

Wildsight Golden's Community Invasive Plant Program

Annual Report 2023



Prepared by Calvin Beauchesne
Community Invasive Plant Program Coordinator
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ACKNOWLEDGEMENTS

Wildsight Golden's Community Invasive Plant Program (CIPP) operates on the traditional territories of the Ktunaxa and Secwepemc First Nations and is the current home of the Metis Nation Columbia River Society. Environmental stewardship and protecting Indigenous culture go hand-in-hand.

The CIPP acknowledges our partners within the community including the Town of Golden, the Columbia Shuswap Invasive Species Society (CSISS) and the community members who supported the program. The CIPP gratefully thanks the Town of Golden for continuing to fund this program, as well as for being a great help by picking up garbage bags full of invasive plants that the Coordinator collects. CSISS was also a great help to the program in 2023. They were very knowledgeable and helpful to any questions the Coordinator had regarding invasive plants or other logistics. Their presence at the Golden Farmer's Market and Community Weed pull events was very much appreciated. The CIPP is also very grateful to all the volunteers who helped out at the Community Weed Pull events.

Lastly, all the staff at Wildsight Golden were extremely helpful. The program wouldn't have been possible without Invasive Plant Program Manager Rachel Darvill, and also Wildsight Golden Branch Manager Leslie Adams. GET WILD! Camp Coordinator Michaela Morrison was also a pleasure to work with.

1. INTRODUCTION

Invasive plants are non-native plants that don't have natural pathogens or predators to keep their populations under control (Polster, 2009). As a result they can outcompete native species and have a negative effect on ecosystem health and biodiversity (Greenfield, 2020). The United Nations Convention on Biodiversity lists invasive species as one of the main threats to biodiversity around the world (Lehtonen et al., 2019). Invasive plant species can exacerbate extreme weather events such as wildfires, floods and mudslides and can inhibit natural functions of ecosystems such as carbon absorption or water filtration (Invasive Species Center, n.d.). They can also make ecosystems more susceptible to the impacts of climate change (Invasive Species Center, n.d.). Invasive plant species also negatively impact the economy, particularly the forestry and agricultural industries. According to Environment Canada just

16 invasive species cost the Canadian economy between \$13 and \$35 billion annually (Invasive Species Center, n.d.). There are also negative social effects associated with invasive plants, whether it's from lost income, reduced property value or reduced recreational opportunities, to name a few. Invasive plant species need to be mitigated in order to reduce their effects on the environment, economy and people. Wildsight Golden's Invasive Plant Program helps remove several invasive plant species using non-toxic removal methods and helps educate people about invasive plant identification, problems and removal methods.

2. PROGRAM OVERVIEW

Wildsight Golden's CIPP Program has been running since 2010, thus 2023 was the 14th season for the CIPP. This year the program ran from May 15- August 18 for a total of 420 hours of work. The program started/ended about a month earlier than last year's season, which ran from June 13- September 23 (Fowlie-Neufeld, 2022). The CIPP Coordinator in 2023 was Calvin Beauchesne. The program worked to remove invasive plants throughout the Town of Golden using non-toxic methods, as well as educate community members about invasive plants and advise on best practices for removal methods. The Coordinator removed invasive plant species at 18 priority sites, including 1 new site. The CIPP Coordinator removed 83 bags in 2023 with the help of some volunteers and CSISS representatives, for a total of 2602 bags for the CIPP to date (Aug 15). Early in the season, plant stems and roots were left on hard ground to decompose if the particular plant species was unable to spread via plant fragments and no seeds were present. A larger effort was put into this strategy, therefore the number of bagged weeds may be lower than in previous years.

3. INVASIVE PLANT MANAGEMENT

3.1 Priority sites

The CIPP has 20 Priority Sites located mostly in public parks and around walking trails and roadways in the Town of Golden (see Appendix B). One new site was added to the priority site list in 2023 (Site 20: Alleyways between 12th Street South and 9th Street South). Of these sites, 18 had invasive plants removed by the CIPP Coordinator.

3.2 Priority Invasive Species

The 2023 Coordinator used the priority site list from the previous Coordinator for invasive plant species in priority sites. No new priority species were added to the Golden Invasive Plant Management Area.

High priority species that were removed include; Cypress Spurge (*Euphorbia cyparissias*), Common Tansy (*Tanacetum vulgare*), Diffuse Knapweed (*Centaurea diffusa*), Leafy Spurge (*Euphorbia esula*), Spotted Knapweed (*Centaurea stoebe*), and Orange Hawkweed (*Pilosella aurantiaca*). Low priority species that were removed include; Bull Thistle (*Cirsium vulgare*), Common Burdock (*Arctium minus*), Canada Thistle (*Cirsium arvense*), Common Comfrey (*Symphytum officinale*), Hounds Tongue (*Cynoglossum officinale*), Western Goat's Beard (*Tragopogon dubius*), Wormwood (*Artemisia absinthium*), and Yellow Toadflax (*Linaria vulgaris*).

3.3 Invasive Plant Surveys and Invasives BC

The online provincial government program used to input invasive plant species distribution and removal methods changed in 2023, from the Invasive Alien Plant Program to InvasivesBC. The CIPP Coordinator conducted invasive plant surveys for each priority site prior to removal and recorded the density and distribution of each invasive plant. This information was then inputted into Invasives BC. The type of treatment method was also inputted as well.

