site Manager (or Acting): _____ Date: _____

Appendix D

Strike Team Expectation and Accomplishment Checklist

Arrival Interview

Station: Lee Metcalf NWR

Date of Visit: June 30 – July 2, 2014

Objectives and Priority Areas defined:

Species	Unit	Section of Unit	Inventory /Monitor	Treat	Chemical (ref or isst)
Sulfur cinquefoil, St. Johnswort, Oxeye daisy	Wildlife Viewing Area (WVA)	Point to point surveys with a 25-30M buffer based on historic data	No	Backpack spray	Milestone –ISST
Dalmatian toadflax	Central and NE regions of refuge	Point to point surveys with a 25-30M buffer based on historic data	No	Yes, clip and bag flowering plants	N/A – Optimal to treat in the fall.
Yellow toadflax	Uplands on East side of refuge	Fields where historic data is present	Yes	No	N/A – Optimal to treat in the fall.

Notes:

Continue working in WVA and recheck areas previous flooded that could not be accessed. Following completion of the WVA, the team will inventory of yellow toadflax in upland fields.

*areas will be monitored if unable to spray due to sensitive resources, weather, etc. or mechanical removal is not feasible

ATV Use: (define whether allowed, if partial allowance any restricted areas or travel directions, including only along fence line or not, only along two-track or if can systematically traverse project site, or if point-to-point treatment)

ATV use is permitted on existing roads, dikes and large trails. They may also be used in fields following the use of large equipment. ATVs may not be used in any fields prior to July 1 and after this date ATV use will need to be determined on a case-by-case basis as approved by the refuge manager.

Other access issues, conflicts, etc...:

None.

Station or Site Manager (or

Acting): _____ Date: _____

(back has Exit Interview)

Exit Interview

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Completed (yes or no with explanation)
Sulfur cinquefoil, St. Johnswort, Oxeye daisy	Wildlife Viewing Area (WVA)	Point to point surveys with a 25-30M buffer based on historic data	No	Backpack spray	Yes, all accessible areas were surveyed and treated. Some areas were still flooded and inaccessible.
Dalmatian toadflax	Central and NE regions of refuge	Point to point surveys with a 25-30M buffer based on historic data	No	Yes, clip and bag flowering plants	Yes, two patches found and managed.
Yellow toadflax	Uplands on East side of refuge	Fields where historic data is present	Yes	No	No, more time needed to complete all areas.
Leafy spurge	Uplands on East side of refuge	Fields where historic data is present	No	Yes, clipped and bagged flowering plants	Not a target species, but mechanically treated when found to curb seeding. No spurge previously mapped by ISST in this area.

Notes:

No Dalmatian toadflax was found in location it was treated in 2012, however, a historic patch in the far NE corner which hadn't been seen in a few years is back up. A second patch of only a couple of stem within 100 feet of this historic location was also found and clipped.

Concerns with Project:

None.

Site Manager (or Acting): _____ Date: _____

Appendix E

Strike Team Expectation and Accomplishment Checklist

Arrival Interview

Station: Lee Metcalf NWR

Date of Visit: Aug 11-14, 2014

Objectives and Priority Areas defined:

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Chemical (ref or isst)
Yellow toadflax	Uplands on East side of refuge and areas to the west with minimal flooding	Fields where historic data is present and areas where observed earlier in 2014 by ISST and County staff	No	Yes, point-to-point with 25M buffer around historic data.	Plateau w/surfactant - Ref
Leafy spurge					

Notes:

*areas will be monitored if unable to spray due to sensitive resources, weather, etc. or mechanical removal is not feasible

I met with Tom on 8/11/14 to discuss yellow toadflax and leafy spurge projects, treatment history, known locations, potential herbicides, environmental constraints, etc. I printed maps of yellow toadflax and spurge locations mapped by ISST over the past several years and based on these maps priority areas were delineated. ISST will primarily work in upland areas starting in the south east corner working northward and then will move over to the west side focusing on areas that had minimal flooding in 2014.

We discussed several herbicides and it was decided we would continue to use Plateau with surfactant for now given the limited options of herbicides available for treatment of yellow toadflax that offer good control.

ATV Use: (define whether allowed, if partial allowance any restricted areas or travel directions, including only along fence line or not, only along two-track or if can systematically traverse project site, or if point-to-point treatment)

ATV use is permitted on existing roads, dikes and large trails. They may also be used in fields following the use of large equipment. ATVs may not be used in any fields prior to July 1 and after this date ATV use will need to be determined on a case-by-case basis as approved by the refuge manager.

ATV use was discussed with Tom and we are permitted to use them but must take care to avoid nesting birds and minimize tracks. Birds have been found recently still with young broods.

Other access issues, conflicts, etc...:

None.

Station or Site Manager (or

Acting): _____ Date: _____

(back has Exit Interview)

Exit Interview

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Completed (yes or no with explanation)
Yellow toadflax	Uplands on East side of refuge and areas to the west with minimal flooding	Fields where historic data is present and areas where observed earlier in 2014 by ISST and County staff	No	Yes, point-to-point with 25M buffer around historic data.	No, additional work to be completed when we return to the site.
Leafy spurge					Yes, not the target of surveys this year. Clipped a new patch found the east side of the site to prevent seeding.
Hoary alyssum	Found incidentally				Treated to the extent possible. Will continue to work on this species as time is available.

Notes:

Concerns with Project:

None.

Site Manager (or Acting): _____ Date: _____

Appendix F

Strike Team Expectation and Accomplishment Checklist

Arrival Interview

Station: Lee Metcalf NWR

Date of Visit: Sept 2-4 & Sept 8-11, 2014

Objectives and Priority Areas defined:

Species	Unit	Section of Unit	Inventory/ Monitor	Treat	Chemical (ref or isst)
Dalmatian toadflax	Central and NE regions of refuge	Point to point surveys with a 25-30M buffer based on historic data	No	Yes	Plateau –Refuge, Surfactant – ISST
Yellow toadflax	Upland areas throughout refuge	Fields where historic data is present starting on East side and then moving West	Yes*		

Notes:

*areas will be monitored if unable to spray due to sensitive resources, weather, etc. or mechanical removal is not feasible

We continued treatments from last visit in August based on guidance received on August 11th from meeting with Tom Reed.

ATV Use: (define whether allowed, if partial allowance any restricted areas or travel directions, including only along fence line or not, only along two-track or if can systematically traverse project site, or if point-to-point treatment)

ATV use is permitted on existing roads, dikes and large trails. They may also be used in fields following the use of large equipment. ATVs may not be used in any fields prior to July 1 and after this date ATV use will need to be determined on a case-by-case basis as approved by the refuge manager.

ATV use was discussed with Tom and we are permitted to use them but must take care to avoid nesting birds and minimize tracks. Late broods were still being found in August.

Other access issues, conflicts, etc...:

None.

Station or Site Manager (or

Acting): _____ Date: _____

(back has Exit Interview)

Exit Interview

Species	Unit	Section of Unit	Inventory/Monitor	Treat	Completed (yes or no with explanation)
Dalmatian toadflax	Central and NE regions of refuge	Point to point surveys with a 25-30M buffer based on historic data	No	Yes	Yes, all found in 2014 was sprayed. Plants found were flowering so the flowers were clipped and bagged for disposal to prevent seeding.
Yellow toadflax	Upland areas throughout refuge	Fields where historic data is present starting on East side and then moving West	Yes*		Yes, all upland areas with historic data were treated and additional surveys of uplands throughout the refuge were completed. More yellow toadflax is know to be present however on the west side and in areas that seasonally flood.
Leafy spurge	Upland areas throughout refuge	Within yellow toadflax survey areas	No	Yes, if found in upland areas in association with yellow toadflax	No, some but not all populations found were treated.

