

Summit CWMA WUI 910 Ranch Weed Control

Contract Number: 202408DG22

Prepared November 2024 by Sara Jo Dickens, PhD, Ecology Bridge LLC

Project Background

Project Description

In 2023, Summit County entered into a contract to purchase the 8,576-acre 910 Ranch in western Summit County. The ranch has been a working ranch since 1860 and serves as a wild game migration corridor, particularly for moose, deer, and elk. It also contains almost 5 miles of East Canyon Creek.

Summit County is working on a land management plan for the property which includes the development of a noxious weed management plan. The Summit CWMA is assisting with initial phases of this process by partnering with grants to aid in inventory and herbicide control. This is one of the many areas prioritized by three Summit CWMA ISM grant programs (Low Elevation Garlic Mustard Control Program; Yellow Starthistle, Knapweed and Phragmites Control Program; Yellow Toadflax and Spurge Control Program).

From previous ISM grant funded work, including along the southwestern edge of the property and along the publicly accessible Jeremy Ranch

Common Name	Latin Name	Class
Garlic Mustard	<i>Alliaria petiolata</i>	1B
Blackhenbane	<i>Hyoscyamus niger</i>	2
Dalmatian Toadflax	<i>Linaria dalmatica</i>	2
Dyers Woad	<i>Isatis tinctoria</i>	2
Spotted Knapweed	<i>Centaurea stoebe</i>	2
Yellow Starthistle	<i>Centaurea solstitialis</i>	2
Canada Thistle	<i>Cirsium arvense</i>	3
Field Bindweed	<i>Convolvulus arvensis</i>	3
Hoary Cress	<i>Lepidium draba</i>	3
Houndstongue	<i>Cynoglossum officinale</i>	3
Musk Thistle	<i>Carduus nutans</i>	3
Perennial Pepperweed	<i>Lepidium latifolium</i>	3
Common Reed	<i>Phragmites australis</i>	3
Poison Hemlock	<i>Conium maculatum</i>	3
Scotch Thistle	<i>Onopordum acanthium</i>	3
Myrtle Spurge	<i>Euphorbia myrsinites</i>	4
Russian Olive	<i>Elaeagnus angustifolia</i>	4
Chamomile sp.	<i>Chamomile sp.</i>	County
Common Burdock	<i>Arctium minus</i>	County

Noxious weed species observed in the project area.

Road, it was known that priority weeds such as garlic mustard, Phragmites and spotted knapweed are present in those areas. The degree to which they had



Greater Short-horned Lizards were commonly seen along the south western boundary of 910 Ranch.

invaded the 910 Ranch property was not yet known.

Approximately 30 percent of the project area is forest/oak-maple woodland. Other habitats include grassland, sagebrush shrubland, oak, riparian habitat and wetlands. The riparian habitat, however, is of poor quality. The Department of Water Quality has identified this area of East Canyon Creek as a high priority for revegetation which will require noxious weed control along with planting of miles of woody vegetation to stabilize banks and shade the creek. Additionally, the project area is within a couple miles of contiguous forests owned by private landowners and local and federal governments.

Meeting Local and Partner Goals

This project meets the following goals for the Utah Strategic Weed Plan and the Summit County Weed Control Policy:

- Focuses on state and county listed noxious weeds.
- Integrates multiple weed control methods including inventory, hand weeding, herbicide, and biological control.
- Makes efficient use of resources (labor, funds, equipment, and materials) through partnerships with land managers and adjacent landowners to meet cross jurisdictional goals.
- Includes an extensive mapping component

that creates a detailed database used locally and reporting of data directly to the state using EDDMaps.

- A project manager is used to direct the work and ensure complete reporting of project outcomes.

