COUNTY OF SAN MATEO
PARKS DEPARTMENT

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www.SMCoParks.org

San Mateo County Parks' Integrated Pest Management Program

RATIONALE

The San Mateo County Parks Department utilizes science-based integrated pest management (IPM) as a vital part of improving habitat and protecting biodiversity within our parks.

IPM is an ecosystem & science-based strategy that focuses on efficient & long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Chemical methods (i.e. pesticides, herbicides, insecticides) shall be used only if the above techniques are found to be either ineffective or economically infeasible. Chemical use shall be in accordance with established guidelines, and treatments shall be made with the goal of removing only target organisms. Pest control materials shall be selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

Invasive plants have greatly altered many of California's natural plant communities. Because they originated elsewhere, many invasive plants are not susceptible to predation or diseases of this region. They are extremely adaptable and can thrive in a wide range of conditions. They can grow quickly, reproduce early, produce many long-lasting seeds, and tolerate disturbance. They reduce native biodiversity by gradually crowding out or competing with native plants for water and sun, and by reducing or modifying wildlife habitat.

County Parks is in agreement with the position of the California Invasive Plant Council (Cal-IPC) that the use of herbicides is an important tool in our integrated pest management (IPM) toolbox for managing invasive plants. When we use these herbicides for strategic invasive plant management in park settings, the applications are small and of limited duration. These efforts remove invasive plants that would otherwise spread and require more extensive intervention in the future. Ongoing strategic efforts to remove invasive plants show success over time and with repeated treatment and allow for native habitat to be improved and for desired native species to expand. Invasive plants growing adjacent to rare, threatened, or endangered plants are of particular concern for control.
The County Parks Department and our contractors follow a precautionary principle which applies to both invasive plants and the chemicals that are used that are introduced to the environment. It is our judgement, and that of Cal-IPC, that the limited application of herbicides for controlling plants poses a significantly lower risk to the park environment and people than do the invasive plants, which severely impact wildlife habitat, fire and flood patterns, and water use.

IPM POLICY & APPLICATION SPECIFICATIONS

The County of San Mateo Integrated Pest Management (IPM) Policy emphasizes the use of non-herbicide alternatives where feasible and utilizing alternative methods of control such as manual and mechanical control (i.e. hand labor or mowing), biological control (i.e. grazing), and cultural control (i.e. mulching or tarping). However, when these methods are not

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effective or economically feasible, it is understood that herbicide use can be an important tool in the IPM toolbox.

When County Parks conducts invasive plant control projects, we look to the best available research on control techniques and efficacy to address target species. A trusted resource is the book on "Weed Control in Natural Areas in the Western United States" from the University of California, which has plant profiles on high priority and common weed species, and the effectiveness of various treatment techniques. For example: Plant Profile for Cortaderia jubata

In many instances, invasive plant control efforts involve a combination of manual, mechanical, and chemical control approaches. The County has been working on testing the efficacy of steam treatment, mulching, tarping, burying, and grazing as various alternatives for treatment – however, there are scale and cost limitations for implementing these techniques on a large scale as well.

Methods for the herbicide treatments typically involve spot spray application only the plant parts of the target plants, not broadcast spraying. Our specifications for herbicide application utilized the lowest possible volume of the active ingredient for effective control, based on studies of the efficacy of its use. A certified pest control advisor provides us with the specifications for appropriate use of chemicals. Our contractors also adhere to best practices so that application does not occur if the weather or wind conditions are not appropriate. This prevents herbicide drift by wind or water run-off.

Additionally, within a short period of time following the application of the herbicide to the plant, the chemical is fully absorbed and dried, and does not pose a threat through contact. The risks associated with exposure are linked to direct contact with the wet chemical while it is applied. Once dried and absorbed by the plant, the risk associated with contact is removed.

When treatments occur adjacent to trails, the County Parks Department implements trail closures, and/or avoiding herbicide use within a certain buffer of a trail edge. Please respect trail closures when they are posted – once the herbicide application is complete and the herbicide has dried, the risk of exposure is no longer present.

In addition, all Parks staff and Contractors maintain up to date certification and licensure required for herbicide applicators, and attend regular trainings on IPM techniques, to ensure that treatments are done safely and appropriately.

The County also employs Active and Passive management techniques.

Active management — Physical actions intended to manage natural resources or built facilities for a desired outcome. Active management may include physical control (hand, mechanical control), or chemical control of pests or manipulation of their habitats. For example, mowing yellow star-thistle to remove it from an infested rangeland would be considered active management.

Passive management – includes design and cultural practices intended to change human behavior or the physical environmental in a manner that discourages pests from occurring. For example, installing boot cleaning stations, or requiring rangers to inspect boots for yellow star-thistle seeds would be considered passive management.

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PRIORITIZATION, PLANNING & MONITORING

The California Invasive Plant Council maintains an Invasive Plant Inventory that rates the threat of non-native plant species by evaluating their ecological impacts, invasive potential and ecological distribution. Along with local knowledge, County Parks uses this list to evaluate the invasive risk of existing and new non-native plants found within our parks. Techniques that County Parks uses to track invasive plant populations includes photo monitoring, mapping, field reconnaissance, collaboration with neighboring land managers, participation in the County Weed Management Area, and seeking advisement from the County's Department of Agricultural Weights and Measures.

GLYPHOSATE

The best available scientific information at this time says that the herbicide active ingredient glyphosate, when used for invasive plant control in accordance with its label, use of appropriate personal protective equipment and best practices by the personnel applying the chemical, that it is low-risk for wildlife, public, pets, and the applicator.

https://oehha.ca.gov/proposition-65/crnr/notice-proposed-rulemaking-amendment-section-25705-specific-regulatory-levels
http://www.sanmateorcd.org/wp-content/uploads/2018/08/Glyphosate-Summary-Paper.pdf
https://extension.psu.edu/glyphosate-roundup-understanding-risks-to-human-health
https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0361-0077

In 2015, the World Health Organization's International Agency for Research on Cancer (IARC) classified glyphosate as "probably carcinogenic to humans." This category is used when there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

In California, the IARC classification triggered the California Office of Environmental Health & Hazard Assessment (OEHHA) to mandate that products containing glyphosate receive a Prop. 65 warning label as a "known carcinogen." This went into effect in 2017. OEHHA has established a "no significant risk level" (NSRL) for glyphosate of 1.1 mg/day based on lifetime dietary exposure tests with rodents, with the results the scaled up for humans. To correlate this NSRL to a typical exposure scenario for a land manager applying glyphosate we can use the US Forest Service's risk assessments and worksheets on pesticide use. For direct foliar spray of glyphosate they estimate a typical exposure of 0.003 mg/day per kg of body weight when using a concentration of 1 lb active ingredient/acre (a standard rate). Using these figures, a 70-kg (155-lb) applicator would be exposed to 0.2 mg/day – much lower than the 1.1 mg/day threshold exposure level.

There is negligible risk for exposure risk once the wet chemical had dried and is fully absorbed by the plant.