Notes:

Toadflax moth caterpillars (*Calophasia lunula*) was found on the Dalmatian toadflax plants. This is a biological control for yellow and Dalmatian toadflax, that damage the plants by voracious feeding on new leaves and flowers first and then stems, leaves and flowers to the point of defoliation. It doesn't kill the plants but reduces their ability to seed. Care was taken to avoid spraying these caterpillars when the Dalmatian plants were treated. No caterpillars were found on the yellow toadflax plants.

Concerns with Project:

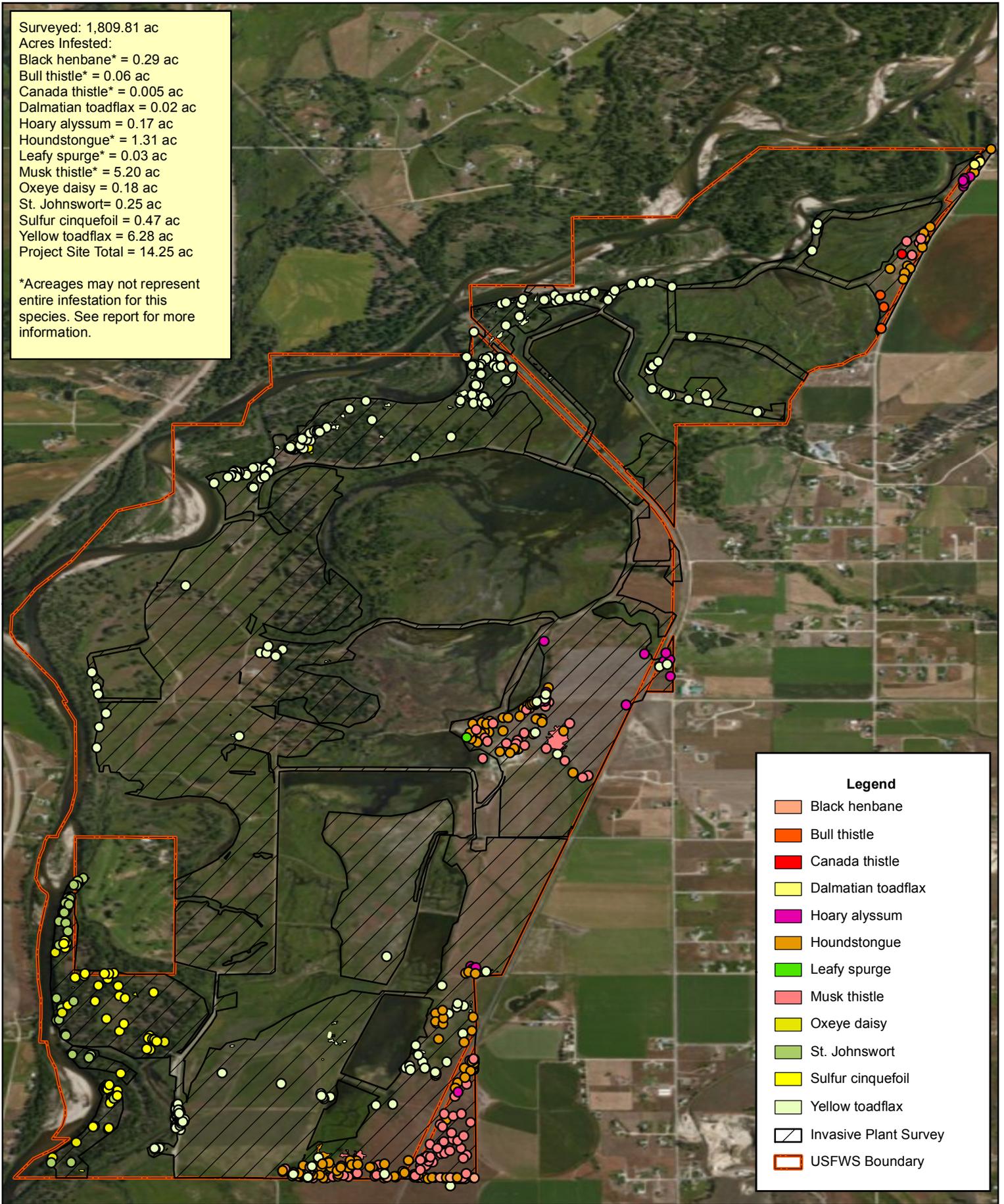
Although we got a lot sprayed across a large area in a short time the past two weeks, there is likely more yellow toadflax present in areas yet to be covered and within the riparian and seasonally flooded habitats onsite. Control of toadflax species is difficult and implementation of an adaptive management plan that uses multiple tools to combat these species is recommended.

Site Manager (or Acting): _____ Date: _____



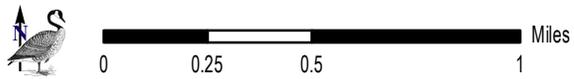
Surveyed: 1,809.81 ac
 Acres Infested:
 Black henbane* = 0.29 ac
 Bull thistle* = 0.06 ac
 Canada thistle* = 0.005 ac
 Dalmatian toadflax = 0.02 ac
 Hoary alyssum = 0.17 ac
 Houndstongue* = 1.31 ac
 Leafy spurge* = 0.03 ac
 Musk thistle* = 5.20 ac
 Oxeye daisy = 0.18 ac
 St. Johnswort = 0.25 ac
 Sulfur cinquefoil = 0.47 ac
 Yellow toadflax = 6.28 ac
 Project Site Total = 14.25 ac

*Acreages may not represent entire infestation for this species. See report for more information.



Legend

- Black henbane
- Bull thistle
- Canada thistle
- Dalmatian toadflax
- Hoary alyssum
- Houndstongue
- Leafy spurge
- Musk thistle
- Oxeye daisy
- St. Johnswort
- Sulfur cinquefoil
- Yellow toadflax
- Invasive Plant Survey
- USFWS Boundary