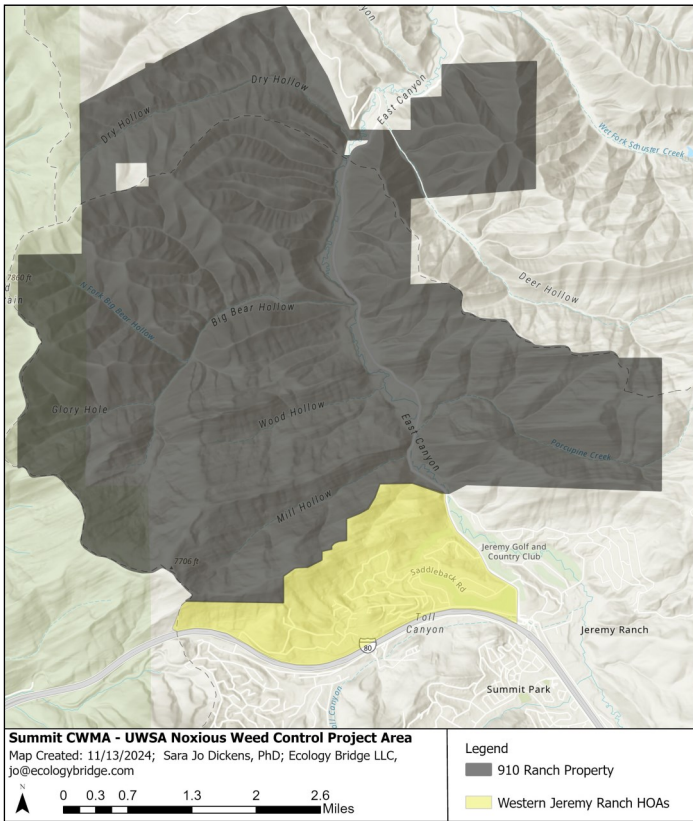
Additionally, this project contributes to an effort to determine the future uses and management of the 910 Ranch for habitat protection and enhancement and possible inclusion of recreations. One of the primary goals of this effort is to protect the watershed of East Canyon Creek by enhancing forest and riparian habitat diversity and health, improving in stream water flows and water quality of the creek. Strategic management of noxious weeds has been identified as a priority in meeting these goals.

Project Goals

The purpose of this project is to aid the county in identifying what noxious weed species are present so uncommon species, high priority species and small populations are treated first with a goal of eradication while more common species and larger populations are contained. The primary project goals were to develop a more accurate map of noxious weed species distribution and control as many invaded acres as funding and contractor availability would allow.



Wildlife overpass at Parley's Summit had substantial noxious weed cover on its eastern side.



Map of the Summit CWMA 910 Ranch Project which includes both the 910 Ranch lands and the HOA lands adjacent in the Jeremy Ranch community.

Methods

Because the property has been a private ranch, the Summit County and CWMA had very little data regarding weeds on the property. As part of the planning process, EDDMaps was referenced to determine what data was available for noxious weeds on property and adjacent. EDDMaps data indicated yellow starthistle within 1 mile, Myrtle spurge within a few miles and garlic mustard on the boundary.

Our general field approach included the use of inventory and monitoring to increase our understanding of species distributions. We prioritized inventory of areas around infrastructure, roads, ATV trails, single track trails, unclassified trails, East Canyon Creek, creeks, ponds and game trails. Linear corridors such as roads, trails and waterways were walked along with a buffer (10 - 50ft) based on likelihood of clear sightlines. Additionally, the majority of the property boundary was inventoried to determine if

noxious weeds were entering the property from adjacent lands.

Contractors monitored previously identified populations and added data to the EDDMaps system for a number of new locations and updated most of the data present prior to 2023. The goals of monitoring was to track population status.

Our control methods were varied; however, herbicide was the primary method as it is most efficient, effective and for some species, the only reliable method. When site conditions and funding allow, we used manual control of garlic mustard.

No additional biological control agents were introduced to the site, however, the Canada stem gall fly had been identified in multiple meadows along East Canyon Creek. Inventory efforts will record additional locations of galls.

Results and Accomplishments

Our goals were to inventory 208 acres of the 910 Ranch and adjacent lands and control as much of the newly mapped weeds as possible with given funding and availability of weed control contractors. In total, 3,030 acres (3,020 ac within 910 Ranch, 10 ac within Jeremy Ranch HOAs) were inventoried and 665 acres of new noxious weeds were mapped (627



Three areas of yellow starthistle were identified on the 910 Ranch.

ac within 910 Ranch, 38 ac within Jeremy Ranch HOAs). Additionally, 253 acres of previously known weed populations were monitored.

The majority of noxious weeds were found in the creek bottoms and roads as expected, but also in drainages that lacked water. Cattle access and human disturbance were the most common factors associated with these high levels of invasion. One species that did not follow this pattern was garlic mustard which appeared more related to wild game movement. We suspect the same is true of hougstongue as it often extended beyond our targeted inventory areas far into the forest and shrublands.

