



SUMMIT CWMA Final REPORT 2019-2020

**EDRR Garlic Mustard and Spotted
Knapweed Control in Summit County**

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Project Summary

The EDRR Weed Control project in Summit County is funded through the Utah Department of Agriculture and Food, Invasive Species Mitigation Fund, and partner matching funds. The project is focused on the Class 1B state noxious weed, garlic mustard (*Alliaria petiolate*) and the Class 2 state noxious weed, spotted knapweed (*Centaurea stoebe* (C. maculosa)). In April of 2019, Park City Municipal Corporation, and the Summit County CWMA were awarded \$200,000 for the treatment of Garlic mustard and spotted knapweed during the 2019-2020 fiscal year with Park City Municipal Corporation as the fiscal agent.

Along with partner in-house weed control efforts, the project uses four weed management contractors including Providia Management Group (PMG), Ground Solutions, Jesus Reas Landscaping and Ecology Bridge. The main partners include Park City Municipal Corporation, Summit County, Snyderville Basin Special Recreation District, Pinebrook Master HOA, Deer Valley and Vail Resorts. Three priority areas were the focus of work within Summit County: Summit Park and adjacent communities, Snyderville Basin, and Park City.

Treatment and Data Collection

This is the eighth year of ISM funding to treat garlic mustard, sixth year of contiguous treatment of garlic mustard in both the spring and fall of the same year and first year treating spotted knapweed. It is the third year the project used pre-treatment weeding to thin flowering plants for better plant-herbicide contact and weeding of remote backcountry



Crescent Ridge Condos is one of the newest partners working with Summit CWMA and have committed to annual community weed pulls.

Treatment Methods

Manual Control

The use of two approaches allowed for rapid treatment of backcountry patches while reducing overall herbicide use and ensuring more complete herbicide coverage of plants in all patches.

Dense Patches:

Flowering plants were weeded to thin the mustard canopy and more complete herbicide coverage.

Small and Backcountry Patches:

Both flowering and rosette stages were weeded.

Herbicide Treatment

Six herbicides were used and chosen based on species treated, environmental condition and land use. Herbicide rates were also tailored for particular locations and sensitive individuals or resources.

Garlic Mustard

2,4-D (Amine): 64oz/ac

MSM 60: 1.5oz/ac

Aquaneet: 2qt/ac

Escort XP (partner contractors)

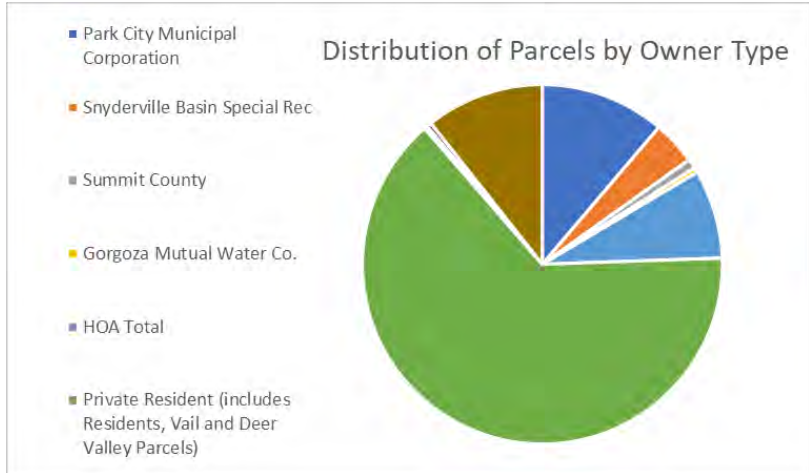
Spotted Knapweed

Milestone: 6oz/ac

Weedmaster: 1.5qt/ac

Revegetation and Mulch

Native grass seeding in sunny areas and mulching in shaded residential areas

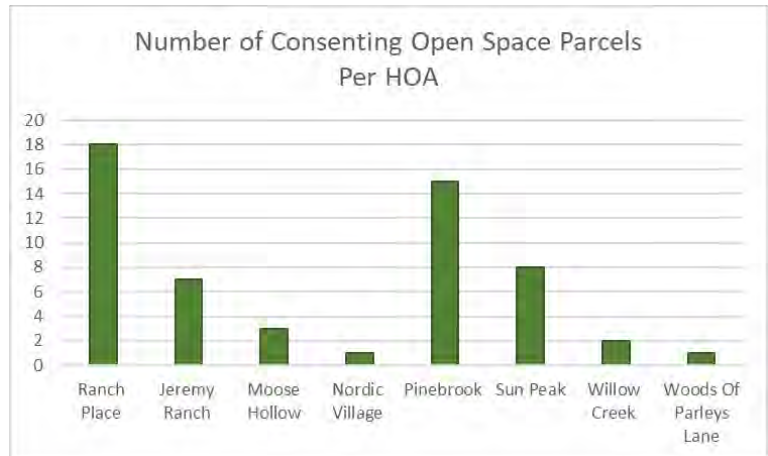


locations. The project was given consent by property owners to treat 778 private and public parcels summer and fall of 2019 and 686 spring of 2020. Participation had an 84 percent increase for summer and fall 2019 and 83 percent increase for spring 2020 since 2017.

This is the second year we partnered with local HOA's to assist with outreach to their members and obtain access to HOA open

space. This allowed for the treatment of 88 populations of garlic mustard on 29 HOA parcels and 50 populations of spotted knapweed on eight parcels during the summer and fall of 2019. During spring of 2020 garlic mustard was controlled on approximately 20 HOA open space parcels and no treatment of spotted knapweed was conducted prior to June 30, 2020.