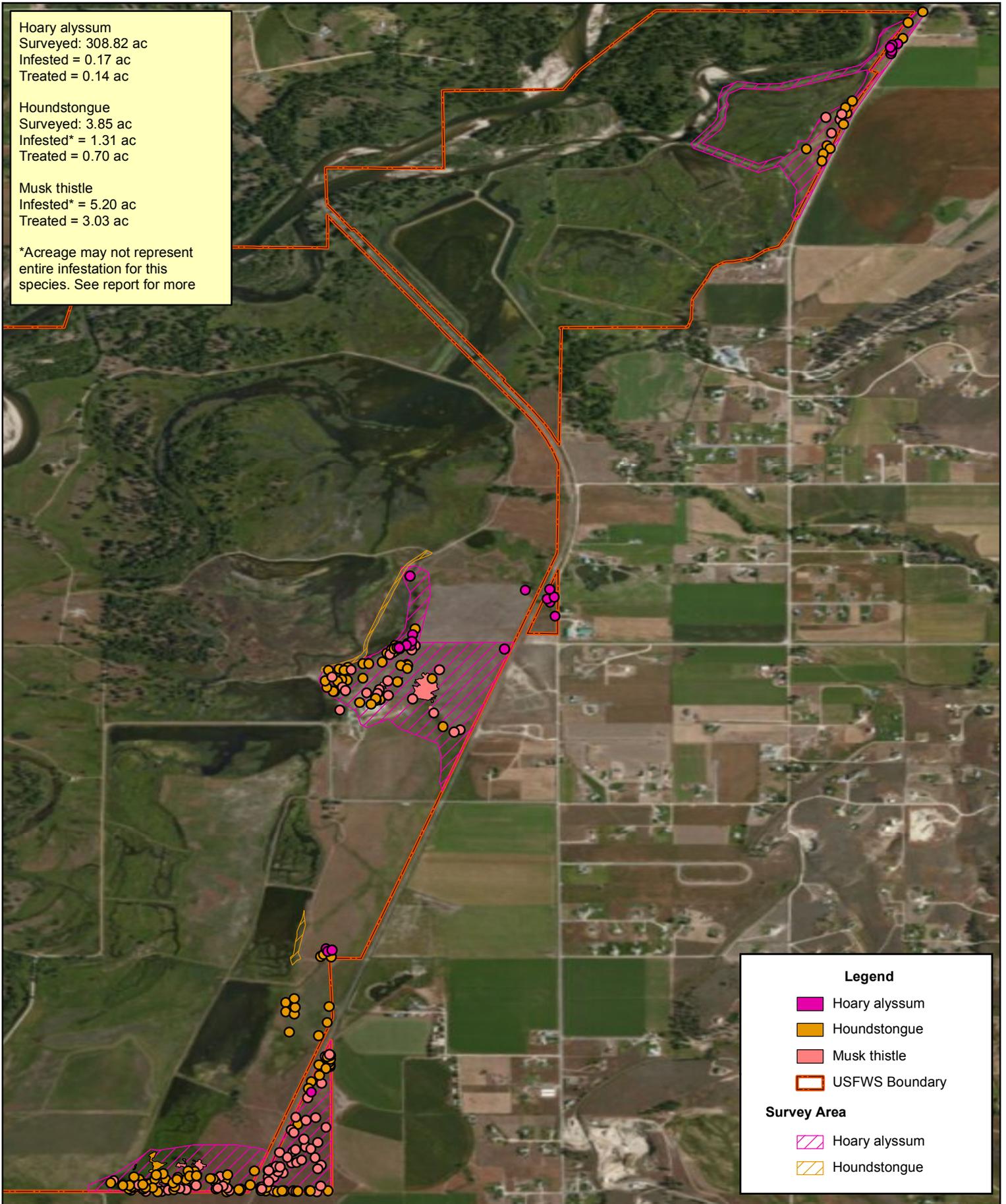


Hoary alyssum
 Surveyed: 308.82 ac
 Infested = 0.17 ac
 Treated = 0.14 ac

Houndstongue
 Surveyed: 3.85 ac
 Infested* = 1.31 ac
 Treated = 0.70 ac

Musk thistle
 Infested* = 5.20 ac
 Treated = 3.03 ac

*Acreage may not represent entire infestation for this species. See report for more

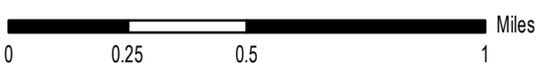


Legend

- Hoary alyssum
- Houndstongue
- Musk thistle
- USFWS Boundary

Survey Area

- Hoary alyssum
- Houndstongue



Reference image from ESRI ArcMap Basemap Imagery

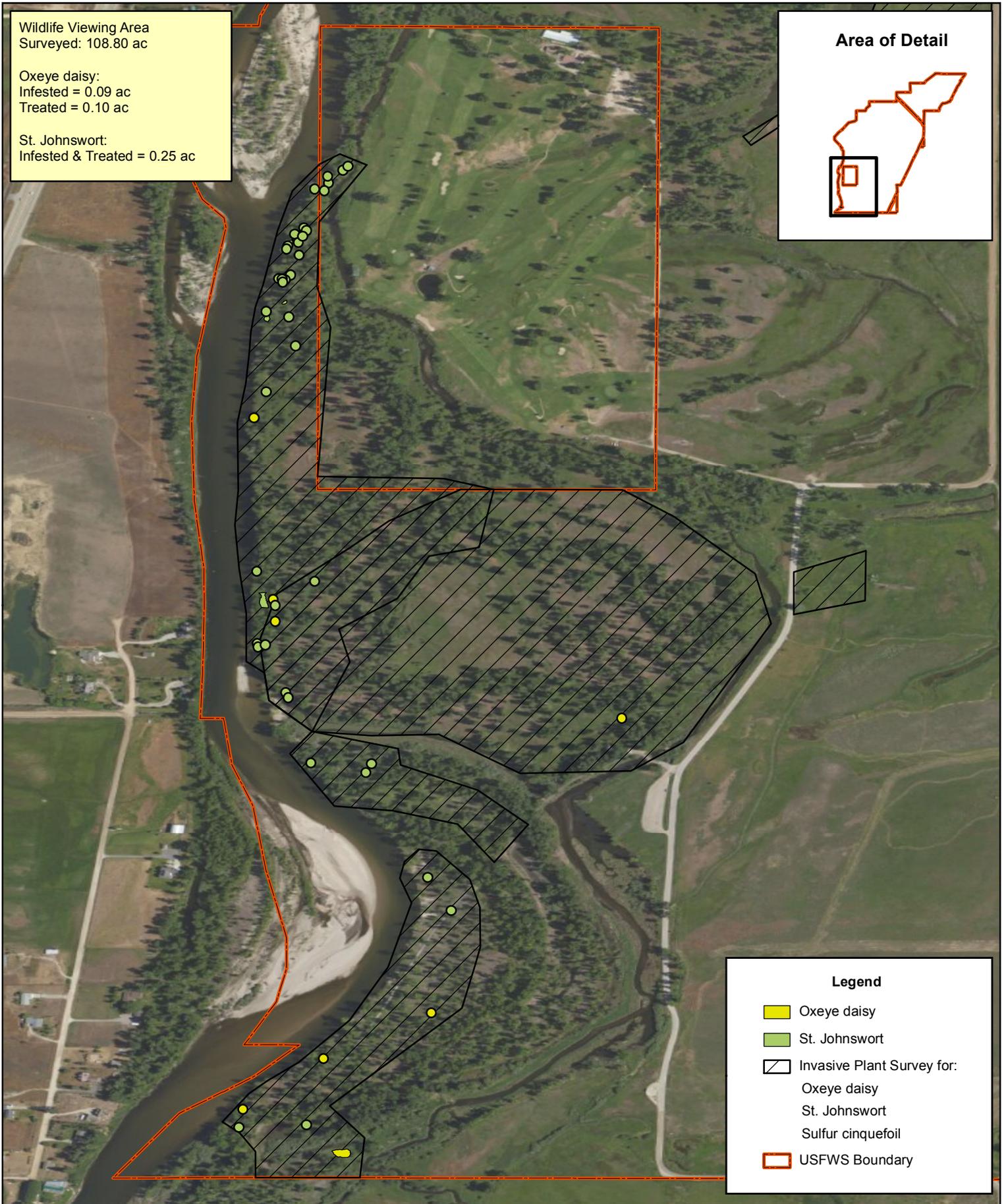
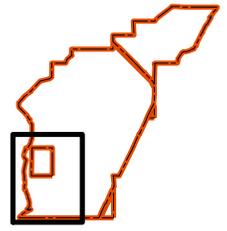


