

Yosemite National Park

National Park Service
U.S. Department of the Interior



Invasive Plant Management Plan for Yosemite National Park

Public Comment Response Report
September 2008

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Introduction

This report summarizes public comments submitted on the *Invasive Plant Management Plan for Yosemite National Park Environmental Assessment* (Invasive Plant Management Plan EA). The Invasive Plant Management Plan EA was released for public review on June 13, 2008, and the National Park Service accepted comments through July 13, 2008. Written public comments were received by email and U.S. mail. During the comment period, eight public comment letters were received with a total of 27 unique concerns. This report provides (1) a summary of public concerns expressed in the public comments received and (2) a specific response to each identified concern.

Methodology

Public comments received during the public comment period were reviewed and analyzed using the park's Comment Analysis and Response Database system. Analysis of public comment letters is performed in a series of stages that require review by staff and members of the Management Team during review and processing. Initially, each letter received is reviewed to determine the discrete points the author is expressing. Each sentence or paragraph in the letter is then "coded" in order to associate that comment with a particular resource topic or element of the plan (such as air quality or the plan's relationship to other projects).

When all letters have been coded for individual comments, similar comments are grouped together and a "concern statement" is generated, which is intended to capture the main points of what the comments are addressing. Concern statements are worded in a way that affords the National Park Service the opportunity to respond to a requested action. Concern statements are then screened to determine whether or not further clarification or modification is needed in the document. In the case of the latter, these types of concerns would be brought to park management for deliberation. Finally, the planning team prepares responses presenting the National Park Service's reasoning as to how and why public concerns will be incorporated into the planning process.

As a direct result of public input, all comments are made available for review on the park's website. The posting of public comments is a result of requests made during the scoping process for this planning effort, and will continue for future planning efforts. The Comment Analysis and Response Report generated through the comment analysis and response process is included in this report.

How To Use This Document

This Response to Public Comments summary is divided into sections based upon the topics identified in the Invasive Plant Management Plan EA. Each section includes one or more statements of public concern. These public concerns present common themes identified from comments in a statement that captures what action the public feels the National Park Service should undertake. [Note: Because all public concerns are presented, oftentimes these statements may offer contradictory direction.] Each public concern is, in turn, followed by supporting quotes from public comments referenced to original letters.

Each supporting quote is followed by an attribute that identifies the number assigned to the original letter it came from, whether the comment was made by an individual or an organization, a general description of the organization type, and a reference to the letter number and the comment number within the letter. This information appears as a parenthetical clause in the following format: organization or individual, city and state of letter – relevant planning effort – letter number. For example, "(Individual, Merced, CA - #7-3)" is

a letter from an individual in Merced, California, and assigned the letter number 7; the supporting quote is from the third coded comment in the letter.

Finally, each public concern statement, and its supporting quote, is followed by the National Park Service Response.

Public Comments and Responses

Subject: Planning Process and Policy

Public Concern #2: The Invasive Plant Management Plan is an invalid NEPA document and should more fully define and analyze the long-range adverse impacts and consider more alternatives.

“As written, this document is invalid as a vehicle of NEPA. It does not evaluate full potential of impacts, does not include a full range of alternatives, and is biased towards a preferred alternative that is both misleading and oversimplified.”

(Non-Governmental Organization, Comment #53-1)

Response: The Invasive Plant Management Plan has been developed according to Director’s Order #12, following federal regulations of the National Environmental Policy Act (NEPA). For federal actions that could affect the human environment, agencies are directed under NEPA to conduct scoping, develop a range of reasonable and feasible alternatives, apply the best available scientific knowledge to analyze impacts, apply an interdisciplinary approach, and select an alternative that best meets the purpose and need while protecting resources, in an efficient and open manner. This document fulfills those requirements.

The National Park Service developed the Invasive Plant Management Plan with careful consideration, public input, and interagency and expert consultation to include a full range of alternatives that would be reasonable means to achieve resource protection and meet the goals of the plan. These alternatives range from No Action to treatments that are more aggressive. Additional alternatives that were more aggressive or more passive alternatives were not considered reasonable alternatives. Considering the widespread volunteer and staff involvement in invasive plant removal (without the use of herbicides) described in the No Action alternative, a program with less volunteer and staff involvement was not considered reasonable and would not meet the goals of the plan. On the other hand, treatments that would be more aggressive than those described under Alternative 3, using more or additional herbicides, were not considered reasonable or necessary to meet the goals of the plan. The park considered but dismissed the use of domestic herbivores (such as goats) to manage invasive plant populations, the use of new biological control agents (not previously used in the park), the use of additional types of herbicides, and the use of aircraft for aerial herbicide application.

Public Concern #3: The National Park Service should state the origin of its authority.