During July 1, 2019 through November 2019, approximately 100 acres were weeded with an additional 4000 acres monitored with small patches manually controlled, and 463 acres treated with herbicide and an additional 138 retreated with herbicide. This equates to 14 percent of treatment being hand weeding, two percent being biological control and 84 percent herbicide treatment. Due to multiple germinations



of garlic mustard, several sites were treated twice July through November and some three times.

Knapweed was generally treated once except a few particularly large populations that were treated

twice and one location three times. Spring of 2020 approximately 76 acres of garlic mustard were treated with herbicide and 35 acres hand pulled and 15 acres of spotted knapweed were treated with herbicide and 0.02 acres hand pulled (see maps in Appendix A).



Many community trails in the HOA open spaces had significant cover in 2019 and a few that have been controlled and show significant reduction. However, the seed banks are substantial and will likely require many years of control.

Known and treated garlic mustard in 2019 and Spring 2020

Garlic Mustard					
Partner	Known Acres	Treated			
		In-house 2019	ISM 2019	In-house 2020	ISM 2020
Basin Recreation	17	5	20	6.2	16
Deer Valley	3.2	3.5	3	0	1
Park City	172	10	170	11	20
Summit County	4	1	5	1	0
Vail Resort	21	5	21	0	0.5
Private Lands	246	0	352	0	54
Total	463.2	24.5	571	18.2	91.5

Known and treated spotted knapweed in 2019 and Spring 2020

Spotted Knapweed					
Partner	Known Acres	Treated			
		In-house 2019	ISM 2019	In-house 2020	ISM 2020
Basin Recreation	2	2	2	0.25	0.25
Deer Valley	16	15	1	0	0
Park City	12	0	0	0	0
Summit County	1	0	1	0	0
Vail Resort	86	50	15	0	13
Private Lands	108	0	148	0	1.5
Total	225	67	167	0.25	14.75

Area Monitored for garlic mustard and spotted knapweed in 2019 and Spring 2020

Garlic Mustard and Spotted Knapweed			
Partner	Monitored		
	2019	On-house Spring 2020	Spring 2020
Basin Recreation	817	24	5
Deer Valley	812	0	2
Park City	1433	27	7
Summit County	47	5	3
Vail Resort	66	0	1
Private Lands	765	4	224
Total	3940	60	242

PMG focused heavily in the Park City and Summit Park areas. Ground Solutions focused on Jeremy Ranch, Pinebrook Open Space, Armstrong/Thayne's Canyon, Toll Canyon areas and remote locations. Ecology Bridge was contracted to manage the project, manually control, monitor infestations prior to and after herbicide treatment and complete weeding in remote backcountry areas where follow up herbicide treatment would not be necessary or inefficient to send a second crew.

Arc Collector was introduced last year to capture new garlic mustard and spotted knapweed locations and record treatment actions and herbicide rates. The app was designed to enable field collection of the following attributes: percent cover (or absence), dominant growth stage, area infested, control method used with herbicide rates, contractor or partner that applied treatment, number of bags of garlic mustard pulled from a site, number of hours on site, number of crew and notes. The app was used to record areas monitored around known populations and newly reported populations to increase efficient use of herbicide crews.

Beyond the data collection application of the Arc Collector App, the App has also increased efficiency in management of control crews. The App allows for assignment of treatment work digitally and real time crew monitoring.

Last year was the first year that we required residents to weed flowering garlic mustard before treatment. In previous years it was becoming clear residents were not putting in effort to control their own weeds. The weeding requirement was intended to shift the responsibility from the grant back to the landowner. This requirement increased resident efforts in 2019, however, in 2020, we did not enforce this requirement due to an inability to fairly identify homeowners unable to weed due to COVID 19 impacts.



The Historic Glenwood Cemetery of Park City is traditionally cared for by volunteers from the Glenwood Cemetery Board. Many of these volunteers are over the age of 60 and were therefore at high risk for COVID 19. For this reason, they reached out to the Summit CWMA for assistance this year with both hand weeding and herbicide. With the help of members of the Bright Futures community group working for the Summit Land Conservancy, we were able to provide the needed assistance.

Treatment Results

Summit Park is showing reduction in garlic mustard density where consistently treated and the spread to open space has been contained. Of the garlic mustard populations treated in the Summit

Park/Timberline and Toll Canyon area, 94% were on private residential property. Spotted knapweed, however, was only present and treated on private residential parcels. Two populations in the Pinebrook HOA showed reduction in number, size and density of patches: while, two other areas showed significant increase. These areas showing an increase in cover experienced fire mitigation activities that likely disturbed soils considerably and slightly increased sunlight. Of the garlic populations treated in Pinebrook, 58% were on private, residential parcels while only 5% of spotted knapweed were on private, residential parcels.

Waterways in Snyderville Basin (i.e. Willow Creek) and Park City (i.e. Poison Creek) are significantly reduced in cover. Areas of Park City along McLeod Creek and the creeks of Thayne’s Canyon had declined boundaries in 2019 but the distribution in 2020 was more similar to historic cover. The largest population of garlic mustard on Deer Valley property was treated with weeding and herbicide in 2019 and cover has been reduced by 95%. The site seems to be following the path of the Masonic Trail population. Neighborhoods that are newer to the program and newly accessed HOA open space had dense populations and tended to have more flowering plants than those treated in the past. The densest population of these new areas is the Crescent Ridge Condo open space which is just down slope from the approximate 30-acre Armstrong population found two years ago.

Three transects were surveyed between July 1, 2019 and June 30, 2020. The remaining transects from previous years have all experienced levels of disturbance that would confound results so have been abandoned. Data indicate drastic reduction in garlic mustard at the all locations with the greatest reduction at the Masonic Trail site since first treated in 2018. A minor increase in seedlings was observed spring of 2020 and a single herbicide treatment again left the site with primarily bare ground. The Toll Canyon and 570 Upper Evergreen transects both show signs of native plant establishment, particularly the Toll Canyon site. Photos of transects can be seen in Appendix B.

