

Public Comments and Responses to the Draft Environmental Assessment (EA) for the Use of Integrated Pest Management (including herbicides) to Control Leafy Spurge Occurrences along the Klamath and Scott Rivers and in the Quartz Valley Watershed.

This report summarizes public comments on the draft Environmental Assessment (EA) for the Use of Integrated Pest Management (including herbicides) to Control Leafy Spurge Occurrences along the Klamath and Scott Rivers and in the Quartz Valley Watershed. The draft EA was released for public comment on January 23, 2012. Comments were to be received through February 13, 2012; however, comments received after this date were also accepted. Comments were received from 14 individuals, organizations, and agencies.

Public Comment Analysis Process

All comments were reviewed by a content analysis team consisting of two employees of the U.S. Fish and Wildlife Service and one employee of the Siskiyou County Department of Agriculture. All comments were carefully reviewed and each individual comment was catalogued by major topic. Where appropriate, comments were divided into more specific topics so that the public's comments could be more thoroughly addressed.

Format of Response to Comments

The response to comment section groups substantive individual comments by major topic then by specific topic. Under each major topic or specific topic there is a short statement summarizing the issue raised. Then the U.S. Fish and Wildlife Services (Service) response to the public comment is provided. The original comments and the names and addresses of all respondents are stored in the project file.

Response to Comments

1. Draft Environmental Assessment Process

1.1 COMMENT: Multiple commenters requested that an Environmental Impact Statement (EIS) be conducted for this project.

RESPONSE: The analyses in the final EA (Chapter 3: Environmental Consequences) indicate the proposed project would not have a significant effect on soil quality, water quality, plants, fish, wildlife, or human health and safety, therefore an EIS is not warranted.

1.2 COMMENT: Two commenters believed that Environmental Justice was not adequately evaluated.

RESPONSE: Based on the analysis of environmental effects in the final EA (Chapter 3: Environmental Consequences), the proposed project would not result in significant effects on human health or the environment. For these reasons the project would not have a disproportionately high or adverse effect on minority or low-income populations. Therefore, no mitigation measures to ameliorate or offset adverse effects to these populations have been identified.

1.3 COMMENT: Two commenters believed that the scoping process was inadequate and that the draft EA failed to provide enough information about proposed treatment sites.

RESPONSE: A public scoping notice for this project was posted on the Yreka Fish and Wildlife Office website on January 20, 2012, and on the front page of the Siskiyou Daily News on January 23, 2012. Additionally, a public notice was mailed to over 30 recipients including local environmental groups, Resource Conservation Districts, Watershed Councils, and State, Federal, and local government agencies.

The Leafy spurge sites proposed to be treated are on private property requiring land owner cooperation and consent. In order to protect the privacy of landowners, detailed maps indicating where specific treatment sites would be located were not included in the draft EA. The final EA does provide additional information on the size, topographic location, and distribution of the proposed sites in order to analyze potential effects on human health and the environment.

2. Tribal Trust Resources

2.1 **COMMENT:** Multiple commenters were concerned that the project may impact tribal trust resources or culturally significant areas.

RESPONSE: To fulfill the Service's compliance responsibilities under Section 106 of the National Historic Preservation Act, all projects funded by the Service are reviewed by the Service's Regional Cultural Resources Team (RCRT). The RCRT determined that this project is not an undertaking that has the potential to affect cultural resources and that this project is consistent with the programmatic agreement between the Service and the California State Historic Preservation Officer. However, the RCRT also stated that "the existence of cultural resources can never be predicted with certainty." Therefore, in the event that cultural resources are discovered during project implementation, activities at these sites will be suspended and the Service's Regional Archaeologist will be notified.

3. Leafy Spurge Ecology and Management

3.1 **COMMENT:** One commenter wanted us to identify where Leafy spurge is on the Federal list of noxious weeds.

RESPONSE: Most Federal Noxious Weeds fit under the International Quarantine definition of "New to or not widely distributed and under official control." Because Leafy spurge is found in at least 34 states and all of the Canadian Provinces it does not meet this definition and is thus not on the federal noxious weed list. Leafy spurge is a California State A-Rated Noxious Weed (Sections 407 and 5004, Food and Agricultural Code. Reference: Section 5004, Food and Agricultural Code.). Besides California, 17 other states regulate it as a State noxious weed.

