



# Parks & Open Space

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## Board of County Commissioners Hearing

Time/Date of Meeting: 9:00 a.m., Thursday, May 23, 2024

Location: Boulder County Courthouse  
1325 Pearl Street, Third Floor, Boulder

<b>TO:</b>	Board of County Commissioners
<b>FROM/PRESENTER:</b>	Therese Glowacki, Director Justin Atherton-Wood, Principal Planner Joe Swanson, Senior Invasive Plant Specialist
<b>AGENDA ITEM:</b>	<b>Final Draft Integrated Weed Management Plan Decision</b>
<b>ACTION REQUESTED:</b>	Decision (no public comment will be taken)

### Introduction

The Board of County Commissioners (BOCC) held a public hearing on the Integrated Weed Management (IWM) Plan on April 16, 2024. At the conclusion of the public hearing, the Board articulated a series of questions related to the IWM Plan and the questions raised in the public hearing.

The purpose of this memo is to answer these questions. Questions have been organized into the following six themes: Racial equity lens, indaziflam questions, plan oversight and ongoing engagement, contract requirements and implications, metrics for implementation objectives, and budget and capacity.

Staff from Boulder County Parks & Open Space (BCPOS), Community Planning & Permitting (CPP), and CSU Extension, and County Attorney's Office will be on hand at this May 23 hearing to respond to further questions.

### Staff Response to BOCC Questions

#### I. Racial Equity Lens

IWM planning and implementation on natural lands will be designed to address racial equity concerns by considering the social, economic, and historical factors that affect different communities. Staff is just beginning a process to explore traditional ecological knowledge and how those practices might be incorporated into the county's land stewardship practices. Staff will ensure that resources for weed management on natural lands are distributed equitably among all communities, including those that have historically been marginalized or underserved. Actions include translating the IWM Plan into Spanish, incorporating the BCPOS land commitment statement once it has been finalized, and conducting broad outreach for volunteer opportunities and public programs. Finally, good land stewardship benefits the entire community by ensuring clean air and water and preserving biodiversity.

## II. Indaziflam Questions

1. What is indaziflam? What is a cellulose bio inhibitor?
  - Indaziflam is a pre-emergent soil treatment.
    - Indaziflam is a biosynthesis cellulose inhibitor and affects germinating seeds.
    - Indaziflam prevents cellulose production when roots are forming from germinating seeds; thus, plants cannot establish from seeds because they cannot form roots.
    - Indaziflam will not harm established perennial plants because their roots are below the herbicide influence area.
    - Monitoring data indicate that many native annual plants have returned to the site in the first growing season after treatment.
  - Label Use:
    - Indaziflam was originally approved for use by the EPA in 2010 and is now licensed for more than 300 uses, including fruit trees, natural areas, and roadsides.
    - The Rejuvra label (active ingredient is indaziflam) states that it is not approved for use around water.
  - Toxicity:
    - Indaziflam is known for its low toxicity to humans and animals when used according to label instructions. Cornell University's Environmental Impact Quotient Field Use Rating System (EIQ-FUR). The EIQ-FUR gives indaziflam a rating of 1.3 (Very Low) on a scale of 1-100.
    - Based on the lack of evidence of carcinogenicity or genotoxicity, indaziflam is classified as "not likely to be carcinogenic to humans." Therefore, EPA does not expect indaziflam to pose a cancer risk from aggregate exposure.
2. How is indaziflam different from glyphosate and organophosphates?
  - Indaziflam is not related to glyphosate.
    - Glyphosate is a systemic herbicide; it is absorbed by the plant through the leaves and moves through the entire plant.
    - Glyphosate has no impact on seeds in the soil.
    - Glyphosate is non-selective; it will kill anything green it touches. It works on grass and broadleaf plants, shrubs, and trees.
  - Indaziflam is not an organophosphate.
    - Organophosphates are used to control insect pests. Organophosphates are used in pet flea and tick powders, collars, and shampoos; garden and lawn products; and agricultural products.
3. Are there alternatives to indaziflam for cheatgrass control?
  - Chemical alternatives to indaziflam for cheatgrass control include imazapic and glyphosate. Glyphosate has been removed from the BCPOS-approved herbicide list. Imazapic is a selective herbicide that controls some grasses and broadleaf weeds; it is effective for only one year, necessitating multiple applications over time, increasing costs, application time, labor, and amount of chemical used.
  - Prescribed burns are not a reliable control method because of restricted burn window for safety and strict burn criteria to protect air quality. Inaccessible terrain and proximity to

neighborhoods can also limit the ability to implement prescribed fire. Fire does not eliminate the cheatgrass seed bank.