Of the species identified, yellow starthistle is the most concerning. All three areas of yellow starthistle were located on hot, dry slopes dominated by bulbous blue grass and low overall plant percent cover. Soils are rocky and of poor quality. Given that two of the populations are very close to the Morgan County line, there is concern that yellow starthistle has established on similar slopes just across the county line.



Canada thistle gall fly galls on East Canyon Creek.

Two additional species of high concern that are limited in distribution include a single population of Myrtle spurge and a population (composed of two patches near each other) of common reed. The spurge is just off a road and is limited in size. The common reed is located in East Canyon Creek just before the Morgan county line. Half of the population is on private property, however the property owner appears to be open to partnering on management efforts.

Spotted knapweed is another species of high concern that is slightly more common but primarily associated with the main Jeremy Ranch Road making control access fairly easy. Garlic mustard is common on the southern boundary with western Jeremy Ranch HOAs. It is clear the garlic mustard has escaped from these HOAs into the 910 Ranch property. Coordination with these HOAs will be key in management of garlic mustard. On the rest of the Ranch, only six other populations were found with two being larger in size (2 and 4 acres). These six populations should be high priority for treatment and the lands between them priority for additional inventory.

Summit CWMA organized herbicide treatment covered 93 acres and the Summit County Weed Division treated an additional over 700 acres of noxious weeds in 2024.

Although control efforts were primarily herbicide applications, 0.3 acres of garlic mustard were hand weeded along the southwest boundary

Common Name	On Ranch		Adjacent Jeremy Ranch HOAs	
	# pops	Acres	# pops	Acres
Black Henbane	11.00	0.17	0.00	0.00
Canada Thistle	505.00	151.45	9.00	1.07
Chamomile sp.	5.00	0.02	1.00	0.00
Common Burdock	156.00	2.52	2.00	0.05
Dalmatian Toadflax	5.00	0.42	2.00	0.05
Dyers Woad	42.00	10.82	5.00	0.29
Field Bindweed	50.00	4.48	1.00	0.01
Garlic Mustard	91.00	36.67	166.00	27.71
Hoary Cress	43.00	5.72	23.00	3.09
Houndstongue	1436.00	337.71	12.00	1.09
Musk Thistle	827.00	70.50	5.00	0.66
Myrtle Spurge	1.00	0.02	6.00	0.33
Perennial Pepperweed	46.00	0.40	0.00	0.00
Common Reed	3.00	0.73	12.00	0.86
Poison Hemlock	3.00	0.04	0.00	0.00
Russian Olive	1.00	0.01	0.00	0.00
Scotch Thistle	71.00	1.80	8.00	0.69
Spotted Knapweed	23.00	0.42	17.00	2.15
Yellow Starthistle	29.00	3.28	1.00	0.04

Acres and number of populations include all those mapped in 2024 and in previous years within the UWSA project area.

along trails where populations have been under treatment for several years. Additionally, biological control in the form of the Canada stem gall fly is already present and widely distributed. This is especially true in populations along the East Canyon Creek riparian meadows. This biological control agent was not intentionally released at these sites so it arrived on its own and is thriving.

The discovery of the Canada thistle gall fly has led to outreach efforts introducing the fly to local land managers to ensure they know the value of the fly and to ask that they do not harvest galls for direct distribution but rather, work with Amber Mendenhall to obtain the fly to prevent spread of the parasitoid wasps that can be moved with the galls. The Summit County Lands and Natural Resources Director has shown interest in partnering on future research regarding the Canada thistle gall fly.

Multiple Partner Involvement

This project involved private and public partners.. Summit County acted as the project fiscal agent

and works with the Summit CWMA to coordinate and report on the project.

Primary Partners

- Utah Department of Agriculture and Food
- Utah Weed Supervisors Association
- Summit County
- Ecology Bridge
- Trout Unlimited
- The Cove at Jeremy Ranch HOA

Challenges

The greatest challenge faced by this project was an unavailability of herbicide contractors for the treatment of garlic mustard prior to mustard going to seed. Most garlic mustard populations went to flower and seed a month early and then flowered again late season below the seed pods. We did not send herbicide contractors in to treat the reflowering plants due to a concern for the potential for further seed spread.



