

# Golden's Community Invasive Plant Program

Annual Report 2021



wildsight  
golden

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## **ACKNOWLEDGEMENTS**

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The coordinator of Wildsight Golden's Community Invasive Plant Program (CIPP) would like to acknowledge that the CIPP operates on the traditional unceded homelands of the Ktunaxa and Secwepemc Nations and home to the Metis Nation Columbia River Society.

The CIPP coordinator is deeply grateful to those who supported the initiative this year. Thank you to the hardworking volunteers who attended the Community Weed Pull events and together removed 46 bags-worth of invasive plants from the community. Thank you to the coordinators at Mountain Child, the Golden Museum, and Wildsight Get Wild camps for facilitating invasive plants programming.

The CIPP is made possible through the generous support provided by the Columbia Shuswap Invasive Species Society (CSISS) and the Town of Golden. The committed team at CSISS provided training, ongoing support at outreach events and shared their expertise. The CIPP coordinator would like to acknowledge the Town of Golden for its funding and continued partnership in managing invasive plants.

Finally, thank you to the Wildsight Golden team, especially Rachel Darvill, who established the CIPP in 2010. Rachel, your guidance and direction were invaluable to the 2021 CIPP; thank you for your support.

## **1. INTRODUCTION**

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Invasive plants may seem innocuous, but they pose a significant threat to the environment, particularly biodiversity. Invasive species are the second largest cause of biodiversity decline globally (Environment Canada, 2004). Invasive species have more recently been considered the third largest threat to biodiversity with climate change considered by many to be a significant emerging threat. Invasive plants can reduce biodiversity by competing with native species for

resources, displacing native species, degrading habitats, and reproducing with native species to form hybrids (Environment Canada, 2021). Invasive plants are defined as non-native plants introduced to ecosystems where natural limits (natural pathogens or predators such as insects) are lacking (Polster, 2009). Invasive plants are well-adapted to produce and disperse their seeds and can significantly alter local ecosystems. Local programs such as Wildsight Golden's Community Invasive Plant Program (CIPP) are essential for managing invasive plants' detrimental environmental impacts. The CIPP surveys and controls invasive plants on municipal land in the Town of Golden and through public outreach Wildsight Golden raises awareness about invasive plants and effective non-toxic control methods.

## **2. PROGRAM OVERVIEW**

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Wildsight Golden established the CIPP in 2010 to raise awareness about invasive plants and toxic-free management strategies. Wildsight Golden's strong partnerships with the Town of Golden and CSISS contribute to the success of the CIPP.

In 2021, Wildsight Golden employed one individual (Evelyn Morett) to coordinate the CIPP from May 17 to August 13 for 30 hours per week (390 hours total). The CIPP coordinator was responsible for a variety of tasks such as: using the Invasive Alien Plant Program (IAPP) survey forms and methodology to inventory invasive plants on high-priority sites; managing invasive plants at priority sites; planning and facilitating Golden's Annual Community Weed Pull; and educating the public about invasive plants through outreach. A total of 124 bags of invasive plants were removed from the Town of Golden during the 2021 CIPP (see Appendix A), bringing the cumulated total of 2,391 bags removed since the program's inception bags.

## **3. INVASIVE PLANT MANAGEMENT**

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### **3.1 Priority Sites**

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There are widespread populations of invasive plants throughout the Town of Golden, which exceed the capacity of the CIPP. Early in the CIPP's operation, fifteen specific municipal sites where the CIPP would focus its efforts were established. The CIPP has been managing invasive plants on these high-priority sites (see Appendix B) annually.

### 3.2 Priority Invasive Species

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The priority invasive plant species removed in 2021 include (but were not limited to) Common Tansy (*Tanacetum vulgare*), Cypress Spurge (*Euphorbia cyparissias*), Diffuse Knapweed (*Centaurea diffusa*), Leafy Spurge (*Euphorbia esula*), and Spotted Knapweed (*Centaurea biebersteinni*). Some of the additional species removed include; Bluebur (*Lappula squarrosa*), Bull Thistle (*Cirsium vulgare*), Canada Thistle (*Cirsium arvense*), Common Burdock (*Arctium Spp.*) Common Comfrey (*Symphytum officinale*), Creeping Buttercup (*Ranunculus repens*), Dame's Rocket (*Hesperis matronalis*), Dalmatian Toadflax (*Linaria dalmatica*), Orange Hawkweed (*Pilosella aurantiaca*), Oxeye Daisy (*Leucanthemum vulgare*), Perennial Sow Thistle (*Sonchus arvensis*), Sulphur Cinquefoil (*Potentilla recta*), Western Salisfy (*Tragopogon dubius*), Wormwood (*Artemesia absinthium*), Yellow Hawkweed (*Hieracium pratense*), and Yellow Toadflax (*Linaria vulgaris*). The CIPP coordinator prioritized higher-priority species at sites where there were multiple plant species.

#### Leafy and Cypress Spurge

These high-priority species must be revisited annually (throughout the CIPP field season) as the small infestations along the Kicking Horse River will re-propagate. Early in the season, the CIPP coordinator carefully removed the Leafy and Cypress Spurge plants through digging. Near the end of the program, the CIPP coordinator returned to remove the re-established plants. Although these species spread aggressively through their roots, they also reproduce through seed dispersal. Monitoring is required (and was completed in 2021) to ensure that plants do not go to seed.

### Himalayan Balsam

As recommended in 2020, the CIPP monitored Himalayan Balsam at Edelweiss Slough and behind the Golden Secondary School because this high priority plant was first observed at those two locations in 2017 (Cobb, 2017). This invasive plant species was not observed at either site in 2018, 2019, 2020, or 2021, suggesting that manual treatment of Himalayan Balsam by the CIPP in past years has been successful. However, continued monitoring is recommended, given it remains a high-priority species in the Golden IPMA Priority Species List. Aerial photography, provided by the Town of Golden, indicates that the area described as Edelweiss Slough is located on private property. Landowner outreach will be the appropriate approach moving forward.

