

City of Rocklin
Invasive Plant Management Plan



December 2014

Table of Contents

INTRODUCTION	3
NATIVE, NON-NATIVE, AND INVASIVE PLANT SPECIES DEFINITIONS	3
Native Plants	3
Native Invasive Plants	3
Non-Native Plants	3
Non-Native Invasive Plants	3
INVASIVE PLANT MANAGEMENT	4
Integrated Pest Management Methodology Within City Open Space	4
Hand/Mechanical Removal	5
Biological Controls	6
Use of Herbicides for Non-Native/Exotic Pest Plant Management	6

List of Attachments

Attachment A: Cal-IPC 2006 California Invasive Plant Inventory Table 1

Attachment B: Herbicide Use within City Open Space

INTRODUCTION

The City of Rocklin currently manages over 700 acres of Open Space Preserves. The Open Space Preserve system consists of land that was required to be set aside as part of a regulatory permitting action and is typically protected by either a Conservation Easement or Declaration of Covenants and Restrictions (Deed Restrictions). The Open Space Preserve areas are primarily annual grassland, oak woodland, or riparian corridors protected due to the presence of waters of the U.S. and/or U.S. Fish and Wildlife Service (Service) regulated endangered/ threatened species (Endangered Species) habitat.

NATIVE, NON-NATIVE, AND INVASIVE PLANT SPECIES DEFINITIONS

Native and non-native plant species are mentioned in several sections of this Interim Plan. The following definitions of these terms have been included to assist the Open Space Manager in determining the status of plant species found in the City's Open Space.

Native Plants

For the purposes of this Plan, plants native to the City's Open Space will be defined as those plants believed by the scientific community to have been present in western Placer County prior to the settlement of Europeans. The Jepson Manual can be a reference for determining if a plant is native or non-native. However, this reference only gets as specific as subregions. As a result, this reference is not necessarily specific enough, and therefore the Open Space Manager can consult with the Monitoring Biologist, local botanists, or the local chapter of the California Native Plant Society to determine if a plant should be considered native to the City's Open Space

Native Invasive Plants

Some native plants can be considered invasive in specific circumstances and may be managed by the City. These species typically form monocultures that crowd out other native species (e.g., cattails).

Non-Native Plants

Based on the above definition of plants considered to be native to the City's Open Space, there are several ways to view what a non-native plant is: there are plants that are not locally native (native to Placer County), plants that are not regionally native (native to Northern California), and plants that are not native to California or the U.S.

Non-Native Invasive Plants

Terminology regarding non-native invasive plants varies. Some use weed, non-native invasive plant, exotic pest plant, etc. This Plan defines non-native invasive plants as plants that replace native vegetation or native habitats. The Monitoring Biologist and the Open Space Manager can refer to the species found on the Cal-IPC 2006 California Invasive Plant Inventory (Inventory) to assist them in determining if a plant is an invasive plant species of concern. A portion of the Inventory (Table 1) has been included as Attachment A; however this list may be updated from time to time by Cal-IPC. The new list will be appended to this Plan as it is updated. The list can be found at <http://www.Cal-IPC.org/>.

INVASIVE PLANT MANAGEMENT

Under current baseline conditions, the City is known to support a number of invasive plants, many of which have become naturalized. It is a goal of the GOSMP to create a City-wide map of invasive plant populations. When finalized, the map will be added to this Plan. The map would be updated annually if new populations are identified.

The required management of invasive plants under the GOSMP will be limited to the removal of newly introduced invasive plants and preventing the spread of existing populations within the City's Open Space.

Beyond the required management activities, the Open Space Manager will pursue more extensive removal of invasive or non-native plants through volunteer efforts or grant funding as time allows.

Integrated Pest Management Methodology Within City Open Space

Integrated Pest Management (IPM) is a methodology that was developed to guide management of plant pests. This methodology can also be used to develop a framework for management of invasive plant species. The IPM involves a four-step approach, as follows:

1. Set Action Thresholds

Before taking action, thresholds must be identified. These thresholds define the point at which action is necessary, based on the invasiveness of a species, environmental conditions, and the potential for spread. The presence of a single invasive plant may not be sufficient to trigger action. Prioritization of actions has been addressed in GOSMP section 7

2. Monitor and Identify Invasive Species

Monitoring is necessary to determine if existing non-native plant populations are spreading, and to identify new populations. Some non-native species may not require control, depending on the environmental conditions. Monitoring will help to ensure that appropriate control

decisions can be made in conjunction with action thresholds. It is a goal of the GOSMP to create a City-wide map of existing invasive plant populations. The map should be updated annually if new populations are identified.

3. Prevention

Preventative measures will be implemented to minimize the chances of new non-native plant populations becoming established in the Open Space. Such measures are detailed throughout the GOSMP, and include:

- Planting only native species in and adjacent to Open Space,
- Using native seed for erosion control,
- Ensuring that equipment used within the Open Space is free of plant material
- Prompt removal of unauthorized non-native plantings

4. Control

Once monitoring, identification, and action thresholds indicate that invasive species control is required, and preventive methods are no longer effective or available, IPM programs then evaluate the proper control method both for effectiveness and risk. Effective, less risky controls, such as weeding or grazing, are chosen first. If monitoring, identification, and action thresholds indicate that less risky controls are not working, and then additional control methods would be employed, such as use of biological controls. If other control methods are unsuccessful, herbicides will be considered as a last resort.