3.2 **COMMENT:** One commenter wanted us to identify potential direct or indirect impacts of Leafy spurge to fish.

RESPONSE: Research indicates that the latex from plants in the *Euphorbia* genus are toxic to some fish species (Ross and Steyn 2004) and in some cases comparable to synthetic pesticides (Prasad et al. 2011). However, because the *Euphorbia* species tested in these studies did not include Leafy spurge (*Euphorbia esula*) and the fish species were not native to North America, inferences from these studies to the Klamath Basin are limited. The occurrence of the latex dripping directly onto the water surface under undisturbed conditions is slight. Manual removal of Leafy spurge would have more of a potential for the latex or plants to fall onto the surface water due to the breakage of plants than for the herbicide application where the plants stay in place and are not broken.

3.3 **COMMENT:** One commenter felt we should take action immediately to avoid further spread of the species.

RESPONSE: This comment is consistent with peer reviewed research referenced in the final EA and relates to the purpose and need of the EA.

4. Private Lands-Only Treatment

4.1 **COMMENT:** Multiple commenters questioned how a private lands only treatment can be effective at controlling Leafy spurge and wanted us to identify the current distribution of the species by land ownership. Several commenters also wanted us to identify what is being done on public lands to control this species and why the EA does not address public lands.

RESPONSE: Information regarding Leafy spurge distribution, reason for private lands only treatment, and importance and efficacy of treating private lands can be found in the final EA (see Chapter 1: Purpose and Need for Action and Chapter 2: Alternatives).

The Siskiyou County Department of Agriculture (SCDA) and the Klamath National Forest (KNF) have an established partnership for coordination and consultation in the management of Leafy spurge in Siskiyou County. Both agencies have a common understanding that Leafy spurge is detrimental to our environment and control measures are necessary on lands within their respective jurisdictions. The KNF is exploring avenues for addressing this issue on Federal lands in a comprehensive manner that includes a collaborative IPM strategy to control multiple species. Forest staff has been involved since 2006 in inventory, mapping, database development, data sharing, experimental mechanical treatment, and outreach to recreationists on vectors of spread of Leafy spurge on Federal lands. Partnerships with local watershed councils have been developed, and additional volunteerism of these groups has already contributed to Leafy spurge treatment on KNF lands. In 2012, KNF added a small amount of sites treated with tarping on the Scott River.

5. Draft Environmental Assessment Alternatives (All)

5.1 **COMMENT:** Multiple commenters requested consideration and analysis of additional alternatives, including a manual only treatment alternative, and/or further analysis of proposed alternatives. Several commenters also requested additional information regarding the development of alternatives and questioned the efficacy of treatments. Additionally, other commenters believed the analysis in the draft EA was flawed because the SCDA and the Service had a pre-decisional bias towards the use of herbicides.

RESPONSE: In the final EA, treatment methods that have been previously tested by local agencies or organizations or described and analyzed in peer reviewed journals or other scientific papers were analyzed and considered for inclusion in one or more of the alternatives (see Chapter 2: Alternatives). To respond to the request for a manual only alternative, Alternative 2 was modified in the final EA to include a defoliation control method. As biological controls were dropped from all alternatives, Alternative 2 in the final EA proposes manual treatments only.

A local organization has demonstrated that hand pulling is an effective method for controlling knapweeds. However, knapweeds are taprooted perennials whereas Leafy spurge is a deep-

rooted rhizomatous species. Due to these differences in root systems, the percent of knapweed controlled by hand pulling is not comparable to that anticipated for hand pulling Leafy spurge. Additionally, the knapweed infestation treated by this organization was 15 net acres. The Leafy spurge infestation proposed for treatment is significantly larger, totaling 72 net acres. While digging and pulling may be effective under limited circumstances they do not represent a practical method for controlling large, established occurrences.