3.4 Removal Strategies

The 2023 CIPP Coordinator used the Removal and Disposal Strategies guide created by the 2022 CIPP Coordinator for guidance on how to remove and dispose of invasive plants (see Appendix D). The most common treatments used were manual methods which mostly consisted of digging, but also hand pulling and deadheading. The method of manual removal was based on the type of plant and whether or not it had seeded yet. For instance for plants that spread by root such as Knapweed, the roots were dug up from the ground. For plants that can spread by seed such as Burdock, the burrs were collected and bagged. For biennial plants that hadn't seeded yet like Burdock rosettes, the rosettes were often left so they could be deadheaded the following year. The 2023 Coordinator was able to reduce plastic waste by focusing on plants that hadn't gone to seed yet earlier in the season like Knapweed. The plants

were dug up and left to decompose on the ground. Although the 2023 CIPP season started around a month earlier than the 2022 season, it was a very hot spring and subsequently plants seeded earlier than usual. Once plants started seeding the Coordinator started bagging all invasive plants. A natural herbicide to treat Orange Hawkweed was also used, similar to previous Coordinators. Tarps were also used as well (see section 3.5)

3.5 Tarps

Tarps had been put up by the previous Coordinator at Site 15 to control a Cypress Spurge infestation. However these tarps were clear meaning sunlight could still penetrate the ground. This meant plants including Cypress Spurge were still able to grow, making the tarps ineffective at killing all of the infestation. The transparent tarps were replaced with blue/opaque tarps to prevent sunlight from getting in (see Figure 1). The original plan was to remove one tarp (east end, beside bench) in the summer of 2023 and remove the other tarp (west end) in the summer of 2024 in order to test the effectiveness of the tarps after 1 and 2 years. That target is now pushed back a year: the east end tarp should be removed in the summer of 2024 and the west end tarp in the summer of 2025.

A new tarp was also put up in the Riverglen Drive alleyway (by Site 15) to control a Creeping Bellflower infestation (see Figure 2), as well as at Alexander Park to control Dalmatian Toadflax (see Figure 6).



Figure 1. New tarp covering Cypress Spurge infestation by Site 15 near the Kicking Horse River riparian area.



Figure 2: Tarp covering Creeping Bellflower infestation by Site 15

3.6 Restoration

Sowing native grass seed helps to reduce the possibility of invasive plants recolonizing an area as many invasive plants thrive in disturbed areas. Native grass seed was used in some areas that had been heavily disturbed by manual plant removal. The grass seed mixture consisted of Northern Wheatgrass, Slender Wheatgrass, Annual Ryegrass, Idaho Fescue, Rocky Mountain Fescue, Tufted Hairgrass, Junegrass, and Spike Trisetum. A jar of Mountain Avens (*Dryas octopetala*) seed was also collected along the Kicking Horse River by the CIPP Coordinator and used to treat some disturbed areas .

3.7 Biological Control Agents

There are two biological control agents that have been monitored by the CIPP in the Town of Golden, but monitoring was not done in 2023. The first is the root-feeding weevil (*Cyphocleonus achates*) at Site

11 along the Kicking Horse River from the Oso Building to the CP train bridge. The root-feeding weevil feeds on the roots of Spotted and Diffuse Knapweed. The second biological control agent is the stem-mining weevil (*Mecinus janthinformis*) to control Dalmatian Toadflax in Alexander Park.

3.8 Overlap of Areas Treated with Spectrum

Last year there was considerable overlap between the CIPP work areas and pesticide treatment by Spectrum Resource Group Inc. (SRGI). SRGI is a private contractor hired by the Town of Golden to mechanically/chemically treat invasive plant species. This year there was little to no overlap between SRGI and CIPP thanks to good communication between the CIPP Coordinator and SRGI Project Manager. The CIPP Coordinator used the detailed map and key of the CIPP (Appendix B) work areas to send to SRGI so they could see what areas to avoid in their work.

4. PUBLIC OUTREACH

4.1 Online Outreach

The CIPP Coordinator helped promote the program and educational information about invasive plants through online outreach including 'Weedy Wednesday' posts on the Wildsight Golden Facebook page (See Appendix F), as well as through the eblasts sent out to the Wildsight Golden email list. The content included different information on invasive plant species and how to remove them, work updates on the CIPP program and information and promotion of future events such as Community Weed Pulls.

4.2 In-Person Outreach

The 2023 Coordinator took part in three Golden Farmers Markets in June, July and August. CSISS was in attendance for two of the three markets; one of these markets the CSISS representative was only in attendance for one hour. CSISS staff were extremely valuable to have at the farmers market as they have a vast knowledge of invasive plants and other invasive species. They had props and games that were effective at attracting people to talk to at the booth ; they had an American Bullfrog in a jar and a Spin-the-wheel invasive species facts game. At the booth there were also informational pamphlets on invasive species, including identification and removal methods.

The 2023 Coordinator did not attend any of the Showcase Saturday events at the Visitor Center as they were not very successful last year in terms of numbers of people talked to.



Figure 3. CIPP Display at the Golden Farmer's Market

4.3 Private Landowner Outreach

All the houses on Riverglen Drive were visited by the CIPP Coordinator about Orange Hawkweed infestations in the neighborhood, even if they did not visibly have Orange Hawkweed on their property (See Appendix G). Five people answered the door, of which two people were very interested in what they could do to control Orange Hawkweed. One of them said they had tried digging and using the

natural herbicide CIPP has been promoting, and neither were effective at controlling the growth of Orange Hawkweed long-term. However, it wasn't asked how many times the person used the herbicide. In future, landowners should be provided with information about how reapplication will likely be necessary to control the spread. Informational letters about Orange Hawkweed were left at the houses where no one was present, and given to those who answered the door. Three people also contacted the CIPP Coordinator asking for the Orange Hawkweed natural herbicide after a Weedy Wednesday post about Orange Hawkweed removal. The house adjacent to the Creeping Bellflower infestation on the alleyway trail was also informed about the Creeping Bellflower infestation. Creeping Bellflower is listed as a noxious weed in nearby Alberta (Alberta Invasive Species Council, n.d.), but it is not on the invasives list for BC.

