



# Summit CWMA 2023 BIL

## Phragmites Control and Riparian Habitat Report

Prepared September 2023

**Prepared for**

**BIL Program**

Division of Plant Industry and Conservation  
Utah Department of Agriculture and Food  
350 North Redwood Road  
Salt Lake City, UT

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## PROJECT OVERVIEW

Phragmites is a Class 2 Utah State Noxious Weed. In general, Phragmites (*Phragmites australis*) is limited in distribution in Summit County and a good fit for EDRR. Several new locations have been identified and reports from residents and land managers suggest we have underestimated the extent of Phragmites. In Summit County, Phragmites tends to occur in roadside ditches, riparian corridors along streams and wetland/pond ecosystems. Phragmites, is an aggressive riparian, wetland, and open water noxious weed that spreads through rhizomatous growth rapidly creating dense patches. Individual plants can grow up to eighteen feet tall and complete their life cycle in one year, which adds tremendous amounts of vegetation to fuel loads increasing wildfire risk. Phragmites out-completes native plants, decreases wildlife habitat and forage, can increase mosquito densities (increased stagnant waters) and threatens freshwater species and migratory bird species by reducing habitat diversity, food sources and water quality.

The Summit CWMA BIL Phragmites Control and Riparian Habitat Program initially focused On Snyderville Basin up through Park City and out Browns Canyon to the Weber River near Peoa; however, as often happens when new inventory programs begin for noxious weed programs, new reports of Phragmites and inventorying for populations down and upstream of known populations greatly expanded the program area within Snyderville Basin, and into Eastern Summit County and a small portion of Wasatch County.

Inventory efforts funded by the Utah Invasive Species Mitigation Grant Program in 2019-2022 helped to begin to identify the extent of Phragmites, but additional inventory continues to be needed as we are seeing Phragmites spread

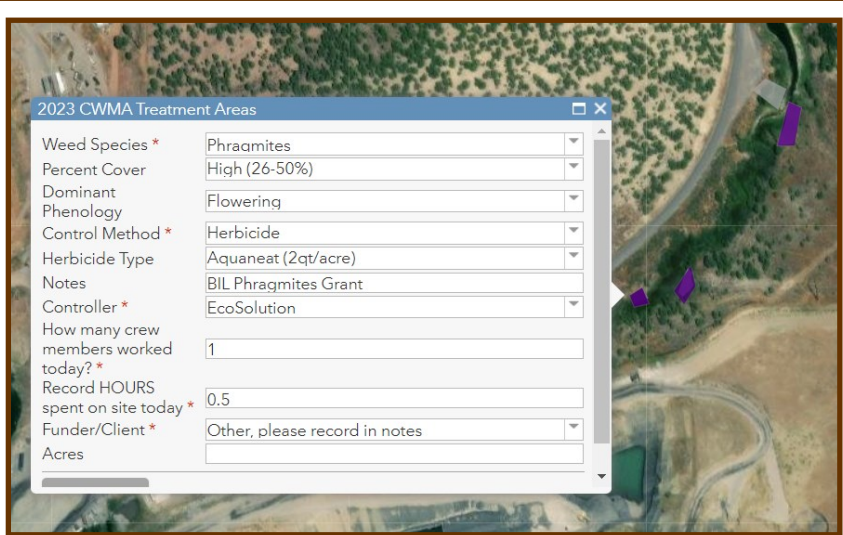
## Deer Valley Pond System



Phragmites (purple polygons) is located primarily in the northeast section of the Deer Valley Pond system. The Summit CWMA as been partnering with Deer Valley to treat these populations and map new ones as they appear for four years. Prior to Deer Valley starting these efforts the entire edge of the invaded pond had populations several feet thick and the wetland just north of the pond had nearly twice the phragmites. This year, BIL funding allowed the Summit CWMA to spray the Phragmites after Deer Valley staff cut the Phragmites to a more manageable height in dense areas. Summit CWMA crews sprayed 3-6 weeks after mechanical treatment later and revisited in the fall for retreatments as needed.