Wildlife Viewing Area
Surveyed: 108.80 ac

Oxeye daisy:
Infested = 0.09 ac
Treated = 0.10 ac

St. Johnswort:
Infested & Treated = 0.25 ac

Area of Detail



Legend

-  Oxeye daisy
-  St. Johnswort
-  Invasive Plant Survey for:
Oxeye daisy
St. Johnswort
Sulfur cinquefoil
-  USFWS Boundary

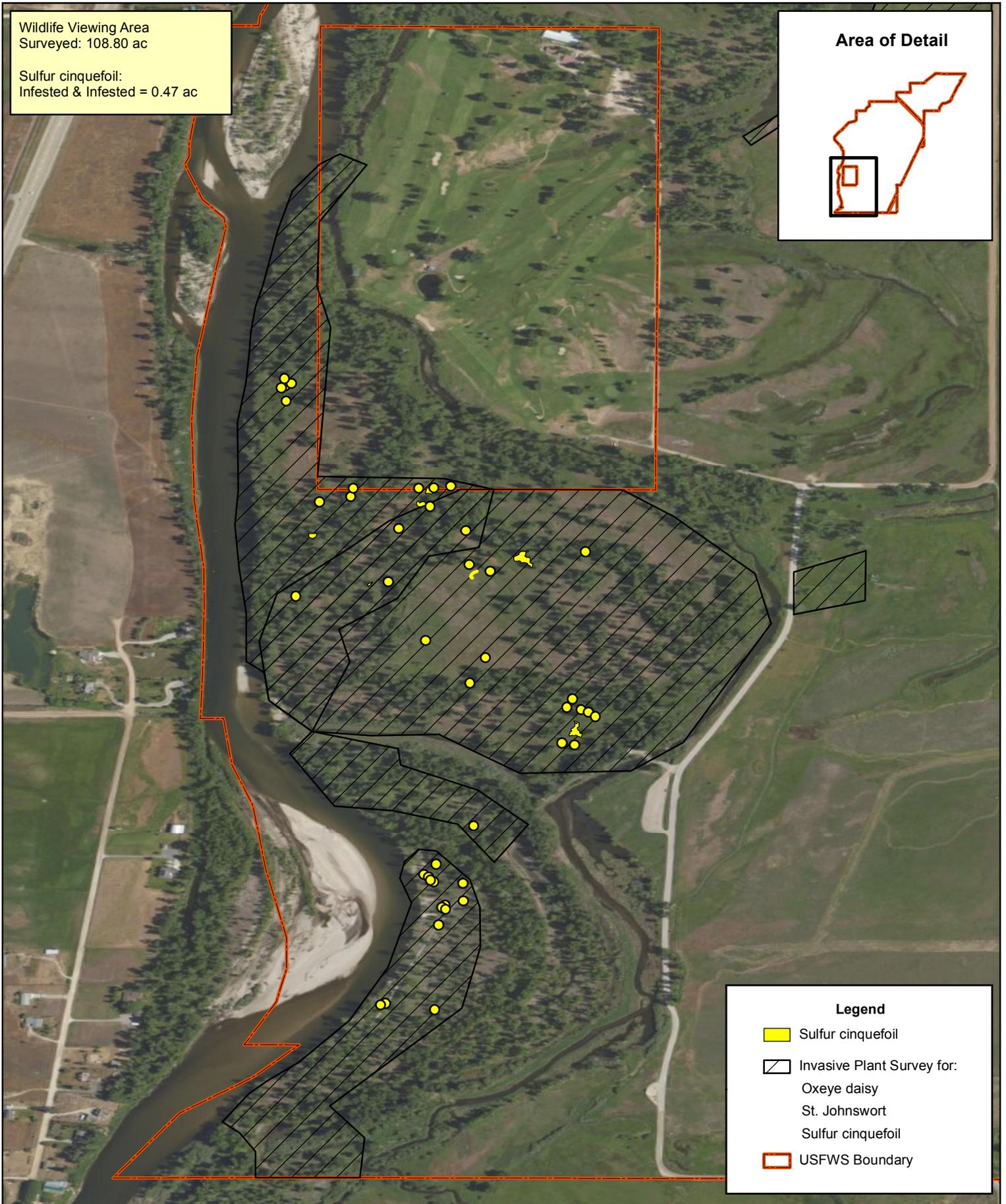
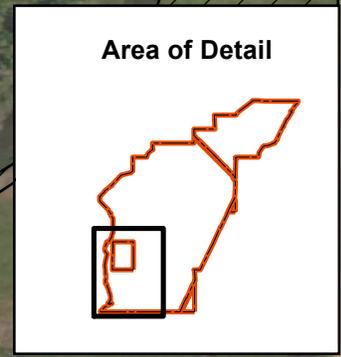


Reference image from ESRI ArcMap Basemap Imagery



Wildlife Viewing Area
 Surveyed: 108.80 ac

Sulfur cinquefoil:
 Infested & Infested = 0.47 ac



Legend

- Sulfur cinquefoil
- Invasive Plant Survey for:
Oxeye daisy
St. Johnswort
Sulfur cinquefoil
- USFWS Boundary