Ranch hand herding cattle on 910 Ranch for fall relocation in October of 2024

Additionally, one yellow starthistle population was identified near the end of the of its growth cycle. Treatment was still applied to those plants that were susceptible to herbicide. The other two populations of yellow starthistle had senesced before detection so it was not possible to effectively treat them in 2024. All populations will be treated next season.

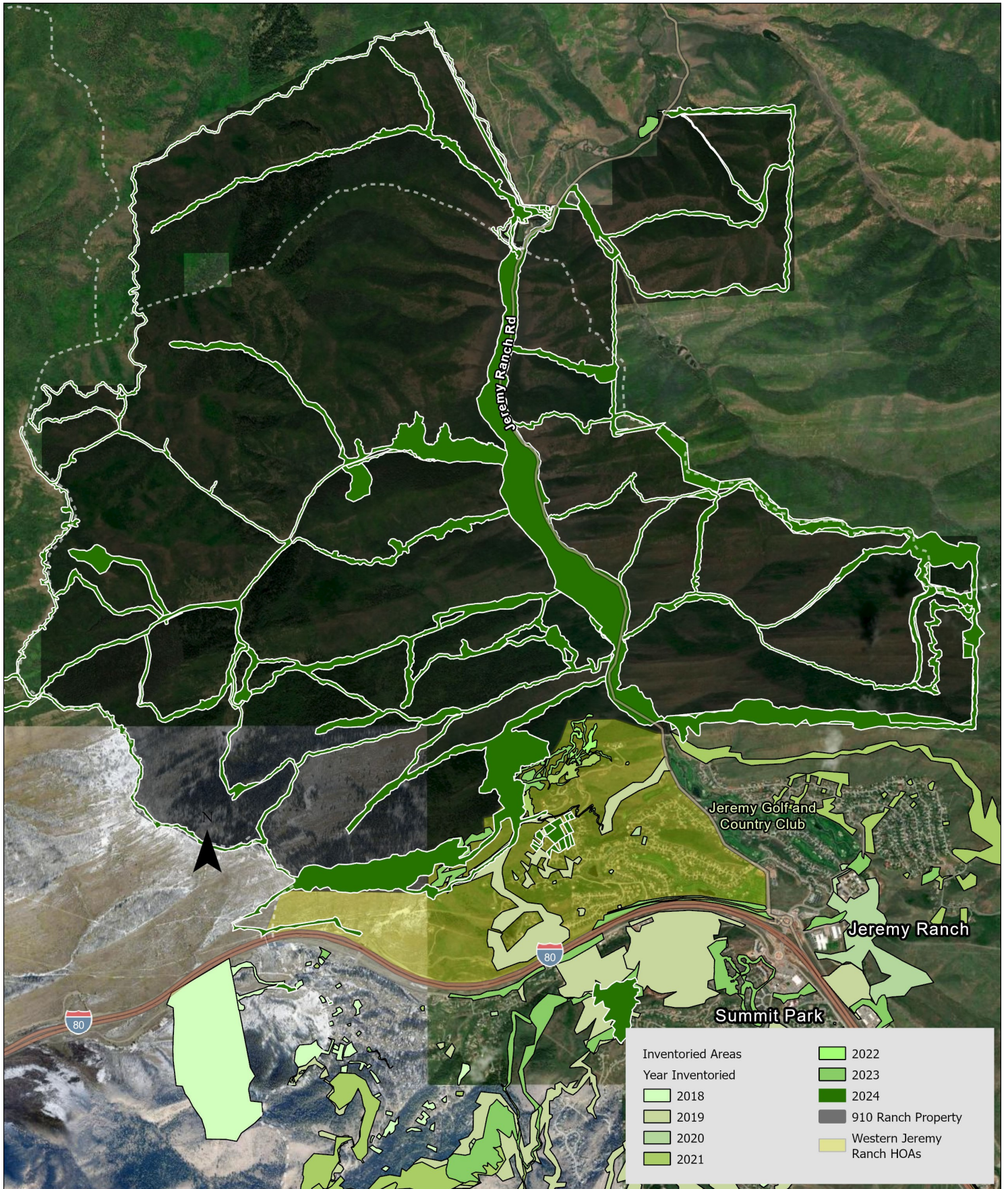
Financial Summary

This \$55,151 project was funded through the UWSA Noxious Weed Grant and portions of grant funds from the Utah Department of Agriculture and Food ISM Grants (specifically the Summit CWMA Low Garlic Mustard Control ISM Grant, Summit CWMA Yellow Starthistle, Knapweed and Phragmites Control ISM Grant) and funding from Trout Unlimited and Summit