“Would you please define for us the concepts that you are deriving your authority from. You state; The Invasive Plant Management Plan tiers off the General Management Plan, and directly supports two goals of the plan:

- *Reclaim priceless natural beauty.*
- *Allow natural processes to prevail.”*

(Non-Governmental Organization, Comment #53-2)

Response: The management of the National Park System and National Park Service programs is guided by the Constitution, public laws, treaties, proclamations, Executive Orders, regulations, and directives of the Secretary of the Interior and the Assistant Secretary for Fish and Wildlife and Parks (NPS 2006). The Invasive Plant Management Plan is tiered to the 1980 General Management Plan (NPS 1980) for Yosemite National Park. Tiering is a staged approach encouraged in the National Environmental Policy Act of 1969 Council on Environmental Quality’s Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1500–1508). Tiering links the broad scope of the 1980 *General Management Plan* with the Invasive Plant Management Plan, which has a much narrower scope and analysis. The guidance of the 1980 *General Management Plan*, as synopsised in its main goals, is valid today and supports the purposes of Yosemite National Park. The Invasive Plant Management Plan helps to implement its goals. The plan also derives its authority from the NPS Management Policies (NPS 2006), and the Federal Noxious Weed Act – Public Law 93-629 (7 U.S.C. 2801 et seq.; 88 Stat. 2148), enacted January 3, 1975.

Public Concern #6: Yosemite National Park is making an effort to meet the objectives for eradication of non-natives.

“I applaud the efforts of exotic plant management at Yosemite National Park, and I support land managers in trying to meet their objectives for eradication of non-natives.”

(Individual, Comment #49-1)

Response: Thank you.

Public Concern #7: The Invasive Plant Management Plan should better describe the decision-making process, the implementation policies, and the opportunity for public involvement.

“One notable exception is that we find no description of the decision-making process which will be used in determining which techniques will be used to address a specific situation. Will there be any opportunity for public involvement? What types of procedures will the staff follow?”

(Conservation Organization, Comment #50-1)

Response: Decision-making processes are included in the document as noted below. To summarize, the National Park Service will follow a consistent decision-making process to determine which techniques work crews will use for invasive plant control. Manual and mechanical control techniques (as described in the Invasive Plant Management Plan Table II-3) would be the preferred methods to treat invasive plants in the park. These methods include hand-pulling, lopping, and brush cutting. Under Alternative 2 (Selected Alternative), the National Park Service may use herbicides on 22 of the 177 non-native plants known from Yosemite and the El Portal Administrative Site. The National Park Service will use herbicides only when they are unable to meet management objectives using manual and mechanical techniques, and individual populations meet location and size criteria.

Project managers used a four-step process to develop the list of 22 species approved for herbicide use under the Selected Alternative.

1. Program managers prioritized invasive plants in the park for treatment.

2. Managers developed species-specific management objectives for the highest-priority species (see Appendix A in the Invasive Plant Management Plan).
3. Managers determined which priority species are responsive to herbicide use, and which species would require herbicide use to meet management objectives (see Table II-4 in the Invasive Plant Management Plan).
4. Managers developed species-specific population size and location criteria that invasive plants must meet before work crews would use herbicides (see Table II-4 in the Invasive Plant Management Plan).

The National Park Service will publicize the specific manual and mechanical control techniques that work crews and volunteers will use at specific locations for individual invasive plant populations in annual work plans, along with proposed locations for herbicide use. The National Park Service will distribute annual work plans via the Yosemite National Park website and other printed media before work takes place.

Public Concern #8: The NPS should post all public comments for the Invasive Plant Management Plan EA on the NPS web site in an accessible and timely manner.

“We request that the NPS post all public comments for the Invasive Plant Management Plan EA on the NPS web site in an accessible and timely manner.”

(Conservation Organization, Comment #50-9)

Response: Comment noted. Public comments are posted on the NPS website at www.nps.gov/yose/parkmgmt/planning.htm. We intend to post National Park Service responses on the National Park Service website along with the decision on the Finding of No Significant Impact.

Subject: Alternatives

Public Concern #1: Because it is so important to remove invasive plants from National Park lands, the National Park Service should employ aggressive action that utilizes the least damaging and environmentally safe methods to prevent further damage and restore infested areas.

“Invasive plants (and animals) are one of the greatest threats to the integrity of our National Park lands. Their presence and invasive nature compete with and displace the native plant and animal communities our national Parks were established to protect. Aggressive action employing the least damaging, environmentally safe control methods available are needed to prevent their spread into un-infested areas and to restore currently infested areas to natural conditions.”

(Conservation Organization, Comment #52-1)

Response: The National Park Service selected Alternative 2 as the Selected Alternative because this alternative employs the least damaging, environmentally safe control methods to meet the goals of the Invasive Plant Management Plan.

Public Concern #4: The Invasive Plant Management Plan should not use herbicides and should instead use natural alternatives.

“You do not reclaim priceless natural beauty and allow natural processes to prevail by applying dangerous toxic substances to them. You are instead putting natural resources in an unnatural state that will produce

both short and long term adverse effects that are either downplayed or ignored in the EA, in violation of NEPA.

