Eastern Region, Area 4

Integrated Roadside Vegetation Management Plan

2024

Washington State Department of Transportation
Maintenance Operations Division

Introduction

The Washington State Department of Transportation (WSDOT) Eastern Region Area 4 manages approximately 450 miles of roadside right-of-way throughout Ferry, Pend Oreille and Stevens' counties. This right-of-way is part of the state highway system including portions of US-395, SR-20, and SR-31, as well as a number of other secondary state routes in the area. A map of state highways and routes in this area is included on the following page.

The primary roadside vegetation management objectives are traffic safety and preservation of the highway infrastructure. Additionally, as a landowner WSDOT is required to control all listed noxious weeds that occur on the right-of-way by state law (RCW 17.10 and 15.15.010). It is important that WSDOT not only meet the legal requirements for weed control, but also consider the needs and concerns of adjacent landowners in this area.

With these priority objectives in mind, WSDOT practices an annually cycling process called Integrated Vegetation Management (IVM). Plans like this are maintained and updated annually for all areas of the state with an overall goal of establishing the most naturally self-sustaining roadsides vegetation possible. Adjustments are made year to year in each area plan based on monitoring the previous years' accomplishments and results, available budget, and prioritization of other highway maintenance activities.

This plan serves as the guidance document for vegetation maintenance in Eastern Region Area 4 for the 2024 growing season. It identifies priority locations and prescribes treatments for accomplishing safety and weed control objectives through the use of seasonally-timed, integrated control measures. Each year's actions are designed as part of a coordinated multi-year strategy to minimize long-term roadside maintenance requirements wherever possible. This plan also accounts for specific locations where maintenance tactics are adjusted due to environmental issues, neighboring properties, local partnerships, or restoration work done through WSDOT design and construction.

The information contained in this plan document can be geographically referenced by crews in the field using iPads and the Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked geographically through this new system. This development in WSDOT maintenance management will greatly improve the agency's success in properly executing planned actions, monitoring and documenting results of treatments, and in measuring cost and results over time.

WSDOT welcomes input from local public and private entities on its weed control and vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan, cooperate, and partner with others in managing the roadside. Please direct any questions, comments or suggestions to the Eastern Region Area 4 Superintendent – David Cabbage, or the State's Roadside Asset Manager – Ray Willard.

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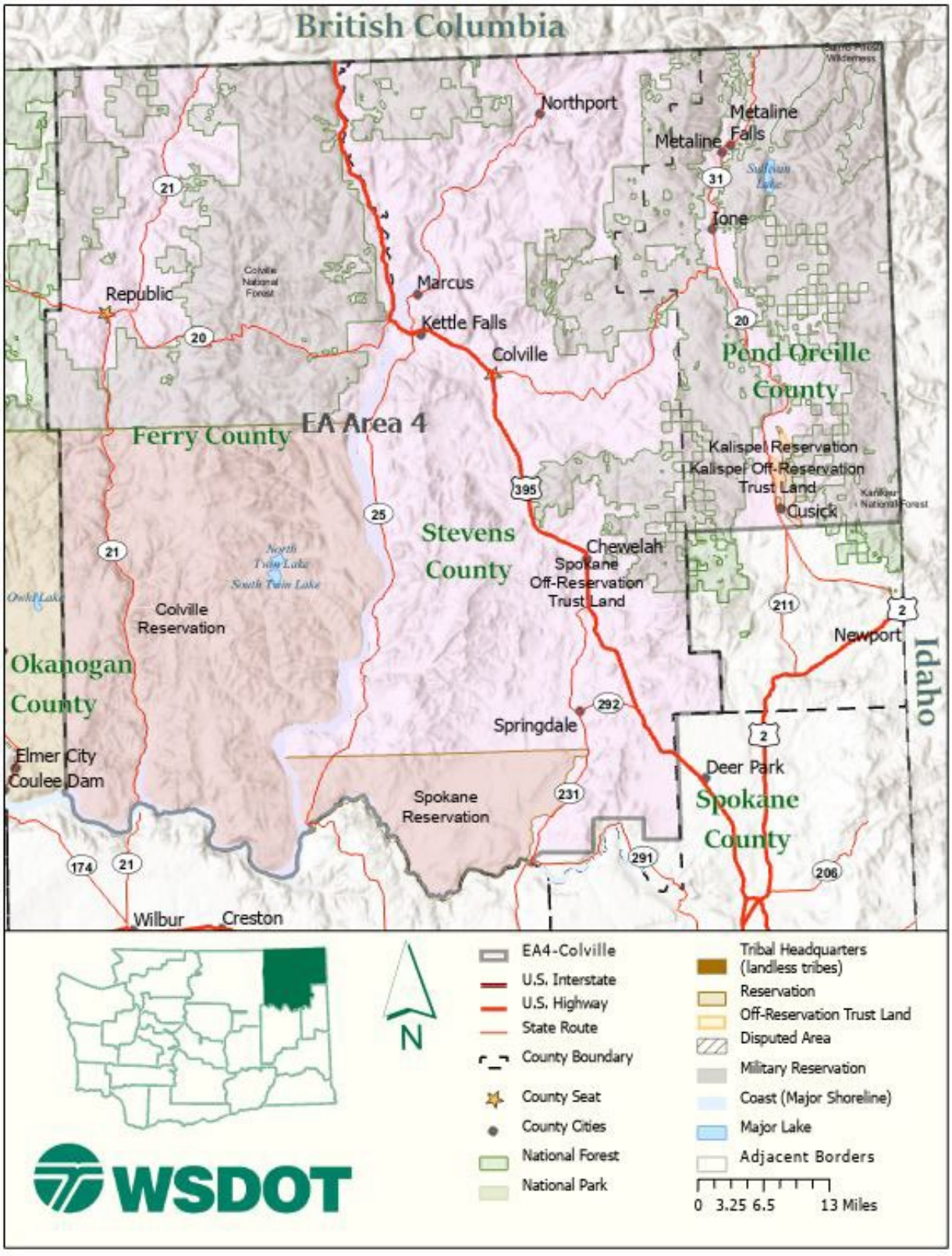