- Grazing is not practical in many open space areas because of access challenges, fencing needs, limited water supply, and the limited time window of grazing effectiveness (in spring when the cheatgrass is young and green). Grazing does not eliminate the cheatgrass seed bank.
- Mechanical controls like mowing are limited by terrain and accessibility. Hand pulling cheatgrass is not practical.
- The Parks & Open Space Advisory Committee (POSAC) approved continued use of indaziflam.

4. How does the IWM Plan propose to use indaziflam?

- The IWM Plan proposes to use indaziflam to control cheatgrass in high-biodiversity areas and for controlling vegetation around infrastructure. Within an area of about 3,000 acres, staff would target treatments to a subset of that area using satellite-sensing technology.
- These will be one-time applications and occur by ground applications, where possible, or by drone application for safety and effectiveness in inaccessible areas.
- POSAC approved continued use of indaziflam if it passed the World Health Organization (WHO) criteria and falls on Table 4 or 5, which it does. The county consulted with a third-party evaluator, Diana Obregon, Post Doctoral Research Associate, New York State Integrated Pest Management, to complete the WHO criteria evaluation in April 2024. The evaluation places indaziflam on Table 4, “Slightly Hazardous,” which would be allowed by BCPOS- proposed new criteria.

### III. Plan Oversight, Local Advisory Board, and ongoing public engagement

- Background: The Colorado Noxious Weed Act states that the governing body of each county and municipality shall appoint a Local Advisory Board. The local governing body can appoint itself as the advisory board and delegate staff to complete actions on behalf of the Board.
  - Historically, the BOCC has assumed the Local Advisory Board role and has assigned BCPOS and CPP staff to complete actions on its behalf.
  - The BOCC could appoint a commission of landowners to serve as the Local Advisory Board; the Act states that an appointed board must consist of residents from the unincorporated portion of the county, and a majority must be landowners with more than forty acres.
  - Any changes to the adopted plan or newly added items must still be approved by the local governing body (BOCC).
  - POSAC has served as an oversight committee through the current process. POSAC had a thorough discussion about ongoing public engagement and creating an oversight committee. POSAC does not recommend forming a separate oversight committee. POSAC proposes that staff should provide an update on IWM Plan progress once a year to POSAC (serving as an oversight committee), providing an opportunity for public engagement and more transparency.

- Staff proposes that an annual update to POSAC would take place early each year to review the preceding year's actions, progress, and challenges, while previewing plans for the upcoming year.
- Staff recommends that BOCC continue to serve as the Local Advisory Board. Every three years staff will bring the three-year implementation update (Appendix B) along with a progress report of the three-year period.
  - **Question:** *Does the BOCC want POS staff to provide an update to BOCC every year?*

