

# DT #119 Mountain City Winter Annual Herbicide Treatment

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*Dream Tags Charitable Fund- Spring 2026*

## ***Nevada Department of Wildlife***

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Caleb Mcadoo  
6980 Sierra Center parkway #120  
Reno, NV 89511

O: 775-688-1500

## ***Logan Ballard***

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60 Youth Center Road  
Elko, NV 89801

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O: 775-777-5924

# Application Form

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## *Grantee Requirements & Project Evaluation Criteria*

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### **GRANTEE REQUIREMENTS**

To be eligible for funding, grantees must adhere to the following requirements:

- Monies are to be used and/or disbursed exclusively for the charitable uses and purposes.
- The Dream Tags Fund shall be used exclusively to provide support for the preservation, protection, management or restoration of Nevada's big game and wildlife habitat
- The Charitable Beneficiaries may include 501(c)(3) organizations and governmental entities. Any grants to governmental entities must be made exclusively for public benefit purposes.
- All grantees will be required to sign a grant agreement stipulating their agreement with all of the terms, conditions, and reporting requirements.
- To maintain eligibility to receive grant funds, each Charitable Beneficiary must comply at all times with the following requirements:
  1. Charitable Beneficiaries must be exempt from federal income taxation under Section 501(c)(3) of the Code;
  2. Charitable Beneficiaries shall use all Fund distributions toward projects that are appropriate and legal public expenditures;
  3. Charitable Beneficiaries must provide financial details and/or reports of their organizations upon request;
  4. Charitable Beneficiaries must not use any Fund distributions for political contributions or political advocacy;
  5. Charitable Beneficiaries must implement the projects, activities, and/or programs for which they received Fund distributions as agreed upon in the grant acceptance agreement, or must return all such distributions to the Community Foundation forthwith;
  6. Charitable Beneficiaries must provide the Community Foundation with quarterly reports detailing the activities of their projects and/or programs; and
  7. Charitable Beneficiaries must sign an agreement regarding their compliance with the qualifications hereof.

### **PROJECT EVALUATION CRITERIA**

Each proposal will be evaluated on criteria that include but are not limited to:

- Measurable outcomes in accordance with the exclusive goal of the Dream Tags Charitable Fund.
- Monitoring and reporting to learn from the project and track project accomplishments.
- Closeness of project focus to areas of funding emphasis (on-the-ground habitat improvements).
- Readiness of sponsoring organization to undertake and complete project.
- Opportunities to partner with others to leverage funds and accomplish larger outcomes.
- Consistency with established Dream Tags Charitable Fund operations (timeline, match, etc.).
- Impact on preservation, protection, management, or restoration of Nevada's big game and wildlife habitat
- Absence of negative or unintended consequences.
- Solutions to known problems as identified through past research and monitoring.

## *Organization Information*

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### **Organization Name\***

Nevada Department of Wildlife

### **Organization Type\***

Governmental Entity

### **EIN**

If the organization is a 501c3, please include the EIN#.

88-6000022

### **Director of Organization\***

Alan Jenne

### **Project Contact Name\***

Logan Ballard

### **Project Contact Postion/Title\***

Habitat Biologist II

### **Project Contact Email\***

logan.ballard@ndow.org

### **Project Contact Phone Number\***

775-777-5924

### **Organization Mission\***

To protect, conserve, manage and restore wildlife and its habitat for the aesthetic, scientific, educational, recreational, and economic benefits to citizens of Nevada and the United States, and to promote the safety of persons using vessels on the waters of Nevada.

## ***Project Information***

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### **Project Name\***

Name of Project.

DT #119 Mountain City Winter Annual Herbicide Treatment

### **Amount Requested\***

\$100,000.00

### **Project Start Date\***

03/25/2026

### **Project End Date\***

10/31/2026

### **This funding will be used to:\***

Complete this sentence with a max of 2 sentences.

All funds awarded will be used for the purchase and/or application of preemergent herbicides that target annual invasive grasses; these grasses reduce the ability of native ecosystems to recover post disturbance, increase fire return intervals, and reduce overall ecosystem health and services. Overall, the goal of these funds is to restore native vegetative communities, natural successional pathways, ecosystem function, and improve crucial wildlife habitat.

### **This project is on:\***

Check all that apply

Public land

### **Are government permits or decision documents needed for the project?\***

Yes

### **If so, are those permits and decision documents already secured?**

*If permits and decision documents are needed but not yet secured, in #4 of the Narrative Requirements provide a list of permits and documents needed and a schedule for securing them.*

No

## *Previous Funding from Dream Tags Charitable Fund*

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**Has your organization received other grants from the Dream Tags Fund?\***

Yes

**If yes, please include the following information for all previously funded projects:**

- *Date awarded*
- *Project # and Title*
- *Amount of award*

*Please attach additional pages as needed to list ALL previously funded projects.*

FY13

DT #7

Overland Pass/Big Wash Sage Grouse and Mule Deer Habitat Improvement Project

FY15

DT #36

DT #36 Mud and Upper and Lower Scott Springs Habitat Enhancement Project

FY17

DT #41

Seeds for 2016 Wildfire Habitat Restoration \$100K

FY17

DT #42

2016 Wildfire Habitat Restoration \$125K

FY18

DT #45

2017 Wildfire Habitat Restoration Funds

FY19

DT #58

Wildlife Habitat Restoration Projects

FY19

DT #61

Cave Valley Ranch Pinyon and Juniper Removal Project

FY21

DT #67

Emergency Proposal-2020 Wildfire Habitat Restoration Projects and Treatment Effectiveness Monitoring

FY21

DT #68

Emergency Proposal-Southern Nevada Guzzler Fill

FY22  
DT #72  
Emergency Fire Rehab

FY22  
DT #73  
Nelson Creek Habitat Improvement Project

FY22  
DT #74  
Whistler Mountain Pinyon Juniper Hand Thinning Project

FY22  
DT #75  
Douglas Canyon 2021

FY22  
DT # 76  
Smith Valley 2021

FY22  
DT #80  
2022 Wildfire Habitat Restoration Projects and Treatment Effectiveness Monitoring