Phragmites showing herbicide impact along the Deer Valley Pond September 2023



*Treatment Data is collected using Arc Field Maps via an app created by the Summit CWMA to capture where, what species, how it was controlled and data about labor costs and who funded the work*

more rapidly.

## METHODS

Because Phragmites is spreading, inventory of new areas is key to strategic control programs. New areas within larger open spaces are walked either in a grid or serpentine fashion while trails and roadways driven or walked for populations. Arc Field Maps is used to capture the location, percent cover and current

phenology.

This data is then used to guide monitoring of populations for status checks prior to treatment. Additionally, 3 transects were established in larger phragmites populations and will be monitored, as long as funding allows, to track treatment success.

Small populations of Phragmites have been present and treated for over a decade by Summit County Weed Division crews, however, over the last three years, the number of small populations has more than doubled and new larger

populations have been discovered. Chemical control efforts in denser populations have only been moderately effective likely due to the dense, live biomass and dense accumulation of dead biomass preventing herbicide contact with enough live Phragmites tissues. Early season effort to mow and remove biomass from some of these dense populations is allowing us to test whether it will increase fall herbicide effectiveness and allow a

The Phragmites populations (purple polygons) below the Echo Dam were discovered late August 2023 and through a partnership with Summit County, Rockport State Park, Weber Basin Water Conservancy District and the Bureau of Reclamation, we were able to gain access to the site for mapping and treatment early September 2023. While inventorying for Phragmites, eight populations of viper's bugloss (gray polygons) were also discovered and treated.



## Base of the Echo Dam Wetland System



reduction in overall herbicide volume required in sensitive riparian and wetland ecosystems

Our herbicide contractors control Phragmites with Aquaneet (2qt/ac) once plants start to flower. Because the biomass can be too dense to get full coverage of herbicide, contractors watch the populations for die back and retreat those portions not responding well enough to initial treatment.

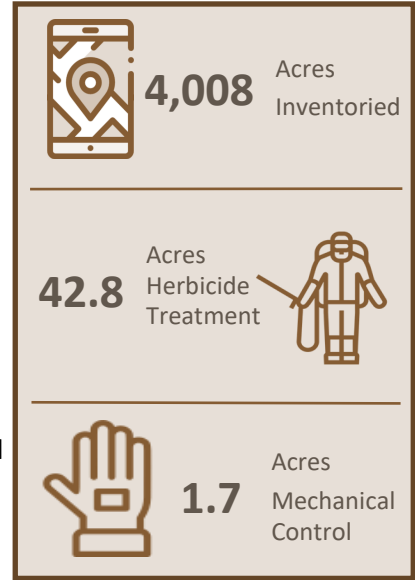
### RESULTS

Inventory efforts occurred in all the targeted areas except portions of the Weber River and the Colony. Gaining access at these locations has taken longer than other locations but is in progress. With the number of areas we had received reports of phragmites and the many riparian corridors we did have access to, we focused efforts in those areas.

Herbicide treatment is still in progress under the 2023-24 Starthistle, Knapweed and Phragmites ISM Grant. It is our hope to treat all newly found populations, however, funding may not be enough during the 2023 season. We had aimed to treat 30 acres with

herbicide, 4 acres with mechanical removal and inventory 350 acres for new populations or spread of known Phragmites populations. In 2022 we mapped 2 ac and treated 4 ac of Phragmites with herbicide. In 2023, we were

able to inventory 4008 ac for Phragmites and now have 39.03 ac (487 populations) mapped and were able to mechanically treat 1.7 ac and treat 42.8 ac with herbicide (some areas were recorded twice as first rounds of treatment were not completely effective so follow-up treatment was applied). We were unable to mechanically treat the intended four acres of Phragmites due to high water levels late into



*During the inventory of populations of Phragmites in the Bear Hollow and Tanger Outlets area of Snyderville Basin, 2 new populations of Common St Johnswort were discovered and are now scheduled for treatment this fall through our Low Elevation Garlic Mustard ISM Grant*