### 3.3 New Invasive Plants Species

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Myrtle Spurge (*Euphorbia myrsinites*) was discovered on private property (51.2972, -116.9727) on June 3 2021, and the CIPP coordinator notified CSISS. CSISS then confirmed the species, and their outreach team contacted the landowner. There was little information about Myrtle Spurge on the Invasive Species Council of BC (ISCBC)'s website. Given the toxicity of Myrtle Spurge, CSISS contacted the ISCBC and requested that the plant be added to ISCBC's online library.

### 3.4 Pesticide Usage Outside of the CIPP

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From June 7 to 9 2021, the CIPP coordinator found several herbicide signs (see Figure 1) on the CIPP high-priority sites. From email exchanges with the Manager of Operations for the Town of Golden, the CIPP coordinator was aware of the Town of Golden's intent to contract an integrated vegetation management team to spray target areas with pesticides. However, sites beyond the target areas were treated. The CIPP requested further information from the Town of Golden regarding the specific chemical treatment zones. In addition to treating target zones, the resource management team spot-treated invasive plants, such as Knapweed and Common Tansy, throughout the town. Rachel Darvill (Registered Professional Biologist) informed the



CIPP coordinator that she would not be working in those chemically-treated zones to avoid exposure to residual toxins; this was a significant setback for the CIPP's non-toxic invasive plant management efforts.



*Figure 1:* Herbicide signage found on CIPP high-priority sites.

Later in June, the contracted integrated vegetation management team came across the CIPP coordinator at a high-priority site. A productive discussion for how to coordinate invasive plants

management ensued. Site information was exchanged between the integrated vegetation management team and the CIPP by email. Following this interaction, the CIPP requested a meeting with the Manager of Operations for the Town of Golden to discuss Golden's invasive plant management strategy and the CIPP's future role within that strategy.

On July 9 2021, the CIPP coordinator met with the Manager of Operations for the Town of Golden. The Manager of Operations explained the decision-making process behind the expanded chemical treatment zones. This year, the Town of Golden's Geographic Information Systems (GIS) team used Golden's IAPP data (CIPP has contributed to this dataset) to develop a Noxious Weed Treatment Area map. This map was provided to the integrated vegetation management team. Through this conversation, the CIPP coordinator learned that the Town of Golden did not know precisely where the CIPP operated. Following the meeting, the CIPP coordinator created a GPS file to map the CIPP high-priority sites (see Appendix C) and shared this information with the Town of Golden.

The Manager of Operations confirmed that CIPP would be an essential part of Golden's invasive plant management strategy moving forward. Concerns regarding the capacity of the CIPP to manage the invasive plants in Golden were also shared. The incoming 2022 CIPP coordinator will need to determine where the CIPP will focus its efforts and communicate this information to the Town of Golden at the beginning of the season. The Town of Golden will coordinate Golden's invasive plant management strategy, once the CIPP has indicated where it will be operating.

A key takeaway from this CIPP season is the importance of sharing information to ensure that CIPP's key partners are aware of—and can support—the CIPP's initiatives.

### 3.5 Invasive Plant Surveys and Manual Treatment Methods

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At the beginning of the season, the CIPP coordinator attended a virtual training session on the Invasive Alien Plant Program (IAPP) methodology provided by CSISS. The CIPP coordinator conducted invasive plant surveys before removal using the paper-based survey forms. Data recorded included species found and their density and distribution within an area; this information was collected in the field then inputted into the IAPP database at the end of the season. The CIPP iPad proved helpful in looking up sites previously surveyed and were already assigned a site ID in the IAPP database.

The CIPP strongly advocates for the use of manual control methods to manage invasive plants. Manual treatment methods include invasive plant removal through hand-pulling, digging, and pruning. Reproductive parts of the plants, such as flowers, buds, and, in some cases, roots, were then double-bagged in heavy-duty garbage bags and set beside a bear bin to be picked up by the Town of Golden. The Town of Golden brought the bags to the Columbia Shuswap Regional District (CSRD) landfill for disposal. Waste reduction has been a priority for the CIPP, and coordinators have explored alternative management strategies, such as incineration (Hackett, 2019). This season, the CIPP coordinator reduced the plastic bag waste through selective plant part disposal (see Section 6.5 Reduction in CIPP Waste).

### 3.6 Removal Strategies

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The CIPP uses—and advocates for—manual treatments to manage invasive plant species. An understanding of plant structure and plant reproduction helped determine the proper manual method for control. As suggested by the 2020 CIPP coordinator, the 2021 CIPP invasive plant removal was informed by the physiology of plant energy dynamics. This approach helped the CIPP coordinator use the appropriate control method at the proper time in the plants' growth cycles to manage invasive plants effectively. Furthermore, this approach was an integral part of the 2021 CIPP waste reduction plan; the CIPP coordinator could discern what plant parts required double-bagging and which parts could be left on-site to decompose.

Certain invasive plants reproduce by seed and through vegetative spread. Common Comfrey, for example, can re-grow from small roots fragments, so this plant requires thorough digging. Similarly, Canada Thistle will produce more plants if the roots are severed from hand-pulling; cutting the stocks to deplete the energy reserves is the best control method. For other invasive plants, specific manual techniques such as mowing can encourage vegetative growth; this is true for Common Tansy, so digging is the best control method. When removing Common Tansy, using the right tool can make the job easier. A garden fork can be used to pry the dense and extensive root system of Common Tansy plants from the soil rather than severing the roots with a spade. Cypress Spurge is another plant that responds to manual control with increased vegetative growth, so monitoring the sites with Cypress Spurge is a necessary precaution after removal. More non-toxic removal strategies can be found in the CIPP Final Report from 2020.

