

# Swan River National Wildlife Refuge

## Benton Lake ISST

### Accomplishments

Weed Species	Total Survey Acres <sup>1</sup>	Survey Acres Infested <sup>2</sup>	Acres Treated <sup>3</sup>
Absinthe wormwood	106.09	0.009	0.0
Bull thistle	106.09	0.009	0.0
Canada thistle	106.09	0.697	0.0
Common tansy	106.09	0.041	0.0
Houndstounge	106.09	0.018	0.0
Meadow hawkweed	106.09	0.005	0.0
Orange hawkweed	106.09	1.520	0.0
Oxeye daisy	106.09	0.005	0.0
Spotted knapweed	106.09	2.100	.04
St. Johnsworts	106.09	0.018	0.0
Sulfur cinquefoil	106.09	0.228	0.0
Yellow toadflax	106.09	0.413	0.0
<b>Project Site Totals</b>	106.09	5.06	<b>0.04</b>

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

<sup>2</sup> 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.

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

### Highlights

#### Schedule

Dates	Project Type	Target Species	Size of Crew	Project Notes
21-July-2014 To 25-July-2014	Invasive Plant Survey	All Noxious Weeds	4	Surveyed along roads, trails, and parking lots. Preliminary surveys of interior areas conducted where accessible.

#### Coordination and Cooperation

- Coordinated with WMD Manager, Jim Lange, for priorities and site logistics.

#### Prevention and Education

- There are several species of noxious weeds present at Swan River NWR that are not common elsewhere in the Benton Lake Complex. Cleaning equipment between sites will help prevent spreading these species within the complex.

#### Early Detection and Rapid Response

- There was little information available on the presence and extent of the invasive species infestation at Swan River NWR. By conducting these preliminary surveys, we will have the information to assess which infestations are EDRR and prioritize them for management.
- Most of the infestations found were closely associated with roads. Managing these species while they are limited to the roadways and before they spread to the interior of the refuge will greatly reduce the management burden.
- All of these populations are still small in size, and eradication is possible.

#### **Inventory and Monitoring**

- The primary purpose of this project was to conduct an initial inventory of noxious weeds on the refuge.

#### **Management**

- Management was not the goal of this project. The goal was to get an initial inventory so management priorities could be established.
- ISST mechanically treated 0.04 acres of spotted knapweed.
  - The plants were from rosette to flowering stages of growth.
  - Treated infestations were along the road and parking area by the kiosk, and along the road to the illegal camping area on the western side of the refuge.

#### **Herbicide Applied**

- ISST did not apply any herbicide at Swan River NWR.

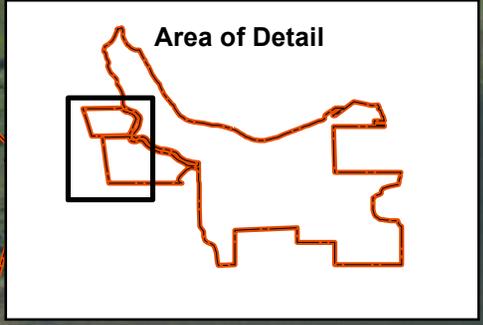
#### **Recommendations**

- Multiple roads provide a continual source of invasion within and adjacent to the refuge. Managing species while they are along the roads and parking lots before they spread into the interior of the refuge will reduce the overall management burden.
- Flowering rush is most easily distinguished from other closely related species when it is flowering, but Montana populations of flowering rush do not flower every year and are known to only flower sporadically. Revisiting the site during peak flowering time for Montana, July-August, will help differentiate it from similar looking species.



**Legend**

- Absinthe wormwood
- Bull thistle
- Canada thistle
- Common tansy
- Houndstongue
- Meadow hawkweed
- Orange hawkweed
- Oxeye daisy
- Spotted knapweed
- St. Johnswort
- Sulfur cinquefoil
- Yellow toadflax
- USFWS Boundary
- Invasive Plant Survey



Surveyed: 106.10 ac  
 Acres Infested:  
 Absinthe wormwood: 0.009 ac  
 Bull thistle: 0.009 ac  
 Canada thistle: 0.70 ac  
 Common tansy: 0.04 ac  
 Houndstongue: 0.02 ac  
 Meadow hawkweed: 0.005 ac  
 Orange hawkweed: 1.52 ac  
 Oxeye daisy: 0.005 ac  
 Spotted knapweed: 2.10 ac  
 St. Johnswort: 0.02 ac  
 Sulfur cinquefoil: 0.23 ac  
 Yellow toadflax: 0.41 ac  
 Total = 13.77 ac



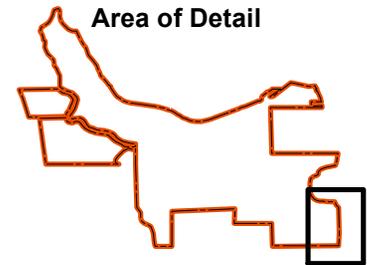
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