While there are several different treatment options to control Leafy spurge, environmental or logistic constraints can limit the ability to implement treatments or inhibit treatment effectiveness. The ability of individual treatments at controlling Leafy spurge was analyzed in the draft EA (pages 6-9) and in the final EA (see Chapter 2: Alternatives). It is because of the inherent limitations of individual treatments identified in these analyses that an alternative including herbicides was developed.

5.2 **COMMENT:** One commenter was concerned that proposed treatments could destabilize banks, increasing erosion and sediment delivery.

RESPONSE: The majority of Leafy spurge sites occur on rocky or sandy soils on low to moderate sloping terrain. These types of soils are typically well drained and have low runoff and erosion potential. If, however, site specific conditions indicate a potential for erosion, appropriate control methods will be selected to minimize this risk.

5.3 **COMMENT:** Several commenters requested that private lands proposed for treatment be surveyed for coho salmon habitat, bank swallow habitat, and rare plants.

RESPONSE: As this is proposed work on private lands, project specific surveys for fish, wildlife, and plants have not been conducted. However, prior to the implementation of treatments, Service biologists will train SCDA field personnel on identification of bank swallow nesting colonies. If a colony is identified adjacent to a treatment site, treatment will be postponed until after July 15th to ensure treatments occur after the swallows have vacated their breeding areas. Additionally, SCDA field crews will avoid walking up or traversing banks that contain burrows. For these reasons, no impacts to bank swallows and their habitat would be expected.

Best management practices for herbicide application including, but not limited to, using low pressure nozzles, wick application adjacent to water, and specific climatic conditions when applications occur are designed to ensure coho salmon habitat would not be degraded. No known California State rare or endangered plant populations occur within the treatment area. Of the 19 known populations within 0.5 miles of the project area, only 3 species occur within 0.25 miles and occur in wetland or wetland-riparian habitat: *Juncus dudleyi*, *Smilax jamesii*, and *Rorippa columbiae*. Siskiyou mariposa lily and Slender Orcutt grass have no known occurrences and no habitat within the Project Area. By using spot treatment applications and best management practices to minimize drift, impacts to non-target species, including rare and endangered plant species, is expected to be negligible.

5.4 COMMENT: One commenter questioned how the alternatives would meet the purpose and need of the project.

RESPONSE: The purpose of the project is to reduce the size of existing populations and prevent the spread of Leafy spurge. The final EA describes the proposed treatment methods and their effectiveness at controlling Leafy spurge (see Chapter 2: Alternatives). Control methods proposed for Alternative 2 may require a time frame of several years to decades to control Leafy spurge. These methods may control individual occurrences over time, but are likely ineffective at preventing the spread of Leafy spurge due to the length of time required to obtain control. The treatment methods proposed in Alternative 3 are better suited to the wide range of environmental conditions, such as those found in this proposed project and have been shown to have relatively high rates of success.

5.5 COMMENT: One commenter requested further analysis regarding the impacts of longhorn beetles to native species.

RESPONSE: Because suitable over-wintering habitat for beetles does not occur at any Leafy spurge sites proposed to be treated in this project, biological controls were not considered as a treatment option in the final EA. Thus, their environmental impacts are not evaluated in the final EA.

6. Draft Environmental Assessment Alternative 2 (Biological and Manual Control)

6.1 COMMENT: One commenter requested an explanation for the difference in treatment acres between alternatives.

RESPONSE: Acres to be treated in the draft EA were based on anticipated budgets and treatment costs. Manual treatments such as tarping and hand pulling and digging would require more time and labor compared to spot spraying with herbicides. Therefore, it was estimated that Alternative 2 would result in the treatment of 20-24 acres of Leafy spurge and Alternative 3 would allow for the treatment of 72 acres.

7. Draft Environmental Assessment Alternative 3 (Biological, Manual, and Herbicide Control)

7.1 COMMENT: Several commenters requested a description of the chemical composition of R-11 and the proposed herbicide formulation and further analysis on the environmental risk of R-11.

RESPONSE: The chemical composition of R-11 and the proposed herbicide formulation can be found on page 11 of the final EA. Further information about the potential impacts of R-11 to fish, other aquatic species, and mammals was included in the final EA (see Chapter 3: Environmental Consequences).