FY22  
DT #81  
Dry Valley Rim and Parsnip Fire Seeding Project

FY23  
DT #84  
Pole Canyon Ranch Conservation Easement

FY23  
DT #86  
FY24 Wildcat Fire Mule Deer Migration Corridor Bitterbrush Planting

FY23  
DT # 87  
2023 Wildfire Habitat Restoration Projects and Treatment Effectiveness Monitoring

FY23  
DT # 88  
Waking Spring Project

FY23  
DT #89  
Pole Canyon Easement Access (Fence)

FY23  
DT #90  
Parrado Purchase

FY24  
DT # 91

South Schells Land Acquisition

FY24  
DT # 97  
Sheep Creek Habitat Improvement Project

FY24  
DT # 92  
2024 Wildfire Habitat Restoration & Treatment Effectiveness Monitoring

FY24  
DT # 95  
Granite Range Mule Deer Habitat Restoration

FY25  
DT # 102  
Management Area 7 Fence Removal and Modification in Mule Deer Migration Corridors

FY25  
DT # 104  
North Pequop Mountains & Murdock Mountain Habitat Enhancement

FY25  
DT # 107  
Area 7 Mule Deer Winter Range Habitat Restoration

FY25  
DT # 109  
Northwestern Nevada Large-Scale Rangeland Restoration

FY25  
DT # 110  
Management Area 10 Fence Modification and Removal in Mule Deer Migration Corridors

FY25  
DT # 112  
Sheep Creek Range Restoration, Phase 2 - Facilitating Succession for Mule Deer Survival

FY25  
DT # 113  
Eastern Nevada Antelope Collaring Project

FY25  
DT # 115  
Emergency Proposal - 2025 Drought Management of Water Developments and Bighorn Sheep

## *Description of Project Under Consideration*

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Indicate the description that best fits the project you are proposing\*

*Mark no more than three categories.*

- A. Improve, protect, or restore habitat, especially big game habitat
- B. Embrace unique opportunities for advancing the mission of wildlife conservation in NV
- C. Address emergent needs

## *Narrative Requirements*

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### 1.) How do the specific project goals and measurable outcomes tie to the project description?\*

*All projects are required to have measurable outcomes.*

This project aims to purchase and implement aerial application of preemergent herbicide that will target annual invasive grasses near Mountain City, Nevada. This treatment will cover up to 12,500 acres of priority wildlife habitat in these areas. Treatment of vital habitat at this scale is important for maintaining habitat continuity in crucial big game and other wildlife habitat. This project is designed to improve ecological conditions, reduce wildfire risk, and improve forage availability. These goals support the Nevada Department of Wildlife's (NDOW) mission as well as the purpose of the Dream Tag Charitable Fund.

The Specific objectives of this project are to improve and restore resilience to this at-risk habitat include:

- Treatment of up to 12,500 acres of annual grass invaded rangelands;
- Foster and restore perennial native plant communities that include a diverse mix of shrubs, grasses, and forbs;
- Decrease fuel continuity by reducing fine fuels on the landscape;
- Improve species composition, diversity, and overall landscape health;
- Prevent the establishment and expansion of non-native invasive species.

### 2.) Describe the project location.\*

This project is located in the Mountain City Ranger District of the Humboldt-Toiyabe National Forest, approximately 65 miles north of Elko, NV in hunt unit 062. Please see attached maps.

### 3.) Project Description\*

*Include site map and aerial photos if applicable/possible as an attachment.*

Mountain City Priority Acres.pdf

The Mountain City Winter Annual Treatment Project is designed to restore ecosystem function in a landscape compromised by winter annual invasion after the 2018 South Sugarloaf wildfire. While wildfire is a natural process, its aftermath in the project area is complicated by the rapid spread of aggressive winter annual grasses that threaten to dominate the site, reduce habitat quality, and increase the risk of future fire. Addressing these challenges requires more than passive recovery.

The primary factor inhibiting natural ecological succession in the Sugarloaf fire is the invasion of winter annual grasses, specifically medusahead, ventenata, and cheatgrass which aggressively outcompete native species and disrupt natural successional pathways.

Addressing this challenge requires a two-pronged strategy:

- Reducing winter annual grass densities to limit competition and fuel buildup.
- Promoting the establishment of perennial grasses and shrubs to stabilize soils and rebuild native plant communities. These intact communities are also critical in building resistance and resilience to prevent reinvasion of winter annuals.

The 2018 South Sugarloaf fire burned over 230,000 acres across multiple land status designations and was a devastating loss to many resources and ecosystems. While much of the fire was resilient post fire due to precipitation and elevation, areas of the fire with prior annual grass populations or within close proximity to annual grass seed sources have not recovered to a native state and are becoming annual grasslands. To promote natural succession of these native systems, control of annual invasive grasses is of the highest importance. Due to the ecological and economic benefits that this area provides, stopping the spread of these species is important to foster robust native plant communities, provide ecological function, improve wildlife habitat, and reduce the fine fuel load to aid in fire control and promote natural fire cycles.

The urgency of restoration is underscored by the broader decline of the sagebrush biome. Across the Great Basin, sagebrush ecosystems are disappearing at an alarming rate, losing an estimated 1.3 million acres annually. In Nevada alone, core sagebrush habitat has contracted by nearly 71% since the 1980s, shrinking from roughly 13.5 million acres to only 3.5 million acres of intact communities.

Protecting and rebuilding these habitats is critical to halting further losses within this imperiled ecosystem. The Mountain City Winter Annual Treatment Project spans a diverse stakeholder landscape with far-reaching interests. Within the project area, U.S. Forest Service lands support livestock grazing, wildlife habitat, and outdoor recreation.