Reference image from ESRI ArcMap Basemap Imagery

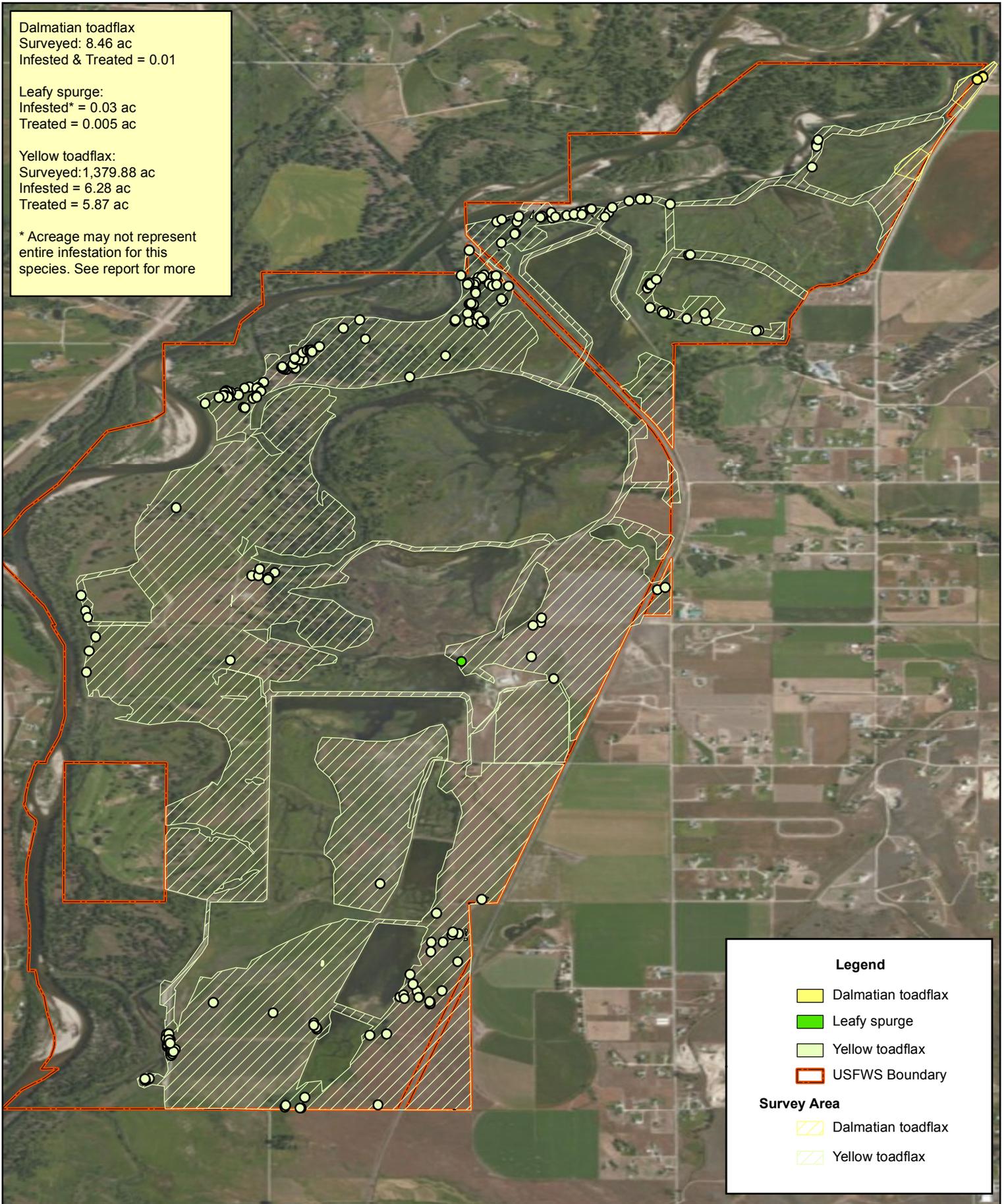


Dalmatian toadflax
 Surveyed: 8.46 ac
 Infested & Treated = 0.01

Leafy spurge:
 Infested* = 0.03 ac
 Treated = 0.005 ac

Yellow toadflax:
 Surveyed: 1,379.88 ac
 Infested = 6.28 ac
 Treated = 5.87 ac

* Acreage may not represent entire infestation for this species. See report for more



Legend

- Dalmatian toadflax
- Leafy spurge
- Yellow toadflax
- USFWS Boundary

Survey Area

- Dalmatian toadflax
- Yellow toadflax



Compliments of the

MONTANA DEPARTMENT OF AGRICULTURE
 AGRICULTURAL SCIENCES DIVISION
 PO BOX 200201
 HELENA, MT 59620-0201
 Phone 406-444-3730

DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen, J. Wilson, C. Holtz, J. Miskella, J.Zarate	
Date	5/27/2014	
County	Ravalli	
Time Start/Stop	3:15pm-4:55pm	
Temperature	74°F	
Relative Humidity	35%	
Wind Speed/Direction (from)	4mph W	
Pesticide Manufacturer	-	
Trade Name	-	
EPA Reg # or Formulation	-	
Rate: Product/Diluent Per Acre	-	
Amount of Chemical Applied	-	
Equipment Used (atv,backpack,truck,saw)	-	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	Hand-pull	
Plant Phenology & Stage	Flowering	
Dominant Pest(s)	Hoary alyssum, Houndstongue	
Equipment Used	Shovel	
Acres/Area Treated or # of plants	0.5 acres	
GPS Filename	-	

Location #1 (Site specific description) NE corner of refuge Location #2 (Site specific description) Maintenance shop yard	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Found Dalmatian toadflax (EDRR species) and spotted knapweed. Found a turkey nest with several eggs in a gully in the NE corner of refuge.
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen, C. Holtz, J. Miskella	
Date	5/28/2014	
County	Ravalli	
Time Start/Stop	8:00am-11:30am, 1:30pm-5:00pm	
Temperature	55°F	
Relative Humidity	71%	
Wind Speed/Direction (from)	0-3mph W	
Pesticide Manufacturer	-	
Trade Name	-	
EPA Reg # or Formulation	-	
Rate: Product/Diluent Per Acre	-	
Amount of Chemical Applied	-	
Equipment Used (atv,backpack,truck,saw)	-	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	Hand-pull	
Plant Phenology & Stage	Preflowering	
Dominant Pest(s)	Houndstongue, Musk thistle, Black henbane	
Equipment Used	Shovel	
Acres/Area Treated or # of plants	0.5 acres	
GPS Filename		

<p>Location #1 (Site specific description)</p> <p>NE corner (am)</p> <p>Location #2 (Site specific description)</p> <p>SE triangle (pm)</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....</p> <ul style="list-style-type: none"> • Found yellow toadflax north of big tree along stream edge and saw it across fence on private land. • Patch of houndstongue not treated in triangle in rock patch along west fence. • Possible field bindweed and hoary alyssum found in triangle. • Surveyed for hoary alyssum in NE corner and found none. Maybe too early in season.
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen, C. Holtz, J. Miskella	
Date	5/29/2014	
County	Ravalli	
Time Start/Stop	1:00pm-5:00pm	
Temperature	65°F	
Relative Humidity	25%	
Wind Speed/Direction (from)	2mph W	
Pesticide Manufacturer	-	
Trade Name	-	
EPA Reg # or Formulation	-	
Rate: Product/Diluent Per Acre	-	
Amount of Chemical Applied	-	
Equipment Used (atv,backpack,truck,saw)	-	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	Hand-pull	
Plant Phenology & Stage	Preflowering	
Dominant Pest(s)	Houndstongue, Musk thistle, Hoary alyssum	
Equipment Used	Shovel	
Acres/Area Treated or # of plants	0.25 acres	
GPS Filename		

Location #1 (Site specific description) East of equipment yard Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Found hoary alyssum along east edge of fence line near railroad track.
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	C. Holtz, B. Mullen
Date	6/11/2014	6/11/2014
County	Ravalli	Ravalli
Time Start/Stop	7:45am-12:00pm	12:45pm-4:00pm
Temperature	66°F	74°F
Relative Humidity	45%	19%
Wind Speed/Direction (from)	0-3mph N	6mph variable
Pesticide Manufacturer	-	-
Trade Name	-	-
EPA Reg # or Formulation	-	-
Rate: Product/Diluent Per Acre	-	-
Amount of Chemical Applied	-	-
Equipment Used (atv,backpack,truck,saw)	-	-
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	Hand-pull	Hand-pull
Plant Phenology & Stage	Preflower / Flower / Post flower	Flower / Post flower/Basal rosette
Dominant Pest(s)	Musk thistle, Houndstongue, Black henbane	Black henbane, Musk thistle, Houndstongue
Equipment Used	Shovel	Shovel
Acres/Area Treated or # of plants	1.0 acre	1.0 acre
GPS Filename	-	-

<p>Location #1 (Site specific description)</p> <p>South end of refuge/ west side of railroad tracks (Section F3)</p> <p>Location #2 (Site specific description)</p> <p>Section F3</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....</p> <p>Location #1:</p> <ul style="list-style-type: none"> • Transected for hoary alyssum; found none. • Treated houndstongue, musk thistle, black henbane. • Mapped yellow toadflax. <p>Location #2:</p> <p>The main objective was to transect for hoary alyssum, but found none. We treated all black henbane and small populations of musk thistle and houndstongue. Large patches were mapped only.</p>
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	
Date	6/12/2014	
County	Ravalli	
Time Start/Stop	8:00am – 5:00pm	
Temperature	61°F	
Relative Humidity	57%	
Wind Speed/Direction (from)	1 mph N	
Pesticide Manufacturer	Dow AgroSciences	
Trade Name	Milestone	
EPA Reg # or Formulation	62179-519	
Rate: Product/Diluent Per Acre	6oz/ac	
Amount of Chemical Applied	0.39oz (1.5 gal mix)	
Equipment Used (atv,backpack,truck,saw)	Backpack (23 GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Flower / Pre-flower	
Dominant Pest(s)	Oxeye daisy / Sulfur cinquefoil	
Equipment Used	-	
Acres/Area Treated or # of plants	0.07 acres	
GPS Filename		