## Primary Project Partners

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- ◆ Bureau of Reclamation
- ◆ Canyon's Golf Course
- ◆ Deer Valley Resort
- ◆ Ecology Bridge
- ◆ Lambert Lane Village
- ◆ Park City Municipal Corporation
- ◆ Pinebrook Master HOA
- ◆ Rockport State Park
- ◆ Silver Creek Ranch Development
- ◆ Snyderville Basin Special Recreation District
- ◆ Snyderville Basin Water Reclamation District
- ◆ Summit County
- ◆ Summit Park HOA
- ◆ Swaner EcoCenter
- ◆ Utah Department of Agriculture and Food
- ◆ Utah Olympic Park
- ◆ Utah State University Extension
- ◆ Weber Basin Water Conservation District

the season limiting access. Instead, additional areas were herbicide treated once water levels dropped.

In total, just over 39 acres of Phragmites are mapped which is an increase of 15 acres. While some of this may be an increase in invasion since 2022, the majority has likely been present for a few years, but gone undetected.

Transects were established in three locations of dense Phragmites, one at the Utah Olympic Park (70% cover of Phragmites), one at the base of

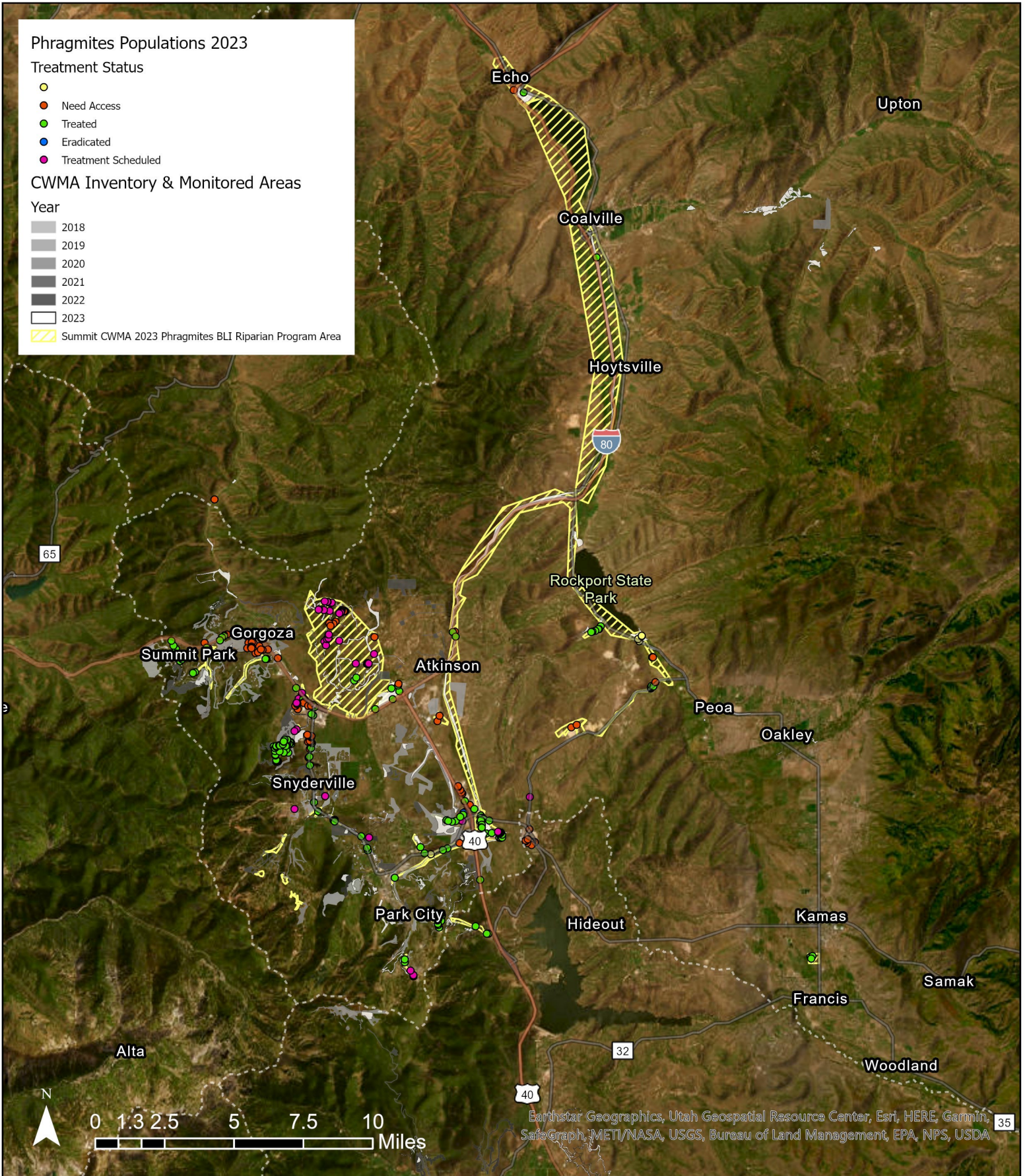


*Phragmites movement through stolons along asphalt in the Deer Valley Parking lots.*

Summit Park off Aspen Dr (100% cover Phragmites) and one at Richardson Flat (100% cover Phragmites).

During pretreatment monitoring of older populations, it was discovered that three of these populations appear to have been eradicated. We will continue to monitor these areas to ensure eradication remains the result of year of treatment. Other populations are showing greatly reduced size and density but seem to be holding on with just a few stalks. These populations were all treated this season and will be a priority for monitoring and treatment in 2024. The status of these populations have been updated in EDDMaps and most new populations added to EDDMaps. We are in the process of updating the status of those most recently treated with herbicide.