#### IV. Contracts Requirements and Implications

1. All future contracts will be written to comply with the county's IWM Plan.
  - Boulder County recently withdrew from the Fish and Wildlife Service RESTORE grant for cheatgrass control along the Front Range because of Boulder County's moratorium on helicopter usage. This project was a partnership with Jefferson County, Larimer County, City of Fort Collins, and Colorado Parks and Wildlife. Boulder County returned \$25,000 in grant funding to these agencies to use on their weed management to enhance winter range for deer and elk.
  - Federal contracts (Federal Emergency Management Agency, US Fish and Wildlife, Natural Resources Conservation Service) require the restored revegetation to have no List A and less than 10 percent LIST B or C species post-restoration. These metrics may need to be met for up to seven years. Although there is no requirement to use herbicides, these metrics would be very difficult to meet without herbicide use. The county has used FEMA grants to fund flood recovery, wildfire mitigation, and other Hazard Mitigation projects.
  - The Army Corps-funded creek restoration project along Boulder Creek required that weeds comprise less than 15% of vegetative cover. At the three- and five-year monitoring milestones, this requirement was the only project metric still not being met. This project metric was finally achieved after many years of consistent effort using an integrated approach, including mechanical removal and targeted use of approved herbicides.
  - The county can expect that any creek restoration or hazard mitigation grant moving forward will have similar requirements. If BCPOS does not have access to all IWM tools, the county may not be able to take advantage of these grants.
  - BCPOS has previously completed invasive tree removals using outside contractors (Russian Olive, Tamarisk, Crack Willow, etc.). These projects require contractors to complete stump treatments with herbicide to ensure sprouting would not occur. There are no reliable methods other than herbicides to stop sprouting, so BCPOS would most likely stop implementing these projects, since without treating the stumps, removing the trees is ineffective.
  - In the future Boulder County may enter into agreements with ditch companies for invasive tree or species removals to decrease fire hazards. These contracts may be hampered if contractors are not able to use herbicides to treat the cut stumps as described above.
  - The Urban Forestry work group has language in its contracts to apply herbicides (as well as pesticides, miticides, and fertilizer) to trees and other vegetation to treat disease, insect infestations, and nutrient deficiencies. Herbicides are particularly important for stump treatment of ash trees removed after Emerald Ash Borer attacks. Herbicide applications prevent resprouting that can lead to maintenance issues. If needed, these contracts will be modified to meet the county's IWM Plan herbicide use criteria.

## V. Metrics for 2024-2027 Implementation Objectives on county natural lands (Appendix B)

### **Implementation Objective 1: Reduce herbicide applications by 50% by 2030.**

- Metric: Annual acres treated on BCPOS natural lands and rights-of-way.
- Baseline: Three-year average of 1,120 acres treated (2021-2023).
- Objective: Reduce the number of acres treated annually to 560 acres by 2030.
- Note: Progress may not appear incremental or linear given the cheatgrass elimination goal that follows under Objective 2.

### **Implementation Objective 2: Eliminate cheatgrass infestations within 3,000 acres of High Biodiversity Areas located along the foothills by 2030.**

- Metric: Conduct targeted drone applications of herbicide located in High Biodiversity Areas characterized by rugged foothill terrain unsuitable for treatment using any other method.
- Treatment areas include Rabbit Mountain (500 acres), Hall Ranch (800 acres), and Heil Valley Ranch (1,100 acres).

### **Implementation Objective 3. Implement a range of pilot projects to evaluate effectiveness of select noxious weed management treatments and their applicability to BCPOS natural lands.**

- Metric: For the seasons of 2024 through 2026, conduct at least five pilot projects to evaluate the effectiveness and scalability of tools that are alternatives to herbicide treatments, including:
  - Weed Warriors volunteer program at Walker Ranch.
  - Goat browsing at Harney-Lastoka.
  - Steam weeding at the Rabbit Mountain Trailhead.
  - Novel soil amendment treatments at Walker Ranch.
  - Hand-pulling Hairy willow herb (List A) with volunteers at Pella Crossing and along ditches.
- Staff will monitor pilot projects for effectiveness and scalability. Monitoring will include weed population density, spread, staff time, and costs.
- At the time of the IWM Plan three-year review, report pilot project results, potential for scalability, and any plans for expansion of use of tools.

### **Implementation Objective 4. Conduct surface water impacts study.**

- Metric: Conduct one study of three sites to evaluate the impacts of BCPOS' herbicide applications on surface water that will inform adaptive management strategies.
- Potential study sites: Walden Ponds, Pella Crossing, and Western Mobile Lakes 3 and 4.
- The study will test water before and after herbicide use in those areas.

### **Implementation Objective 5. Continue supporting IWM research on BCPOS natural lands.**

- Metric: Support one or more funded and non-funded academic and small grant research efforts annually that will inform BCPOS natural resource management decisions.
- Share research reports on IWM Plan-related topics through the IWM Plan web page to serve as a community resource.
- Share the results of any new research at the time of the IWM Plan three-year review.

**Implementation Objective 6. Update reporting methods to increase availability of BCPOS IWM activity data.**

- Metric: Increase availability of weed management activity data on the Boulder County Web site to report on treatment locations and descriptions.
- Collaborate with staff developing BCPOS Asset Management System on opportunities to use this emerging technology to improve tracking and reporting.
- Share process improvements at the time of the IWM Plan three-year review.