Transect Site	2018		2019		Spring 2020		Total Reduction Along Transect since 2018
	Pre-Weeding	Post Weeding	Pre-Herbicide	Post Herbicide	Pre-Herbicide	Post Herbicide	
Masonic Trail	87%	75%	5%	1%	10%	0	100%
Toll Canyon @ Matterhorn	42%	19%	33%	26%	4%	Not Treated	38%
570 Upper Evergreen Dr	79%	41%	36%	35%	10%	7%	72%

Canyons Revegetation

Knapweed was controlled twice in 2019 and once in spring of 2020 prior. The site was further prepared by spreading compost three to 5 inches thick and seeding with native grass seed mix. The native grass seed mix was comprised of the following: 10% Switchgrass (*Panicum virgatum*), 10% Arizona Fescue (*Festuca arizonica*), 10% Big Bluestem (*Andropogon gerardii*), 10% Slender Wheatgrass (*Elymus trachycaulus*), 20% Thickspike/Streambank/Western (*Elymus lanceolatus*), 10% Yellow Indiangrass (*Sorghastrum nutans*), 5% Blue Grama (*Bouteloua gracilis*), 5% Beardless Wheatgrass (*Pseudoroegneria spicata*), 5% Indian Ricegrass (*Oryzopsis hymenoides*), 5% Little Bluestem



Typical knapweed density prior to revegetation.



(*Schizachyrium scoparium*), 5% Sand Dropseed (*Sporobolus cryptandrus*), and 5% Sideoats Grama (*Bouteloua curtipendula*). The seed was raked into the soil lightly.

The land manager, Vail Resort, was provided detailed direction for irrigation. Unfortunately, the irrigation was not applied regularly, and low rainfall resulted in limited germination of grasses, but a relatively high rate of common weed species germination. That said, the revegetation area has little spotted knapweed, approximately 70% less than the adjacent areas.



Seed was retained for use in the fall. We will again seed with the same native grass seed mix in October prior to the snowfall. The site will be monitored in the late spring, midsummer and fall to assess success. Results will be reported in the 2020-21 ISM report.

Outreach

Individual Residential Outreach

One on one conversations have provided research supported information regarding bees and herbicide to calm resident concerns. In 2018-2019, the program received a number of negative comments on social media regarding potential impacts of the herbicides on honeybees. In spring of 2020, we partnered with USU Extension and Swaner EcoPreserve to hold pollinator and herbicide educational webinars, which also received ISM funding (a repost for this project will be submitted separately). These efforts and one on one interactions with local beekeepers have reduced the comments on Facebook. Extra seed from the pollinator webinar program was used to incentivize residents to pull their own garlic mustard and sent a message that



Honeybees of a local beekeeper.



Canyons revegetation site: (top) Pre-treatment, (middle) Post-Treatment and (bottom) a month later.

the Summit CWMA is working to create non-chemical weed control where appropriate.

Many residents asked for non-chemical methods that are not as labor intensive as weeding. Reseeding sunny areas after a thick

layer of compost and soil or mulching shady areas was recommended. Five residents mulched and three reseeded in 2019. Over 30 residents in the project area are reseeding with the pollinator native grass seed mixes this fall in areas where they have seen reduction in garlic mustard. It is their hope that they will not have to use herbicide in these areas moving forward and continue to use herbicide in areas garlic mustard is denser.

Community Weed Pulls



Three community weed pull events and two local community group weed pulls were held Spring of 2020. In previous years, the Summit CWMA held a bounty paying residents per bag of mustard. We brought the program back for the three community weed pulls. By paying \$3 a bag, offering native seed and holding an opportunity drawing at each weed pull, we had 68 participants pull 121 bags. Most did not take the per bag payment, preferring native seed, however the kids were driven by the bounty and continued pulling several days after the event and contacted the project manager when they had a pile of bags for pick up.

HOA Outreach Program

Two hundred and forty HOAs in the project area

were contacted to assist in the collection of consent to treat on member properties. Eighty-four of these HOAs forwarded on project information and consent collection instructions. Thirty of these HOA's partnered to treat their open space lands. The Pinebrook Master HOA has become an ongoing partner for the ISM project and is working with Snyderville Basin Special Recreation District to address other noxious



weeds and develop a weed program. They have also committed to assist with a weed pull in Pinebrook in 2021. The Summit Park HOA has added noxious weed control requirements and information to their new resident welcome packet and plans to help with a weed pull in Summit Park in 2021. The Summit Park, Pinebrook and Crescent Ridge HOAs have committed to annual garlic mustard pulls events within their communities As many of these HOA open spaces are adjacent to or contain waterways and trails that lead to public open space, treatment of these area is important to reduce reinvasion of public open space.

Additional Partnership Project Components

The Summit CWMA was awarded funding from the Utah Weed Control Association for revegetation seed mix, soil amendments and biochar trials for shady garlic mustard treatment sites. Shady sites remain difficult to revegetate due to the lack of an effective seed mix and possibly soil legacy effects of garlic mustard allelopathy. These trials may lead to a seed mix for these difficult sites or identify methods to address soil legacy impacts. To date, trials suggest there are native grasses that will germinate and establish under aspen forest and maple stands, however the evergreen forests have not shown germination. Grasses are not at a growth stage to identify them at this time so results will be reported at a later date.