Nor are you fulfilling your responsibility to future generations by continuing the shortsighted use of dangerous substances to replace natural methods of control.”
(Non-Governmental Organization, Comment #53-3)

“Rather than employing chemical means to deal with non-native plants in Yosemite, I would continue using manual efforts coupled with much more aggressive restoration activities following the removal of exotics. I would opt for alternative 1 - provided that increased efforts are made in ecological restoration, as well as investigation and implementation of biological controls.”
(Individual, Comment #49-4)

“I am firmly against the use of herbicides in Yosemite National Park.”
(Individual, Comment #49-3)

“There is no such thing as a “safe” pesticide.”
(Conservation Organization, Comment #50-8)

Response: This is a fundamental comment, one which links back to the purpose and need for the Invasive Plant Management Plan. Invasive plant crew leaders and volunteers initiated the Invasive Plant Management Plan. Some of these people have worked to remove invasive plants from Yosemite National Park and the El Portal Administrative Site for almost two decades, without the use of herbicides. While these crews were effective at suppressing some invasive plant populations, they have not been able to eradicate large invasive plant populations, especially in the case of the non-native blackberry (*Rubus discolor*, *R. laciniatus*) and yellow star-thistle (*Centaurea solstitialis*). After extensive staff effort for almost two decades, and over 10,000 volunteer hours of work per year in some years, the work crews called for the judicious use of selected herbicides in situations where manual and mechanical techniques were not effective, desirable (e.g., the use of ground-disturbing control efforts in archeological or culturally significant sites), or safe (e.g., mowing star-thistle on steep slopes).

The planning team evaluated six herbicides (see Appendix K – of the Invasive Plant Management Plan) and selected two with the least potential risk to human health, safety, and the environment. The proposal to use these herbicides was not a trivial one, and came with careful evaluation and consideration. The National Park Service determined that the use of herbicides would sometimes be necessary to protect native plant communities and wildlife habitat from a very real threat, and provide for sustainable ecosystems as directed by the NPS Organic Act and the 1980 *General Management Plan* for Yosemite. These vulnerable communities include meadows threatened by non-native blackberry and foothill woodlands threatened by yellow star-thistle. The National Park Service concludes that with the implementation of strict Herbicide Use and Storage Protocols, Special Protection Zones, and mitigation measures, the Selected Alternative (Alternative 2) will allow for the selective use of herbicides while minimizing the risks to visitors and natural resources in the park and best fulfills its responsibility as a trustee for the environment.

Public Concern #9: The NPS should address the importance of ecological restoration and reseeding disturbed areas with native plants in all the alternatives.

“However, all the alternatives proposed do not address the importance of ecological restoration and reseeding disturbed areas with native plants.”
(Individual, Comment #49-2)

Response: The National Park Service concurs that ecological restoration is an important part of an integrated invasive plant management program. Goal #5, as stated in the Purpose and Need for the Invasive Plant Management Plan, is to “Restore ecosystems and key ecological processes that have been impacted by invasive species.” The management objective under this goal is to “Integrate ecological restoration practices in invasive plant control treatments to guard against re-infestations.” Ecological restoration is an Action Common to All Alternatives in Table II-33 of the Invasive Plant Management Plan.

Public Concern #10: The EA should include a non-herbicide alternative.

“You have failed to include two important alternatives, a non herbicide alternative that enlists the necessary support to effectively combat the problem of invasives in Yosemite NP, and a true no action alternative. You have not given us an alternative that defines how manual and mechanical techniques might possibly work. How many personnel, how much money, etc.”

(Non-Governmental Organization, Comment #53-4)

Response: The National Park Service is currently using all non-herbicide means at its disposal to combat invasive plants; thus, the No Action alternative is a non-herbicide alternative. This alternative describes the current program that has been in place over the last decade. Prior to this, the program occasionally used herbicides approved through the integrated pest management system. This occasional use of herbicides was discontinued until a comprehensive plan could be developed. National Park Service staffing has been well-funded in the past two years from Flexible Base and Fee Demonstration funding sources. This funding supported two National Park Service field crews and coordination of over 10,000 volunteer hours per year. It is unlikely that funding levels can be sustained at higher or even equivalent levels in the future.

Public Concern #11: The EA should reconcile inconsistencies in referring to El Portal as part of the Park, and if herbicides have been used in El Portal and is considered part of the “no-action” alternatives.

“Page III-26 of the EA refers to El Portal as being a “park location.”

Page III-24, in describing yellow starthistle infestation, speaks as though El Portal is considered to be part of the park.

The Plan addresses its impact on the Merced Wild and Scenic River corridor, and refers to El Portal as being part of that corridor.