4.4 GET WILD! Kids Camp

The CIPP Coordinator spent two mornings with Wildsight Golden's GET WILD! kids day camp playing fun educational games and activities about invasive plants. The Coordinator discussed the difference between native, non-native and invasive plant species. Then the 'Here or Away' game was played with the kids where a picture of an animal/plant was shown and the kids had to guess if it was from here (native) or away (invasive). There was also a Goat's Beard pulling competition held where the kids split into two groups and had a competition to see who could pull the most Western Goat's Beard. An Amazing Adaptations scavenger hunt also took place where kids had a list of adaptations common to invasive plants such as smelling bad to avoid predators, smelling really good to attract pollinators or having spikes or thorns to deter herbivores. They then had to find a plant that corresponded to each adaptation. This activity gave the kids a better idea of how introduced non-native species become invasive. Afterwards the kids played a game of invasive tag where one kid was 'it' and had to try and tag all the other kids; when another kid got tagged they also became 'it'. At the end, the Coordinator showed the kids how to brush off their shoes after hiking to ensure no invasive plant seeds can hitch a ride with them.

During the second morning the Coordinator also played a game called 'What's wrong with this picture?,' where a picture of an invasive species was shown in an area and the kids had to guess what it was and why it was ecologically detrimental. A bag of Mullein, Goat's Beard and Knapweed was also pulled along the Rotary trail.

4.5 Signage

A number of new signs were put up this year to inform the public of specific things, such as 'No Dumping', or restoration signs where tarps had been set up. A 'No Dumping' sign was put up at Site 13 behind the Dojo center (See Appendix I), as well as a Creeping Bellflower restoration sign in the alleyway by site 15 (see Appendix E), and a Dalmatian Toadflax restoration sign at Site 1 during the Community Weed Pull event. There is a 'No Dumping' sign at Site 2 by 14th street that had been put up by a previous Coordinator and the Cypress Spurge restoration signs at Site 15 that had been put up previously are still present as well.

4.6 Media

A press release on Wildsight Golden's Community Invasive Plant Program was published in the Golden Star on May 11, 2023 (Islam, 2023) (See Appendix J). This article included information on invasive plant species, the CIPP and the new Coordinator. A press release was sent to the Golden Star about the first Community Weed Pull event, but it was not published.

5. Community Weed Pulls

Two Community Weed Pull events were held during the summer of 2023. The locations were the same as the 2022 season. The events were promoted through posters, social media and eblasts, as well as the farmers market.

The first Community Weed Pull event took place at Alexander Park (Site 1) on Friday July 7 from 10:00-2:00pm. Two volunteers attended, as well as a representative from CSISS. There was a large group that registered the day before the event but unfortunately didn't show up the day of the event. Eight bags of Mullein, Canada Thistle, Burdock, Wormwood and Dalmatian Toadflax were collected. Volunteers also helped tarp the infestation of Dalmatian Toadflax and put up a restoration sign. Free burritos from a local restaurant (Reposados) were served to all the volunteers.



Figure 4: Volunteers posing with bags of pulled weeds after first Community Weed Pull event



Figure 5: Dalmatian Toadflax infestation before tarping and digging



Figure 6. Tarp over Dalmatian Toadflax infestation

The second Community Weed Pull took place at the Golden Disc Golf course. The second event was slightly better attended than the first. Five volunteers showed up, including three kids, and two representatives from CSISS for a total of eight people, including the CIPP Coordinator. It was great to have CSISS in attendance at the event once again for their knowledge and resources. All invasive plants except the Burdock rosettes were removed. In total, eight bags of Knapweed, Thistle, Burdock, Sulfur Cinquefoil and Yellow Toadflax were collected. Some of the Burdock rosettes were dug up, but the volunteers eventually tired of this.



Figure 7: CIPP Coordinator posing with a volunteer and CSISS representative at second Community Weed Pull

6. FUTURE RECOMMENDATIONS

6.1 Work Term and Hours

The work terms for the 2023 CIPP Coordinator was 14 weeks (420 hours), the same as the previous Coordinator. The previous Coordinator recommended the Office Assistant help the CIPP Coordinator in the field a few hours a week to make it easier for the Coordinator to remove all invasive plant species in the work sites, both high priority and low priority. However there was no Office Assistant hired by Wildsight Golden in 2023 as there was no funding available to do so. Without any help, the Coordinator found it difficult to remove all high and low priority species in all priority areas, similar to the 2022 Coordinator. If an Office Assistant is hired in 2024, they could potentially help out the Coordinator periodically pulling weeds and also attend the farmers markets.

6.2 Public Outreach

The CIPP Coordinator attended the Golden Farmer's market three times throughout the summer. The outreach was definitely more effective when CSISS was present as they had props and games to draw people in. The Coordinator found it harder to get people's attention when these things weren't present. The future CIPP Coordinator should make an effort to make sure CSISS can join all the Farmers Market events, if possible. Alternatively, if CSISS is not available the CIPP coordinator should make efforts to design some interesting props to attract the attention of market attendees.