The ecological impacts of the 2018 South Sugarloaf Fire have been nothing short of devastating, with widespread consequences for both wildlife habitat and livestock production. Within the fire's perimeter, crucial wildlife areas include mule deer crucial summer, migration corridors and stopover sites, other native ungulate habitat such as pronghorn and elk, and sage-grouse habitat including lek, nesting brood-rearing, and winter habitat.

The restoration strategy for the Mountain City Winter Annual Treatment Project is to treat areas identified through satellite mapping and ground observation to target invasive annual grasses with a preemergent herbicide.

Preemergent herbicides are used to limit winter annual grass densities and reduce competition for desirable perennial species. Treatments are applied almost exclusively by fixed-wing aircraft or rotorcraft, allowing efficient coverage of large, often remote areas.

For this project, two primary herbicides will be utilized, each serving distinct restoration purposes:

- Imazapic – Applied to prepare a site for post-fire seeding where perennial grass densities are insufficient for natural recovery. By temporarily suppressing annual grasses, imazapic creates a critical establishment window for seeded perennial grasses and shrubs to germinate and grow without being outcompeted.
- Indaziflam – Used to promote natural succession in areas where perennial grasses are present but need a competitive advantage. Indaziflam provides 4–6 years of reduced winter annual densities, giving perennial grasses the opportunity to stabilize and expand without reseeding.

Healthy perennial grasslands are essential not only for high-quality forage, but also for their role in limiting wildfire size and intensity and resisting invasion by aggressive annual

grasses such as medusahead and ventenata, both of which were present in areas affected by the fire and are expected to proliferate further without intervention. These invasive species dramatically increase fire frequency and intensity, creating a cycle of type-conversion that can result in the permanent loss of productive ecosystem.

Beyond their value for wildlife and livestock, functioning rangelands provide critical ecosystem services that are often overlooked. Properly functioning vegetation communities support processes such as nitrogen cycling, carbon sequestration, soil stabilization, and water retention—benefits that are fully realized only when plant communities remain resilient and free from invasive species dominance.

A primary objective of the Mountain City Winter Annual Treatments Project is therefore to limit invasive species densities through targeted treatments and to rebuild robust, native plant communities capable of supporting wildlife, sustaining livestock production, and maintaining the ecological services essential to the health of Nevada’s rangelands.

#### 4.) Permitting\*

*Provide a permitting schedule for your project along with your plan for getting the required permits and decision documents. Be sure to include the cost of permitting/decision documents as a line item in your budget.*

HTNF Aerial Herbicide DN\_03282025 - Signed.pdf

NEPA encompassing the project area has been completed as of March 2025, as a stipulation of this NEPA an implementation plan must be completed that analyzes the specific project area prior to the start of work, NDOW is currently working with the US Forest Service to get this plan signed prior to the application window.

#### 5.) If future phases of the project will be needed, identify anticipated sources of funding.\*

With the methods and approaches being implemented for this project minimal future work will be needed. If the need arises for nearby or complimentary treatments other NDOW or NGO funds may be used as necessary.

#### 6.) Identify the principals involved in leading or coordinating the project or activity.\*

Logan Ballard: Habitat Biologist II  
Matt Glenn: Habitat Staff Specialist.

#### 7.) Number of staff positions involved in project.\*

*Identify how many staff will be full-time and how many will be part-time.*

*“Fulltime” means 100% of their staff position will be dedicated to this project; “part-time” means only a portion of their staff position will be dedicated to this project.*

3 part-time

### 8.) Number of volunteers involved in project and an estimated number of volunteer hours.\*

NA

### 9.) Timeline of Project\*

List key dates and include project milestones. Note: Be realistic in your estimate of dates and milestones. List any factors that may cause a delay in implementing and/or completing the project.

*\*\*Note: Funding will not be provided for work performed prior to grant approval.*

Matching funds must be spent by early 2027. In order to meet this timeline a bulk herbicide purchase will be completed around late March, and application will occur in August-September 2026 based upon optimal herbicide weather windows and compliance with Forest Service permitting.

### 10.) What factors will indicate a successful project?\*

The success of this project will be indicated by a successful application of preemergent herbicide during proper weather conditions, leading to a reduction in annual grass population over the next 4-6 years allowing for an expansion in native plant populations.

## Grant Match

*All applicants must provide a match of at least 25 percent for dollars requested. The match may be with funding and/or in-kind services.*

*If Volunteer Labor is used, it must be documented and valued at a maximum of \$35.00 per hour.*

### Total grant match to be provided.\*

Total Match = Cash + In-Kind

\$800,000.00

### Cash

\$800,000.00

### For the cash portion, is the funding already being held by the applicant for this project?

Yes

## In-kind

*\*\*Note: Provide an itemized breakdown of volunteer match in your budget with rationale.*

\$0.00

## Description of matching funds/in-kind donations.\*

NDOW has acquired \$700,000 of matching funds for this project through AB578(Shared Stewardship) and is in the process of requesting additional funding from Heritage, funding notification will be received in June.

Please see the following breakdown of funding sources for the project:

AB578 (Shared Stewardship) - \$700,000 (Awarded)

Heritage - \$100,000 (Requested)

Dream Tag - \$100,000 (Requested)

## Attachments

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### Project Budget\*

*Provide detail on line-item expenditures and show which costs are to be paid for by the Dream Tags Charitable Fund grant, which expenses will be paid by other sources of funding, and which will be paid for with in-kind services. **Note: Indirect/overhead expenses cannot exceed 25 percent.***

*Grants from the Dream Tags Charitable Fund are paid on a reimbursable basis for actual expenditures only. Craft your budget in such a way that requests for reimbursement correspond to the original budget. **Please contact Lauren Sgandurra, Director of Donor Services at CFNN, at [laurens@nevadafund.org](mailto:laurens@nevadafund.org) for a Sample Budget Template if needed.***

