



**TOWN OF CARBONDALE
511 COLORADO AVENUE
CARBONDALE, CO 81623**

Board of Trustees Agenda Memorandum

Meeting Date: February 27, 2024

TITLE: 2024 Town of Carbondale Integrated Weed Management Plan

SUBMITTING: Parks & Recreation Department

ATTACHMENTS: Parks Department Yearly Timeline
Weed Management Plan Spreadsheets
Goat Information

PURPOSE:

Resolution # 13 Series of 2019 adopted the Town of Carbondale Integrated Weed Management Plan (CIWMP). The management techniques prioritized in this plan include prevention, cultural, mechanical, biological strategies and as a last resort, chemicals. This plan includes consultation with area Natural Land Management Specialists to exhaust all strategies named above before resorting to chemical control. Before using any chemical on town managed land in Carbondale, it is necessary to get approval from the Board of Trustees, because Carbondale pursues a herbicide and pesticide free policy whenever possible.

On an annual basis an assessment, well in advance of the growing season, will take place of the weed mitigation methods used per park and on other Town owned lands and this plan will be presented to the Parks & Recreation Commission, the Environmental Board and to the Weed Advisory Board (Board of Trustees). The effectiveness assessment will utilize data compiled on the Parks Department & Public Works Department Weed Management Plan spreadsheets, which detail the methods, techniques, timing, and effectiveness of the efforts of weed management presently being used. These documents also provide data on species of non-desirable plants not responding to the non-chemical treatment efforts and provide some alternative and organic methods of control.

BACKGROUND:

The State of Colorado Noxious Weed Act (C.R.S. 35-5.5) was signed into law in 1990 and amended in 1996. Now known as the Colorado Noxious Weed Act (Act), it states that noxious weeds pose a threat to the natural resources of Colorado. The Act also directs that the governing body of each municipality shall adopt a Noxious Weed Management Plan for all lands within the municipality. The Mayor and Board of Trustees shall provide for the administration of the Noxious Weed Management Plan authorized by the Act. In October of 2015, the Board of Trustees appointed a Citizens Weed Advisory Task Force to develop a noxious weed management plan. This citizen group produced a base plan that saw numerous revisions and was adopted in 2019. The *Integrated Weed Management Plan* that we are now using is the product of continuing refinement of the document by the Citizens Task Force, the Public Works Department, the Parks & Recreation Department, the E-board and the Parks & Recreation Commission.

DISCUSSION:

2023 Weed Management Techniques and 2024 planned efforts and solutions:

Reviewing the park specific management plans from 2019-2023, the techniques for weed eradication will remain the same and chemical free as we have seen progress in the success of these efforts. In addition, the steam machine equipment was purchased and used successfully for certain weed eradication efforts in 2020-23. One of the best techniques for noxious weed control in our park spaces is the propagation of a healthy, organically maintained and treated, low grow, low water use, turf grass. Efforts to eradicate non-functional turf grass and to replace those locations with xeriscape or pollinator gardens presents a larger opportunity for noxious weed infestation in areas that were working to stem the spread of the weeds with the tight root systems of organically maintained turf grass. This effort potentially creates an increased amount of maintenance needs and additional acres of noxious weed problems for the Town.

The site-specific plans did expose some problem areas that are not responding well to our existing weed mitigation techniques. The following locations are problem areas that we are closely monitoring. These locations need additional study and assessment of natural techniques and possibly a visit by Natural Land Management consultants. The one tool in our natural and integrated weed management plan that we have not experimented with is the use of goats. We will experiment in 2024 on a few test plots at the North Face Bike Park and potentially at Nuche Park and the Red Hill trailhead.