Through a partnership with the Park City Community Foundation, Hispanic weed control business owner, Jesus Rea, Summit County Division, Park City Municipal Corporation and Ecology Bridge LLC, the current Summit County Weed Identification Handbook was translated into Spanish and provided to Spanish speaking crews and a handful of landscape companies.

Corey Ransom of USU and his crew established and treated Esplanade trial research plots in 2019 to test the effectiveness of Esplanade on garlic mustard control. Plots were established on the Park City Armstrong Trail and Snyderville Basin property of Toll Canyon. He and his crew have been back to monitor these sites.

The Summit CWMA established DuraCor herbicide trials June of 2020 to test the effectiveness of this herbicide on garlic mustard. Additional treatments will occur in fall of 2020 while this project is scheduled for completion October of 2020, it also is an ISM funded project and will be monitoring beyond that date and reported in future ISM garlic mustard reports.

Britany Duncan of UDAF established transects in Copper Moose Farms, Armstrong Trail Area and the Canyons Lower Village to track treatment success under the differing treatment methods. She and her crew have been back to monitor these transects again this year.

Contributors to Success

Several changes were made this season to increase flexibility to respond to weather, efficient use of time and money and to collect higher quality data to share across jurisdictions. The following is a list of the project components we found most effective.

- Increasing the number of contractors allowed timelier treatment and response to limiting weather conditions.



Grass seedlings from seeding trials.

- Use of Survey 123 to electronically invite residents to participate and gain consent to treat provided efficient consent collection, reduced number of paper letters mailed in 2019 and eliminated the need for letters in 2020. Hosting this program on the Summit County Weed Division website provided a way to direct residents to sign up throughout the treatment season.
- While COVID 19 slowed initial control efforts and required operational adjustments, it also increased the amount of time residents spent on trails and in their yard. This paired with the banner garlic mustard year and social media outreach efforts brought noxious weeds to many resident's attention for the first time. It also made them more receptive to treatment options.
- Use of the Arc Collector App has increased efficiency in coordinating contractors, support to partners and data availability. Reconciling EDDMaps data with the Arc Collector data has identified populations unknown to the CWMA previously that will be controlled in 2020. This has also allowed us to identify a limited number of populations on EDDMaps that no longer persist. These populations will be monitored to ensure eradication for three years then every other year for seven years.
- Increasing the standardization of data collection using the Arc Collector app allowed for easier download of control data.
- Partnering with HOAs further increased the reach of the outreach program and increased number of residents in new areas signing up for the program. Access to HOA open space not previously treated is helping address creeks and stream populations and have inspired HOA weed program development.
- Consistent partners and treatment
- Land manager on site with ISM crews when possible, particularly at complex sites
- Pre-treatment monitoring/survey: herbicide crew efficiency
- Post treatment monitoring to assess completeness and new growth
- Local government and weed department support
- Adding spotted knapweed increased the interaction of both Deer Valley and Vail Resorts. Some of the largest populations are on their properties and mapping efforts this season will allow for better timing of treatment next season.
- Working with Amber Mendenhall and David Bingham has enabled our partners to increase the use of biological controls for spotted knapweed. It has also increased the interest in expanding local weed control programs to include other biological control agents for species not included in our ISM program.

Challenges

Inconsistent participation of individual landowners continues to be a challenge. Each time a property goes two or more years without treatment, we see recovery of garlic mustard populations. We are using our historical treatment data along with current population data to aid in targeting long treated parcels to maintain the progress made in previous years. However, if an historically treated parcel is in the middle of a neighborhood with extensive invasion, the parcels may be placed secondary to other parcels that are adjacent open space and the edges of invasion fronts.

Some contractors were inconsistent with the use of the Arc Collector App. This reduced the efficiency of communication and slowed planning of contractor assignments. After working with their supervisors, use was improved.

Garlic mustard germinated several times during the 2019 growing season which required multiple monitoring visits to most populations and two to three herbicide treatments. In addition, snow came

early followed by an Indian summer which shifted the fall treatments making rescheduling treatment crews difficult. A dry 2020 spring proceeded by high rates of fall germination with weather limited control efforts lead to dense garlic mustard populations that went to flower quickly.

Masonic Trail: Park City Open Space garlic mustard reduced to < 5%



Pre-weeding 2018

Post Weeding 2018

2019

2020 Seeding Trial

Future Treatment Plans

With the decrease in state weed control budgets, all ISM programs will be facing this coming season. We are working on events to increase participation by residents. The first possible program includes partnering with Summit County to obtain a couple of their loaner program backpack sprayers to loan out from a location in Snyderville Basin. While the drive to the Weed Division office is not far, it appears that it is far enough that residents in Snyderville Basin fail to make the trip. This was learned when a Summit Park resident checked out one of the County sprayers and several other Summit Park residents asked to use it along with the herbicide.

The second program will be a competition between HOA's to see which community pulls the greatest number of bags of noxious weeds, specifically garlic mustard. We are also implementing weeklong weed pulls along public trails that incentivize participation through an opportunity drawing that includes passes to Deer Valley. These weeklong weed pulls will be done in partnership with Park City, Snyderville Basin Special Recreation District and Mountain Trail Foundation.

In addition, we will be compiling a list of respectable weed control contractors and landscape crews that can assist residents with weed control and make the list available to those seeking help that we cannot provide. It is our hope that we will minimize contractor costs for mechanical removal by incentivizing residents and using good hearted competition between community groups.

To ensure we target our highest priority areas for all species we have received funding for, we will be analyzing our current data to identify populations along water ways, in open space, trails and residential areas adjacent opens space. The remaining populations will be lower priority and the majority will be residential property for which the previously mentioned programs will assist with.