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Area of Detail



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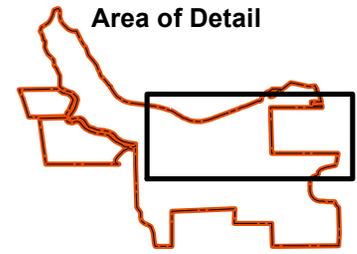
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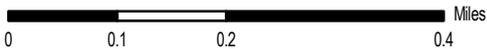
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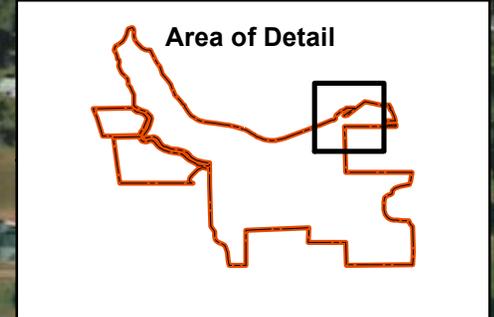
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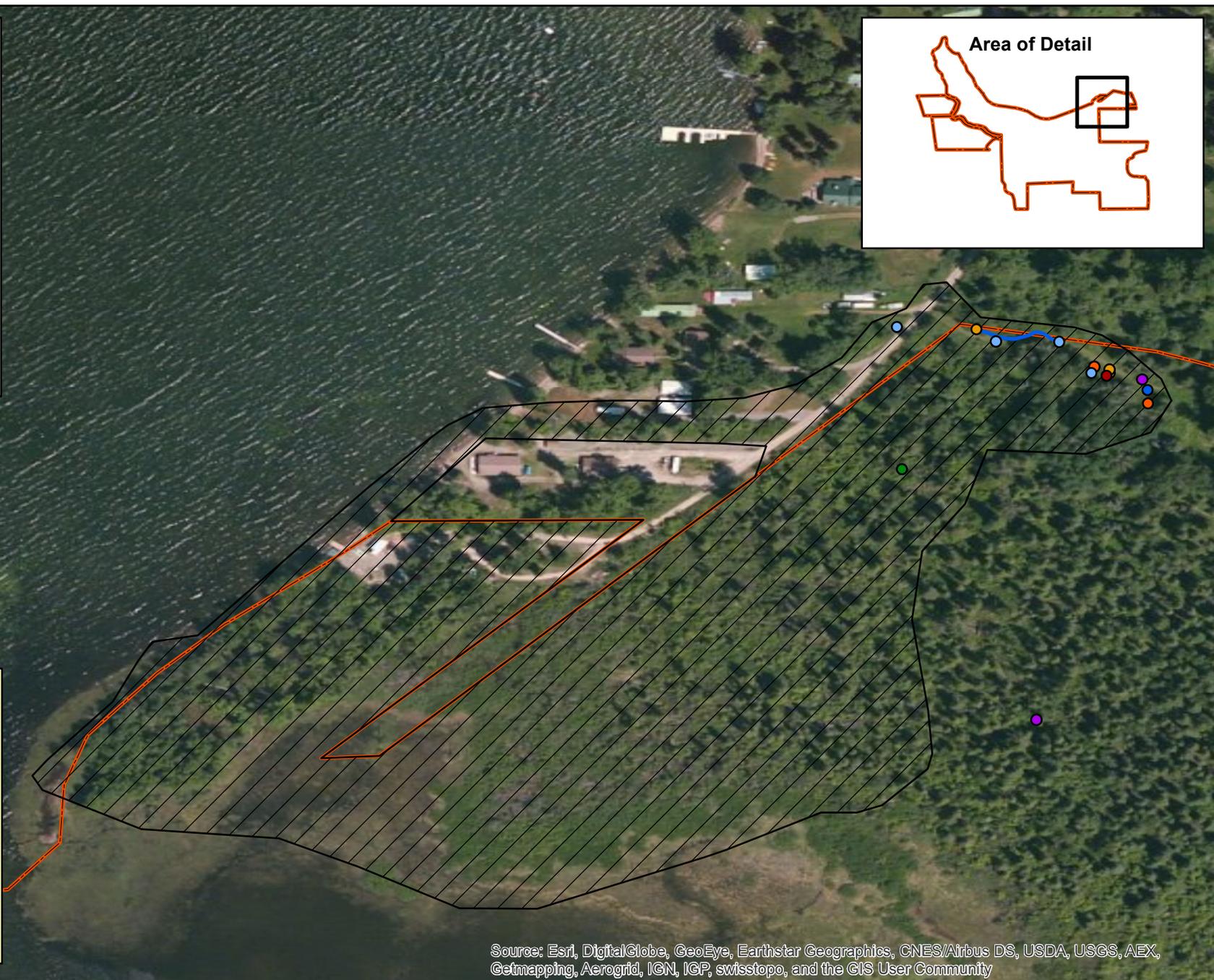


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**Legend**

- Spotted knapweed
- USFWS Boundary
- Invasive Plant Survey

**Area of Detail**

Spotted knapweed  
 Acres Infested: 2.10 ac  
 Acres Treated: 0.50 ac

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