Location #1 (Site specific description) Wildlife Viewing Area. North of main path to eastern fence. Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Spreader 90 used at 3.2oz/10gal Hi-Light used at 1oz/gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	
Date	6/19/2014	
County	Ravalli	
Time Start/Stop	8:45am-3:30pm	
Temperature	65°F	
Relative Humidity	54%	
Wind Speed/Direction (from)	0-5mph W	
Pesticide Manufacturer	Dow AgroSciences	
Trade Name	Milestone	
EPA Reg # or Formulation	62719-519	
Rate: Product/Diluent Per Acre	6oz/ac	
Amount of Chemical Applied	0.63oz (2 gal mix)	
Equipment Used (atv,backpack,truck,saw)	Backpack (19GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Preflower	
Dominant Pest(s)	Sulfur cinquefoil, Oxeye daisy, St. Johnswort	
Equipment Used	-	
Acres/Area Treated or # of plants	0.11 acre	
GPS Filename	-	

Location #1 (Site specific description) Wildlife Viewing Area Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Spreader 90 used at 3.2oz/10gal Hi-Light used at 3.0oz/10gal Several acres washed out by river, with sand, dirt, and debris covering many areas. High water limited transecting.
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NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	C. Holtz
Date	7/1/2014	7/1/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-3:00pm	8:00am-3:00pm
Temperature	58°F (am) 82°F (pm)	58°F (am) 82°F (pm)
Relative Humidity	31%	31%
Wind Speed/Direction (from)	1mph NW	1mph NW
Pesticide Manufacturer	Dow AgroSciences	Dow AgroSciences
Trade Name	Milestone	Milestone
EPA Reg # or Formulation	62719-519	62719-519
Rate: Product/Diluent Per Acre	6oz/ac	6oz/ac
Amount of Chemical Applied	0.21oz (1 gal mix)	0.33oz (1.25 gal mix)
Equipment Used (atv,backpack,truck,saw)	Backpack (28GPA)	Backpack (23GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette / Preflower, Flower	Preflower, Flower
Dominant Pest(s)	Sulfur cinquefoil, ox-eye daisy	St. Johnswort
Equipment Used	-	-
Acres/Area Treated or # of plants	0.04 acre	0.05 acre
GPS Filename	-	-

<p>Location #1 (Site specific description)</p> <p>Wildlife Viewing Area –north section to the west and south of the golf course.</p> <p>Location #2 (Site specific description)</p> <p>Wildlife Viewing Area</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....</p> <p>Spreader 90 used at 3.2oz/10gal Hi-Light used at 3.0oz/10gal</p>
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	B. Mullen, J. Miskella, C Holtz
Date	7/1/2014	7/1/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-3:00pm	4:30pm-5:10pm
Temperature	58°F (am) 82°F (pm)	82°F
Relative Humidity	76% (am) 31% (pm)	43%
Wind Speed/Direction (from)	0-1mph NW	1mph NW
Pesticide Manufacturer	Dow AgroSciences	-
Trade Name	Milestone	-
EPA Reg # or Formulation	62719-519	-
Rate: Product/Diluent Per Acre	6oz/ac	-
Amount of Chemical Applied	0.39oz (1.25 gal mix)	-
Equipment Used (atv,backpack,truck,saw)	Backpack (19GPA)	-
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	Cut
Plant Phenology & Stage	Preflower	Flowering
Dominant Pest(s)	St. Johnswort, Oxeye daisy, Sulfur cinquefoil	Leafy spurge
Equipment Used	-	Hand shears
Acres/Area Treated or # of plants	0.07 acre	0.01 acres
GPS Filename	-	-

Location #1 (Site specific description) Wildlife Viewing Area Location #2 (Site specific description) East side of Pond #5	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Location #1: Spreader 90 used at 3.2oz/10gal Hi-Light used at 3.0oz/10gal Location #2: Looked to be far enough along that a majority of the seeds were probably viable.
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Wilson	
Date	8/11/2014	
County	Ravalli	
Time Start/Stop	3:00pm-5:30pm	
Temperature	95°F	
Relative Humidity	52%	
Wind Speed/Direction (from)	0-5mph NW	
Pesticide Manufacturer	DuPont	
Trade Name	Escort	
EPA Reg # or Formulation	352-439	
Rate: Product/Diluent Per Acre	1oz/ac	
Amount of Chemical Applied	0.01oz (0.5 gal mix)	
Equipment Used (atv,backpack,truck,saw)	ATV handgun (48GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Basal rosette	
Dominant Pest(s)	Houndstongue	
Equipment Used	-	
Acres/Area Treated or # of plants	0.01 acre	
GPS Filename	-	

<p>Location #1 (Site specific description)</p> <p>South of the ranch house in open field and around bunches of trees</p> <p>Location #2 (Site specific description)</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....)</p> <p>Spreader 90 used at 3.2oz/10gal Hi-Light used at 3.0oz/10gal</p>
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	J. Miskella
Date	8/13/2014	8/13/2014
County	Ravalli	Ravalli
Time Start/Stop	7:30am-4:00pm	7:30am-3:30pm
Temperature	68°F(am) 82°F (pm)	68°F(am) 82°F (pm)
Relative Humidity	59%	59%
Wind Speed/Direction (from)	1mph variable	2mph variable
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241—365	241—365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	0.44oz (2 gal mix)	2.60oz (15 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (50 GPA)	ATV handgun (64 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflower, flower	Preflower, Senesced
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.04 acre	0.23 acre
GPS Filename	-	-

<p>Location #1 (Site specific description) North of headquarters</p> <p>Location #2 (Site specific description) F3- began at south boundary and worked north. Worked main paved road south of Wildlife Viewing Area.</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....</p> <p>Rivet used at 3.2oz/10 gal Hi-Light used at 3.0oz/10gal</p>
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 HELENA, MT 59620-0201
 Phone 406-444-3730

DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	B. Mullen
Date	8/13/2014	8/13/2014
County	Ravalli	Ravalli
Time Start/Stop	7:30am-3:30pm	7:30am-3:30pm
Temperature	85°F	85°F
Relative Humidity	31%	31%
Wind Speed/Direction (from)	2mph SE	2mph SE
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	5.68oz (16 gal mix)	10oz (10 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31GPA)	ATV boom (11GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Flower/ Post flowering	Basal rosette
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.52 acre	0.91 acre
GPS Filename	--	-

Location #1 (Site specific description) F8 and F12 Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Rivet used at 3.2oz/10gal Dynamark used at 3.0oz/10gal
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Compliments of the

MONTANA DEPARTMENT OF AGRICULTURE
 AGRICULTURAL SCIENCES DIVISION
 PO BOX 200201
 HELENA, MT 59620-0201
 Phone 406-444-3730

DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Wilson	
Date	8/13/2014	
County	Ravalli	
Time Start/Stop	8:00am-4:00pm	
Temperature	88°F	
Relative Humidity	59%	
Wind Speed/Direction (from)	0-3mph variable	
Pesticide Manufacturer	BASF	
Trade Name	Plateau	
EPA Reg # or Formulation	241-365	
Rate: Product/Diluent Per Acre	11oz/ac	
Amount of Chemical Applied	2.52oz (11 gal mix)	
Equipment Used (atv,backpack,truck,saw)	ATV handgun (48GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Basal rosette, Flower, Post flowering	
Dominant Pest(s)	Yellow toadflax	
Equipment Used	-	
Acres/Area Treated or # of plants	0.23 acre	
GPS Filename	-	

Location #1 (Site specific description) NE corner of property, in units F13 and F14 Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Site #1: Rivet used at 3.2oz/10gal HiLight used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	J. Wilson
Date	9/2/2014	9/2/2014
County	Ravalli	Ravalli
Time Start/Stop	10:30am-5:15pm	11:00am-5:15pm
Temperature	78°F	80°F
Relative Humidity	38%	45%
Wind Speed/Direction (from)	1mph N	10mph S
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	3.19oz (9 gal mix)	0.11oz (0.5 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31GPA)	ATV handgun (11GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflower / Flowering	flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.29 acre	0.01 acre
GPS Filename	-	-

<p>Location #1 (Site specific description)</p> <p>Northwest of office (F7, F8 and F11)</p> <p>Location #2 (Site specific description)</p> <p>Triangle and worked up from SE corner of property west towards wetland areas. Completed F2, F3, and part of F5.</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....)</p> <p>For both applications: Spreader 90 used at 3.2oz/10gal Dynamark used at 3.0oz/10gal</p>
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	J. Miskella
Date	9/2/2014	9/2/2014
County	Ravalli	Ravalli
Time Start/Stop	11:00am-5:00pm	11:00am-5:00pm
Temperature	76°F	76°F
Relative Humidity	30%	30%
Wind Speed/Direction (from)	3mph W	3mph W
Pesticide Manufacturer	BASF	-
Trade Name	Plateau	-
EPA Reg # or Formulation	241-365	-
Rate: Product/Diluent Per Acre	11 oz/ac	-
Amount of Chemical Applied	3oz (3 gal mix)	-
Equipment Used (atv,backpack,truck,saw)	ATV handgun (11GPA)	-
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	Hand-pull
Plant Phenology & Stage	Flowering	Flowering
Dominant Pest(s)	Yellow toadflax	Hoary alyssum
Equipment Used	-	-
Acres/Area Treated or # of plants	0.27 acre	0.01 acres
GPS Filename	-	-

Location #1 (Site specific description) Unit F5 Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... MSO used at 32oz/acre Hi-Light used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	C. Holtz
Date	9/2/2014	9/2/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-5:15pm	8:00am-5:15pm
Temperature	68°F	68°F
Relative Humidity	50%	50%
Wind Speed/Direction (from)	1-3mph N	1-3mph N
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	5.5oz (7.0 gal mix)	0.76oz (1.25 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (14GPA)	backpack (18GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflower, Flower	Preflower, Flower
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.50 acre	0.07 acre
GPS Filename	-	-

<p>Location #1 (Site specific description)</p> <p>Along east and west side of road south of Wildlife Viewing Area.</p> <p>Location #2 (Site specific description)</p> <p>Dike between Otter Pond and other unknown pond on north side of refuge.</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....)</p> <p>MSO used at 32oz/acre Dynamark used at 3.0oz/10gal</p>
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	C. Holtz
Date	9/3/2014	9/3/2014
County	Ravalli	Ravalli
Time Start/Stop	7:30am-11:00am	7:30am-5:00pm
Temperature	55°F	55°F
Relative Humidity	49%	49%
Wind Speed/Direction (from)	3mph E	3mph E
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	2.84oz (8.0 gal mix)	3.93oz (5.0 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31GPA)	ATV (14GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflowering, Flowering	Preflowering, Flowering, Senesced
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.26 acre	0.36 acre
GPS Filename	-	-

Location #1 (Site specific description) Unit F11 Location #2 (Site specific description) North road of LE house/garage and also north of that near the railroad bridge	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	J. Wilson
Date	9/3/2014	9/3/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-5:00pm	8:00am-5:00pm
Temperature	72°F	59°F
Relative Humidity	35%	45%
Wind Speed/Direction (from)	3mph E	3mph E
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	2.06oz (12 gal mix)	3.44oz (15 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (64GPA)	ATV handgun (48GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette through senesced	Rosette/flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.19 acre	0.31 acre
GPS Filename	-	-

Location #1 (Site specific description) Unit F3 and F5, near the railroad underpass and oxbow Location #2 (Site specific description) South of homestead in Unit F5 and in Unit F13	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Hi-Light used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	B. Mullen
Date	9/4/2014	9/4/12
County	Ravalli	Ravalli
Time Start/Stop	8:00am-3:45pm	7:00am-3:00pm
Temperature	44°F (am) 68°F (pm)	61°F
Relative Humidity	65%	49%
Wind Speed/Direction (from)	0-3mph E	3mph E
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	7.86oz (10 gal mix)	3.9oz (11 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (14GPA)	ATV handgun (31GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflowering, Flowering, Senesced	Preflowering, Flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.71 acre	0.35 acre
GPS Filename	-	-

Location #1 (Site specific description) Units F12, F13 (north) Location #2 (Site specific description) Units F8, F11, F12	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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 HELENA, MT 59620-0201
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Wilson	J. Miskella
Date	9/4/2014	9/4/12
County	Ravalli	Ravalli
Time Start/Stop	4:00pm-5:00pm	10:00am-4:30pm
Temperature	75°F	78°F
Relative Humidity	45%	36%
Wind Speed/Direction (from)	0-3mph variable	3mph variable
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241—365
Rate: Product/Diluent Per Acre	11oz/ac	11 oz/ac
Amount of Chemical Applied	0.04oz (1/8 gal mix)	1.72oz (10 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (36GPA)	ATV handgun (64GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette, Flowering	Rosette, Senesced
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.003 acre	0.16 acre
GPS Filename	-	-

<p>Location #1 (Site specific description)</p> <p>Unit F13 on south side of road</p> <p>Location #2 (Site specific description)</p> <p>South of the railroad tracks near the underpass</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....</p> <p>For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal</p>
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	C. Holtz
Date	9/8/2014	9/8/2014
County	Ravalli	Ravalli
Time Start/Stop	8:30am-5:15pm	8:30am-5:15pm
Temperature	70°F	70°F
Relative Humidity	49%	49%
Wind Speed/Direction (from)	0-3mph NE	0-3mph NE
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	1.99oz (3.25 gal mix)	2.36oz (3 gal mix)
Equipment Used (atv,backpack,truck,saw)	Backpack (18GPA)	ATV handgun (14GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflowering, Flowering	Preflowering, Flower
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.18 acre	0.21 acre
GPS Filename	-	-

Location #1 (Site specific description) Heavily treed area east of road near train tracks Location #2 (Site specific description) Grassy meadow east of road near train tracks	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	J. Miskella
Date	9/8/2014	9/8/2014
County	Ravalli	Ravalli
Time Start/Stop	8:30am-5:00pm	8:30am-5:00pm
Temperature	68°F	68°F
Relative Humidity	14%	14%
Wind Speed/Direction (from)	3mph W	3mph W
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	1.83oz (3.5 gal mix)	1.20oz (7 gal mix)
Equipment Used (atv,backpack,truck,saw)	Backpack (21GPA)	ATV handgun (64GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette, Flowering	Preflowering, Flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.17 acre	0.11 acre
GPS Filename	-	-