Project Partners

Thank you so much to our partners and sponsors for their contribution to this program. Thanks to the Utah Department of Agriculture and Food for funding this project. Thanks to the following partners and contractors for their participation:

Aspen Springs HOA: Richard Rockhold

Bear Hollow Village HOA: Howard Butt
 Brook Hollow Village HOA: Barbara Yamada
 Copper Moose Farms: Ben Smaha
 Courtyards at Quarry Village: Ryan Dickey
 Cove at Eagle Mountain: Ryan Dickey
 Crescent Ridge HOA: Carla Maupin
 Deer Crest HOA: Dan Taylor
 Deer Valley: Laura Sexton and Paul Hedman
 Discovery Ridge HOA: Mike Milner and Cedar Jordan
 Ecology Bridge: Sara Jo Dickens
 Enclave at Sun Canyon HOA: Jim Simmons
 Fairway Village HOA: Ryan Dickey
 Ground Solutions: Sterling Graham
 Hidden Cove HOA: Erin Ferfuson
 Jeremy Ranch HOA: Tom Spencer
 Jesus Rea Landscaping: Jesus Rea
 Meadow Wild HOA: Whit Logan
 Moose Hollow HOA: Ryan Dickey
 Mountain Ranch Estates: Brenda Lake
 Park City Community Foundation: Diego Zegarra
 Park City Nursery: Tissa and Sophie
 Park City Equipment Rental: Lance Anderson
 Park City Municipal Corporation: Logan Jones and Maria Barndt
 Parkview HOA: Derek Howard
 Pinebrook HOA: David Geffen, Don Brown, Stephan Herrera
 Providia Management Group: Nate Elwood
 Ranch Place: Brenda Lake
 Sagebrook HOA: Brenda Lake
 Salt Lake County: Sage Fitch
 Summit County: Dave Bingham, Dan Pena and Robin Judd
 Snyderville Basin Special Recreation District: Jessica Kirby
 Soaring Wings School: Bruce King
 Southshore HOA: Insa Riepen
 Summit Park and Timberland HOA: Megan Fleming, Mike Quinones and Jackalyn Silva
 Sun Peak HOAs: Teresa Wharton
 Swaner EcoCenter: Nell Larson
 The Colony HOA: Pedro Rodriguez
 The Oaks and Solamere HOAs: Tom Mohor
 Utah Department of Agriculture and Food: Brittany Duncan
 Utah Olympic Park: Jamey Kimball
 Utah State University: Corey Ransom
 Utah State University Extension: Elizabeth Cohen
 Vail Resorts: Michael Testa and Keith Gareau
 Wild Harvest Farms: Phillip James
 Windrift Condos HOA: Brenda Lake
 Willow Bend East Silver Springs Townhomes: Brenda Lake and Insa Riepen
 Willow Bend West: Stephanie Schmidtke
 Woods at Parley Lane HOA: Board



Financial Summary

The Garlic Mustard and Spotted Knapweed ISM Project focused on the control of garlic mustard and spotted knapweed, however, when diffuse or Russian knapweed or yellow Starthistle were identified on properties that had consent for treatment, these species were also treated. The project was awarded \$200,000 for July 1, 2019 to June 30, 2020. The Proposed budget allowed for \$20,000 to be spent on administrative costs (fiscal agent and project management). The remaining line item allotment and expenditure is defined in the table below.

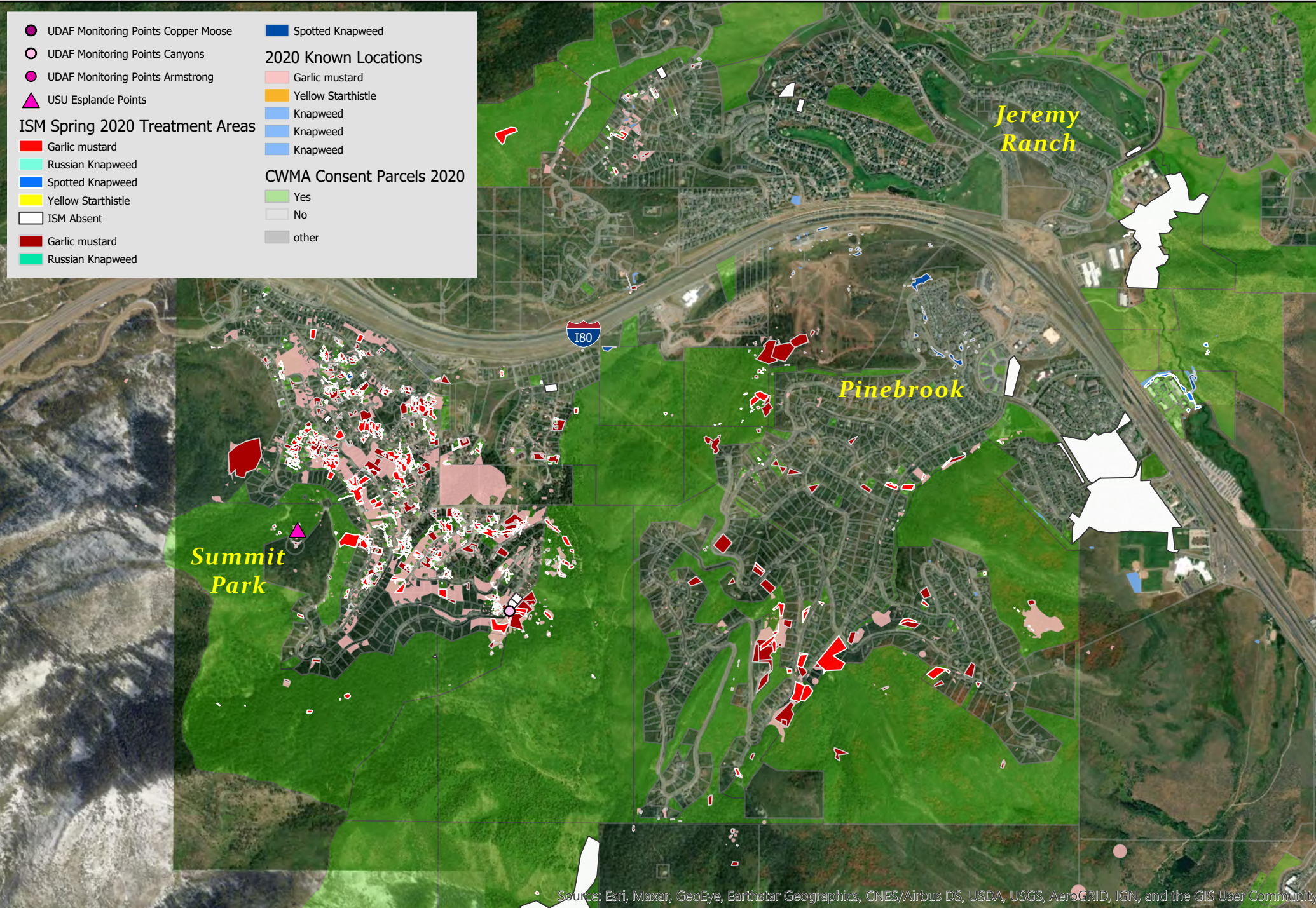
Financial summary of expenditures and remaining budget as of November 2019.