The Abstract (page not numbered) states that under the No Action Alternative, “Work crews would not use herbicides for invasive plant control. However, the statement in the Abstract (the same statement also appears in other places) cannot be reconciled with the reality that herbicides have been used in the El Portal area. “No Action” usually means that management practices used in the past will continue. This inconsistency is serious. It could lead people to advocate the No Action alternative with the understanding that it would mean no herbicide use. But some manager will come along and say that No Action means continuing past practices, and that mean using herbicides. Is El Portal considered to be part of the park for the purposes of this Plan, or not? If the answer is that it is not, then we would say that it should be.”
(Conservation Organization, Comment #50-4)

“You do not have a true “No Action Alternative”. Your no action alternative is really an action alternative that continues current strategies and methodologies. A true no action alternative leaves things as they are. Please include this as a baseline alternative.” *(Non-Governmental Organization, Comment #53-6)*

Response: The El Portal Administrative Site is not located within the boundaries of Yosemite National Park, though it was placed in the jurisdiction of the National Park Service in 1958 as an administrative site for the park. The actions proposed in the Invasive Plant Management Plan include both Yosemite National Park and the El Portal Administrative Site. The No Action alternative in the Invasive Plant Management Plan EA represents a baseline for comparison with other alternatives. It describes the direction of the existing invasive plant management program in Yosemite National Park and the El Portal Administrative Site. While the Mariposa County school district and Mariposa County have used herbicides in El Portal in the past, the current National Park Service invasive plant program does not use herbicides for invasive plant control on National Park Service-managed lands in El Portal or Yosemite National Park.

Public Concern #12: The EA should clarify if biological controls will continue to be used under the No Action Alternative.

“Since biologic controls have been used in the past, would their use continue under the No Action alternative?”

(Conservation Organization, Comment #50-6)

Response: Under the No Action Alternative, the four biological control agents previously released in the park could be rereleased, pending permitting, compliance, and adherence to new mitigation measures added to the plan (see the Errata Sheet for the Finding of No Significant Impact for the Invasive Plant Management Plan and Comment #15 in this document). Currently, there are no invasive plant species in the park that require the release of a biological control agent to meet management goals. If this changes, the only biocontrol agents covered under this environmental assessment that will be released in Yosemite National Park are the four species that have been released in the past to control yellow star-thistle (*Centaurea solstitialis*) and St. John’s wort (*Hypericum perforatum*).

Public Concern #13: The Park should implement Alternative 2.

“Combining mechanical removal techniques with judicious application of appropriate herbicides proposed in Alternative 2 will be the most effective method of controlling the many noxious plant species invading and destroying the natural ecosystems in Yosemite National Park. The sooner we get started the better.”
(Conservation Organization, Comment #52-2)

“I would support Alternative II as presented in the Environmental Assessment.”
(Individual, Comment #48-3)

“Other techniques for invasive plant control result in greater environmental impacts and risks than the combined mechanical removal and judicious application of appropriate herbicides proposed in Alternative 2.

Fire control methods result in smoke and air pollutions, undesirable impacts on non target species, problematic use in steep terrain, and failure to kill subterranean root tissues of perennial invaders. Biological control methods are even more risky. They sound good and in some cases they are, but when unanticipated impacts occur to non-target native species they may not be reversible. Then chemical control methods fail or yield undesirable results they can be terminated.”

(Conservation Organization, Comment #52-6)

“In general we are in agreement with Alternative 2, the Preferred Alternative.”
(City Agency, Comment #54-1)

Response: After full consideration of Section 101 of the National Environmental Policy Act, Alternative 2 was determined to be the environmentally preferable alternative and the National Park Service's Preferred Alternative. Upon the signing of the Finding of No Significant Impact, the National Park Service will implement Alternative 2.

Public Concern #14: The Park should eradicate exotic plant populations in both natural and developed areas.

"I believe that a prompt and aggressive effort should be made to eradicate or control invasive plants in both natural and developed areas of the park, roughly as outlined in the proposed Alternative 3"
(Individual, Comment #47-1)

Response: Though Alternative 3 was not selected, work crews will continue to treat invasive plants in developed areas, either by hand or with herbicides (if listed for herbicide use under the Selected Alternative, Alternative 2). While plants with the highest threat to natural communities will be the top priority, work crews will also continue early detection and eradication efforts in developed areas, as they are prime vectors for the spread of invasive plants.

Subject: General Park Resources

Public Concern #15: The Park has not done enough research on biologic controls.

"We note that it is proposed to use the same biologic controls which have been used in the past, but we find no analysis of the results of that past use.

Were the control agents effective? Was their effect limited to the target species? Are the introduced species still present, or did they disappear? If they are still present, what impact are they having on natural values or visitor experience?"

(Conservation Organization, Comment #50-5)

"Aren't we trying to avoid introducing new exotic species (including biological control agents) into Yosemite's complex ecosystem?"

(Conservation Organization, Comment #52-7)

Response: The most recent biological control agents were released in Yosemite in the mid-1990s under the authority of the Federal Plant Pest Act of 1957 or the Federal Noxious Weed Act of 1974, with the cooperation of the National Park Service Integrated Pest Management Program and the U.S. Department of Agriculture. Substantive testing takes place before biological control agents are approved for release, though little information is available on the effectiveness of past releases of biological control agents specifically in Yosemite National Park or the El Portal Administrative Site.