Eastern Region, Area 4
Vicinity Map
Figure 1

The section outlines the overall approach and geographic distribution of roadside vegetation management requirements and planned treatments throughout the maintenance area in 2024. Information is organized in relation to three groups of activities defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions**, **Noxious Weed Control**, and **Nuisance Weed Control**. Specific locations as noted in this work plan are also mapped in the Highway Activity Tracking System (HATS) for reference by maintenance in the field.

Safety

Safety of our employees, the traveling public, and the environment are WSDOT's highest priorities and key to our success. Our licensed applicators read the entire label before using products and use the products strictly in accordance with label precautionary statements and directions. WSDOT has implemented additional agency specific restrictions on some products, to minimize any risk to aquatic or terrestrial ecosystems. Applicators wear protective equipment applicable to the products being used and discuss product exposure procedures at a daily Pre-Activity Safety Plan meeting. They inspect their calibrated equipment daily to ensure it is in proper working order. Herbicides are kept well organized in clean locked storage facilities. In addition to their morning safety meeting, the applicators hold brief tailgate meeting at the job site prior to work to address current and unforeseen circumstances.

Control of Vegetative Obstructions – 3A4

The work of this group of maintenance activities relates to the safety and operational requirements of the highway. These items are considered first priority in terms of the overall roadside maintenance needs. Vegetation management objectives and work activities in this category fall into four groups – **Pavement Edge Maintenance/Zone 1**, **Safety Mowing/Zone 2**, **Tree and Brush Control/Zone 2 and 3**, and **Hazard Tree Removal/Zone 3**.

Pavement Edge Maintenance/Zone 1
Work Operation: 1615
HATS Form: Pesticide Application
HATS Map Layer: Reference lines – Roadside Features/Spray Zone 1 Reference

This work involves the annual application of herbicides to road shoulders where necessary throughout the area. The objective of these applications in designated locations is preserving of a band of vegetation-free gravel shoulder adjacent to the pavement. This treatment is necessary in the mapped locations described below to provide visibility and maintainability of roadside hardware and guideposts, allow room for vehicles to safely pull off on shoulders, facilitate stormwater drainage, and/or provide added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Apply approximately **450 acres** of herbicide treatment to road shoulders throughout the area which includes 13 acres in USFS

Locations of Planned Treatments

- Bare ground treatments will be applied to all shoulder sections.
- Pit sites are treated for bare ground as needed, separate records are kept for these application
- USFS lands SR 20, 21, and 31 will be treated with approved mixture shown below
- Planned treatment sites are mapped in HATS layer – **Zone 1 Treatments**.

Treatment Methods

- Herbicides are applied using a truck mounted power spray system calibrated to deliver a 3-ft. band of spray mixture on a flat surface.