Line Item	Original Budget	Invoiced by Jan 2020	Altered Budgeted (Approved by State)	Spent
Revegetation	\$4,000.00	\$3,350.00	\$7,200.00	\$7,220.96
EDDMaps Updating	\$0.00	\$0.00	\$5,000.00	\$1,838.00
Mechanical Control	\$40,000.00	\$0.00	\$40,000.00	\$40,000.00
Herbicide Application	\$136,000.00	\$111,845.64	\$127,800.00	\$130,941.04
Administration	\$20,000.00	\$8,516.75	\$20,000.00	\$20,000.00
Total	\$200,000.00	\$123,712.39	\$200,000.00	\$200,000.00

Conclusions

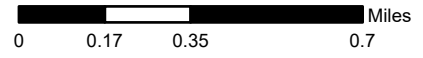
Treatment is reducing garlic mustard density and containing populations where treatment has been consistent over the last seven years. Several new, large populations in open space and some residential areas were found and many were treated. Monitoring and control of spotted knapweed in 2019 gave us a better picture of its distribution and density and allowed us to treat some large patches earlier in the season leading to greatly reduced density by mid-summer. The Arc Collector App has allowed us to create an extensive database of known populations and treatment records that we continue to use to determine priorities for treatment and monitoring.

● UDAF Monitoring Points Copper Moose	■ Spotted Knapweed
○ UDAF Monitoring Points Canyons	2020 Known Locations
● UDAF Monitoring Points Armstrong	■ Garlic mustard
▲ USU Esplande Points	■ Yellow Starthistle
ISM Spring 2020 Treatment Areas	■ Knapweed
■ Garlic mustard	■ Knapweed
■ Russian Knapweed	■ Knapweed
■ Spotted Knapweed	CWMA Consent Parcels 2020
■ Yellow Starthistle	■ Yes
□ ISM Absent	□ No
■ Garlic mustard	■ other
■ Russian Knapweed	