The CIPP coordinator monitored the developmental stages of all the invasive plants. For bio-agents used to control the Spotted and Diffuse Knapweed sites, the developmental monitoring of the knapweed plants was critical. The CIPP coordinator waited until the knapweed plants had flowered to allow the bio-agents to develop, feed, and reproduce before cutting at the base of the plants (see Figure 2).

Some plants, such as Burdock, are biennial and use all their energy to produce a flower-bearing stalk in their second year. Burdock is monocarpic, meaning it will die after seed production. The CIPP coordinator used this knowledge to cut the bolting stalks of second-year Burdock plants, to deplete the Burdock seed bank. The buds and flowers were removed from the stalks and double-bagged for proper disposal, and non-reproductive plant parts were cut and left on site to decompose; this is one example of how a physiological approach helped reduce the amount of CIPP waste.



*Figure 2: Before and after photos of removal of Spotted Knapweed.*

### 3.7 Restoration

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Restoration (in the CIPP) is the process of re-seeding disturbed areas with native plant seeds to discourage the invasive plants from re-claiming the site. Wherever the removal of plant species required extensive digging or disturbing the earth, the CIPP coordinator restored the site with native seeds. Early in the summer, the CIPP coordinator collected Yellow Mountain Avens (*Dryas drummondii*) to restore rocky zones. For grassy areas, the CIPP restored the sites with surplus native grass mix provided by the CIPP in 2019.

### 3.8 Biological Control Agents

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Two biological agents were monitored during the CIPP season. The first species observed was the root-feeding weevil, *Cyphocleonus achates*. This bio-control agent resides in and eats the roots of Diffuse and Spotted Knapweed species. This root-feeding weevil was found in the roots of knapweed species along Kicking Horse Drive. Spotted and Diffuse Knapweeds located in this area were cut at the base of the plant to encourage stable root-feeding weevil populations, to leave the roots (weevil food) undisturbed. The Spotted Knapweed populations appeared to have reduced shoot biomass (see Figure 3). Dalmatian Toadflax stem-mining weevil, *Mecinus janthinformis*, was observed within a dense Dalmatian Toadflax population near Alexander Drive Park.



*Figure 3: Less biomass on Spotted Knapweed plant, which is biologically controlled by *Cyphocleonus Achates*.*

## **4. PUBLIC OUTREACH**

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### **4.1 Public Perception**

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Over the course of the season, the CIPP coordinator interacted with approximately 64 community members while removing invasive plants from high-priority sites. The CIPP coordinator made an effort to smile and greet passers-by, which encouraged people to ask questions. It was rewarding to connect with community members and learn what they knew about invasive species. During many of these interactions, the CIPP coordinator would show the individuals the plants they were managing and explained manual removal methods. Some

community members knew about the CIPP, but for many this was new information. Overall, people seemed pleased to know that such a program existed and thanked the CIPP coordinator for their efforts.

When herbicides were sprayed throughout the town, the CIPP coordinator fielded a lot of inquiries about the Town of Golden's Pesticide Bylaw. Several community members were upset with the pesticide usage and confused the CIPP's management with the herbicide usage. The CIPP coordinator explained the CIPP's non-toxic approach and explained how the Town of Golden had contracted the chemical control. Most people were seeking clarity on Golden's Pesticide Bylaw, to which the CIPP explained the bylaw and suggested that the individuals share their concerns with the Town of Golden.

### 4.2 COVID-19

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COVID-19 restrictions prevented the CIPP outreach program from reaching its full potential. Several outreach opportunities were affected by COVID-19 protocols. For example, a notable local event, the Golden 24-hour bike race, previously attended by the previous CIPP coordinators, was cancelled. Outreach opportunities with local schools were hampered by COVID-19; the CIPP coordinator had planned and made arrangements to facilitate invasive plant programming with Golden Secondary School, but the COVID-19 policy prevented an experiential lesson from taking place. Outreach at the Golden Two-Four and local schools would be excellent outreach opportunities to explore in the 2022 CIPP season.

### 4.3 Outreach at the Golden Farmers' Market

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During the 2021 season, the CIPP coordinator attended the Golden Farmers' Market on three Wednesday markets on June 16, June 30, and July 21. The Golden Farmers' Market operated with social distancing and masking measures in place, which the CIPP coordinator found beneficial. "Bring-a-Weed Wednesday" posters (see Appendix D) were created to encourage individuals to bring weeds (or photos of weeds) to learn about non-toxic management



strategies. Six individuals brought mystery weeds to the Wildsight Golden table for identification, and received information about the plant and discussed best management practices. For less common invasive plants, the CIPP conducted research and emailed the individual with further information.

A visual display of invasive plants was set up at the vendor table, including a vase of fresh-cut invasive plants, brochures, invasive plants posters (see Figure 4). These visuals attracted interest, which led to conversation, especially for individuals who recognized Orange Hawkweed and wanted to learn more about non-toxic management strategies. On average, 20 individuals stopped by the table on Market days to ask about invasive plants and other Wildsight Golden programs.



Figure 4: The invasive plants display at the Farmers' Market.

On two occasions, a member of the CSISS team shared the Wildsight Golden table. It was valuable to have CSISS's expertise and a great way to discuss future collaboration opportunities.

On another occasion, the Wildsight Golden Branch Assistant joined the CIPP coordinator at the Farmers' Market to learn more about the CIPP. Presence at the Golden Farmers Market was a fundamental aspect of public outreach. Many of the initial interactions for private landowners' outreach took place at the Farmers' Market.

#### 4.4 Private Landowner Outreach

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Two individuals signed up for Private Land Surveys at the Golden Farmers' Market. The CIPP visited these private properties and identified the weeds of concern. Follow-up emails, including management resources, were sent to the landowners following the survey.