- The treated area extends beyond the back of guardrail posts.
- Herbicides are applied using a truck mounted power spray system set up to deliver a 3-foot band of spray mixture adjacent to the paved shoulder. The resulting width of treated shoulder may be wider than 3 feet (measured along the surface of the slope) in areas with steeper shoulder slope. In some locations as noted, application width may be increased to accommodate roadside hardware.
- Spring applications will be made on most corridors
- Treatments will be made in the March-April timeframe with the following locations and mixtures of herbicides and adjuvants:
- Mix for 2024:
    - Glystar Plus @ 64 oz/acre
    - Esplanade @ 7 oz/acre
    - Opensite @ 3 oz/acre
    - Oust @ 2 oz/acre
    - In-Place @ 8 oz/acre

Safety Mowing/Zone 2
Work Operation: 1625
HATS Form: Mowing Zone 2
HATS Map Layer: Reference lines – Roadside Features/Mowing Zone 2 Reference

This work includes routine mechanical cutting of all vegetation on the road shoulder in a band width immediately adjacent to pavement. Mowing is necessary in areas where taller growing grasses or other vegetation are present and must be annually or semi-annually cut back for visibility and maintenance of roadside hardware and delineators, to maintenance traffic sight distance at curves and intersections, and for improved visibility of wildlife approaching the highway. Mowing height for these operations is typically 6 to 8 inches above the ground.

Total Units of Planned Treatment

- Approximately **20 acres** will be mowed where needed on the edges
- This acreage has decreased over time as Zone 1 application have been expanded

Locations of Planned Treatments

- Shoulders without guardrail will be mowed once per year in areas where grass growth exceeds 12" height, only a few locations require this treatment
- Shoulders where Zone 1 is being reestablished will no longer need to be cut
- Locations where mowing due to grass height is required will be mapped in the HATS map layer – **Mowing Zone 2**. This will be done as mowing is conducted in 2024 in late spring/early summer.

Treatment Methods

- Mowing will occur as needed once per year, after seed set and selective control of noxious weeds, if timing allows before IFPL regulations restrict this activity.
- Mowing will consist of one pass with a tractor mounted sickle-bar, locations with additional sight distance needs may be mowed beyond one pass as necessary.

Tree and Brush Control/Zone 2 and 3
Work Operations: 1622, 1625, 1626
HATS Forms: Pesticide Application for spray applications, and three sub-forms under Tree/Brush Control –Trimming Mechanical, Trimming Manual, and Mowing
HATS Map Layer: None

This includes safety and traffic operations related work in Zone 2, such as periodic side-trimming or removal of brush and trees or tree branches encroaching on or overhanging traffic operations and impacting sign visibility. Also included is work in Zone 2 and 3 when selectively controlling emergent early succession tree species –

to prevent them from growing into mature hazard trees within striking distance of the road.

Total Units of Planned Treatment

- Approximately **50 acres** will be mechanically treated throughout the area.
- Approximately **20 acres** of large tree growth will be mowed and mulched for open road to winter sun on SR20 and US395
- Up to **5 acres** will be trimmed with hand tools for site distance and sign visibility

Locations of Planned Treatments

- Forested and wetland locations throughout the area must be periodically cut back and trees pruned for highway safety and visibility.
- Seedling trees growing too close to the highway must be selectively removed where they occur, leaving lower growing native plants in place.
- Sections where winter shading causes excess ice formation will be cleared as needed over the coming years.

Treatment Methods

- Some control of seedlings and encroaching brush species is accomplished incidental to noxious weed control spraying throughout the growing season.
- Some herbicide may be used for stump treatment following cutting, or for treating regrowth late in the season.
- Mechanical side trimming is conducted using a tractor mounted cutting deck, in combination with hand saws where needed.
- In areas with overhanging branches, occasional pruning is conducted using a man-lift and hand saws.

Hazard Tree Removal/Zone 3
Work Operation: 1628
HATS Forms: Hazard Tree Removal – Individual Tree Removal, Stand Removal, and Cleanup Fallen Trees
HATS Map Layer: None

Trees within and adjacent to the right of way are routinely monitored by maintenance staff for potential risk to the highway and/or neighboring structures. Individual and stands of mature trees identified as a potential imminent threat will be further evaluated and removed as soon as possible where needed.

Total Units of Planned Treatment

- The area has experienced a high number of hazard trees in recent years due to fire and insect damage.
- Total trees removed are between **500-1,000 per year** throughout the area.

Locations of Planned Treatments

- Pine forest areas are the most effected.

Treatment Methods

- Wherever possible trees will be dropped in place and left to naturally decompose.