Dream Tag Budget.pdf

### Supplemental Attachments

*Please upload any additional attachments here.*

Supplemental Attachments.pdf

## File Attachment Summary

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### *Applicant File Uploads*

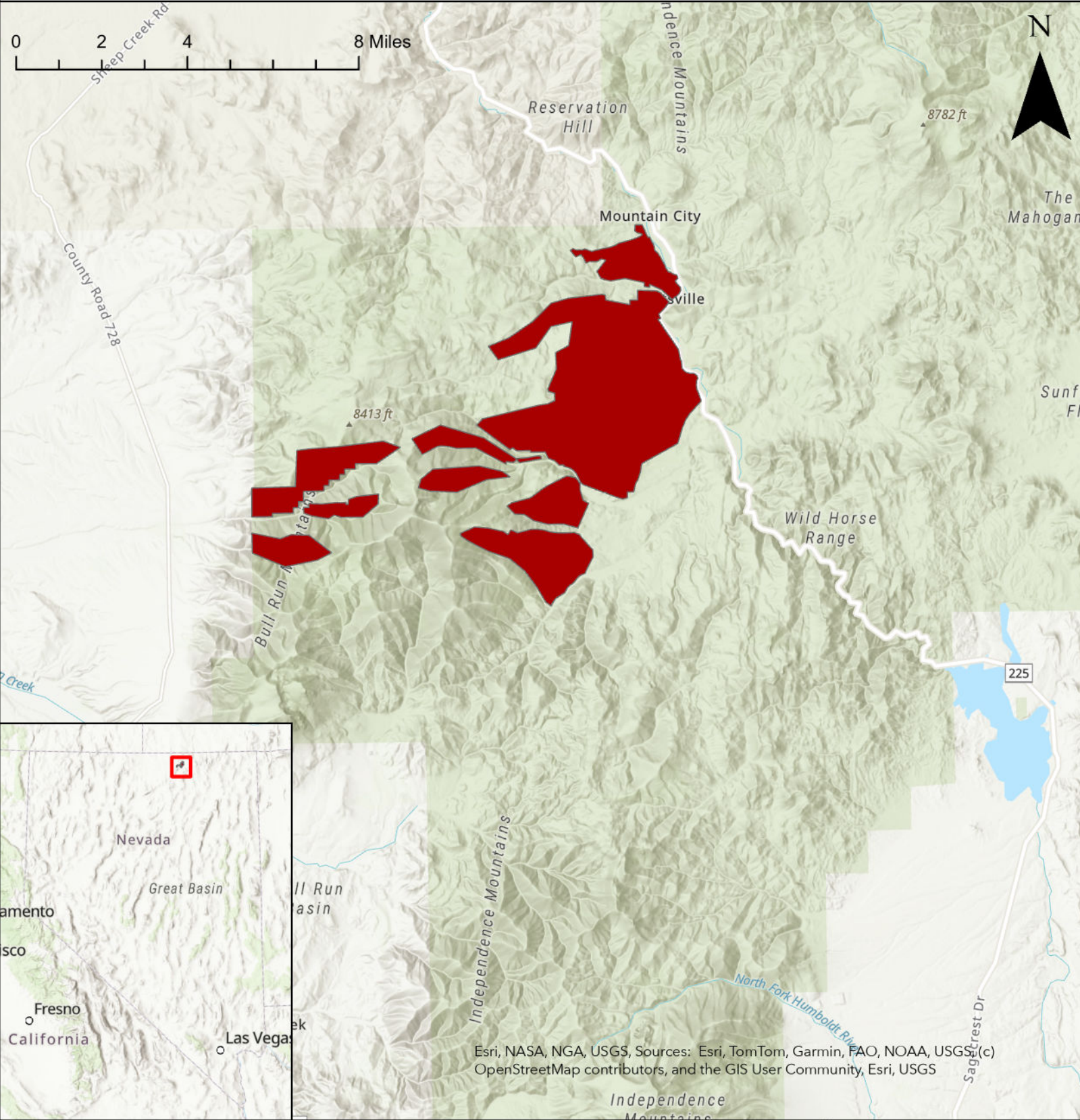
- Mountain City Priority Acres.pdf
- HTNF Aerial Herbicide DN\_03282025 - Signed.pdf
- Dream Tag Budget.pdf
- Supplemental Attachments.pdf

# Mountain City Winter Annual Herbicide Treatment



Author Name: Logan Ballard

Date: 1/7/2026



## Legend

 Priority Treatment Acres

Spatial Reference:  
Name: NAD 1983 UTM Zone 11N

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

## Decision Notice

Aerial Application of Herbicide on the Humboldt-Toiyabe National Forest

U.S. Forest Service

All Districts in Nevada, Humboldt-Toiyabe National Forest

Carson City, Clark, Douglas, Elko, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Washoe, and White Pine counties, Nevada

The Decision Notice incorporates all previous information in the Environmental Assessment and Finding of No Significant Impact (FONSI), as well as information included in the project record.

### Decision and Rationale

Based on the analysis in the Environmental Assessment (EA) and supporting documentation in the project record, I have decided to authorize aerial application of herbicides as described in the [Purpose and Need](#) and [Proposed Action](#) sections of the EA, which include any modifications identified during environmental analysis and review of legal and regulatory compliance.

Native ecosystems across the United States are increasingly under threat from the spread of non-native invasive plant species (NNIPS). Between 2001 and 2020, sagebrush ecosystems in the western U.S. lost an average of 1.3 million acres annually to invasive annual grasses. Across the Humboldt-Toiyabe National Forest (HTNF), invasive annual grasses have greatly increased in cover, density, and species diversity over the last 20 years. On the HTNF, invasive annual grasses coverage between 20 and 60 percent grew from approximately 9,451 acres to 311,449 acres in the span of 16 years (between 2000 and 2016). As of 2024, invasive annual grasses occupy approximately 1,536,329 acres within the boundaries of this project. It is not possible for the Forest to keep up with these rates of expansion using the ground-based control methods currently available.