Private landowner outreach is essential in the neighbourhood of Riverglen Drive, where several invasive species such as; Cypress Spurge (*Euphorbia cyparissias*), Dame's Rocket (*Hesperis matronalis*), Field Scabious (*Knautia arvensis*), Mountain Bluet (*Centaurea montana*), Orange Hawkweed (*Hieracium aurantiacum*), and Spotted Knapweed (*Centaurea biebersteinii*), have been observed. The CIPP coordinator approached the two landowners to inform them about the invasive plants and discuss ways to work together to manage the spread of these plants.

#### 4.5 Kids' Camps

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The CIPP coordinator collaborated with Wildsight Golden's Get Wild Kids' Camp to schedule weekly invasive species programming. Locations, dates and times were organized with the camp's program coordinator. Over the 2021 CIPP season, the CIPP coordinator attended the Get Wild Kids' Camp on five occasions. On one occasion, the CIPP coordinator facilitated invasive plant programming on an afternoon when the Get Wild Camp met with the Golden Museum Summer Camp. Similar programming was also delivered to the Mountain Child Early Learning + Care Centre on one occasion with modified programming for a younger age group.

At the Get Wild Kids' Camp, each session lasted approximately an hour and a half and included invasive plant-themed games, educational discussions about invasive plants, and a weed pull

component. At times, the weather conditions (heat, smoke, strong winds) or mosquitoes made it challenging to sustain weed pulling efforts. Kids enjoyed restoring the area after the weed pulls (see Figure 5). Native grasses and Yellow Mountain Avens (*Dryas drummondii*) were used for restoration. On one occasion, kids created native seed balls with a mixture of clay, soil, and native seeds to restore the Golden Dog Park.



Figure 5: Kids at Get Wild Camp helping with native grass restoration (Corrigan, 2021).

Involvement with the summer camps was an excellent outreach opportunity to teach young kids in Golden about invasive and native plants. The kids were enthusiastic about sharing their knowledge about invasive plants and were keen on removing them to help the environment

#### 4.6 iNaturalist

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Plant identification is the first step in managing invasive plants with non-toxic methods. Many technological tools help with plant identification, such as the iNaturalist app and Seek app. Both apps are trusted and used by the scientific community to encourage individuals to contribute to citizen science. The CIPP coordinator created a Priority Invasive Plants in Golden project (see Figure 6) to collect invasive plant observations. Project parameters, such as species and locations requirements, were set by the CIPP coordinator.

The CIPP coordinator regularly monitored the Priority Invasive Plants in Golden project to confirm or suggest the species ID for observations. The project allows the CIPP to see invasive data mapped. It also provides the CIPP with a presence in the iNaturalist Canada community.

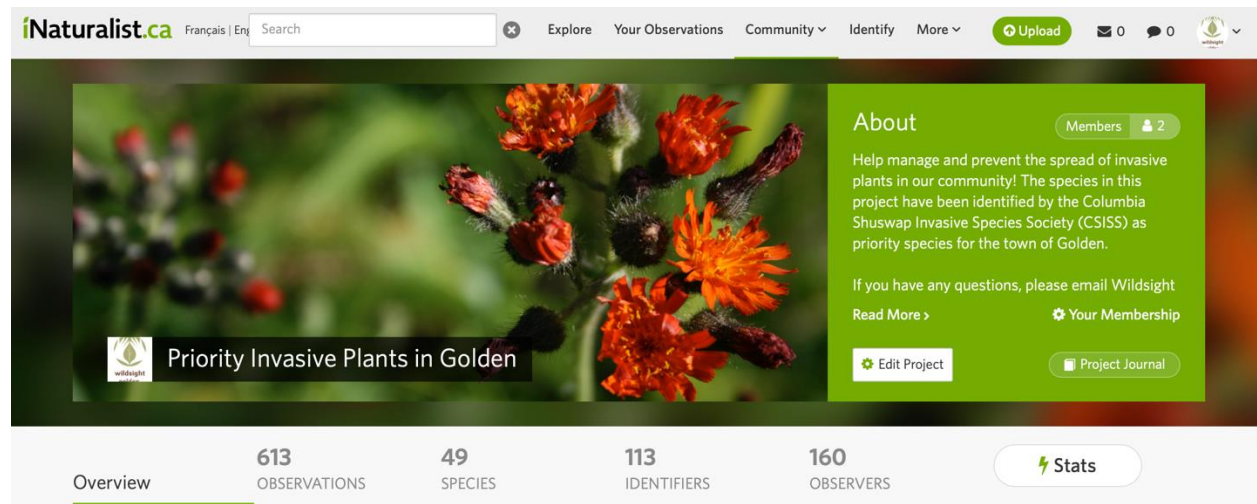


Figure 6: Snapshot of Wildsight Golden's iNaturalist Project webpage.

#### 4.7 Media

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Social media was used throughout the 2021 CIPP to post online outreach material and to promote Community Weed Pull Events. "Weedy Wednesday" material was posted on Wildsight Golden's Facebook page weekly. These posts were action-based; they aimed to provide individuals with the knowledge to identify and manage invasive plants and included a call to action. Promotional posts for the Community Weed Pull events were shared through Wildsight Golden's Facebook account to the "Golden Community" group and the "Columbia Valley Naturalist" group.

Wildsight Golden's eBlasts were another essential avenue to raise awareness about the CIPP. The CIPP coordinator crafted monthly communications for the eBlast and developed accompanying blog posts published on the Wildsight Golden blog. For example, a "Cheat Sheet for Dealing with Invasive Plants" was referenced in the eBlast, which directed people to more information on Wildsight Golden's blog.

Three press releases were submitted to the Golden Star for publishing during the 2021 CIPP (see Appendix E). An initial press release outlining the launch of the 2021 CIPP, as well as a second write-up to raise awareness about manual methods of managing invasive plants, were published in the Golden Star. A third and final press release promoting the August Community Weed Pull was also submitted for publishing.