Line Item	Description	Expensed	Funder
Herbicide Contractor	Herbicide treatment of all noxious weed species in areas assigned for treatment	\$5,040.46	UWSA Weed Control Grant
Inventory	Inventory of new areas in and adjacent 910 Ranch, mapping of any noxious weed species found and monitoring EDDMaps points.	\$4,959.54	UWSA Weed Control Grant
Administration, Crew Supervision and Inventory	Project management, crew supervision and arrangement of access to 910 Ranch property for weed treatment, and inventory and mapping of all noxious weed species.	\$30,886.47	Summit County
Inventory and Hand Weeding	Portions associated with the 910 Ranch and Jeremy Ranch HOAs areas include 90% of the Inventory costs \$987.30; 15% of general labor as hand removal of garlic mustard \$257.01. Total match for the UWSA 2024 Grant is \$1,244.31	\$1,244.31	Low Elevation Garlic Mustard ISM Grant
Inventory, Administration, Crew Supervision for Herbicide Treatment	910 Ranch Portion of Invoice: 50% of administration costs (\$54), 60% of Crew Supervision costs (\$91.98), 30% of Inventory costs (\$2,618.78) and half the costs of GIS Specialist (\$255.92) for a total of \$3,020.68 as a match to the UWSA 2024 Grant.	\$3,020.68	Yellow Starthistle, Knapweed and Phragmites ISM Grant
Inventory and Herbicide Treatment	Inventory, mapping and herbicide treatment of noxious weeds in the North Big Bear Hollow Canyon of 910 Ranch property.	\$10,000	Trout Unlimited