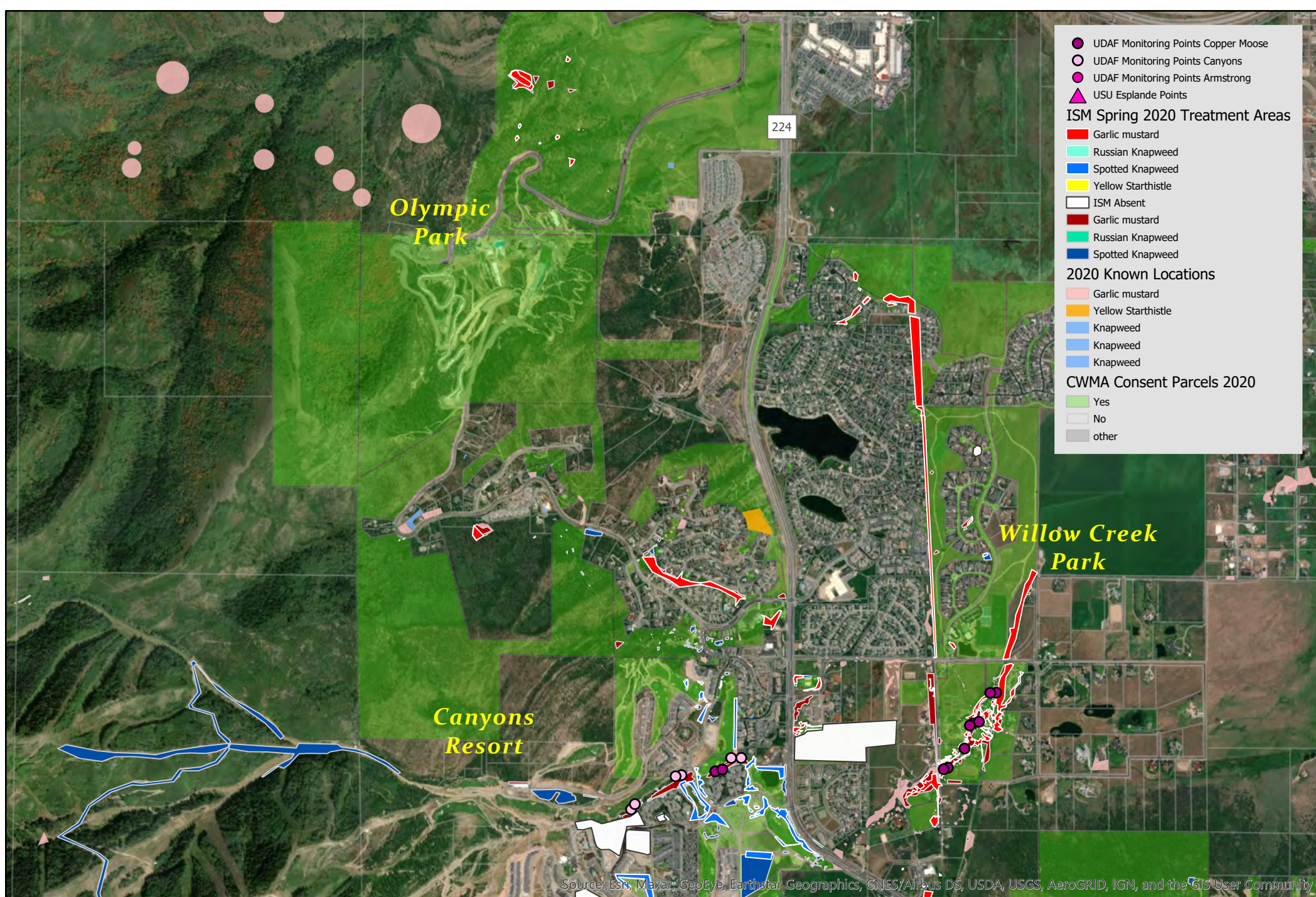


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Summit Park/ Pinebrook
Summit CWMA Garlic Mustard and Knapweed Control July 1, 2019 - June 30, 2020
 Summit County CWMA EDDRR Weed Control of Garlic Mustard
 2019-20 ISM FIY



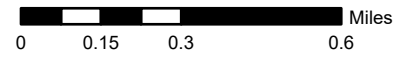
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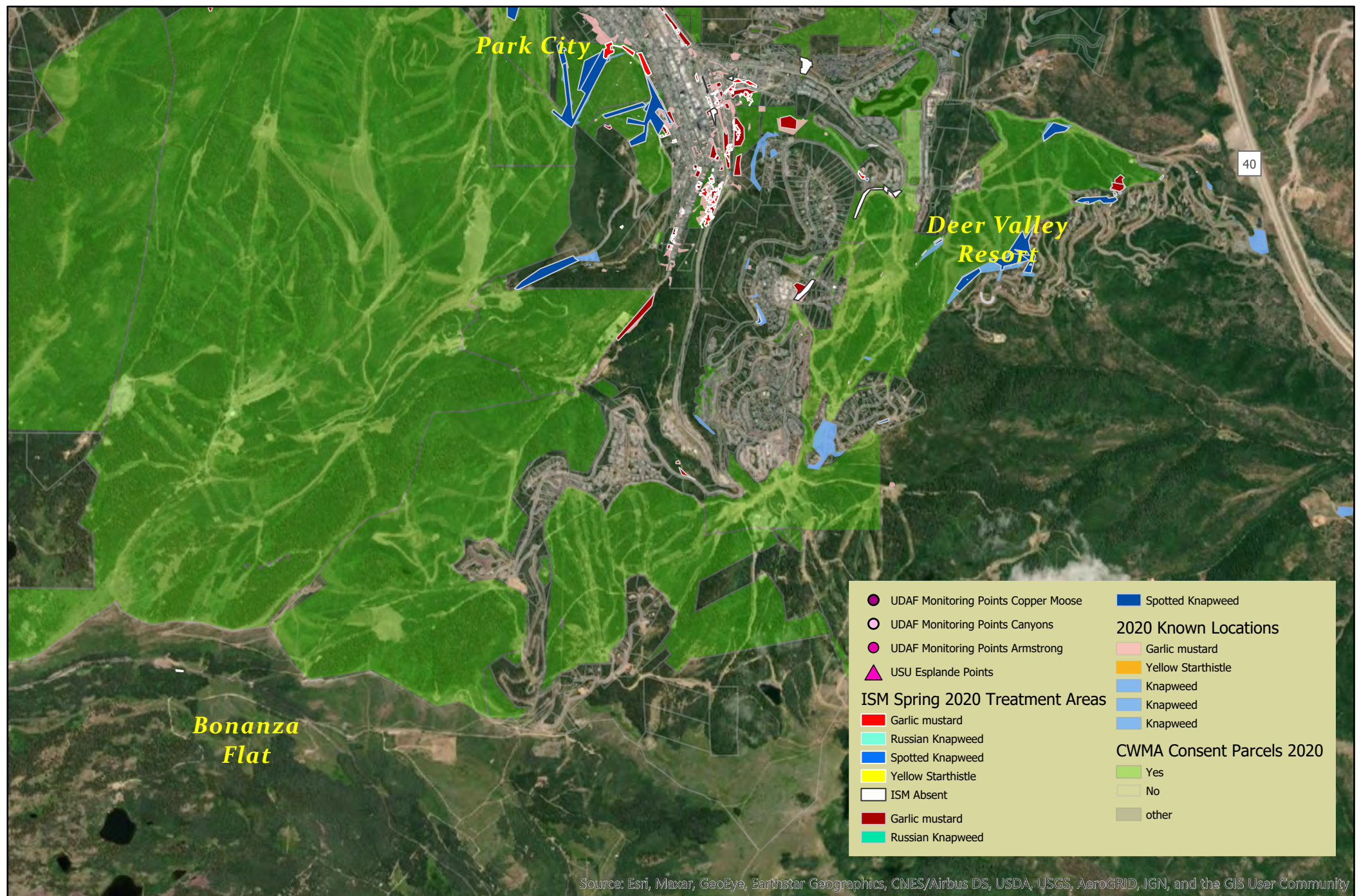
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Snyderville Basin
Summit CWMA Garlic Mustard and Knapweed Control July 1, 2019 - June 30, 2020**