#### 4.8 Community Partnerships

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The establishment and strengthening of community partnerships was an objective for the 2021 CIPP coordinator. With over 700 members and an extensive trail network, the Golden Cycling Club was a priority organization. The CIPP coordinator approached CSISS to see if they could introduce the new 2021 CIPP coordinator to the club; however, CSISS did not have a contact within the Golden Cycling Club, so the CIPP coordinator emailed the Cycling Club directly. Two

Board Members responded to the CIPP coordinator with different concerns related to invasive species.

One Cycling Club board member was concerned about the Aspen-leaf miner infestation affecting much of the trail system and wanted to learn more about the consequences of the infestation. Another board member, who happened to be a regular volunteer at the Community Weed Pull events, was concerned about introducing invasive plants through forestry operations.

A meeting was arranged for July 7 2021 between the Golden Cycling Club, CSISS, and CIPP. Both CSISS and CIPP researched the concerns, and shared the information at the meeting. The meeting was an effective way to connect the Golden Cycling Club with resources and support for managing invasive plants. As a result of this meeting, CSISS provided the Cycling Club with five new Play Clean Go brushes and signs for trailheads. A Weed Pull event was also discussed to educate the Golden Cycling Club members about invasive plants. The Weed Pull will take place early in September. CSISS will help facilitate the event, and the 2021 CIPP coordinator will support on a volunteer basis.

A partnership was also established with the Golden Disc Golf community, which led to a co-hosted Community Weed Pull early in August 2021.

## **5. COMMUNITY WEED PULLS**

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The CIPP organized and facilitated two Community Weed Pull events this season. Posters (see Appendix F) were created and posted around the community to promote these events. The first event, Golden's 14th Annual Community Weed Pull, was scheduled for Saturday, June 26 2021. In the weeks leading up to the event, the CIPP coordinator met with Rachel Darvill to determine the location. Community Weed Pulls have taken place at the same location annually along the Kicking Horse River. These events are proving effective in managing the Spotted Knapweed

infestations, so there is much less distribution and a reduced density in the areas where community weed pulls have taken place. After surveying the site, it was decided that the 14th Annual Community Weed Pull would be hosted in the Kicking Horse River location, with a broader area, from the Pedestrian Bridge to the Municipal Campground.

At the Community Weed Pull events, Wildsight Golden provides volunteers with free lunch to thank them for their hard work. Last year, the coordinator for the 2020 CIPP season established a relationship with The Columbia River Catering Co. who provided the volunteers with an edible invasive plant lunch. The 2021 CIPP coordinator wanted to continue with the edible weeds lunch and contacted The Columbia River Catering Co. to arrange catering services. Invasive plants were harvested through the CIPP (see Figure 7) and provided to The Columbia River Catering Co. several days in advance.



*Figure 7:* Harvested invasive plants for the edible weeds lunch at the Community Weed Pull event.

On the day of the 14th Annual Community Weed Pull, the volunteers met at Kumsheen Park. The event included a brief introduction to the invasive plants that were to be targeted, and best management practices for the invasive plants were shared during the weed pull. Following COVID-19 guidelines, each participant sanitized their hands and any tools shared with hand sanitizer. As an additional safety measure, the participants were asked to bring their personal garden gloves to the event. Seventeen volunteers attended the Community Weed Pull, and a total of 16 bags of invasive plant material were removed from along the Kicking Horse River at this event. At the end of the Weed Pull, the volunteers enjoyed a taco lunch featuring edible invasive plants provided by the Columbia River Catering Co (see Figure 8).



*Figure 8: Volunteers enjoying the lunch featuring edible invasive provided by Columbia River Catering Co.*



The second Community Weed Pull event was hosted in partnership with the Golden Disc Golf Course. The CIPP made lunch arrangements with Reposados. Despite the poor air quality from widespread and local smoke, 16 volunteers attended the event. The volunteers were asked to target Spotted Knapweed and Burdock at Holes 1 and 8, where there were dense populations of those invasive species. Twenty-six bags of invasive plants were removed. At the end of the Weed Pull, the volunteers enjoyed burritos provided by Reposados, and the volunteers were invited to play a game of Disc Golf. The Disc Golf Course could be an excellent site to host a follow-up Community Weed Pull early in the 2022 season to remove the invasive plants at their rosette stage.

## **6. FUTURE RECOMMENDATIONS**

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### **6.1 Continued Communication with the Town of Golden**

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The 2021 CIPP season was significantly affected by the Town of Golden's expanded pesticide control. As previously mentioned, there were many lessons learned from this interruption to the CIPP. Mutual information sharing between the CIPP and the Town of Golden is necessary to ensure invasive plant management within Golden is manageable and coordinated.

The incoming CIPP coordinator is encouraged to meet with Rachel Darvill immediately at the start of the CIPP season to determine where the CIPP will control invasive plants through manual methods. An in-person meeting should be scheduled with the Town of Golden within the first week to discuss CIPP sites. If the Town of Golden contracts an integrated vegetation management team to control invasive plants chemically, the CIPP coordinator should proactively request to be included in those conversations.

### **6.2 Optimized Public Outreach**

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Many members are involved in Wildsight Golden, but engagement on Wildsight Golden's Facebook page is low. This year, the CIPP coordinator used Facebook analytics to optimize

social media posts. Relevant, succinct, action-based, and visual posts were developed throughout the CIPP season. Even still, there was often more engagement with posts on community Facebook pages; the 2022 CIPP coordinator might want to publish Weedy Wednesday posts on these community pages more frequently.

A Wildsight Golden Instagram account might be another option worth exploring. The visual nature of posts might be an excellent way to share invasive plant identification and management tips. Instagram may be an effective way to reach younger demographics.