Total USWA	\$10,000
Total Match	\$45,151.46
Project Total Cost	\$55,151.46

Inventory and Monitored Areas Within And Adjacent The Project Area

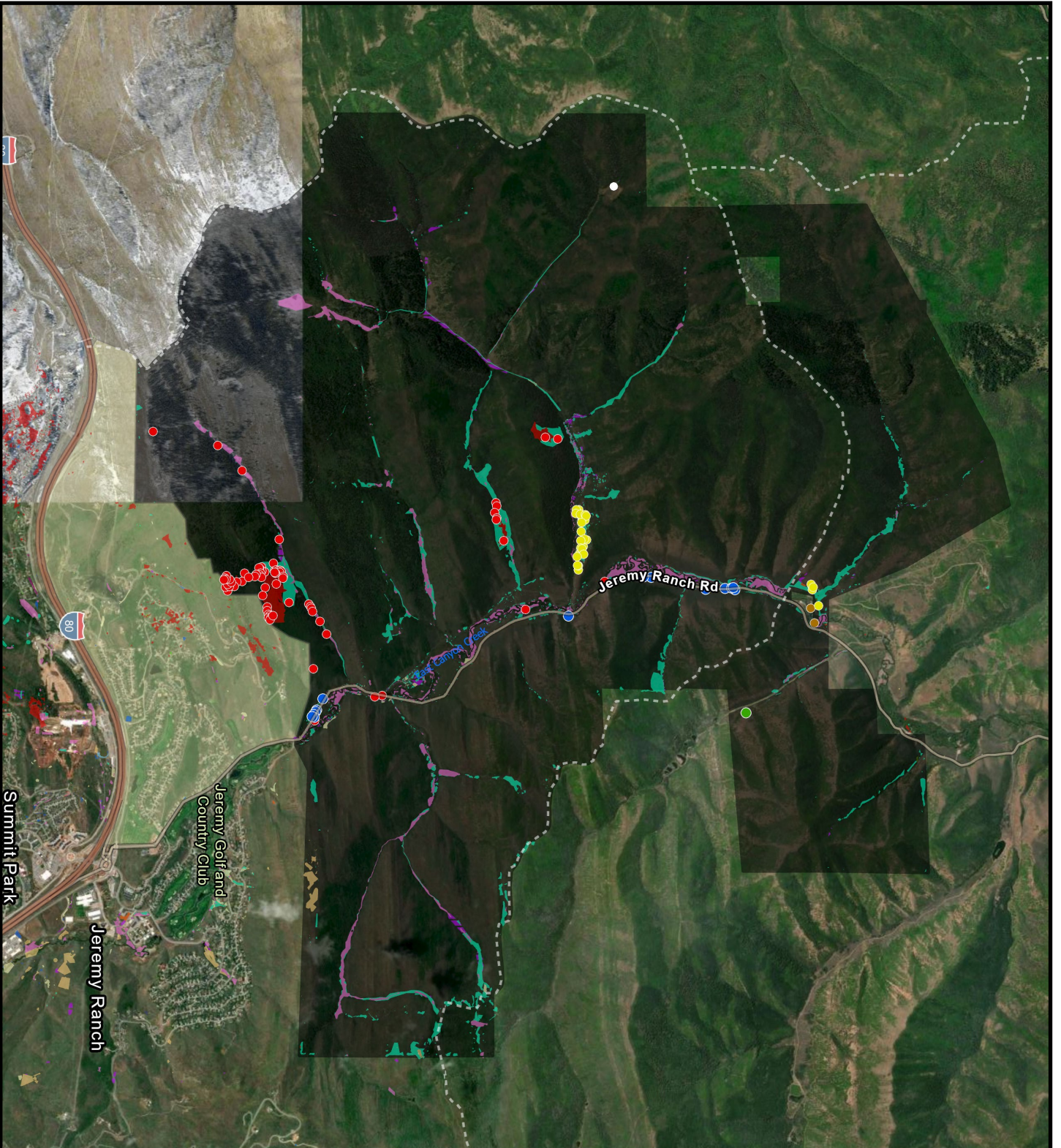


Summit CWMA - UWSA 2024 Noxious Weed Control Grant
 Areas Inventoried/Monitored within the project area.



Map Created: 9/15/2023
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Current Known Distribution of Noxious Weeds In the Project Area



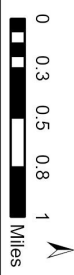
910 Ranch 2024 Noxious Weeds

Priority Species Locations on 910 Ranch

- Common Reed
- Garlic Mustard
- Myrtle Spurge
- Spotted Knapweed
- Yellow Starthistle
- Russian Olive

Noxious Weed Species

- Blackhenbane
- Canada Thistle
- Chamomile sp.
- Common Burdock
- Common St. Johnswort
- Dalmatian Toadflax
- Dame's Rocker
- Diffuse Knapweed
- Dyers Weed
- Field Bindweed
- Garlic Mustard
- Giant Reed
- Hoary Cress
- Leafy Spurge
- Musk Thistle
- Houndstongue
- Myrtle Spurge
- Oxeye daisy
- Perennial Pepperweed
- Phragmites
- Poison Hemlock
- Russian Knapweed
- Russian Olive
- Scotch Thistle
- Spotted Knapweed
- Yellow Starthistle
- Western Jeremy Ranch HOAs
- 910 Ranch Property