7.2 COMMENT: Multiple commenters questioned the SCDA's ability to control Leafy spurge in the past and wanted the Service to explain why we think they will be effective with this project. Other commenters also requested that past monitoring efforts be included.

RESPONSE: The history of Leafy spurge in Siskiyou County is summarized in the final EA (see Chapter 1: Purpose and Need for Action). That summary demonstrates that the SCDA has been successful in controlling and dramatically reducing Leafy spurge infested acres when adequate funding is available for treatment and inventory. Because this project would allow for

the treatment of 99 percent of the infested acres on private land it is expected to effectively control individual occurrences of Leafy spurge on private lands as well as control the spread of Leafy spurge from private lands to public lands.

7.3 COMMENT: Several commenters requested that the application and timing of spraying needs to be clarified.

RESPONSE: The herbicide considered for this project is glyphosate because it is an effective contact herbicide and can be used in riparian areas. Herbicides will only be applied as per label directions. The following excerpt is from a North Dakota State University publication entitled “Leafy Spurge. Identification and Chemical Control” (Lym and Messersmith 2006):

Glyphosate is most effective for leafy spurge control when applied either after seed filling in midsummer or after fall regrowth has begun but before a killing frost (Figure 3). Glyphosate alone applied during spring growth stages generally provides poor long-term control.

The optimal time for applying glyphosate is after full flower, during seed fill to fall regrowth. In most cases this creates an estimated 2 month window given weather and climate conditions for that year. Proposed herbicide treatments described in the final EA are designed to coincide with the point in the Leafy spurge life cycle where treatments would be most effective and consistent with the recommendations made by Lym and Messersmith (2006). Because weather and climate conditions can vary annually, adjustments to the application schedule may be necessary.



The photo on the left is Leafy spurge at the stage of full bloom and seed fill and was treated the day the photo was taken. The photo on the right is the same area later in the season demonstrating the effectiveness of correct herbicide application timing. Notice there is no green Leafy spurge and the Curlycup gumweed, a native plant, unable to grow earlier because of the dense Leafy spurge was able to grow healthy and set seed.

7.4 COMMENT: Two commenters were concerned that undesirable plants may invade treated areas, reducing the effectiveness of the project to control Leafy spurge.

RESPONSE: Because herbicide treatment will target Leafy spurge plants through spot treatment by hand and best management practices will minimize drift to non-target species, there is not expected to be a significant reduction of vegetation after treatment. Therefore herbicide treatments are not expected to create much new space for other undesirable plants to invade, though it is a possibility that will be monitored. Also, the optimal treatment timing for glyphosate on Leafy spurge is late summer, August and September, when most other annuals and

many perennials have already completed their life cycle and are not in an active growing stage to absorb the herbicide.

7.5 **COMMENT:** Several commenters had concerns that project best management practices are not adequate to ensure that herbicides will not come into direct contact with water or be transported to water and other vegetation following application.

RESPONSE: Based on the scientific literature and the results of a project specific groundwater loading and erosion model, and as described in Chapter 3 of the final EA, it is unlikely glyphosate or R-11 would be transported to a water source following rain.

The potential for herbicide drift was analyzed in the final EA using the DRIFTSIM model (see Appendix A). Model results suggest that drift from backpack sprayers is expected to be less than one foot. Additionally, a wick application would be used to treat Leafy spurge sites within 10 feet of water. Therefore, herbicides are not expected to come into direct contact with water or affect the aquatic environment.

7.6 **COMMENT:** Several commenters requested that the Service adhere to Environmental Protection Agencies (EPA) stream buffer requirements for glyphosate.