My decision is based on the need to manage the spread of NNIPS into areas that the Forest is incapable of treating using the current ground-based methods. The aerial application of herbicide will allow the Forest to contain and control this spread of infestations and, in some cases, reverse those that are trending toward or have already become monocultures. Using this tool, in conjunction with ground-based methods, will help make our efforts to manage NNIPS infestations more effective. Specifically, the Forest will be better equipped in treating these infestations following wildfires where seeds of NNIPS can sprout, take root, and outcompete native species. Once established, the NNIPS disrupt natural ecosystems, increase fire frequency, and create larger and faster fires. Upon establishment, our ability to reverse conditions is significantly reduced and the natural ecosystem dynamics are lost along with any ecological services the landscape once provided. My decision to incorporate the use of aircraft in the application of herbicides, where appropriate, across the HTNF in Nevada is an effort to use every available means to counter the threat to Forest resources posed by these NNIPS. After reviewing the analysis in the EA, I am comfortable in making my decision. Some design elements ([Appendix A](#)) reduce the potential impacts from aerial herbicide application to terrestrial and aquatic wildlife species, surface waters, and native plant species. Others restrict the use of aerial application near water bodies, developed recreation sites, and forested areas to reduce potential impacts on health and human safety and the environment. Design elements (and herbicide label requirements) also reduce the risk of herbicide drift into areas that we do not want it to be.

My goal in authorizing the use of aerial herbicide application is to be efficient in the treatment of NNIPS and maintain the health and safety of the public, our cooperators, and our employees. This tool will also be used in a way that minimizes impacts to our environmental resources (such as soil, water, vegetation, and wildlife) and cultural/historical resources as well as the plant materials important to members of tribes and the public while maintaining the Forest Service goals and objectives of multiple-use land management. To put this into practice, my staff has developed the

Aerial Application Implementation Plan. This will help planning teams identify and adhere to the design elements in the EA and ensure that they can be met before, during, and after implementation. As part of this decision, I am requiring the use of this implementation plan for each aerial herbicide application project.

The U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BO) indicates that the project is likely to adversely affect two endangered species, four threatened species, and two proposed threatened species. The BO includes non-discretionary terms and conditions to implement reasonable and prudent measures necessary to minimize the incidental take of the six federally listed wildlife species that the project is likely to adversely affect. The BO also includes discretionary conservation recommendations to minimize or avoid adverse effects of the proposed action on all eight federally listed species or their designated critical habitat, to help implement recovery programs, or to develop information. All terms and conditions specified in the BO will be followed throughout the duration of the project’s implementation. (See the BO in the project record to view the lists of the terms, conditions, and conservation recommendations.)

A Heritage Implementation Plan (HIP) associated with the National Phasing Programmatic Agreement is actively being developed with consulting parties and will be the means through which the HTNF meets Section 106 compliance requirements. Upon completion, the HIP will be filed appropriately. In the unlikely event any implementation requires analysis while the HIP is still in final review, the HTNF will comply with procedures found in 36 CFR 800 on a treatment-by-treatment basis to meet Section 106 requirements.

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### Further Consideration of Aerial Application Methodologies

The project area covers approximately 4.3 million acres (excluding designated Wilderness, Wilderness Study Areas, and Research Natural Areas [RNAs]) across the HTNF and the State of Nevada. Across these 4.3 million acres, vegetation communities, terrain/topography, ecosystem dynamics, weather and climate, and public use vary greatly and may change over time (e.g., wildfires and nearby urban development). Due to this variation, aerial herbicide application treatments must be specific to both location and time. Thus, the requirement to complete implementation plans prior to each aerial herbicide application treatment is critical for successful and effective implementation of the project. The proposed action specifies and limits the herbicides available for aerial application use (see Table 1 of the EA), and these herbicides are known to be effective treatments for some, but not all, of the NNIPS that are currently priorities for treatment on the Forest. Due to this specificity, Table DN-1 below provides a list of the NNIPS (or grouping of NNIPS) that are currently priorities for treatment, the herbicides that are known to be effective for controlling each NNIPS, and the mode of aerial application recommended for each NNIPS-herbicide combination. Table DN-1 is not an exhaustive list, as priority NNIPS and the recommended aerial application modes are likely to change over time as new NNIPS spread into and across the HTNF and new technologies develop for any of the three aerial application modes.

**Table DN-1. Recommended Herbicides and Aerial Application Modes for Specific NNIPS.**

Species or Species Grouping <sup>1</sup>	Recommended Herbicides <sup>2</sup>	Recommended Aerial Application Modes <sup>3</sup>
<b>Thistles</b> Canada thistle ( <i>Cirsium arvense</i> ) <sup>4</sup> Musk thistle ( <i>Carduus nutans</i> ) Scotch thistle ( <i>Onopordum acanthium</i> )	2,4-D amine	Helicopter, unmanned aerial vehicle (UAV)
	Aminopyralid	
	Chlorsulfuron	
	Clopyralid	
	Metsulfuron-methyl	
	Aminocyclopyrachlor (Canada thistle only)	