Under Alternative 2 (Selected Alternative), the only biocontrol agents that would be released in Yosemite are the four species previously released in the park, pending permitting and compliance. Currently, no invasive species in the park require the release of a biological control agent to meet management goals.

To clarify the mitigation and permitting that would take place prior to biological control release, the following mitigation was added to the Invasive Plant Management Plan FONSI:

- Only biological control agents approved by the U.S. Department of Agriculture Animal and Plant Health Inspection service will be used.

- When considering the use of a biological control agent, the program manager will confirm its use is necessary and that all other treatment options are either not acceptable or not feasible.
- Before a biological control agent is released, the resource specialist will receive approval from the National Integrated Pest Management Coordinator to release the agent.
- The transport, handling, and release of biological control agents will be in accordance with all permit conditions. The park will report annual releases of biological control agents to the Regional Integrated Pest Management Coordinator.
- The number of biological control agents released will account for the size and density of the treatment area and the number of agents required to maintain a viable biological control agent population.
- Releases will be synchronized with the time period when the host is present. Biological control agents will be released at times of the day when they will not disperse from the treatment area. Surveys for biological control agents will be completed several times during the season to monitor biological control agents.

Subject: Water Resources

Agency Comment – Concern #16: The EA should state that water quality in Tuolumne River is important to the health of residents of the San Francisco Bay area.

“In the Affected Environment Section of the EA, on page 111-10 in the Section regarding Hydrology and Water Quality we suggest that in the second paragraph that in addition to: “water quality being important to the health of habitats throughout the park” that you add a statement about the water quality in Tuolumne River above Hetch Hetchy Reservoir is important to the health of 2.4 million residents in the San Francisco Bay area.”

(City Agency, Comment #54-2)

Response: In response to this concern, a statement has been added to the Invasive Plant Management Plan stating that water quality in the Tuolumne River above Hetch Hetchy Reservoir is important to the health of 2.4 million residents in the San Francisco Bay area who rely on water supplied from the Hetch Hetchy Reservoir (see the Errata Sheet of the Invasive Plant Management Plan FONSI).

Public Concern #17: The EA should state that the Park will not apply herbicide within ten feet of standing or flowing water.

“Since the Tuolumne River above Hetch Hetchy Reservoir is an important unfiltered drinking water source we are very interested in assuring that no contaminants enter the water in the source watershed. Therefore, we do have a concern regarding the proposal to use herbicides in the Tuolumne River watershed above Hetch Hetchy Reservoir. In Appendix L, Mitigation Measures Common to All Alternatives, the third mitigation measure under Natural Resources states: “Work crews would not apply herbicides in standing water or within six feet of standing water.” We propose that this measure be rewritten to state; Work crews would not apply herbicides in standing or running water or within ten feet of standing or running water. The Stanislaus National Forest utilizes this ten foot buffer around standing or running water in all of their herbicide applications, even in non-drinking water watersheds.”

(City Agency, Comment #54-3)

Response: In response to this concern, the buffer area around standing water for herbicide use has been increased to ten feet (see the Errata Sheet of the Invasive Plant Management Plan FONSI).

Subject: Vegetation (not rare, threatened or endangered)

Public Concern #5: There is no safe pesticide.

“There is no such thing as a “safe” pesticide.”

(Conservation Organization, Comment #50-8)

Response: Herbicides are a type of pesticide designed to eliminate selected plants, not animal pests. The two herbicides used in the Invasive Plant Management Plan are registered as herbicides that do not pose an unreasonable risk to human health or the environment by the U.S. Environmental Protection Agency. The National Park Service concurs with this evaluation of pesticide risk when herbicides are properly applied according to label directions. Herbicide Use and Storage Protocols, mitigation measures, and Special Protection Zones prescribed in the Invasive Plant Management Plan will further reduce the risk of herbicide exposure.

Public Concern #18: Herbicide use as proposed in the EA is an effective way to control invasive non-native plants.

“A formulation of the herbicide glyphosate containing the surfactant adjuvant R11 (approved for aquatic use in California) directly applied to target species will maximize eradication efficiency with the minimal environmental impacts projected in the EA.”

(Conservation Organization, Comment #52-3)

“Spot application of herbicides such as glyphosate or aminopyralid is an essential part of any effective program to control perennial weeds.”

(Individual, Comment #47-2)

Response: After consideration of the use of six herbicides (See Appendix K in the Invasive Plant Management Plan EA), the National Park Service agrees that glyphosate and aminopyralid herbicides will maximize efficiency with minimal environmental impacts.

Public Concern #19: Exotic plants can be removed without the use of herbicide.