The Golden Star is a good way to get the word out about invasive plant species. No advertisements in the Golden Star were paid this year for the CIPP program as the Wildsight Golden Branch Manager advised against it for being too expensive. However, an advertisement for the 2nd Annual Community Weed Pull event was paid for and put on the Chamber of Commerce electronic billboard by 6th Street North. This was cheaper than an advertisement in the newspaper, and likely reached more people. Facebook advertisements were also explored, but were unsuccessful due to regulations and rules around Facebook advertising. The issue is unbeknownst to the Coordinator, as it is dealt with by the Branch Manager. If Facebook advertisements can be successfully used in the future, they could be very effective in helping to reach a large audience. Free food for weed pull attendees should be highlighted in future advertisements.

6.3 Encouraging Management of Invasive Plants on Private Property

The CIPP Coordinator did private landowner outreach to residents at Riverglen Drive about Orange Hawkweed, of which at least a couple people were very receptive. In Site 6 there is visibly Common Tansy and Burdock on private property that isn't being controlled by landowners. No letters were sent to the landowners about invasive plant removal as multiple letters were sent by previous Coordinators for several years but have been ineffective. There is a bylaw in Golden that is able to enforce the management of noxious weeds on private property (see Appendix H). However, even though Common Tansy is listed as a Regional Noxious Weed by the BC Weed Control Act, it is not listed as a noxious weed under the local bylaw (see Appendix H). CSISS was contacted by the 2023 Coordinator to see if they could help enforce the bylaw but they said their job is to do outreach, not enforcement. CSISS recommended the 2023 Coordinator send another letter. It should be a priority for the 2024 Coordinator to advocate for Common Tansy to be added to the Noxious Weed list of this bylaw so that its removal can be enforced by the Town of Golden.

6.4 Volunteer Engagement

The Community Weed Pull events were great in helping educate the public about invasive plant species/removal, as well as to help the Coordinator remove large quantities of invasive plants from priority sites. 16 bags were collected between the two events in 2023. The previous Coordinator recommended a potential 3rd Community Weed Pull event. This would be beneficial as it would help remove a large amount of invasive plants from a 3rd priority site. However the weed pull events do take up time/resources for the Coordinator from writing articles, putting up posters, making social media posts etc. The future CIPP Coordinator could decide whether he/she thinks it's worth it to host a 3rd event in one season. They were also not well attended in 2023 so more effort could be spent coming up with ways to attract more people.

6.5 Future Community Weed Pull Routes

The 2023 CIPP Coordinator used the previous Coordinator's locations for the Community Weed Pull events: Alexander Drive Park and Hole #1 at the Golden Disc Golf course. These sites were surveyed beforehand, as well as the sites for previous Community Weed Pulls at Site 17, 18 and 19, of which all had very little amounts of invasive plants. Alexander Park and the Golden Disc Golf Course had a sizable amount of invasive plants, so these sites were chosen for the 2023 weed pull events.

Alexander Park was a good location as there were sufficient invasive plant species to work on throughout the event, as well it had a good variety of invasive plant species to teach people about. Alexander Park is also a good location as there are picnic tables and sufficient shade available. It is also conveniently located within the Town of Golden. Alexander Park should be explored as another option for a weed pull event in 2024, if there are sufficient invasive plants to work on.

The Golden Disc Golf course was also a good location for the weed pull; there were facilities nearby which was convenient. However a lot of the invasive plant species were Burdock rosettes. Volunteers worked on removing these Burdock rosettes after the rest of the invasive plants were removed, but many tired quickly as the roots are very hard to dig up. When those Burdock rosettes flower next year, there could be sufficient work for another weed pull event. The CIPP Manager suggested in the future the Burdock rosettes could be taken home by volunteers and used to make chips or tea. A Weedy Wednesday post with a Burdock chip recipe was made by the Coordinator.

Site 2 could be explored as an option for a future weed pull as there are a lot of invasive plant species and of different varieties. However the area lacks any amenities or facilities. Site 13 could also be explored as there are a lot of invasives there as well, but again lacks amenities/facilities. As well, almost all the invasive plants at Site 13 are Thistle, which is less enjoyable for people to work with due to its sharp thorns, and may not be a good option at all for kids.

6.6 Plastic Bags

The Coordinator looked into the option of using compostable bags, however there were sufficient plastic bags to last throughout the season, so the Coordinator did not have to get more. However at the Community Weed Pull events the Coordinator noticed the bags brought by CSISS were labeled certified compostable. The bags seemed durable and seemed identical to the bags the Coordinator normally

used. After doing some research the Coordinator found out there were several companies with certified compostable plastic bags that are advertised as being durable, with good reviews. It is highly recommended that the future Coordinator pursue this option in order to reduce the amount of plastic waste the CIPP is producing. This can also be talked about at Community Weed Pull events so volunteers can feel better about the amount of waste they are producing.

6.7 Future Sites

It is recommended that Site 6 be removed from the priority list, as almost the whole area is on private land. Site 18 could potentially be removed, as almost the entire area is paved or rocks; although there are still small amounts of invasive plants that grow between the rocks. Site 20 was added and could be kept, as there is often Burdock that grows in those alleyways. Site 3 should continue to be monitored for Himalayan Balsam, but no invasive plants were found, besides 1 or 2 Burdock rosettes.

7. CONCLUSION

2023 was another successful season for the CIPP. The Coordinator was able to interact with people about invasive plants through the Golden Farmers Market, Community Weed Pull events, and the GET WILD! Kids Day Camp and door to door outreach on private property. People would also sometimes stop and ask questions to the CIPP Coordinator from working at different sites. Besides the face to face interactions there were also newspaper articles, social media posts and emails. The CIPP was able to remove 83 bags in 2023, with the help of volunteers and CSISS.