Summit County CWMA EDDRR Weed Control of Garlic Mustard
2020-21 ISM Grant Application



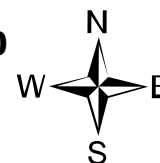
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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Southeastern Park City and Deer Valley Summit CWMA Garlic Mustard and Knapweed Control July 1, 2019 - June 30, 2020

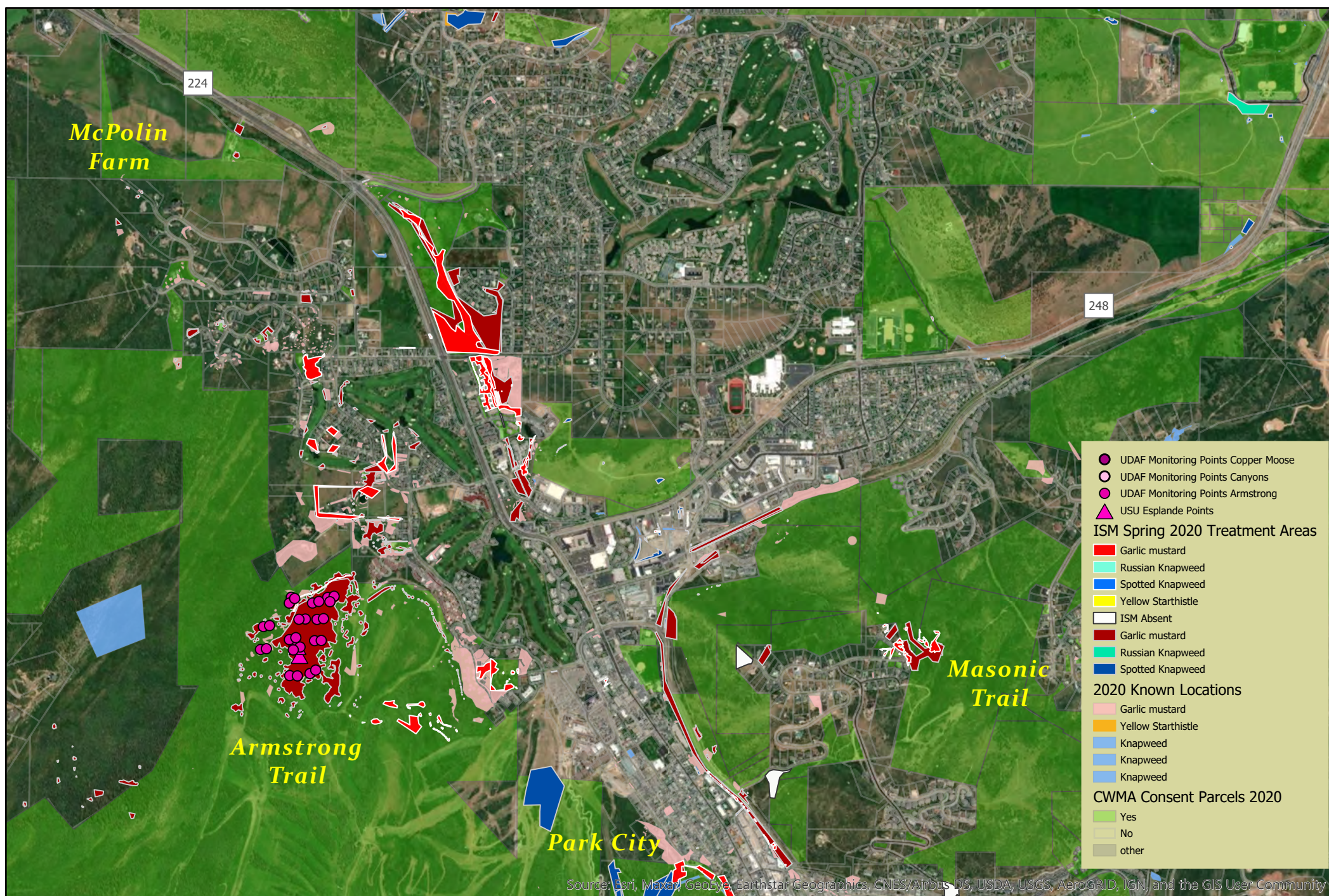
Summit County CWMA EDDRR Weed Control of Garlic Mustard
2019-20 ISM FIY



0 0.42 0.85 Miles

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Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Northwestern Park City
Summit CWMA Garlic Mustard and Knapweed Control July 1, 2019 - June 30, 2020**

Summit County CWMA EDDRR Weed Control of Garlic Mustard
2019-20 ISM FIY

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**Appendix B: Masonic Trail Transect Photos
2018 Pre-treatment (left) and 2019 Late Summer (right)**



0 ft



10 ft



20 ft



30 ft



40 ft



50 ft



60 ft



70 ft



80 ft

**Appendix B: Toll Canyon Transect Photos
2018 Pre-treatment (left) and 2020 Early Summer (right)**



0 ft



10 ft



20 ft



30 ft



40 ft



50 ft



Full length of transect looking from 70ft towards 0 ft.

**Appendix B: 570 Upper Evergreen Dr Transect Photos
2018 Pre-treatment (left) and 2020 Early Summer (right)**



0 ft



10 ft



20 ft



30 ft



40 ft



50 ft



60 ft



70 ft



80 ft