*“My experience has been that foxglove, *Digitalis purpurea*, can be removed from small areas without the use of herbicide.”*

(Individual, Comment #48-1)

Response: The National Park Service agrees that work crews could remove most invasive plants that threaten native habitats in Yosemite, including foxglove, without the use of herbicides. Out of the 177 non-native plants known in Yosemite (88 with a high priority for removal), the Selected Alternative would approve herbicide use on a total of 22 invasive plant species, not including foxglove.

Public Concern #20: Additional invasive species may enter the park.

*“If you do not have reed canary grass, *Phalaris arundinacea*, it would seem that a future infestation would be possible.”*

(Individual, Comment #48-2)

Response: Thank you. We will add reed canary grass (*Phalaris arundinacea*) to our Watch List.

Public Concern #21: The NPS does not clearly show that it commits to using herbicides only when necessary.

“The policy states that pesticides will be used only when it has been determined, through a stipulated process, that such use is “necessary”. We have looked for such a commitment in the EA, but have not found it.”

(Conservation Organization, Comment #50-7)

Response: Managers in Yosemite will only use herbicides when necessary. Whether a given instance is or is not necessary is determined by a four-step process to determine when it is necessary to use herbicides (see Response to Public Concern #7, above). At the heart of this process (described on page II-13 of the Invasive Plant Management Plan EA) is the development of objectives for each high priority invasive plant that would ensure protection of natural habitats in the park. If managers could not meet these objectives (listed in Appendix A of the Invasive Plant Management Plan EA) using manual and mechanical techniques, herbicide use might be warranted. Next, the specific invasive plant must be responsive to herbicides. Individual plant populations must also meet size and location requirements. For example, work crews would not use herbicides to control a small population of yellow star-thistle (smaller than 10 square meters [32.8 square feet]) when the plants could be hand-pulled with minimal effort. Lastly, individual populations must meet Special Protection Zone requirements for the protection of wetlands, Wilderness, cultural resources, special-status plants and animals, Wild and Scenic River corridors, and school and playing field grounds.

Public Concern #22: The National Park Service should enlist the help of volunteers.

“Volunteer effort should be an important part of the weed control program.”

(Individual, Comment #47-4)

Response: Absolutely. The No Action alternative in the Invasive Plant Management Plan EA described how volunteers provided over 10,000 hours of service in 2007 removing invasive plants in Yosemite. Volunteers have been, and will continue to be, the backbone of the invasive plant management program. The first sentence in the overview for Alternative 2 (the Selected Alternative) states that “an extensive program staffed by park employees and volunteers would employ an integrated pest management approach to detect, control, and prevent [] invasive plants from spreading into uninfested areas.”

Public Concern #23: The National Park Service should also remove non-invasive exotics.

“Non-invasive exotics, such as the apple trees in Curry Village, should also be removed eventually (primarily because of their effect on bears!), but this is not an urgent concern.”

(Individual, Comment #47-3)

Response: The National Park Service concurs that protection of bears in the park is a critical issue, though removal of non-invasive exotics is outside the scope of this plan.

Public Concern #24: The National Park service appears not to have reviewed recent literature on the surfactant R-11, and appears to be unaware of the toxicity of R-11 and its degradates.

“As with the analysis of risk from endocrine mediated effects by R-11, non-endocrine effects, both acute and chronic, are seriously underestimated. Once again, the only real remedy is to start from scratch and

use all data that exists, instead of a handful of poorly understood documents.”

(Non-Governmental Organization, Comment #53-13)

“The NPS should be sure the breakdown products of the proposed herbicide formulations cited in appendix F, G, and H of the EA are safe, well understood and not harmful to non target species, and that applicators are fully trained in the proper use and knowledge of the specific formulation selected.”

(Conservation Organization, Comment #52-4)

“Though not listed as carcinogens, NPE and metabolites have shown the potential to cause mutations and deformities (Atienzar 2002, Zhang 2003, Zumbado 2002) and are suspected of producing cancer effects (Yu 2003), possibly through endocrine mediated pathways. Garry et al 1999 found X-77, an NPE based surfactant, to be genotoxic.”

(Non-Governmental Organization, Comment #53-11)

The analysis incorporated into the risk assessment for acute and chronic non-endocrine toxicity is unrealistic, do not reflect current scientific understanding of expected effects and misrepresent potential risk from R-11.”

The NPS appears unaware of the dangers of using R11, whose primary component and its degradates are some of the most dangerous chemicals ever introduced into our environment.”

(Non-Governmental Organization, Comment #53-8)

These statements [regarding impacts assessments] are all inaccurate and misleading, put forth to present the preferred alternative as a safe vehicle for management goals. It is not. You are not applying low toxicity herbicides. NPE's (R11) alone are extremely toxic, both acutely and chronically, and are known endocrine disruptors that are considered by many scientists as the primary substance causing the feminization of fish throughout the world.”