- **2023-Techniques Baseball field infields-** A perennial rhizomes bind weed *Field Bindweed* (C-list) and other weeds were manually removed with a leveling effort and new infield dirt during the summer of 2023. This was conducted to a depth of 6” on Bill Hanks and Tiny Nightingale infields and they looked perfect once completed. Monitoring the infields after this effort 2023 during the growing period, it appeared that these methods did not have a beneficial effect on these well-established weeds on these two treated infields. Taproots of the bindweed can be 2-10 feet deep; seed can remain viable for 50+ years and shallow tillage appears to only increase the number of plants. We used our tractor to try and pull the weeds in the infields at a deeper than normal depth and then hand-picked the remnants, but this weed is established in the soil, and we are not getting ahead of it with these techniques. We also experimented on the fields with a vinegar-based product and a soap-based mixture to check the efficacy of those natural products, without seeing results that would justify the time and materials cost. We then used our tractor on Triangle baseball diamond field with the same results, a short-term gain, and a rapid return of the non-desirable plant material. Other weeds identified in the infields are *Purslane*, *Prostate Knotweed*, *Common Mallow*, *Prostate Pigweed*, *Khakiweed*.
- **2024 Solutions-Baseball Field Infields:** This is an area of irrigated dirt where we do not want any plant growth. Bring in new dirt and hyper saturate it to bring up the salinity of the soil and the existing infield dirt with mag chloride so that nothing can grow. Make sure the new dirt is weed free.
- **2023-Techniques Gateway RV Park-** prior to being open to the public and at first growth we increased our efforts to eradicate the weeds established in the gravel camp sites. We used avenger, a natural burn down herbicide, manual extraction and/or weed burning techniques. Other weeds that are present on site include *Scotch Thistle* & *Canada Thistle* (B-List) which our manual extraction efforts, before they go to seed, has been slowly diminishing the infestation and their annual regrowth. We used a biologic mite from the Palisade Insectary, on the small

infestation of puncture vine in the fall to see if this biological control method is able to get established to help us with the potential growth of this plant.

- **2024-Solutions** Continue with our existing techniques and look at additional weed burning before park opens.

- **2023 Techniques** *Carbondale Nature Park*- We conducted manual weed extraction around the cabin and the solar panels and burned what we could last spring which amounted to ¼ of the park approximately. This seems to be working on the *Common Burdock* (C-list) and *Hounds Tongue* (B -list) and *Scotch & Plumeless Thistles* (B-list). Our biological efforts (rust fungus) and environmental (burning) weed management techniques will continue. We will continue to monitor and will try to propagate the rust fungus that is working on the Canada Thistle in the eastern portion of open area of the park and we will look for an opportunity to burn the park in the spring. The rust fungus was not available from the Palisade Insectary last year due to a re-classification taking place at the federal level. The experimental plot and techniques demonstrated by Bee Happy Lands proved successful in establishing better soil health and the overseeding worked to establish native grasses, choking out the Canada thistle in these locations. We hired temp workers for manual extraction of noxious weeds in and around the solar array and of the small infestation of *Yellow Toadflax*.

- **2024 Solutions** *Carbondale Nature Park*-Continue with temporary labor manual extraction prior to plants going to seed. Conduct another training and demonstration session with Bee Happy Lands on another problem area of the park as an additional demonstration location where we can see the advocacy of their techniques and receive additional training at the same time. We will continue to monitor and will try to propagate the rust fungus that is working on the Canada Thistle in the eastern portion of open area of the park and try to get additional shipments from the Palisade Insectary.

Staff and interested citizen organic weed control training- Town staff in the Public Works and Parks Department, and interested citizens will receive additional training from Bee Happy Lands Natural Land Manager with an on-site day long demonstration of the following techniques. This will take place on the Friday before Dandelion Day on May 10th, 2024.

METHODS Demonstrated by Be Happy Lands

- Manual removal of plants
- Minimal disturbance in management practices (foot traffic)
- Applying native grass seeds in areas of focus
- Compost top dressing and mulch applied to seeded areas.
- Biodynamic ash remedy application with backpack sprayers

Bee Happy Lands also includes educational material that details the value of wild weeds and a quantum shift in the perception of chemical-based control. The values explained and demonstrated by Bee Happy Lands include the following benefits:

- a. Regenerate topsoil fertility
- b. Maintain moisture in soil.
- c. Valuable forage for insect pollinators
- d. Extensive edible and medicinal qualities

- **2023 Techniques** *Highway 133 corridor* - was originally seeded with wildflower and native grasses, but this technique has not been effective enough to crowd out weeds and they have

established themselves to a point that they are getting tall enough to create a visual hazard on the entrances to the roads and businesses along the corridor.