RESPONSE: An inquiry was made to the EPA through the EPA pesticides customer service regarding their pesticide stream buffers widths that are either in place (established) to protect fish or which are in process but not yet in place. In an email dated 3/16/2012 the EPA replied that “buffer zones for glyphosate are not required by the EPA’s 1993 Registration Eligibility Decision, which is still in effect. At the time of the RED, we determined that glyphosate is practically non-toxic to aquatic invertebrates so we required no buffer zones.” The email went on state that “The EPA is currently reevaluating glyphosate through registration review, a program to ensure that as risk assessment methodology evolves and policies change, all pesticide products in the marketplace can be used safely...We will then determine what steps, if any, are necessary to ensure that the registered uses of glyphosate meet current Federal Insecticide, Fungicide and Rodenticide Act and Endangered Species Act standards. We plan to propose a glyphosate registration review decision for public comment in 2014 and issue a final decision in 2015.” Since EPA does not require stream buffers for glyphosate nor is any future decision on stream buffers imminent, the Service has not proposed stream buffers for this project.

7.7 **COMMENT:** Two commenters requested that the we explain what will become of treated plants and the environmental risk of decaying treated plants.

RESPONSE: Treated plants will be left on site. Ungulates rarely graze on Leafy spurge and orally ingested glyphosate is poorly biotransformed in animals and is rapidly excreted unchanged in urine and feces (Williams et al. 2000). For these reasons oral exposure of glyphosate has been shown to have very low acute toxicity to mammals. Therefore, potential impacts to ungulates or other mammals foraging on treated Leafy spurge or other non-target plants is expected to be minimal.

Glyphosate can reach soil by exudation from roots and from decomposition of treated plant residues (Rodrigues et al. 1982; Tesfamariam 2009). However, because it adsorbs strongly to most soils and desorption (the release of a substance from another surface) of absorbed

glyphosate is low (Mamy and Barriuso 2007), glyphosate associated with decaying plants would not be expected to leach into groundwater or be transported to water in runoff or sediment. Treatment sites are characterized by well drained soils and low slopes. Therefore, it is unlikely that decaying plants would be washed into streams except under high water events.

7.8 COMMENT: Sensitive plants and other non-target species will be impacted by herbicide treatment.

RESPONSE: See response 5.3.

7.9 COMMENT: Several commenters requested further analysis of the potential impacts to amphibians, including sensitive or rare species.

RESPONSE: Information regarding the potential impacts to amphibians is included in the final EA in Chapter 3: Environmental Consequences.

7.10 COMMENT: Many commenters requested further analysis of the potential impacts to bank swallows and other avian species.

RESPONSE: Response to comment 5.3 describes measures to be taken by the field crews to ensure bank swallow habitat is not degraded. The potential for avian species including bank swallows to be impacted by herbicide application is addressed in the final EA in Chapter 3: Environmental Consequences.

7.11 COMMENT: One commenter requested that the potential impacts to beaver and subsequently coho be addressed.

RESPONSE: Information regarding the potential impacts to beaver is addressed in the final EA in Chapter 3: Environmental Consequences.

7.12 COMMENT: Several commenters requested further analysis regarding the impacts to aquatic species resulting from drift or overspray of herbicides, accumulation of herbicides in river bottom sediments, and bioaccumulation.

RESPONSE: This information was in the draft EA and is further evaluated in the final EA in Chapter 3: Environmental Consequences.

7.13 COMMENT: Multiple commenters inquired as to how the project would comply with the North Coast Regional Water Quality Control Board (NCRWQCB) Basin Plan or state if an National Pollutant Discharge Elimination System (NPDES) permit is required.

RESPONSE: Analysis in the final EA indicates that detectable amounts herbicides are not expected to enter water directly or indirectly (Chapter 3: Environmental Consequences). Therefore, this project will not result in the bioaccumulation of herbicides in bottom sediments or aquatic life and is consistent with the Clean Water Act standards and the NCRWQCB Basin Plan. The SCDA has also received notification from the state Water Quality Control Board stating that they do not need a NPDES permit for this project because the treatments are terrestrial only.

7.14 COMMENT: Two commenters requested further disclosure and quantification of the potential cumulative effects of the proposed herbicide application.

RESPONSE: Analysis in the final EA indicates it is unlikely detectable amounts of glyphosate or R-11 would be transported to a water following application. Therefore, potential cumulative or synergistic effects resulting from herbicide application are expected to be negligible (see Chapter 3: Environmental Consequences).

8. Economics

8.1 **COMMENT:** Several commenters requested additional consideration and analysis of potential socioeconomic impacts.