(Non-Governmental Organization, Comment #53-7)

“The use of a relatively new semi-selective, broad-spectrum herbicide, Aminopyralid, approved for use in California in 2006 that would target various invasive thistle species should proceed with considerable caution as much of the scientific data supporting the safety of glyphosate and R11 formulations in environmentally sensitive eco-systems are not yet available. As stated in appendix H of the EA, “mobility and degradation in field conditions are a concern,” for this relatively new herbicide. Perhaps use of Aminopyralid might be delayed until more information on the environmental impacts of this relatively new herbicide becomes know. The Glyphosate/R11 formulation could be used on these thistle invaders until more information on this compound becomes available.”

(Conservation Organization, Comment #52-5)

Response: The U.S. Environmental Protection Agency (EPA) has registered R-11, an adjuvant used to increase absorption of herbicides, for aquatic use. While R-11 is suspected of being toxic to aquatic life (Stark et al 2003) the U.S. Department of Agriculture (USFS 2003) concluded that concentrations associated with normal operations are below any levels of concern.

The National Park Service acknowledges there is a potential for toxic effects on aquatic life resulting from the use of the adjuvant, R-11. Though the U.S. EPA has approved use of the adjuvant in aquatic areas, the National Park Service will not use R-11 in areas with standing or flowing water including ponds, river oxbows, or rivers or creeks. R-11 will only be used on invasive plants in wetlands that have a dry phase, and only during the dry phase of the year. Herbicides would not be used on plants growing in water, and

there would be a 10-foot no-herbicide buffer zone around bodies of water. No herbicides would be used within the bed and banks of Wild and Scenic rivers.

In Yosemite Valley, about 15 acres of non-native blackberry are located in designated wetlands with a dry phase. Some 70 additional acres are found outside designated wetlands. Removal of this invasive plant is one of the top priorities of the Invasive Plant Management Plan due to its threat to the meadows in Yosemite Valley. National Park Service staff have been attempting to eradicate these populations without herbicides for 15 years with the help of volunteers, American Conservation Experience crews, and roving National Park Service Exotic Plant Management Team crews. While these efforts suppressed blackberry growth in some areas, full eradication was rarely attained, and all areas with suppressed growth require intensive annual maintenance. An herbicide is needed to meet Invasive Plant Management Plan goals, and an effective surfactant is required to ensure the success of any herbicide application.

In analyzing the human and ecological safety of R-11, the National Park Service accepts current industry methodology for determining human toxicological exposure limits to endocrine disrupting (ED) compounds as documented in (USFS 2003). These limits include the development of No Observed Adverse Effect Levels (NOAEL) and the setting of human exposure limits at 1 percent or less of the highest NOAEL as determined through animal testing. Should the industry develop new standards for setting exposure limits to ED compounds, the National Park Service would adopt the new standards, even if it means discontinuing the use of R-11. The National Park Service would consider the use of alternative aquatic-approved adjuvants (instead of R-11) if they are shown to have less potential toxicity than R-11. The Invasive Plant Management Plan has been refined to include this information (see Errata Sheet for the Invasive Plant Management Plan FONSI).

Public Concern #25: The NPS should consider that endangered fish and amphibian species may be more sensitive than fish and amphibian species used in toxicological tests.

“Another issue that needs to be considered when attempting to analyze risk from any substance through the methodology used in the EA is the potential for differences in effects generated in surrogate species as opposed to listed species. Listed species have shown greater sensitivity than surrogate species in a number of studies.”

“Standard environmental assessment procedures are designed to protect terrestrial and aquatic species. However, it is not known if endangered species are adequately protected by these procedures. At present, toxicological data obtained from studies with surrogate test fishes are assumed to be applicable to endangered fish species, but this assumption has not been validated. Static acute toxicity tests were used to compare the sensitivity of rainbow trout, fathead minnows, and sheepshead minnows to several federally listed fishes (Apache trout, Lohontan cutthroat trout, greenback cutthroat trout, bonytail chub, Colorado pikeminnow, razorback sucker, Leon Springs pupfish, and desert pupfish). Chemicals tested included carbaryl, copper, 4-nonylphenol, pentachlorophenol, and permethrin. Results indicated that the surrogates and listed species were of similar sensitivity. In two cases, a listed species had a 96-h LC50 (lethal concentration to 50% of the population) that was less than one half of its corresponding surrogate. In all other cases, differences between listed and surrogate species were less than twofold. A safety factor of two would provide a conservative estimate for listed cold-water, warm-water, and euryhaline fish species (USGS 2001).”

(Non-Governmental Organization, Comment #53-10)

“Though the body of data for neurological effects induced by NPE and metabolites is limited, there have been some findings that are very important and need to be included in the current risk assessment. The first of these studies involve surrogate species commonly used for analyzing effects to amphibians listed as sensitive by the FS.”