Species or Species Grouping <sup>1</sup>	Recommended Herbicides <sup>2</sup>	Recommended Aerial Application Modes <sup>3</sup>
<b>Rhizomatous mustards</b> <sup>4</sup> Hoary cress ( <i>Lepidium draba</i> ) Perennial pepperweed ( <i>Lepidium latifolium</i> )	2,4-D amine	Helicopter, UAV
	Chlorsulfuron	
	Imazapic	
	Metsulfuron-methyl	
	Glyphosate or aquatic glyphosate <sup>5</sup>	UAV
<b>Toadflaxes</b> Dalmatian toadflax ( <i>Linaria dalmatica</i> ) Yellow toadflax ( <i>Linaria vulgaris</i> )	2,4-D amine	Helicopter, UAV
	Imazapic	
	Chlorsulfuron	
<b>Knapweeds and Starthistles</b> Diffuse knapweed ( <i>Centaurea diffusa</i> ) Russian knapweed ( <i>Rhaponticum</i> [or <i>Acroptilon</i> ] <i>repens</i> ) Spotted knapweed ( <i>Centaurea stoebe</i> ssp. <i>micranthos</i> [or <i>australis</i> ]) Squarrose knapweed ( <i>Centaurea virgata</i> ssp. <i>squarrosa</i> ) Yellow starthistle ( <i>Centaurea solstitialis</i> )	2,4-D amine	Helicopter, UAV
	Aminopyralid	
	Clopyralid	
	Chlorsulfuron (Russian knapweed only)	
	Imazapic (Russian knapweed only)	
Dyer's woad ( <i>Isatis tinctoria</i> )	2,4-D amine	Helicopter, UAV
	Chlorsulfuron	
	Imazapic	
	Metsulfuron-methyl	
Houndstongue ( <i>Cynoglossum officinale</i> )	2,4-D amine	Helicopter, UAV
	Imazapic	
	Metsulfuron-methyl	
Leafy spurge ( <i>Euphorbia esula</i> )	2,4-D amine	Helicopter, UAV
	Aminocyclopyrachlor	
	Imazapic	
	Glyphosate or aquatic glyphosate <sup>5</sup>	UAV
Rush skeletonweed ( <i>Chondrilla juncea</i> )	2,4-D amine	Helicopter, UAV
	Clopyralid	
Sulfur cinquefoil ( <i>Potentilla recta</i> )	2,4-D amine	Helicopter, UAV
	Aminocyclopyrachlor	
	Aminopyralid	
	Chlorsulfuron	
	Metsulfuron-methyl	
Triclopyr butoxyethyl ester		
<b>Goatgrasses</b> Barbed goatgrass ( <i>Aegilops triuncialis</i> ) Jointed goatgrass ( <i>Aegilops cylindrica</i> )	Aminocyclopyrachlor	Helicopter, UAV
	Imazapic	
	Indaziflam	

Species or Species Grouping <sup>1</sup>	Recommended Herbicides <sup>2</sup>	Recommended Aerial Application Modes <sup>3</sup>
Cheatgrass ( <i>Bromus tectorum</i> )	Imazapic	Fixed-wing aircraft (FWA) <sup>6</sup> , helicopter, UAV
	Imazapyr	
	Indaziflam	
	Rimsulfuron	
Medusahead ( <i>Elymus</i> [or <i>Taeniatherum</i> ] <i>caput-medusae</i> )	Aminocyclopyrachlor	FWA <sup>6</sup> , helicopter, UAV
	Aminopyralid	
	Imazapic	
	Indaziflam	
	Rimsulfuron	UAV
Glyphosate or aquatic glyphosate <sup>5</sup>		
North African grass ( <i>Ventenata dubia</i> )	Imazapic	FWA <sup>6</sup> , helicopter, UAV
	Indaziflam	
	Rimsulfuron	

<sup>1</sup> Other NNIPS may be treated with aerial herbicide application as new species spread onto and within the HTNF in Nevada.

<sup>2</sup> Aerial treatment of a given NNIPS is not limited to the herbicides matched to each NNIPS in the table. Other herbicides (or combination of herbicides) listed in the table may be shown to be effect treatments as new research/testing becomes available. Note: Herbicides used must always follow the label instructions and be registered in the State of Nevada by the Nevada Department of Agriculture (NDA).

<sup>3</sup> All modes may be available and utilized in accordance with the herbicide label and contingent upon the infestation size, terrain, proximity to water and community development, and surrounding native vegetation.

<sup>4</sup> Canada thistle, hoary cress, and perennial pepperweed are often associated with riparian habitat, but these species also invade upland landscapes. The design element specifying that aerial herbicide applications will not occur within 300 feet of all open water features and riparian areas will be followed regardless of the NNIPS being treated.

<sup>5</sup> The only aerial application mode recommended when using glyphosate or aquatic glyphosate is UAV regardless of species.

<sup>6</sup> Fixed-wing aircrafts would generally be used for large-scale NNIPS infestations across landscapes primarily composed of the target NNIPS or multiple NNIPS (e.g., two or more invasive annual grass species). Such infestations may cross administrative boundaries, and partnerships between the HTNF, federal and state agencies, and private landowners may elicit the need to use a fixed-wing aircraft for aerial herbicide application(s) in order to optimize effectiveness and cost. Large-scale infestations may also dominate landscapes recently burned in wildfires, which could also prompt the use of fixed-wing aircrafts.

All of the NNIPS listed in Table DN-1 have more than one herbicide that is known to be an effective control. Providing multiple herbicides for the removal of a single NNIPS is intentional in that it allows each treatment to be tailored to the specifications of the infested landscape, while also optimizing treatment efforts by using different applicable herbicides as needed over time to maximize the effectiveness of each treatment and prevent herbicide resistance. Furthermore, the variation of treatment methods over time is not limited to aerial applications. As authorized under previous NEPA decisions, the HTNF can use ground-based herbicide treatments, manual/mechanical treatments, and biological controls to maximize NNIPS removal efforts both across the Forest and over time.

In selecting the appropriate treatment method for a landscape and the optimal treatment regime over time, the HTNF is considering the best course of action to not only mitigate the spread of NNIPS but also preserve and restore native vegetation. The herbicide indaziflam, for example, has demonstrated the ability to control invasive annual grasses in established sagebrush-perennial grass

plant communities through the selective depletion of annual grass seeds in soil seed banks. This removal of annual grass seed in turn promotes the desirable native vegetation through reduced competition for resources (Courkamp et al. 2022). By authorizing the use of aerial herbicide applications and indaziflam through this NEPA process, I intend to optimize the Forest's efforts in controlling the influx and spread of NNIPS across the HTNF in Nevada by broadening the methodologies that can be used for NNIPS removal and control.