Control Methods will be considered and used in the following order:

1. Hand pulling or use of a weed wrench or chainsaw
2. Mechanical removal involving larger equipment, such as mowers
3. Grazing and/or controlled burning
4. Biological control (natural parasites, predators or pathogens)
5. Solarizing (unproven - may be used on a trial basis to assist with research)
6. Use of herbicides

In situations where herbicide is the preferred control method, the herbicides and application methods for the different target species are identified in Attachment C.

Hand/Mechanical Removal

Hand removal or use of small hand powered or handheld equipment (such as a Weed Wrench or a chainsaw) should always be the preferred method of removing invasive plant species from the City's Open Space, if practical. If hand removal methods are tried and found to be ineffective, or the problem is too widespread for hand removal to be practical, then mechanical methods (use of larger equipment with motors such as mowers) or biological controls as described below can be implemented.

Biological Controls

Biological controls are natural parasites, predators or pathogens that are released to combat non-native species. For example, there are several natural enemies of yellow star thistle that have been introduced from Europe to act as biological controls against this invasive species. The insects begin life within the seed head of the flower and develop there, feeding on the seeds. The County Agricultural Commissioner would be the point of contact for any use of these biological controls within the City's Open Space. They currently do not have a program for providing the hairy weevil for biological control; however, they must be contacted if biological controls obtained from other sources are proposed for use.

Biological controls should be used with caution and only after contact with the Agricultural Commissioner's Office. If biological control methods are tried and found to be ineffective or if biological control methods are not available for the target species, then herbicides can be used, but only as outlined below.

Use of Herbicides for Non-Native/Exotic Pest Plant Management

If hand or mechanical removal is found to be ineffective, herbicides can be used for the management of invasive plant species. Herbicides can be potentially harmful however invasive species can also be extremely detrimental to native habitats. The use of chemicals should be considered carefully and the most recent research regarding the appropriate herbicide for the target plant should be consulted. This approval does not obviate the need for the City to obtain any other applicable approvals for the use of these chemicals.

The following conservation measures should be implemented as part of this plan.

Mixing Site BMP's

1. As a precaution against spillage, sprayer tanks will never be left unattended during filling. Mixing, loading, and rinsing will not take place within preserves, riparian or open space areas.
2. All chemical containers will be triple rinsed.
3. All pesticide sprayers will be properly cleaned.

4. Empty, triple rinsed pesticide containers will be recycled at local herbicide container collections. These containers will not be stockpiled from year to year.
5. All unused herbicides that are no longer needed will be properly disposed of at local “safe send” collections.
6. Herbicides will be stored in a secure, properly ventilated location where product usefulness can be maintained, and any spillage will be easily contained.
7. All herbicide spills will be attended to immediately.

Improved Pesticide Application BMP's

1. The City will utilize herbicides with low mobility and persistence wherever the use of these alternatives will meet treatment objectives.
2. Herbicide formulations that reduce drift will be utilized wherever possible.
3. Spray equipment will be adjusted to produce the optimum droplet size for coverage of the target organism while reducing drift.
4. Herbicide spray applications will be made at the optimal height to cover target plants, and reduce drift potential.
5. Herbicide applications will never be made when weather conditions may facilitate drift or runoff (high winds, precipitation, or inversions)
6. Equipment will be calibrated regularly to ensure that the proper amounts of herbicides are applied.
7. Adjuvant (MSO) will be used when recommended to allow for better contact with target organisms, and lower rates of herbicides to be applied.

Best Management Practices and Personal Protective Equipment

All chemical applications will be planned and conducted with the coordination and under the supervision of a licensed applicator certified in the appropriate State category that covers the application. Boom spraying will only be conducted when wind speeds average 7 miles per hour (mph) or less, and preferably in the 3 to 5 mph range, with no gusts greater than 10 mph. Antidrift nozzles will be utilized. Inversion conditions, typical in calm and very low wind conditions, will be avoided since these conditions facilitate large-scale herbicide drift off site. Only enclosed cab equipment with air conditioning will be used to boom spray, offering the maximum protection from contamination to the operator/applicator. Due to frequent windy

conditions during afternoon periods and early spring in general, boom spraying will typically be conducted in the early morning in late spring or summer, based on observations and the weather forecast. Spray applications will not be conducted on days when there is a 30% or higher forecast for rain within 6 hours, except for products that are rapidly rainfast (e.g., glyphosate in 1 hour).

Applications of herbicides prone to leaching will also not be made within 24-48 hours of likely (greater than 50% chance of) moderate to heavy rainfall. Certain herbicides are less likely to leach and more effective following a light rainfall that moistens the soil, and these conditions are usually indicated as optimal on the label. Complex herbicide applications will take these factors into consideration, and when feasible, will take advantage of these factors.