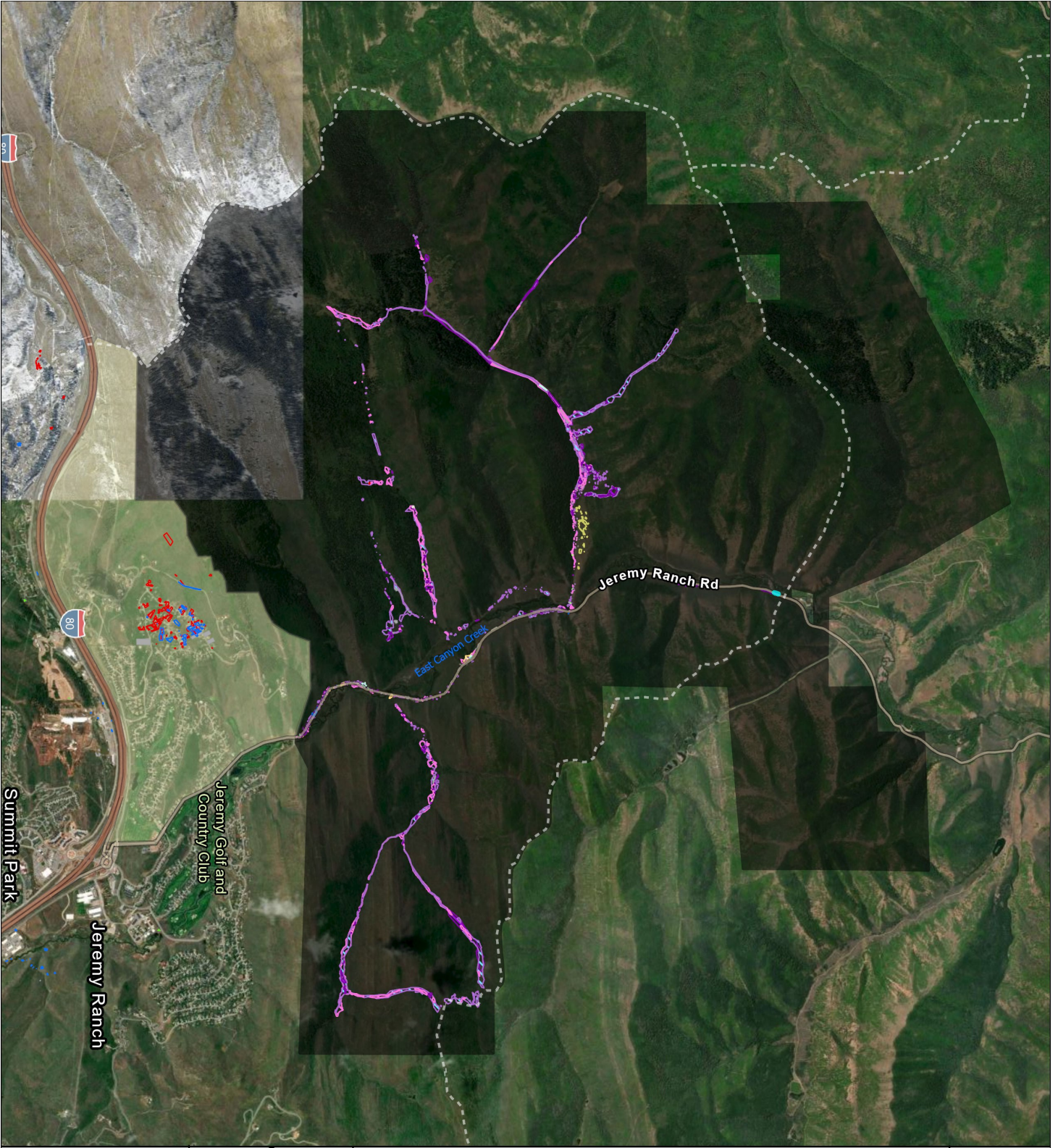


County of Salt Lake, Utah
 Geospatial Resource Center, Esri,
 TomTom, Garmin, SafeGraph,
 GeoTechnologies, Inc, METI/NASA
 USGS, Bureau of Land
 Management, EPA, NPS, USDA,
 USFWS, Salt Lake County, Maxar

Map Prepared 10/31/2024
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2024 Noxious Weed Treatment In the Project Area



910 Ranch 2024 Noxious Weed Treatment Areas

- Treated Noxious Weed Species
- Black Henbane
 - Canada Thistle
 - Chamaemile sp.
 - Common Burdock
 - Dalmatian Toadflax
 - Dyers Wood
 - Field Bindweed
 - Flowering Absent
 - Garlic Mustard
 - Hoary Cress
 - Houndstongue
 - Musk Thistle
 - Myrtle Spurge
 - Perennial Pepperweed
 - Phragmites
 - Poison Hemlock
 - Russian Olive
 - Scotch Thistle
 - Spotted Knapweed
 - Yellow Starthistle
 - <all other values>
 - Western Jeremy Ranch HOAs
 - 910 Ranch Property
- 0 0.3 0.5 0.8 1 Miles
- N

County of Salt Lake, Utah
Geospatial Resource Center, Esri,
TomTom, Garmin, SafeGraph,
Geotechnologies, Inc, METI/NASA,
USGS, Bureau of Land
Management, EPA, NPS, USDA,
USFWS, Salt Lake County, Maxar

Map Prepared 11/25/2024
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