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### **NEPA Sufficiency**

The decision to prepare an EA rather than an Environmental Impact Statement (EIS) for this project was considered throughout the National Environmental Policy Act (NEPA) process. The purpose of an EA is to determine if there would be significant impacts resulting from the implementation of a proposed action. In this case, the HTNF used its discretion provided under 36 CFR 220.7 to prepare an EA to determine if an EIS was required. Since multiple EISs have already been prepared by multiple national forests (e.g., Boise/Sawtooth, Bridger-Teton, and Medicine Bow-Routt national forests) for aerial herbicide application projects that did not identify significant impacts, the HTNF believed it was prudent to first prepare an EA to identify significant or irreversible/irretrievable impacts that may result from the implementation of the proposed action. Had analysis of the potential effects of the proposed action identified any significant impacts or irreversible/irretrievable impacts, the HTNF could then focus its analysis in an EIS on those specific impacts.

The HTNF is aware of regulations at 36 CFR 220.5(a)(1) that identify "actions" that may "normally require preparation on an EIS" and that identifies "proposals to carry out or to approve aerial application of chemical pesticides on an operational basis" as an example (EISs). The HTNF's decision to initially prepare an EA for the analysis does not contradict this direction but allowed the HTNF to determine whether an EIS was needed. Had the HTNF identified significant impacts during the analysis and preparation of the EA, the EIS process would have been initiated. The factors listed above support the use of an EA for this project and suggest that this project is not one that falls under the category of "actions normally requiring" EISs. Additionally, the EA produced from the NEPA analysis resulted in a FONSI, which is the finding that is intended to result from an EA and concludes that an EIS is not necessary. Thus, for this project, an EA was the correct course of action. (Further explanation and additional factors that were considered in determining the correct NEPA process for this project are provided in the project record in the document entitled *Aerial Application of Herbicide - EA Rationale (Final)*.)

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### **Rescinded Regulations and Map Corrections**

The analyses conducted for the EA and supporting documents were completed in order to comply with the Council on Environmental Quality (CEQ) Phase 2 NEPA regulations that were in effect at the time of the analyses. The climate change and greenhouse gas (GHG) emissions analysis, in particular, was also conducted as a result of public comments involving these issues and was not solely based on specific federal regulations. These regulations have now been rescinded as a result of Executive Orders (EOs) issued in 2025. Although these rescinded regulations were included in the project analyses, they did not affect the outcomes of the analyses and were not considered in this decision.

Four WSAs were not included in Figures 1 and 2 of the draft EA (published in November 2024). This error was corrected in the final version of the EA. It did not affect the analyses in the EA or the supporting documentation.

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### **Reference in the Decision Notice**

Courkamp, J.S., P.J. Meiman, and M.W. Paschke. 2022. Indaziflam reduces seed bank richness and density but not sagebrush-grassland plant diversity. *Rangeland Ecology and Management* 84: 31-44.

## Summary of Public Involvement

On June 7, 2023, the HTNF issued a public scoping notice associated with the Aerial Application of Herbicide on the Humboldt-Toiyabe National Forest in Nevada Project, inviting comments regarding the scope of the associated NEPA review. The Proposed Action description, the public notice, and other information were made available for review at <https://www.fs.usda.gov/project/?project=64139>, or at the HTNF Supervisor's Office (Humboldt-Toiyabe National Forest, 1200 Franklin Way, Sparks, NV 89431). The 30-day scoping period formally began on June 7, 2023, when a legal notice was published in the Reno Gazette Journal (#5726852).

The HTNF utilized the NEPA scoping process in lieu of public involvement requirements found in 36 CFR Part 800, the regulations implementing Section 106 of the NHPA (54 U.S.C. 306108). During the 30-day comment period, comment letters were received from two agencies, one organization, and five individuals. The scoping notice, comment letters, and scoping report are included in the project record.

Based on scoping comments received and input from the Forest Service Interdisciplinary Team, resource issue statements and indicators were developed to be analyzed in this EA (see [Issues Considered for Analysis and Environmental Consequences](#) section).

A list of agencies, organizations, and persons consulted regarding this proposal is also provided in the [Agencies and Persons Consulted](#) section of this EA.

On November 14, 2024, the HTNF published the Draft Decision Notice, EA, and FONSI for the Aerial Application of Herbicide on the Humboldt-Toiyabe National Forest in Nevada project in the Reno Gazette-Journal, thus, starting the 45-day formal objection period. The 45-day objection period ended on December 30, 2024. Four objections were received. Response to the objections were sent out on March 14, 2025. The objections and responses are included in the Project Record.

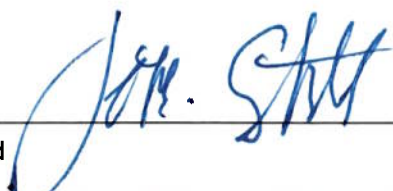
## Findings Required by Other Laws and Regulations

Findings required by other laws and regulations applicable to the proposal can be found in the [Environmental Impacts](#) section. Resource specialists completed a thorough review of the Humboldt National Forest Land and Resource Management Plan (USFS 1986a, as amended) and the Toiyabe National Forest Land and Resource Management Plan (USFS 1986b, as amended) and found that the Proposed Action and design elements ([Appendix A](#)) are consistent with the relevant plan components.