An added benefit from the inventory of reported and newly found Phragmites populations was the discovery of other priority noxious weed species that will now be treated through Utah Invasive Species Mitigation grants this fall. Eight new populations of Viper's Bugloss (*Echium vulgare*) were found at the Echo Dam and treated the same day as the Phragmites. Three new populations of Common St Johnswort (*Hypericum perforatum*) were identified in Snyderville Basin, one new Russian knapweed (*Rhaponticum repens*) population in Richardson Flats, 42 populations of



### Summit CWMA 2023 BIL Phragmites Control and Riparian Habitat Program Map

Prepared: September 15, 2023. Sara Jo Dickens, PhD, Ecology Bridge LLC

## Richardson Flat Wetland System and Park and Ride

Richardson Flat has had a complicated ownership history and many uses making obtaining a landowner contact challenging over the years. While the County has been aware of some of these populations of Phragmites and knapweed, they were only able to treat Phragmites populations along the right of ways and release biological controls for knapweed. In 2023, efforts to track down the owner contact included cooperation from Summit County, Summit CWMA and Park City Municipal Corporation and resulted in a successful conversation with the landowner leading to treatment of Phragmites and knapweed in the entire property except just north of the park and ride as this area has become a successful insectary for the knapweed biological control weevils.



Richardson Flat is a 230 acre area with 6 acres Phragmites and 14 acres of spotted knapweed and 0.02 acres of Russian knapweed. Areas in purple are Phragmites and those in blue are spotted knapweed populations mapped summer 2023.



Phragmites along 248 connected to the Richardson Flat wetland via Silver Creek post treatment.



Top: Knapweed root boring weevils (*Cyphoncleonus Achates*) collected during a Utah Weed Supervisors and Summit County sponsored biological control day organized by Amber Mendenhall.

Center: Newly identified population of Russian knapweed at Richardson Flat.

Bottom: One of many Phragmites populations on Richardson Flat.

spotted knapweed (*Centaurea stoebe*) population on Richards Flats and one new Russian knapweed population off Brown's Canyon Rd just west of Peoa, UT.