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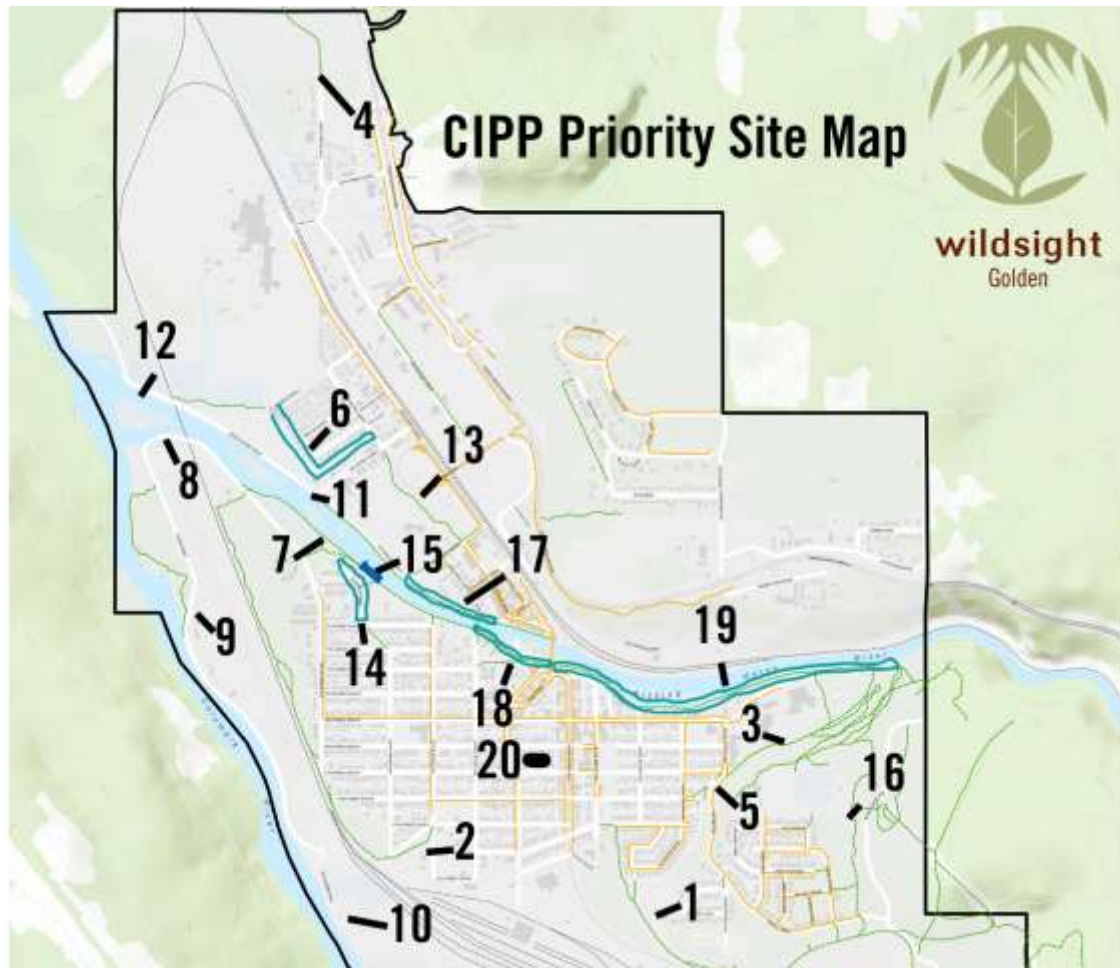
Appendix A. 2023 CIPP Invasive plant removal locations and number of bags pulled (July 31)

Site Number	Location	Invasive Plants Removed	# of bags
1	Alexander Drive Park	Spotted Knapweed, Western Goat's Beard, Wormwood, Mullein, Common Burdock	9.5
2	Rotary Trail, 14th St S to 6th Ave S	Western Goatsbeard, Common Tansy, Burdock, Canada Thistle	14.5
3	Rotary Trail and area behind High School	N/A	0
4	Edelweiss Slough, along the parking lot and the trail	Common Burdock, Canada Thistle	1/2
5	Rotary Trail, 11th St S by Well #3	Spotted/Diffuse Knapweed	3
6	Alleyway and walking path behind King Crescent	Common Tansy, Common Burdock, Spotted Knapweed, Canada Thistle, Yellow Toadflax	1
7	Rotary Trail, CP Bridge to Pedestrian Bridge	Spotted and Diffuse Knapweed, Common Tansy, Bull Thistle, Mullein, Orange Hawkweed, Yellow/Common Toadflax	13.5
8	CP Bridge to Confluence, on the River side of the road	Spotted/Diffuse Knapweed	3
9	Confluence to the Airport, along Fisher Rd	Spotted/Diffuse Knapweed	4
10	From the Little Mittens building to the Barn Swallow building, between the Private Driveway and the Columbia River	Common Burdock, Common Tansy, Spotted/Diffuse Knapweed, Canada Thistle, Mullein	1
11	Kicking Horse Drive, 9th St N to CP Bridge, the side of the road by the river	Spotted/Diffuse Knapweed, Mullein, Common Burdock	7
12	Kicking Horse Drive, CP Bridge to the Ski Hill Bridge, the side of the road by the river	Spotted/Diffuse Knapweed, Mullein	1.5