Noxious Weed Control – 3A2

This group of activities includes control of non-native invasive weed species as defined by state law and individual county designation. This group of activities is second priority vegetation management work after safety related objectives have been addressed. While all Class A, B, and C noxious weed species as listed in RCW 17.10 are considered potential targets for WSDOT noxious weed control, the agency is currently not funded to achieve 100% control of all noxious weeds. Therefore, the top priorities for weed control are focused on locations and species that are more limited in distribution on the right of way – where there is a chance of successful eradication. To prioritize control of species that are already

widespread in the area, WSDOT works with the local county noxious weed boards and coordinators, to annually review and determine which species and locations will be specifically targeted.

To prioritize, plan, and track noxious weed control, WSDOT maps and monitors weed infestations in three categories: **Priority**, **Planned Treatment**, and **General Reference**. **Priority** locations are where Class A noxious weed species exist on the right of way, and complete eradication is required by state law. **Planned Treatment** sites are locations where there are new, and/or limited distribution infestations of Class B and C noxious weed exist, and eradication is possible.

Noxious Weed Control
Work Operations: 1616, 1618, 1641, 1699
HATS Forms: Pesticide Application (for spray applications,) and three sub-forms under Noxious Weed Control General– Manual/Mechanical, Seed/Fertilize/Mulch, and Biological
HATS Map Layer: Reference Points – Roadside Features/Noxious Weed Control Priority, Noxious Weed Control Planned Treatment, and Noxious Weed Control General Reference

Operations are prescribed throughout the season to prevent the spread of legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrated treatment plans combine field monitoring and an integral mixture of seasonally timed control methods with proven effectiveness on designated species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation.

Designated Species Known to Exist on WSDOT Right of Way

- No Class A noxious weeds are known to exist on WSDOT right of way in the future. The right of way is continually monitored for occurrences of any Class A species known to exist off right of way within the region.
- The area has adopted the combined designate species lists for all three counties in the area as noxious weed control targets throughout the area.
- A list of target species and treatment strategies is included in **Appendix A.**

Total Units of Planned Treatment

- Approximately **100 acres** will be treated with herbicides.

Locations of Planned Treatments

- Locations for seasonally planned treatment sites are being mapped in HATS over the course of the 2024 season, including county weed board identified reoccurring “hot spots” and priority sites identified by the spray crews.

Treatment Methods and Timing

- Timing goal is prior to seed set in June.
- Broad spectrum treatment:
    - Opensight @ 3 oz/acre
    - Telar @ 1 oz/acre
    - Vista @ 8 oz/acre
    - In-place @ 8 oz/acre
    - Syl-Tac @ 4 oz/acre
    - Weedmaster @ 32 oz/acre will be added where needed for additional burn down

Nuisance Vegetation Control – 3A3

Nuisance vegetation control takes place only in a select set of carefully prioritized locations throughout the state, primarily along wider rights of way and interchanges on limited access highways. These locations are delineated on maps in HATS as polygon outlines in Zone 3. Locations are prioritized to take place where there is heightened local interest in the visual

appearance and condition of the roadside vegetation. Typical locations include wider areas along limited access freeways in urban and suburban areas, freeway interchanges for local urban centers, environmentally mitigation sites, and areas where neighbors are willing to partner with WSDOT on management efforts. Because nuisance weed control activities are not related to safety or legal requirements and are primarily undertaken to improve the visual appearance of the roadside, they are considered the last priority vegetation management needs.

For all areas designated to receive Nuisance Vegetation Control, multi-year treatment plans have been developed. The actions contained in these plans will be executed and tracked in relation to specific Zone 3 polygons for **Nuisance Vegetation Control Zone 3,** referenced on HATS maps and described below.

Nuisance Vegetation Control
Work Operations: 1611, 1612, 1699
HATS Forms: Pesticide Application (for all spray applications), and 3 sub-forms under Nuisance Veg. Control General – Manual/Mechanical, Biological, and Seed/Fertilize/Mulch
HATS Map Layer: Reference polygons – Zone 3 Nuisance Reference and Environmental Mitigation Site Boundaries

Maintenance activities in each identified location are planned and tracked as multi-year treatment strategies, utilizing monitoring and the most effective combination of control methods – with a goal of establishing desirable vegetation that requires only minimal maintenance. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation. In some cases, soil enhancements may be used as well as seeding or planting of beneficial competition species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary, based on field observations.

Total Units of Planned Treatment
There is no Nuisance Vegetation Control planned in the area for 2024.

Locations of Planned Treatments

- There are several environmentally permitted mitigation sites mapped in HATS, where WSDOT is committed to maintaining a weed free condition.
- These sites will be monitored, and treatments will be planned for any emerging issues.