**Implementation Objective 7. Implement IWM actions to fulfill BCPOS Management Objectives discussed in Section 4.**

- Implementation details for this objective are described in detail in Appendix B of the IWM Plan.
- In addition, under the Eradication Management Objective, staff propose to add this metric:
  - By 2030, eliminate 10 species from BCPOS natural lands and rights of way by 2030. Four species can be eliminated by mechanical methods, six species would need herbicides to be successfully eliminated.

## VI. Budget and Capacity

The Invasive Weeds Group has a current operating budget of \$91,000, with an average additional project budget of \$100,000 through grants and internal project-based funding. Staff consists of four FTE employees (\$500,000 and nine to 11 seasonal staff (\$425,000). The cost of staff, operating budget, and project budget totals to approximately \$1,116,000.

If efficacy of pilot treatments has been established, BCPOS staff would need to determine the scalability of these efforts. A rough estimate of cost for implementing the pilot projects at a feasible scale is \$500,000 of additional funding, as follows:

- Steam weeding, if effective, could be completed at another 27 properties, which would extrapolate to 84 acres, or \$252,000 per year.
- Soil amendments, if effective, could be applied to 50-100 acres per year for \$45,000-\$90,000.
- Goat browsing, if effective, could be used on 50-100 acres per year for \$60,000-\$120,000.
- Weed Warriors Project for weed pulling, if expanded, could require another \$10,000-\$15,000 per year to implement.

Additionally, if herbicides are removed from the IWM toolbox, BCPOS projects a need to increase staff to contract out work, increase current non-herbicide treatments, and/or learn to implement new methods of management. The projected increase is at least two to three additional FTE staff (\$350,000) and three to four additional seasonal employees (\$150,000), for an additional \$500,000 to the budget. Even with these additional resources, we risk not being able to eradicate List A species and to suppress and contain other noxious weeds that are negatively affecting the county's biodiversity.

There are several factors to consider when evaluating the ability to control weeds at the same level as the current approach, even with the proposed changes and additional funding:

1. **Effectiveness of Alternative Methods:** While steam weeding, soil amendments, goat browsing, and volunteer-based projects, like the Weed Warriors Project, show promise, their effectiveness may vary depending on factors such as terrain, weed species, and environmental

conditions. There's uncertainty about whether these methods will provide the same level of control as herbicides.

2. **Scalability:** Even if the pilot treatments are successful, scaling up alternative methods to cover a larger area may present logistical challenges. It's essential to assess whether the resources and infrastructure are in place to expand these efforts effectively.
3. **Cost Considerations:** The proposed alternative methods have associated costs, and the estimated additional funding may not cover all expenses. For example, if the need for additional funding is underestimated or if unexpected costs arise during implementation, it could affect the ability to control weeds effectively.
4. **Staffing Requirements:** Implementing alternative weed control methods may require additional staffing for training, management, and on-site operations. Hiring new full-time and seasonal employees, as well as investing in their training and equipment, adds to the financial burden.
5. **Transition Period:** Shifting away from herbicides and adopting alternative methods may require a transition period, during which the effectiveness and feasibility of these methods are evaluated. This transition period could affect weed control efforts during the initial stages of implementation.
6. **Long-term Sustainability:** It's important to consider the long-term sustainability of alternative weed control methods both from an effectiveness and economic standpoint.

### **Conclusion**

In conclusion, the effectiveness of IWM tools often depends on the ability to use them in a complementary fashion. If one of the tools is eliminated from the toolbox, the overall effectiveness of weed control efforts is compromised, and the costs will at least double. Implementing weed control tools absent herbicides may pose challenges related to effectiveness, scalability, cost, staffing, and long-term sustainability. Finally, the IWM Plan has benefitted from extensive public input and the plan incorporates significant changes from the previous versions reflecting public input. POSAC's input and approval reflected their intense engagement and a synthesis of public input.

### **BOCC Action Requested**

Request approval of IWM Plan Version 3.0, as presented by staff and supported by POSAC, or provide direction on modifications to the plan.

### **Next Steps**

The Version 3.0 IWM Plan will be amended to reflect the metrics for the implementation objectives in Appendix B, as spelled out in this memo, and any other changes needed to reflect the BOCC decision, including direction on providing an annual update to BOCC. In addition, the land commitment statement will be added, and the document will be translated to Spanish. Staff will bring the amended IWM Plan to a business meeting for final approval.