RESPONSE: Analyses conducted for the final EA suggest that the amount of glyphosate or R-11 that could potentially contact fish bearing streams is so small it would not be detectable. Thus, impacts to downstream fisheries are expected to be insignificant. Additionally, project best management practices will ensure that herbicides will not drift onto adjacent agriculture crops. Additional information can be found in the final EA in Chapter 3: Environmental Consequences.

8.2 **COMMENT:** Two commenters requested that the cost of treatments relative to their potential benefits be evaluated.

RESPONSE: This information is included in the final EA (see Chapter 2: Alternatives). Given that current funding would allow for the treatment of approximately 99 percent of known Leafy spurge occurrences on private lands and tribal lands within the Quartz Valley, these treatments would effectively control the spread of Leafy spurge originating from these areas.

8.3 **COMMENT:** Two commenters requested that the cost of alternatives be revealed.

RESPONSE: The final EA was amended to include this information; see Chapter 2: Alternatives.

9. Indian Communities

9.1 **COMMENT:** One commenter believed the proposed project violates tribal law.

RESPONSE: Within the Karuk Aboriginal Territory, treatments will only occur on private lands; no treatments are proposed on Tribal or public lands. Private landowners within the Karuk Aboriginal Territory are able to purchase over-the-counter herbicides containing glyphosate and treat Leafy spurge at their discretion without supervision. This project is proposing to treat Leafy spurge on private lands with landowner consent using the same herbicide that can be purchased over the counter and this project allows for the application of the herbicide by trained vegetation management professionals.

9.2 **COMMENT:** Several commenters requested further analysis and disclosure of the potential impacts to Native Americans and other river users, and that all laws applicable to Native Americans be adhered to.

RESPONSE: Human health risks are assessed in the final EA (see Chapter 3: Environmental Consequences), and glyphosate would pose little risk of acute or chronic effects to fishers, gatherers, basket makers, or recreators. Additionally, because the project will occur exclusively on private lands without public access, there is very low potential for public exposure.

10. Human Health Risks

10.1 COMMENT: Multiple commenters believed the human health and safety assessment was inadequate and requested further analysis and disclosure of the potential effects to human health and safety.

RESPONSE: To assess the health risk to the general public, a site specific risk assessment was included in the final EA (see Chapter 3: Environmental Consequences) using a risk analysis methodology widely accepted by the scientific community and regulatory agencies (National Resource Council 2009; SERA 2011; EPA 2012). The risk assessment compares the potential doses of herbicide that the public may be exposed to by possible contact with treated plants or eating contaminated fruit with doses shown to cause no observed effect level in long-term laboratory studies. Results of this risk assessment indicate the project would pose little risk of acute or chronic effects to the general public.

10.2 COMMENT: One commenter requested that the Service adopt the precautionary principle when proposing the use of herbicides.

RESPONSE: Throughout the development of this project the Service has been applying the concepts of the precautionary principle by incorporating project best management practices that protect the public from exposure of activities on private lands, and by analyzing the potential impacts to human health and the environment.

11. Project Logistics and Monitoring

11.1 COMMENT: A few commenters requested disclosure of the proposed measures to prevent or respond to chemical spills.

RESPONSE: The SCDA has an emergency spill plan that will be adhered to in the event of an accidental spill. All personnel applying herbicides are trained to implement this plan and will carry spill-containment and clean-up equipment. Equipment used for transportation, storage, or application of chemicals shall be maintained in a leak proof condition at all times. Herbicides will be mixed at the SCDA yard in Yreka and backpack sprayers will be filled off-site to minimize spills and the potential to contaminate any water source.

11.2 COMMENT: Two commenters requested an explanation of past and proposed monitoring to evaluate impacts of the proposed treatments to the environment.

RESPONSE: When a previously treated Leafy spurge occurrence is revisited, SCDA personnel evaluate impacts to non-target vegetation. If unexpected impacts to non-target vegetation are observed, treatments will be modified or other treatments methods implemented until desired condition for the site is achieved. At the majority of treated sites, the SCDA has observed an increase in native vegetation over time.

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