(Non-Governmental Organization, Comment #53-12)

Response: The National Park Service carefully manages aquatic resources to avoid impacts to sensitive species including endangered fish species. These management practices are based on the best available science including peer reviewed scientific literature and U.S. Environmental Protection Agency (EPA) reports. In the case of federally listed species, the National Park Service must consult with the U.S. Fish and Wildlife Service if the action could affect listed species. Together, the agencies develop mitigation measures to reduce or eliminate the potential threats. There is only one federally listed fish species in Yosemite. The Lahontan cutthroat trout (*Onchorhynchus clarkii henshawi*), a federal Threatened species, was introduced to the park, and now exists in only one high-elevation lake, where invasive plant species are not likely to exist.

New information on the effect of herbicide to both humans and the environment are continually being reviewed by the U.S. EPA, the National Park Service, and other agencies. The U.S. EPA uses this information in reregistration of herbicides and federal agencies thorough risk assessments. If new information emerges that indicate that a greater risk than disclosed in this analysis, this decision will be revisited.

Subject: Wildlife (not rare, threatened or endangered)

Public Concern #26: The Parkwide Invasive Plant Management Plan EA assumes that amphibians are restricted to aquatic habitats and therefore are not susceptible to application of terrestrial formulation herbicides. It also assumes that the elevational distribution of the Yosemite toad is above the herbicide treatment areas.

“While I am generally in favor of the removal of non-native species from Yosemite National Park, and particularly when those species are detrimental to the ecology of native species, I am also concerned about the likely detrimental impacts to amphibian populations when terrestrial formulation herbicides are applied to terrestrial habitats utilized by amphibians.”

(Individual, Comment #51-1)

“The core problem with the Environmental Assessment (EA) in this respect is the incorrect assumption that amphibian species are generally restricted to aquatic habitats, and thus would not be impacted by the application of terrestrial formulation herbicides containing POEA:”

(Individual, Comment #51-2)

“The EA makes the assumption that the Yosemite toad is restricted to aquatic habitats, however, there are numerous reports of Yosemite toads being found 150-750 m away from breeding pools in upslope habitat that is presumed to be used for foraging and/or overwintering.”

(Individual, Comment #51-3)

“The EA also incorrectly states that the Yosemite toad would be largely unaffected by herbicide application given its restriction to high elevation habitats.

However, the known altitudinal distribution limits of the Yosemite toad within this range are given by Karlstrom (1962) as 1,950 m (Aspen Valley, Yosemite National Park (YNP), Tuolumne Co.) to 3,444 m

(Mt. Dana, YNP, Tuolumne Co.), which means that the established historical range of this species includes much of Yosemite National Park.”

(Individual, Comment #51-4)

“Further, while the mountain yellow-legged frog is more closely tied to aquatic habitats than the Yosemite toad, this frog also utilizes terrestrial habitats as adults (Matthews, K.R., and K.L. Pope. 1999) and thus is also susceptible to mortality resulting from application of terrestrial formulations of herbicides.”

(Individual, Comment #51-5)

“Given the clear potential for the chemical herbicides to cause significant adverse impacts to amphibians (see, for example, Relyea 2005a,b,c), the EA is deficient because it fails to address the terrestrial habitat needs of amphibians. The EA should be supplemented to clearly disclose the significant impacts to amphibians, including rare species such as the Yosemite toad, mountain yellow-legged frog, and others, that would occur if chemical herbicides are applied to (or near) the amphibians’ terrestrial habitats.”

(Individual, Comment #51-6)

Response: The protection of amphibians in Yosemite is of great importance to the National Park Service. Mitigation measures to protect amphibians have been refined as follows (see Invasive Plant Management Plan FONSI). The National Park Service will not apply herbicides within 750 meters (2,500 feet) of known breeding habitat for the Yosemite toad. Above 2,100 meters (7,000 feet) in elevation, if invasive plant eradication activities are planned to take place in appropriate habitat for the Yosemite toad in an area that has not been surveyed, surveys will take place prior to control activities. Surveys will take place within two months after Yosemite toad breeding times, when the toad is in its tadpole stage.

Concern #27: The National Park Service should prepare an Environmental Impact Statement for the Invasive Plant Management Plan.

“The expected adverse impacts and the lack of protection measures for terrestrial habitats [of amphibians] suggest that an environmental impact statement should be prepared to more fully analyze, disclose and mitigate the potentially significant impacts.”

(Individual, Comment #51-7)

Response: The National Park Service is required, under the National Environmental Policy Act (NEPA) and Department of the Interior Director’s Order 12, to prepare the appropriate level of environmental review and analysis for all proposed projects and planning actions. NEPA (section 102(2)(C)) requires that an environmental impact statement be prepared in the National Park Service “proposes or approves an action whose impacts on the human environment may be significant.”

The National Park Service has refined the mitigation measures to protect amphibians in the Invasive Plant Management Plan to include the upland habitats that are used by selected amphibians during phases of their life cycle (see Errata Sheet for the Invasive Plant Management Plan FONSI). Based on the analysis of environmental effects documented in the environmental assessment with these refined mitigation, the National Park Service concludes that there is no significant impact to terrestrial habitats associated with amphibians.

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