- **2024-Solutions- *The Highway 133 Corridor***- We are recommending a monthly mow and weed whack on these areas to keep down the weed growth and spread and a manual extraction of seed heads prior to the weeds going to seed.

- **2023 Techniques *North Face Bike Park***- Our attempts to eradicate weeds on the Colorado Noxious Weed B list, *Common Tansy*, *Hoary Cress* (White Top) and *Canada Thistle* at this location has proven to be difficult. The efforts have helped to stem their spread, but we have some problem areas in the park that are not controlled and expanding. We have been weed whacking and hand pulling the *Canada Thistle* and are keeping it from expanding, but mowing is not effective on the *Tansy* and *Hoary Cress* and may cause the plant to develop perennial characteristics. Both weeds have not responded favorably to our existing techniques for weed mitigation and have established themselves in specific areas adjacent to the riding surfaces in the bike park, on the berms of the parking lot and on the berms in the outfield of the Bill Hanks Ballfield.

- **2024 Solutions *North Face Bike Park***-Town staff met with Lani Malberg who runs the goat operation and looked at some of the Town properties where goats would potentially work. The berm beyond the outfield of Bill Hanks, the hillside and parking area at the bike park are good candidates for goat work.

- **2023-Techniques *Manual weed eradication*** has been taking place at the following location with Town staff, volunteer groups, or temporary labor and this will continue into 2024 where applicable.
 - Town Parks staff and temp labor was put to work at Nuche Park and at the Riverfront Park on *Common Burdock* (C-list) and *Hounds Tongue* (B -list) and a small infestation of *Absinth Wormwood* (B -list). There is also *Scotch* , *Canada* and *Plumeless Thistle* (B-listers) on this property. We are potentially going to try out the goats on this property to test the efficacy of their techniques.
 - The Summer Advantage School Program (organized through Roaring Fork Outdoor Volunteers) worked on the North Face Bike Park and Bill Hanks Baseball Diamond going after the thistle and the bindweed.
 - The Senior Class at Roaring Fork High School worked with the Town Parks & Recreation Department to provide manual thistle eradication at the North Face Bike Park during Rams Day in May. We are scheduling a Roaring fork High School Rams Day manual weed eradication project for Rams Day which will take place on May 17th, 2024
 - The adopt a trail program with Roaring Fork Outdoor Volunteers conducted additional manually extraction Russian Thistle Kochia (AKA tumbleweeds) from the Red Hill Trailhead. This is potentially another location where the goats would benefit the weed mitigation.
 - The permaculture garden at Thompson Park continued with a large volunteer effort to manually extract weeds and to reestablish the guilds and pathways that had been overgrown. With the guilds and pathways now better-established, Town parks staff scheduled a once-a-month mow and weed whack of the areas around the guilds. We will continue with that effort. The permaculture garden group, spearheaded by Erin Anderson, will need to grow interest in the project and provide additional workdays to mitigate unfettered weed growth in this irrigated area.
 - Promenade Park monthly mowing with the Parks Department summer seasonal crew.

RECOMMENDATION:

The noxious weed management method selected should be the least environmentally damaging, yet practical and reasonable in achieving the desired results. In making these decisions all factors including budget implications, materials costs, training and availability of labor needs to be considered. There is additional money in the 2024 budget to allow us to be flexible with temporary labor and the timing and amount of use for manual weed mitigation efforts. We are also exploring the possibility of utilizing goats as an additional tool in our natural lands management toolbox. The challenge for the Parks & Recreation and Public Works Department is the total square acreage of parklands and gardens in the Town right of ways that require ongoing maintenance. The goal is to develop the most feasible and time efficient means of noxious weed control while paying attention to the benefits of the health of pollinators, the importance of utilizing organic methods for public open space lands management, and the ongoing efforts to educate the public on our philosophy of a chemical free ability to maintain healthy and diverse landscapes.

Prepared By: Eric Brendlinger, Parks & Recreation Director