## Contact

For additional information concerning this decision, contact:

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Sparks, NV 89431  
[heidi.guenther@usda.gov](mailto:heidi.guenther@usda.gov)  
p: 775-352-1223  
f: 775-355-5399



March 31, 2025

Jon Stansfield

Forest Supervisor, Humboldt-Toiyabe National Forest

Item Description	Acres Treated	Estimated Cost	Total Costs for Project Area
Application (Rotorcraft/Fixed Wing)*	Up to 12,500	\$45 Rotorcraft/ac	\$450,000-\$562,500
	Up to 12,500	\$25 Fixed Wing/ac	\$250,000-\$312,500
Herbicide Cost**	Up to 12,500	\$52/ac	\$512,000-\$650,000
<b>Total</b>	<b>10,000-12,500 Acres</b>	<b>\$75-\$97/ac</b>	<b>\$762,000-\$900,000***</b>

*\*Aircraft type will vary based upon terrain and application requirements*

*\*\*Herbicide costs include Imazapic, Indazaflam, and adjuvant*

*\*\*\*Total Treatment cost will vary based upon aircraft required, current herbicide costs, and acreage treated.*

Funding Sources	Amount	Use	Status
AB578	\$700,000	Purchase and/or application	Awarded
Heritage*	\$100,000	Application	Requested
Dream Tag	\$100,000	Purchase and/or application	Requested

*\*Funding notification will be received in June and will be received after herbicide purchase timeline.*

# Mountain City Winter Annual Herbicide Treatment

Author Name: Logan Ballard

Date: 1/7/2026

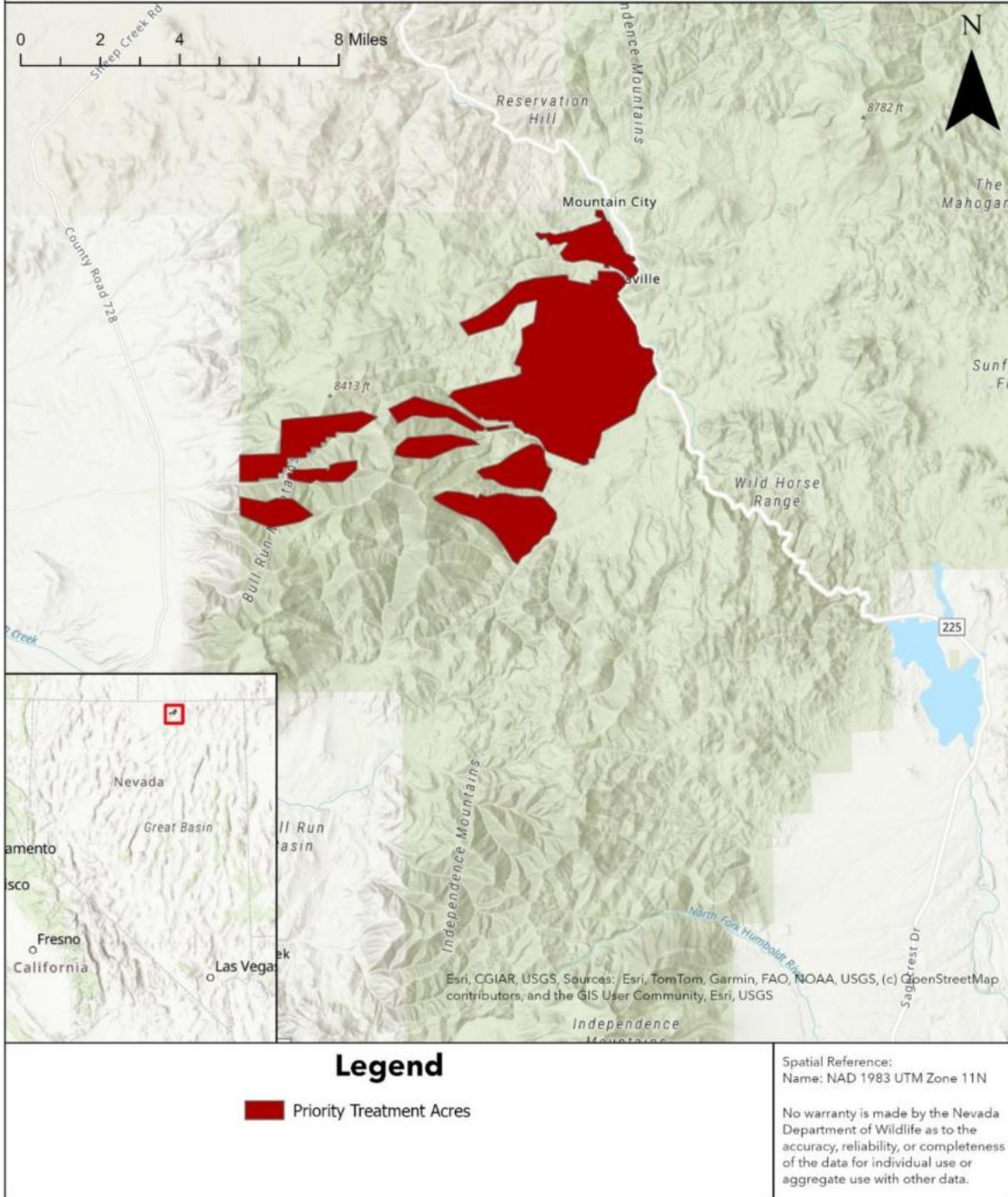


Figure 1: Map of Priority Treatment Acreage Based on Annual Grass Densities

DIRECTION  
307 deg(T)

41.73158°N  
115.89392°W

ACCURACY 4 m  
DATUM WGS84



*Figure 2: Example of Treatment Area, Note the Presence of Perennial Grasses and Shrubs with Dominant Cheatgrass Understory.*



*Figure 3: A Close View of Ventenata Within the Priority Boundary*



*Figure 4: Example of an Annual Invaded Slope in the Foreground with a Native Community in the Background, Note the Increased Fuel Continuity*

DIRECTION  
311 deg(T)

41.77757°N  
115.97115°W

ACCURACY 5 m  
DATUM WGS84



2025-07-10  
10:33:57-07:00

*Figure 5: A Landscape Overview Showing Annual Grass Presence is Light Yellow.*

DIRECTION  
317 deg(T)

41.78043°N  
115.97112°W

ACCURACY 5 m  
DATUM WGS84



*Figure 6: An Example of a Plant Community That Will Benefit From Herbicide Treatment, Note The Presence of Bunchgrasses, Forbs, and Shrubs within the Cheatgrass.*