At events, such as the Community Weed Pulls, asking individuals how they heard about an event could help determine the effectiveness of outreach. Furthermore, asking individuals for their input proved to be effective; a volunteer suggested that the CIPP coordinator craft a personalized email circulated among volunteers' social networks. The 2022 coordinator is encouraged to ask the community for feedback about the CIPP.

### 6.3 Native and Invasive Plant Walk

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A community member expressed an interest in a Plant ID Walk that Wildsight Revelstoke, CSISS and the Revelstoke Local Food Initiative hosted (see Appendix G). The CIPP coordinator contacted the CSISS outreach team, who provided more detailed information about what was involved with organizing the event. Wildsight Golden Board members who had hosted Native Plants in previous years were also contacted. There is capacity within the Wildsight Golden team to facilitate a Native and Invasive Plant Walk next CIPP season. Given the limited remaining time in the CIPP season, this event could not take place in 2021.

### 6.4 Coordinating an Ongoing Volunteer Group

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There are many individuals in the community who want to take action to protect Golden's biodiversity. The establishment of a "Weed Warrior" or "Weed Patrol" could be an effective way to manage the invasive plants on an ongoing basis. Interested community members could

sign up for an email list at the Farmers' Market and Community Weed Pull events. Interested individuals could be added to the "Golden Wildsight Volunteers" Facebook page, or a CIPP Instagram account could notify community members when and where invasive plant removal would occur.

### 6.5 Reduction in CIPP Waste

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The CIPP has generated many plastic bags over the years. Many CIPP coordinators have explored alternative options, such as bringing the invasive plants to the Louisiana Pacific Mill in Golden to be incinerated (Hackett, 2019). However, logistical barriers, such as small doors to the incinerator and a lack of invasive plant storage, prevent this from being feasible. Perhaps the use of large poly-woven bags, such as the ones used by the CSRD Recycling Depot, could be used to dry and store invasive plant matter awaiting incineration.

This season, the CIPP coordinator raised awareness about selective plant part disposal to reduce unnecessary plant waste ending up in the landfill. Although, this approach assumes that individuals have a basic understanding of plants. At this point, most of the general public may lack plant identification skills to ensure that the correct plant parts are double-bagged and disposed of. Plant identification tools, such as iNaturalist, and plant identification workshops, could help to develop these skills among community members.

### 6.7 Efficient Systems

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As previously described, having the proper tools can make a big difference in terms of work efficiency. For example, rather than using hand pruners to cut bio-controlled Knapweed, using loopers with an extended reach can dramatically improve efficiency. Furthermore, keeping the tools well-maintained is critical. Early in the season, the CIPP coordinator asked the Town of Golden to maintain the CIPP tools. The staff at the Town of Golden sharpened four shovels, welded a damaged shovel, oiled two pairs of loopers, and replaced three pairs of hand pruners. Proper tool maintenance and tool selection can increase the efficiency of work systems. The

efficiency of work should be kept in mind to increase productivity and prevent injuries from repetitive manual labour.

## **7. CONCLUSION**

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Data from IAPP suggests that Wildsight Golden's Community Invasive Plant Program has reduced invasive plant populations within the Town of Golden since its establishment in 2010. Despite an anomalous season due to pesticide control, the CIPP removed 124 bags of invasive plants from the community in 2021.

The success of the CIPP is due to newly established and strengthened partnerships with community members, organizations. Critical to the success of the CIPP are the partnerships with the CSISS and the Town of Golden. Ongoing communication with both of these partner groups will ensure that the invasive plant management in Golden is manageable, coordinated, and wherever possible, non-toxic.

Overall, the CIPP continues to be effective for managing invasive plant populations within the Town of Golden. Continued partnerships and optimized public outreach will continue to raise awareness about non-toxic methods to control invasive plants.

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**Appendix A. 2021 CIPP Invasive plant removal locations and number of bags pulled**

<b>Site #</b>	<b>Location</b>	<b>Invasive Plants Removed</b>	<b># of Bags</b>
1	Alexander Drive Park	Burdock, Spotted Knapweed, Western Salsify, Canada Thistle, Yellow Hawkweed, Bluebur	10.5
2	Rotary Trail 14th St. S to 6th Ave	Common Tansy, Dame's Rocket, Burdock, Yellow Toadflax, Western Salsify	4.5
3	Behind High School	Burdock, Oxeye Daisy, Perennial Sow Thistle, Bull Thistle, Creeping Buttercup, Canada Thistle,	3
4	Edelweiss	Spotted Knapweed, Burdock, Yellow Toadflax, Canada Thistle, Western Salsify, Oxeye Daisy, Perennial Sow Thistle	9
5	Rotary Trail - 11th St. S	Common Comfrey, Spotted Knapweed	3
6	Walking Trail behind King Crescent		--
7	Rotary Trail - CP Bridge to Riverglen Dr.	Spotted and Diffuse Knapweed, Orange Hawkweed, Leafy Spurge, Burdock, Mullein, Oxeye Daisy	1
8	CP Bridge to Confluence	Spotted and Diffuse Knapweed, Oxeye Daisy, Western Salsify,	3
9	Fischer Rd to Airport	Spotted Knapweed, Oxeye Daisy, Western Salsify, Common Comfrey, Canada Thistle, Perennial Sow Thistle	6
10	Little Mittens/Old Mill	Burdock, Common Tansy, Canada Thistle	16
11	Kicking Horse Dr. 9th Street N to CP Bridge	Spotted and Diffuse Knapweed, Oxeye Daisy, Mullein, Burdock, Western Salsify, Perennial Sow Thistle, Canada Thistle,	6