Stormwater Facilities Maintenance

Vegetation maintenance in stormwater management facilities is tracked and measured as part of stormwater and drainage operations. Vegetation control actions in these facilities are defined in a published "Owner's Manual" for each feature. Ongoing maintenance of these facilities is regulated by permit and necessary vegetation management actions in these facilities is prioritized separately from other roadside vegetation management needs.

As in all vegetation management activities, long-term vegetation maintenance requirements can be minimized by applying a multi-year IVM strategy to establish desirable vegetation and minimize the emergence and growth of unwanted species.

NPDES Maintenance
Work Operations: 1344, 1363, 1364, 1365, 1368, 1399
HATS Feature-based Forms: Stormwater Features List
HATS Forms: Pesticide Application (for all spray applications)
HATS Map Layers: Stormwater Features

Before crews warrant the need to remove or treat vegetation from a Stormwater Facility several factors need to be considered. Crews shall review sections 3.9 and 3.9.1 of the

Olympic Region Area 1 IVM Plan, section 5.5 of the Highway runoff manual, and review sections 1 through 4 of the Roadside Policy Manual an onsite visit with Region and/or HQ environmental office to determine what is the “Best Maintenance Practice” to a site specific plan or Owner’s Manual.

Locations of IVM needs in Stormwater facilities will be tracked through Highway Activities Tracking System. (HATS)

There are no Class A species known to be present on state right of way in this area. However, a number of Class B and C weeds routinely emerge annually and in some places multi-year seed banks exist. Area crews work throughout the growing season to address priority infestations and randomly emerging occurrences as agreed upon and directed by the county noxious weed control boards.

Eastern Region, Area 4 includes Ferry, Stevens, and Pend Oreille Counties. The area has adopted the following list of target species based on designates in each of the three counties, with treatment notes describing the strategy for control in this area:

Common Name/Botanical Name	***Treatment Notes***
Annual bugloss *(Anchusa arvensis)*	Target sites mapped and treated in the spring with follow up treatments in summer if needed
Buffalobur *(Solanum rostratum)*	Control where visible in conjunction with summer seasonal weed patrols.
Common bugloss *(Anchusa officianalis)*	Target sites mapped and treated in the spring with follow up treatments in summer if needed
Dalmation toadflax *(Linaria dalmatica)*	Target sites will be mapped and treated in the spring and fall
Knapweed sp. *(Centaurea sp.)*	Control where visible in conjunction with summer seasonal weed patrols. Some spotted knapweed sites may be mapped.
Herb Robert *(Geranium robertianum)*	Control where visible in conjunction with summer seasonal weed patrols.
Hoary alyssum *(Berteroa incana)*	Target sites will be mapped and treated in the spring
Houndstongue *(Cynoglossum officinale)*	Only controlled when growing next to other target species
Knotweed sp. *(Polygonum sp.)*	Target sites will be mapped if found
Kochia *(Kochia scoparia)*	Coming into the area along 395 and in Ferry County along SR21. These corridors will be targeted for control in the early summer. Heavy infestation sites will be mapped this year.
Longspine sandbur *(Cenchrus longispinus)*	Target sites will be mapped and treated in the spring. County weed boards help with control.
Leafy spurge *(Euphorbia esula)*	Historical sites treated and controlled in past years. These sites will be mapped and monitored.
Musk thistle *(Carduus nutans)*	Control where visible in conjunction with summer seasonal weed patrols.
Orange hawkweed *(Hieracium aurantiacum)*	Mostly on SR20, sites will be mapped and treated in spring
Oxeye daisy *(Leucanthemum vulgare)*	Only controlled when growing next to other target species
Perennial pepperweed *(Lapidium latifolium)*	One small patch mapped on SR25 MP (Pleasant Valley Road)
Plumeless thistle *(Carduus acanthoides)*	Target sites will be mapped and treated in the spring.
Rush skeletonweed *(Chondrilla juncea)*	Heavy infestation target sites will be mapped and treated in the spring. Priority control will be in areas on the northern part of the area where infestations do not currently exist.
Russian knapweed *(Acroptilon repens)*	Coming into the area along 395 and in Ferry County along SR21. These corridors will be targeted for control in the early summer. Heavy infestation sites will be mapped this year.
Scotch thistle *(Onopordum acanthium)*	Target sites will be mapped and treated in the spring.
Sulfur cinquefoil *(Potentilla recta)*	Only controlled when growing next to other target species

Tansy ragwort *(Senecio jacobaea)*	Control where visible in conjunction with summer seasonal weed patrols.
Hawkweed sp. *(Hieracium sp.)*	Control where visible in conjunction with summer seasonal weed patrols.
Yellow starthistle *(Centaurea solstitialis)*	Target sites will be mapped and treated in the spring.