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13	Walking Trail, from behind the Dojo to 7th St N	Canada Thistle, Common Burdock	12
14	Riverglen Drive	Orange Hawkweed	N/A
15	South bank of the Rotary Trail, encompasses the backs of the first 3 houses in from the Riverglen Drive pathway	Glandular Baby's Breath, Cypress Spurge, Orange Hawkweed	(counted towards site 7)
16	Golden Disc Golf Course, area around Hole #1	Canada Thistle, Mullein, Sulphur Cinquefoil, Spotted Knapweed, Common Burdock, Yellow Toadflax	8
17	Spirit Square to Oso Building, along Kicking Horse River	Spotted/Diffuse Knapweed	1/2
18	Pedestrian Bridge to Traffic Bridge, along Kicking Horse River	Canada Thistle	1/2
19	Traffic Bridge to Municipal Campground (end of trail), along Kicking Horse River	Western Goat's Beard, Mullein	1.5
20	Alleyways between 12th Street S and 9th Street S	Common Burdock	2
Total # bags			83

Appendix B. CIPP Priority Site Map and Key



Appendix C. CIPP Priority Sites Crossed-Referenced with 2023 Golden IPMA Priority Plant List

IPMA Color Codes:

Regional EDRR, **Eradication/Annual Control**, **Containment**, **Established**, **Insufficient Information**

Site Number	Location	Invasive Plants Found
1	Alexander Drive Park	Common Burdock, Spotted Knapweed, Western Goatsbeard, Wormwood, Mullein
2	Rotary Trail, 14th St S to 6th Ave S	Common Tansy, Common Burdock, Western Goatsbeard, Canada Thistle
3	Rotary Trail and area behind High School	N/A
4	Edelweiss Slough, along the parking lot and the trail	Spotted Knapweed, Common Burdock, Canada Thistle
5	Rotary Trail, 11th St S by Well #3	Spotted/Diffuse Knapweed
6	Alleyway and walking path behind King Crescent	Common Tansy, Canada Thistle, Common Burdock, Common Comfrey, Spotted/Diffuse Knapweed, Yellow Toadflax
7	Rotary Trail, CP Bridge to Pedestrian Bridge	Leafy Spurge, Spotted and Diffuse Knapweed, Orange Hawkweed, Common Tansy, Bull Thistle, Western Goatsbeard, Oxeye Daisy, Yellow Hawkweed, Mullein, Yellow/Common Toadflax
8	CP Bridge to Confluence, on the River side of the road	Spotted/Diffuse Knapweed
9	Confluence to the Airport, along Fisher Rd	Spotted/Diffuse Knapweed
10	From the Little Mittens building to the Barn Swallow building, between the Private Driveway and the Columbia River	Common Burdock, Common Tansy, Yellow/Common Toadflax, Canada Thistle,
11	Kicking Horse Drive, 9th St N to CP Bridge, the	Spotted and Diffuse Knapweed, Western Goatsbeard, Mullein, Canada Thistle, Common Burdock

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	side of the road by the river	
12	Kicking Horse Drive, CP Bridge to the Ski Hill Bridge, the side of the road by the river	Spotted/Diffuse Knapweed, Western Goatsbeard, Canada Thistle
13	Walking Trail, from behind the Dojo to 7th St N	Canada Thistle, Common Burdock
14	Riverglen Drive	Orange Hawkweed
15	South bank of the Rotary Trial, encompasses the backs of the first 3 houses in from the Riverglen Drive pathway	Cypress Spurge, Common Comfrey, Orange Hawkweed, Glandular Baby's Breath
16	Golden Disc Golf Course, area around Hole #1	Common Burdock, Spotted Knapweed, Sulphur Cinquefoil, Western Goatsbeard, Bull Thistle, Canada Thistle, Mullein
17	Spirit Square to Oso Building, along Kicking Horse River	Spotted/Diffuse Knapweed, Mullein, Canada Thistle, Western Goatsbeard
18	Pedestrian Bridge to Traffic Bridge, along Kicking Horse River	Common Burdock, Mullein, Canada Thistle, Western Goatsbeard
19	Traffic Bridge to Municipal Campground (end of trail), along Kicking Horse River	Spotted/Diffuse Knapweed, Common Burdock, Bull Thistle, Mullein, Western Goatsbeard, Canada Thistle
20	Alleyways between 12th Street S and 9th Street S	Common Burdock

Appendix D. Removal Strategies Guide

**Wildsight Golden's Community Invasive Plant Program - Invasive Plant Removal Strategies
August 2022**

Invasive Species	Spreads By:	CIPP Removal Strategies	Treatment Effectiveness	Disposal Strategies
Baby's Breath	Seed	Hand pull - grab the whole plant from the crown to remove the whole root. Loosen the ground with a pitchfork before pulling, if necessary.	Hand pulling is very effective - the site must be returned to yearly due to the seed bank	Dispose of the entire plant to ensure no flowers or seeds have been left behind.
Bull Thistle	Seed	Cut the tap root just below the root crown, ideally before it has bolted and flowered.	Cutting below the root crown is effective for permanent removal.	Dispose of any flowers or seed heads. The whole plant may be left out to decompose if it hasn't flowered or gone to seed.
Dalmatian Toadflax	Seed Root Rhizomes	Hand pull before it flowers.	Handpulling does not remove the plant - it only stops seed production.	Dispose of the entire plant.
Dames Rocket	Seed	Hand pull.	Hand pulling is very effective - the site must be returned to yearly due to the seed bank	Dispose of flowers and seed heads.
Canada Thistle	Seed Root Rhizomes	Repeated hand cutting. Hand pulling may increase infestations.	Cutting does not remove the plant permanently - it only stops seed production.	Dispose of the entire plant.
Common Burdock	Seed	Cut the plant down after it has bolted and produced purple	Both cutting the plant down after it has	Dispose of the seeds / burs.