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12	KH Dr. CP Bridge to Ski Hill Bridge	Spotted and Diffuse Knapweed, Oxeye Daisy, Western Salsify, Perennial Sow Thistle	1.5
13	Rotary Trail beside Dojo		--
14	Riverglen Dr.		--
15	Private Property Riverglen Dr/Rotary Trail	Cypress Spurge, Glandular Baby's Breath, Common Comfrey, and others	2.5
--	GPS Location on Rotary Trail	Cypress Spurge	.5
--	Rotary Trail (Pedestrian Bridge to Municipal Campground)	Spotted Knapweed, Burdock, Yellow Toadflax, Western Salsify, Oxeye Daisy, Bluebur, and Sow Thistle	17
--	Golden Museum	Burdock, Western Salsify, Sow Thistle, Canada Thistle, and Oxeye Daisy	2
--	Golden Dog Park	Diffuse Knapweed, Canada Thistle, Burdock, Oxeye Daisy, Scentless Chamomile, Western Salsify, Foxtail Barley	13.5
--	Golden Disc Golf Course	Spotted Knapweed, Burdock, Western Salsify, Oxeye Daisy, Bluebur, and Canada Thistle	28

## Appendix B. CIPP Priority Sites Cross-Referenced with 2021 Golden IPMA Priority Plant List

## IPMA Colour Codes:

Regional EDRR

Eradication/Annual Control

Containment

Established

Insufficient Information

Site #	Location	Invasive Plants Found
1	Alexander Drive Park	Burdock, Spotted Knapweed, Western Salsify, Canada Thistle, Dalmatian Toadflax, Yellow Hawkweed, Sulphur Cinquefoil, Bluebur
2	Rotary Trail 14th St. S to 6th Ave	Common Tansy, Dame's Rocket, Burdock, Yellow Toadflax, Canada Thistle, Western Salsify
3	Behind High School	Burdock, Oxeye Daisy, Perennial Sow Thistle, Bull Thistle, Creeping Buttercup, Canada Thistle,
4	Edelweiss	Spotted Knapweed, Burdock, Yellow Toadflax, Canada Thistle, Western Salsify, Oxeye Daisy, Perennial Sow Thistle
5	Rotary Trail - 11th St. S	Common Comfrey, Spotted Knapweed
6	Walking Trail behind King Crescent	Common Comfrey, Common Tansy, Spotted Knapweed, Mullein, Yellow Toadflax
7	Rotary Trail - CP Bridge to Riverglen Dr.	Spotted and Diffuse Knapweed, Orange Hawkweed, Leafy Spurge, Burdock, Mullein, Oxeye Daisy
8	CP Bridge to Confluence	Spotted and Diffuse Knapweed, Oxeye Daisy, Western Salsify,
9	Fischer Rd to Airport	Spotted Knapweed, Oxeye Daisy, Western Salsify, Common Comfrey, Canada Thistle, Perennial Sow Thistle
10	Little Mittens/Old Mill	Burdock, Common Tansy, Canada Thistle
11	Kicking Horse Dr. 9th Street N to CP Bridge	Spotted and Diffuse Knapweed, Oxeye Daisy, Mullein, Burdock, Western Salsify, Perennial Sow Thistle, Canada Thistle,
12	KH Dr. CP Bridge to Ski Hill Bridge	Spotted and Diffuse Knapweed, Oxeye Daisy, Western Salsify, Perennial Sow Thistle
13	Rotary Trail beside Dojo	Burdock, Western Salsify