A hand held wind meter will be used to determine wind speed at the application site, and wind direction will also be evaluated relative to any sensitive sites. If the wind temporarily increases during boom spraying, lowering the nozzle pressure, thereby reducing droplet size, can reduce drift. However, this practice will reduce the application rate for the area affected, and would have to be combined with shifting to a lower gear (reduced speed) to approximate the same standardized application rate. When boom spraying, it is desirable to maintain the same combination of gear and rpm's used in calibrating the boom sprayer, so any exceptions to this standard practice will be minimized. Also, maintenance personnel will routinely limit herbicide drift by using anti-drift nozzles. A nontoxic anti-drift agent will also be used when allowed by the label, especially adjacent to sensitive resources. Equipment will be calibrated as necessary to ensure that herbicide application rates are accurate.

Personal Protective Equipment: Applicators will wear personal protective equipment (PPE) in accordance with the specific labeling requirements for each product, and the City as needed, will supply all PPE. The required PPE, as specified by the label, will be worn at all times during handling, mixing and application. Fresh clean clothing, such as coveralls, laundered after each use, will be put on daily before handling pesticides used in application and removed before engaging in other duties unrelated to the application. Mixers and applicators will wear a pair of footwear specially designated for herbicide use, and will not wear the designated footwear for other operations to minimize contamination.

As exposure to concentrated product is usually greatest at mixing, extra care will be taken during the mixing period. Persons involved in mixing will be best protected if they wear extra-long gloves, an apron, and designated footwear and face shield throughout the mixing process, in addition to the protective clothing required by the label. Coveralls and other clothing used in an application will be laundered separately from other laundry items, or disposable Tyvek clothing may be used. Transportation, storage, handling, mixing and disposal of pesticide containers will be consistent with label requirements, EPA and OSHA requirements.

Surfactants and anti-drift agents: Surfactants provide benefits by increasing plant uptake of the applied herbicide and will normally be used if specified on the label. To the maximum extent possible, consistent with label specifications, the City will select surfactants and anti-drift agents that are themselves low in toxicity by comparing information available from the product MSDS's and by consulting contaminant specialists when additional information is needed.

Dyes: A non-toxic dye may be used to assist applicators in visually determining target acquisition, potential drift or over-spray, the amount of treatment applied, and to aid in discovering equipment leaks. If a leak is discovered, the application will be stopped until repairs can be made. Any dyes or foam markers used must also be non-toxic.

Spills: If a spill occurs, the top priority will be the decontamination of any personnel involved. Any gloves, clothing or other PPE involved in the contamination will be removed as soon as practical and cleaned or discarded appropriately, and the applicator will be provided with the time and opportunity to wash up and decontaminate as thoroughly as needed. A continuous emergency eye wash station will be available near the mixing station. Whenever possible, mixing stations will be located near a shower stall or other means of thoroughly washing off and decontaminating the entire body. A "spill kit" with absorbent material will be kept on hand wherever pesticides are stored, mixed, or when transported, and the storage and mixing areas will provide containment appropriate for the volume of material involved. A tarp will be used to cover any spill site until retrieval of the spilled material, cleanup or capping of the site occurs. If the spill cannot be cleaned up and contained immediately, City Fire Department spill response personnel will be contacted.

Labels and Material Safety Data Sheets: Prior to each treatment season and prior to mixing or applying any product for the first time each season, all applicators will review the label, MSDS, and Pesticide Use Proposal (PUP) for each product, determining the target pest, appropriate mix rate(s), PPE, and other variables listed on the label. A written reference for each tank to be mixed (on a note pad, chalk board, dry erase board, etc.) will be provided in the mixing area to use as a quick reference while mixing is in progress.

Notification: Staff, volunteers, and members of the public who could be in or near the treatment area within the stated reentry time period on the label will be alerted concerning treatment areas, and posting will occur in any site where the individuals might inadvertently become exposed to a pesticide during other activities. Where required by the label, sites will also be posted on all corners and at other locations of likely site entry, such as trailheads.

Pesticide Disposal: Empty product containers will be triple rinsed. Empty containers will be triple rinsed and recycled at local collection sites. Solutions used to clean equipment after

application such as water, will be recaptured and reused or applied to an appropriate pest plant infestation.

Training and Supervision of Pesticide Applicators: At least one staff member will be a trained Certified Applicator, and any staff member applying an herbicide must be operating under his/her direct supervision. Preferably, all staff involved in herbicide applications will be afforded the opportunity to attend appropriate training. New staff unfamiliar with the City procedures for storage, mixing, handling, applying and disposing of herbicides and containers, will receive orientation and training before handling or using any products, and documentation of that training, and related training, will be placed in files for documentation.

Log of Pesticide Use: A log will be maintained to record and document each application, applicator, amount of product(s) used, location, time of day, acreage and, for boom spraying treatments, wind speed. These records will assist in producing the annual Pesticide Use Report and will meet other documentation requirements.