**Wildsight Golden's Community Invasive Plant Program - Invasive Plant Removal Strategies
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		flowers (burs). Only second year plants produce seeds. The plant can be dug up if it has not yet flowered. Remove the entire tap root or it will regrow.	flowered and digging the plant up are very effective ways of removing Burdock. Waiting to cut plants down seems to be more efficient than digging them up.	
Common Comfrey	Seed Root	Dig out the entire root system.	Removing all the roots is effective in removing Common Comfrey. Leaving the roots in the ground will allow new plants to sprout.	Dispose of the entire plant.
Common Tansy	Seed Root Rhizomes	Dig out the entire root system. There taproots as well as creeping roots and rhizomes. Return several times a season since regrowth is rapid.	Removing all the roots is effective in removing Common Tansy. Leaving any roots in the ground will allow new plants to sprout.	Dispose of the entire plant.
Cypress Spurge	Seed Root	Dig the plant and it's roots up. Lay a tarp over an infestation for long term removal. Wear gloves - Cypress Spurge can cause skin irritation (rashes, blisters) and blindness if it gets in your eyes. Return several times a summer.	Digging only helps to stop the spread of the plant as it's roots can grow up to several metres deep.	Dispose of the entire plant.

Wildsight Golden's Community Invasive Plant Program - Invasive Plant Removal Strategies
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Diffuse Knapweed	Seed	Hand pull to remove the entire tap root. Best to manage early season before it flowers - that way you don't have to dispose of any part of the plant. Bio-agent - root-feeding weevil (<i>Cyphocleonus achates</i>)	If the whole root is removed, the treatment is very effective. Areas will still have to be treated yearly due to the seed bank.	Dispose of any flowers or seed heads. The whole plant may be left out to decompose if it hasn't flowered or gone to seed.
Glandular Baby's Breath	Seed	Hand pull. Remove as much root as possible.	Hand pulling is very effective for removal. Areas will still have to be treated yearly due to the seed bank.	Dispose of the entire plant.
Hound's Tongue	Seed	Hand pull. Remove as much of the root as possible to prevent regrowth. Wear gloves to prevent skin irritation.	Hand pulling is very effective for removal. Areas will still have to be treated yearly due to the seed bank.	Dispose of burr-like nutlets (seeds). The rest of the plant can be left to decompose.
Himalayan Balsam	Seed	Hand pull. If it has already gone to seed, put a bag over the plant before you pull it as the seed pods can explode and spread seeds several metres.	Hand pulling is very effective for removal as the root system is very shallow. Areas will still have to be treated yearly due to the seed bank.	Dispose of the entire plant to ensure no seeds are being spread.

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Leafy Spurge	Seed Root	Dig the plant and it's roots up. Wear gloves - Leafy Spurge can cause skin irritation (rashes, blisters) and blindness if it gets in your eyes. Return several times a summer.	Digging only helps to stop the spread of the plant as it's roots can grow up to several metres deep.	Dispose of the entire plant.
Mullein	Seed	Hand pull. Remove the entire tap root.	Hand pulling is very effective.	Dispose of the yellow flower stalk. The rest of the plant can be left to decompose.
Orange Hawkweed	Seed Root Rhizomes	Cut flower heads and use a natural herbicide on the rest of the plant. OR dig up the plants and the roots. Return several times a summer. <input type="checkbox"/> Natural Orange Hawkwe...	The herbicide treatment seems to be effective in killing the foliage of the plants. More data is needed to measure the long term effectiveness. Digging is effective as long as all of the roots are removed.	Dispose of the entire plant.
Oxeye Daisy	Seed Root Rhizomes	Hand pull to reduce the spread of seeds, however to remove the plant entirely the whole root system must be dug up (it is possible to get most of the roots by hand pulling depending on the density and moisture level of the soil).	Removing the entire roots system seems to be effective.	Dispose of the entire plant.
Spotted Knapweed	Seed	Hand pull to remove the entire tap root. Best to manage early	If the whole root is removed, the treatment	Dispose of any flowers or seed heads. The whole

Wildsight Golden's Community Invasive Plant Program - Invasive Plant Removal Strategies
August 2022

		season before it flowers - that way you don't have to dispose of any part of the plant. Bio-agent - root-feeding weevil (<i>Cyphocleonus achates</i>)	is very effective. Areas will still have to be treated yearly due to the seed bank.	plant may be left out to decompose if it hasn't flowered or gone to seed.
Sulphur Cinquefoil	Seed	Hand pull. Remove the entire root.	Hand pulling for small infestations is effective.	Dispose of any flower/seed heads.
Western Goatsbeard	Seed	Hand pull.	Hand pulling is effective as long as the root is removed (they come out very easily).	Dispose of any flower/seed heads.
Wormwood	Seed Root	Hand pull or dig out (depending on the soil).	Removing all of the roots is very effective.	Dispose of any roots or flower/seed heads.
Yellow Hawkweed	Seed Root Stolons	Hand pull the entire plant including stolons (above ground runners).	Hand pulling is effective to prevent seed production, however it does not prevent the plant from growing back the following year.	Dispose of the entire plant.
Yellow Toadflax	Seed Root Rhizomes	Hand pull before it flowers. Bio-agent - stem-mining weevil (<i>Mecinus janthinformis</i>)	Hand pulling will prevent seed production. Repeated hand pulling can be effective if done for up to 10 years.	Dispose of the entire plant.