Location #1 (Site specific description) Unit F12-North and south of the railroad bridge Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Wilson	B. Mullen
Date	9/8/2014	9/8/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-5:00pm	10:00am-3:00pm
Temperature	81°F	81°F
Relative Humidity	14%	14%
Wind Speed/Direction (from)	4mph W	4mph W
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	0.08oz (0.25 gal mix)	0.09oz (0.25 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (36GPA)	ATV handgun (31GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette, Flowering	Flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.01 acre	0.08 acre
GPS Filename	-	-

Location #1 (Site specific description) Unit F15 on south side of road Location #2 (Site specific description) Unit F11	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	C. Holtz
Date	9/9/2014	9/9/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-5:00pm	8:00am-5:00pm
Temperature	70°F	70°F
Relative Humidity	39%	52%
Wind Speed/Direction (from)	9mph SE	0-3mph NE
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	0.53oz (1.5 gal mix)	0.79oz (1 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31GPA)	ATV handgun (14GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Flowering	Flowering, Senesced
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.48 acre	0.07 acre
GPS Filename	-	-

Location #1 (Site specific description) Units F10, F12, F13, F14 Location #2 (Site specific description) Unit F9 near hunter blinds 1-5	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	
Date	9/9/2014	
County	Ravalli	
Time Start/Stop	8:00am-5:00pm	
Temperature	78°F	
Relative Humidity	25%	
Wind Speed/Direction (from)	2mph W	
Pesticide Manufacturer	BASF	
Trade Name	Plateau	
EPA Reg # or Formulation	241-365	
Rate: Product/Diluent Per Acre	11oz/ac	
Amount of Chemical Applied	1.83oz (3.5 gal mix)	
Equipment Used (atv,backpack,truck,saw)	Backpack (21GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Rosette, Senesced	
Dominant Pest(s)	Yellow toadflax	
Equipment Used	-	
Acres/Area Treated or # of plants	0.17 acre	
GPS Filename	-	

Location #1 (Site specific description) Unit F13 north of the railroad tracks Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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Compliments of the

MONTANA DEPARTMENT OF AGRICULTURE
 AGRICULTURAL SCIENCES DIVISION
 PO BOX 200201
 HELENA, MT 59620-0201
 Phone 406-444-3730

DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Wilson	B. Mullen
Date	9/10/2014	9/10/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-5:00pm	8:00am-5:00pm
Temperature	60°F	55°F
Relative Humidity	48%	69%
Wind Speed/Direction (from)	3-6mph N	3mph W
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	0.04oz (1/8 gal mix)	4.79oz (13.5 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (36GPA)	ATV handgun (31GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Rosette, Flowering	Flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.03 acre	0.44 acre
GPS Filename	-	-

Location #1 (Site specific description) Unit F8 Location #2 (Site specific description) Unit F12, F13, F14, F15	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	J. Miskella
Date	9/10/2014	9/10/2014
County	Ravalli	Ravalli
Time Start/Stop	8:00am-5:00pm	3:00pm-5:00pm
Temperature	58°F	58°F
Relative Humidity	25%	25%
Wind Speed/Direction (from)	3mph W	3mph W
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	2.36oz (4.5 gal mix)	0.86oz (5 gal mix)
Equipment Used (atv,backpack,truck,saw)	Backpack (21GPA)	ATV handgun (64GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	All lifestages	All lifestages
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.21 acre	0.08 acre
GPS Filename	-	-

Location #1 (Site specific description) Unit F13 Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	C. Holtz	
Date	9/10/2014	
County	Ravalli	
Time Start/Stop	8:00am-5:00pm	
Temperature	65°F	
Relative Humidity	48%	
Wind Speed/Direction (from)	3-6mph NE	
Pesticide Manufacturer	BASF	
Trade Name	Plateau	
EPA Reg # or Formulation	241-365	
Rate: Product/Diluent Per Acre	11oz/ac	
Amount of Chemical Applied	13.36oz (17 gal mix)	
Equipment Used (atv,backpack,truck,saw)	ATV handgun (14GPA)	
Bio-Control (genus species)	-	
# released / acre	-	
Mechanical (mow,hand-pull)	-	
Plant Phenology & Stage	Preflowering, Flower	
Dominant Pest(s)	Yellow toadflax	
Equipment Used	-	
Acres/Area Treated or # of plants	1.21 acre	
GPS Filename	-	

Location #1 (Site specific description) South field west of Blind 12 Location #2 (Site specific description)	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	B. Mullen	J. Wilson
Date	9/11/2014	9/11/2014
County	Ravalli	Ravalli
Time Start/Stop	10:00am-5:00pm	8:00am-3:00pm
Temperature	55°F	65°F
Relative Humidity	69%	43%
Wind Speed/Direction (from)	3mph NE	5mph N/NE
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	1.42oz (4 gal mix)	0.31oz (1 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (31 GPA)	ATV handgun (36 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflower/flower	Rosette/flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.13 acre	0.03 acre
GPS Filename	-	-

Location #1 (Site specific description) Units F8 and F12 Location #2 (Site specific description) Units F7 and F8	COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc.... For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal
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DAILY PESTICIDE APPLICATION RECORD

BUSINESS U.S. Fish and Wildlife Service	LICENSE# 101891-15
NAME Lee Metcalf Invasive Species Strike Team	ADDRESS (Refuge or WPA) Lee Metcalf NWR
CITY, STATE, ZIP Stevensville, MT 59870	PHONE (406) 544-2552

	APPLICATION #1	APPLICATION #2
Applicator/Operator Name (s)	J. Miskella	C. Holtz
Date	9/11/2014	9/11/2014
County	Ravalli	Ravalli
Time Start/Stop	10:00am-4:00pm	10:00am-4:00pm
Temperature	65°F	65°F
Relative Humidity	25%	43%
Wind Speed/Direction (from)	2mph variable	1-3mph N/NW
Pesticide Manufacturer	BASF	BASF
Trade Name	Plateau	Plateau
EPA Reg # or Formulation	241-365	241-365
Rate: Product/Diluent Per Acre	11oz/ac	11oz/ac
Amount of Chemical Applied	1.02oz (7 gal mix)	5.5oz (7 gal mix)
Equipment Used (atv,backpack,truck,saw)	ATV handgun (64 GPA)	ATV handgun (14 GPA)
Bio-Control (genus species)	-	-
# released / acre	-	-
Mechanical (mow,hand-pull)	-	-
Plant Phenology & Stage	Preflowering, Flower	Preflowering, Flowering
Dominant Pest(s)	Yellow toadflax	Yellow toadflax
Equipment Used	-	-
Acres/Area Treated or # of plants	0.11 acre	0.5 acre
GPS Filename	-	-

<p>Location #1 (Site specific description)</p> <p>Unit F13 (Application #1)</p> <p>Location #2 (Site specific description)</p> <p>Unit F2 (Applicator #2 both people worked this area in the afternoon)</p>	<p>COMMENTS/MAP: (any surfactant or dye used, PUP number, concerns with weather prior or post treatment, DETAILS, etc....)</p> <p>For both applications: Noble used at 32oz/acre Dynamark used at 3.0oz/10gal</p> <p>Location#2: Only 3 points sprayed and a few polygons</p>
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