## FINANCIALS

This Phragmites project has cost \$58,124.04 in 2023. Of that cost, \$29,000 was BIL funded, \$26,805.04 was state funded through grants and \$2,319 was matched through in-kind staff and contractor donated hours. BIL funds were matched primarily by the 2022-23 and 2023-24 Summit CWMA Starthistle, knapweed and Phragmites Grants and Low Elevation Garlic Mustard Control Grants. In addition, Summit County and Deer Valley Resort matched BIL funds through staff hours spent

mapping, monitoring and treating Phragmites on their respective properties. Ecology Bridge donated a portion of the services provided. The Pinebrook HOA also donated labor to assist in getting Phragmites in their wetland mechanically removed as many of the homeowners were not in support of herbicide use. We are working with the HOA on outreach programs that we are hopeful will allow for herbicide treatment in 2024.

## CONCLUSIONS

Even with the late spring and complications with access, we were able to far exceed the number of acres we had aimed to inventory for Phragmites which allowed us to identify and map several new locations. There were long stretches of roads and

Summit CWMA 2023 Phragmites and Riparian Habitat BLI Grant Budget				
Line Item	Description	Original Budget	New Budget	Expensed
Herbicide Contractors	Herbicide contractors for late summer treatment	\$3,000.00	\$12,386.70	\$12,386.70
Mechanical control Contractors	Contractors for mechanical removal of dead biomass	\$4,000.00	\$4,660.40	\$4,660.40
Inventory and Monitoring Contractors	Contactors to inventory and map new populations and monitor weed control effect	\$2,000.00	\$10,952.90	\$10,952.90
Administrative costs	Fiscal administration and project management 50/50 split	\$1,000.00	\$1,000.00	\$1,000.00
Dump Fees and Dump Trailer Rental	ISM Low Elevation Garlic Mustard ISM Grant 2023-24			\$1,531.54
Inventory and Monitoring Contractors	Starthistle, knapweed and Phragmites ISM Grant 2022-23			\$3,259.00
Inventory and Monitoring Contractors	Starthistle, knapweed and Phragmites ISM Grant 2023-24			\$7,920.00
Herbicide Contractors	Starthistle, knapweed and Phragmites ISM Grant 2022-23			\$2,100.00
Herbicide Contractors	Starthistle, knapweed and Phragmites ISM Grant 2023-24			\$11,994.50
In-kind Labor	Summit County Staff - treating Phragmites on County Property			\$950.00
In-kind Labor	Pinebrook HOA - mechanical control of Phragmites			\$576.00
In-kind Labor	Deer Valley Staff - Mapping new Phragmites populations and monitoring older populations			\$793.00
<b>Total ISM</b>		<b>\$10,000.00</b>	<b>\$29,000.00</b>	
Total In-Kind	Partner and Volunteer In-Kind Match			\$2,319.00
Total State Match	Grant Funds - Summit CWMA Knapweed, Starthistle and Phragmites Control Grant			\$26,805.04
<b>Total Match</b>				<b>\$29,124.04</b>
<b>Project Total</b>			<b>\$58,124.04</b>	



trails inventoried this season along with open wetlands and other more open space. Many of additional open space areas in riparian corridors still need to be inventoried as we are finding patches of Phragmites on waterways but are not sure how far upstream the source populations are. Many are likely on private property which we will continue to work towards gaining access to.

While this project has not included revegetation efforts in areas of previously Phragmites invaded areas, Deer Valley did establish a pollinator habitat garden in the meadow adjacent the invaded pond. Most areas where Phragmites has been treated and is declining either is recovering with native wetland species (particularly Baltic rush (*Juncus balticus*) or reed canary grass (*Phalaris arundinacea*). Other areas contain deep layers of dead biomass that prevents establishment of other vegetation. If funding allows in 2024, we aim to remove more dead biomass and begin seeding in areas that are drier to see if the biomass removal plus seed helps to speed recovery of native vegetation.



*Small populations are popping up along roadsides throughout Western Summit county particularly in areas near recent development*