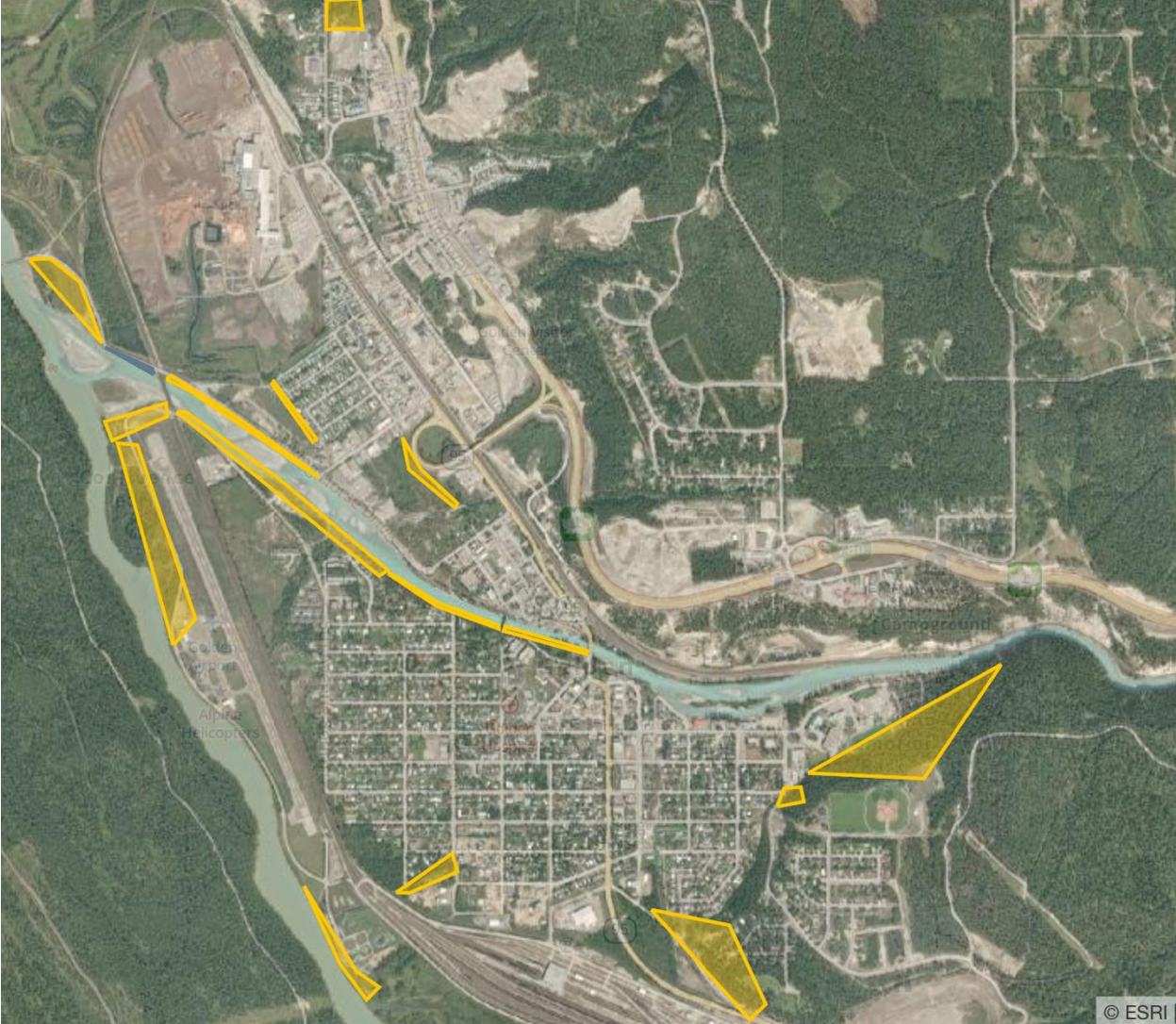


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14	Riverglen Dr.	Orange Hawkweed
15	Private Property Riverglen Dr/Rotary Trail	Cypress Spurge, Glandular Baby's Breath, Common Comfrey, and others

**Appendix C. GPS Map of CIPP Priority Sites**

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Appendix D. Bring a Weed Wednesday Poster

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# BRING-A-WEED WEDNESDAY

Are you curious about a weed in your yard? Bring your plant (or photo of it) to our table at the Farmers' Market, where we will tell you what it is and how to manage its spread!

**JUNE 16, JUNE 30, & JULY 21 -- 11AM-3PM -- SPIRIT SQUARE**

Appendix E. Article in Golden Star

Thursday, May 27, 2021 Page A9

Golden Star

regoldenstar.net

# Wildsight Golden targets invasive plants



Invasive plants pose a dangerous threat to local ecosystems, according to Wildsight Golden. (Contributed)

Wildsight Golden is taking action against invasive plants, hosting two community weed pull events along an event table at the Golden Farmers' Market every third week until the end of July. The event table will be organized by the Community Invasive Plant Program (CIPP) coordinator, Erin Marrett, who will provide the public with information on invasive plants and offer a free weed pull survey conducted on private land in the Town of Golden.

Marrett will also continue to run a "What's in my yard" series, where community residents send a photo of a weed to [wildsightweed@wildsight.com](mailto:wildsightweed@wildsight.com) to learn more to better understand and identify invasive plants on their properties.

Two community weed pull events take place on July 26 and Sunday, July 25, with more events to come.

These family-friendly events are an excellent opportunity to learn about invasive plants and eradicate invasive plants from our community," Wildsight in a statement. "Invasive species have been taking root in our community and pose a threat to local biodiversity

and ecosystems, which is why Wildsight Golden initiated the Community Invasive Plant Program (CIPP) in 2010. Since 2010, Wildsight Golden, in collaboration with the Town of Golden and the Columbia Shuswap Invasive Species Society, has been removing invasive plants and raising awareness about invasive species identification and management.

Invasive species threaten the environment, economy and society as they continue to spread at an alarming rate, according to Wildsight.

Wildsight states invasive species are the second largest cause of extinction for plants and animals globally. Across Canada, invasive species cost Canadians billions of dollars in losses in fisheries, forestry and agriculture.

On a local level, invasive species pose a serious threat to our region's biodiversity. Invasive species can devastate local ecosystems because they compete with - and sometimes kill - native species. People are often the primary vector of spread of invasive plants and have the power to mitigate the harmful effects of invasive species, which is why Wildsight is encouraging the public to take action to prevent the spread of invasive species in Golden.

Appendix F. Community Weed Pull Poster



The poster features a green and white color scheme. At the top center is the Wildsight Golden logo, which consists of a stylized green leaf with two hands cupping it. Below the logo is the text "wildsight golden". To the right of the main text area, there are two logos: the City of Golden logo and the CSISS logo. The main text "COMMUNITY WEED PULL EVENT" is in large, bold, black letters. Below it, the date and time "Saturday, August 7 9am-12pm" are listed. A call to action "TAKE ACTION TO PROTECT OUR COMMUNITY'S BIODIVERSITY!" is centered below the date. A circular photograph shows three people wearing gloves and hats, working in a garden to pull weeds. The bottom section contains two paragraphs of text: one describing the event as family-friendly and another providing instructions on what to bring and how to register.

  
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Supported by:

  
CITY OF GOLDEN  
Pursuing Nature's Goals

  
CSISS  
COLORADO SKILLSHIP IMPROVE  
SOCIETY

# COMMUNITY WEED PULL EVENT

Saturday, August 7 9am-12pm

TAKE ACTION TO PROTECT OUR  
COMMUNITY'S BIODIVERSITY!


This **family-friendly** event is an excellent opportunity to **learn** about invasive plants and **non-chemical management** strategies.

Dress for the weather, bring water and come ready to work! Gloves, tools and a **free lunch** will be provided to all volunteers.

Please **email** Evelyn at [wildsightweedprogram@gmail.com](mailto:wildsightweedprogram@gmail.com) to **register**.  
After registration, the meeting location will be sent out via email.



Appendix G. Wildsight Revelstoke's Plant ID Walk



# PLANT ID WALK

NATIVE VS. INVASIVE  
PLANT ID

MEDICINAL & EDIBLE  
PLANTS

HABITAT AND  
ECOSYSTEM RELATIONS

July 15th @ 6pm meet at Kovach Park