Appendix E. Creeping Bellflower Restoration Sign



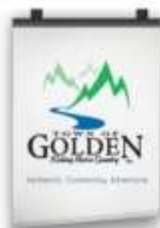
RESTORATION SITE

This site is currently undergoing
invasive plant control to help restore
the native plant ecology.

At this location: Creeping Bellflower



Tarps have been staked down in an effort to permanently remove Creeping Bellflower in this area. Creeping Bellflower is a noxious invasive plant that is very high on our priority list for removal. If you see Creeping Bellflower in other areas, please report it to wildsightweedprogram@gmail.com.



Learn more at
www.wildsight.ca/invasivespecies



Appendix F. Weedy Wednesday Facebook Post



Appendix G. Landowner Outreach Letter - Orange Hawkweed



Wildsight Golden's Community Invasive Plant Program



Dear Landowner,

Please find enclosed information about an invasive plant of concern in your area. We have noticed that you have **Orange Hawkweed** on your property and have provided information below on how to control this plant effectively. Please contact wildsightweedprogram@gmail.com if you need more information on where the plant is located on your property and how to treat it effectively. A full invasive plant survey of your property is also available upon request.



As you may know, a few garden ornamental species are known to escape cultivated areas and may move into native ecosystems such as river edges, wetlands and grasslands. Without natural predators to keep them under control, these plant species can form dense monocultures and negatively impact habitat for native plants, fish, birds, amphibians and other animals. Once established, these plants are extremely difficult – if not impossible – to eradicate. In addition, invasive species can have detrimental impacts on our economies, including the agricultural industry, land values, and social/recreational values.

There are several ways of removing **Orange Hawkweed**. If it is a small infestation digging up the plant can be successful. Make sure all of the roots are removed as the plant will come back the following year if they are not. For a dense infestation, the best option is to cut all the flower heads off and put a tarp over the affected area for the whole summer. This will remove the seeds and kill the plants. A third option is to make your own natural herbicide to control the plant. If you'd like the recipe please contact us. The last option is to simply cut all of the flower heads off before they go to seed. This will not remove the plant, as it will still spread by it's roots, but it will help to control the spread.

We encourage you to separate invasive plant waste from your compost waste, double bag, and dispose of it accordingly at the local CSRD landfill or transfer station. As of 2018, it is now free to dispose of yard waste and weeds. Please inform the landfill attendant that you have invasive/noxious plant material to ensure proper disposal in deep burial. Do not compost or yard waste invasive plants.

If you have any further questions or concerns, please do not hesitate to contact us.

Sincerely,

Invasive Plant Program Coordinator
wildsightweedprogram@gmail.com

Appendix H. Schedule A, from the Property Maintenance Bylaw 1287, 2011

Town of Golden Bylaw No. 1287, 2011
Property Maintenance

PROPERTY MAINTENANCE BYLAW NO.1287, 2011

SCHEDULE A

The following plants are noxious weeds:

Annual Sow Thistle	(Sonchus oleraceus)
Blueweed	(Echium vulgare)
Burdock	(Arctium spp.)
Canada Thistle	(Cirsium arvense)
Common Crupina	(Crupina vulgaris)
Common Toadflax	(Linaria vulgaris)
Dalmatian Toadflax	(Linaria dalmatica)
Diffuse Knapweed	(Centaurea diffusa)
Dodder	(Cuscuta spp.)
Gorse	(Ulex europaeus)
Hoary Cress	(Cardaria spp.)
Hound's-tongue	(Cynoglossum officinale)
Jointed Goatgrass	(Aegilops cylindrica)
Leafy Spurge	(Euphorbia esula)
Meadow Knapweed	(Centaurea pratensis)
Orange Hawkweed	(Hieracium aurantiacum)
Perennial Sow Thistle	(Sonchus arvensis)
Purple Nutsedge	(Cyperus rotundus)
Rush Skeletonweed	(Chondrilla juncea)
Scentless Chamomile	(Matricaria maritima)
Spotted Knapweed	(Centaurea maculosa)
Sulphur Cinquefoil	(Potentilla recta)
Tansy Ragwort	(Senecio jacobaea)
Velvetleaf	(Abutilon theophrasti)
Wild Oats	(Avena fatua)
Yellow Nutsedge	(Cyperus esculentus)
Yellow Starthistle	(Centaurea solstitialis)

Appendix I. No Dumping Sign

NO DUMPING

**NO YARD WASTE
NO LITTERING**

Effective February 1, 2018, all yard waste and garden waste is **FREE** to dispose of at any CSRD refusal disposal site year-round.



Appendix J. Golden Star Newspaper Article

TELUS

6:58 PM

17%

CountThings
App for automatic counting

OPEN >



Yellow Salsify are one of several invasive plant species that can be found in Golden. (Regional District of Central Okanagan photo)

Wildsight Golden's Community Invasive Plant Program is back

The program includes free property visits to identify weeds and discuss strategies for removal

CountThings
App for automatic counting

OPEN >

thegoldenstar.net

Appendix K. Community Weed Pull Poster


wildsight
Golden

**GOLDEN'S 14th
ANNUAL COMMUNITY
WEED PULL EVENT**

Saturday, July 29th 10:00am-2:00pm

FREE LUNCH WILL BE
PROVIDED FOR ALL
VOLUNTEERS!

Email
[wildsightweedprogram@
gmail.com](mailto:wildsightweedprogram@gmail.com) to register
and to find out the
location

Come join us to help reduce the
spread of invasive plants growing
within Golden. Dress for the
weather, bring some water, work gloves,
garden clippers, and come ready to work in
exchange for good times and free food!

Supported by:


GOLDEN
Colorado


CSISS
Colorado State Invasive Species
Suppression

