



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
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In Reply Refer To:  
8-10-08-I-0023

MAR 25 2008

Mr. Gary Brown, PPQ Officer  
USDA, APHIS, PPQ  
Airport Business Center  
6135 N.E. 80th Avenue Suite A-5  
Portland, Oregon 97218-4033

Subject: Concurrence on Effects Determination for Listed Species in Klamath County, Oregon for USDA-Animal Plant Health Inspection Service (APHIS) Proposed Rangeland Grasshopper and Mormon Cricket Suppression Program

Dear Mr. Brown:

The U.S. Fish and Wildlife Service (Service) has reviewed your request for concurrence that the referenced action may affect but is not likely to adversely affect the federally threatened bull trout (*Salvelinus confluentus*), and the federally endangered Lost River sucker (*Deltistes luxatus*), shortnose sucker (*Chasmistes brevirostris*) and Applegate's milk vetch (*Astragalus applegatei*) in Klamath County, Oregon.

The Service received your February 25, 2008 request for concurrence and biological assessment (BA) containing effects determinations for impacts to federally listed animals and plants (USDA 2008) on February 28, 2008. The Service has reviewed your BA and provided comments in accordance with section 7 of the Endangered Species Act (87 stat. 884 as amended; 16 U.S.C. 1531 *et. seq.*) in a letter dated March 18, 2008. **This letter supersedes our earlier letter dated March 18, 2008.**

APHIS has reached a no effect determination for the threatened Northern spotted owl (*Strix occidentalis caurina*), and Canada lynx (*Lynx canadensis*). The Service does not have any information to contradict this determination, therefore these species will not be considered further in our review.

This concurrence is based on information provided in the BA (USDA 2008), the 2008 Site-Specific Environmental Assessment for Klamath County (USDA 2008a) and other sources of information cited herein. A complete decision record of this consultation is on file at the Service's Klamath Falls Fish and Wildlife Office.

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**Service Office Responsibility**

The proposed action is a statewide program for grasshopper and Mormon cricket activities in the following counties of Oregon: Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Lake, Klamath, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler. All of these counties are within the area of responsibility of the Oregon State Fish and Wildlife Office in Portland except Klamath County. Klamath County is within the Klamath Falls Fish and Wildlife Office's area of responsibility.

The Oregon Fish and Wildlife Office assigned their portion of the consultation on this proposed action to the Bend Field Office, located in Bend, Oregon. As a result of this division of responsibility, you will receive two letters from the Service regarding your request.

**Consultation History**

In 1987, the Service completed a National programmatic biological opinion for APHIS's 1987 Rangeland Grasshopper Cooperative Management Program. Amendments to this biological opinion were conducted through 1995 for the purposes of adding newly listed and proposed species. Protective measures described in the biological opinion included buffers to protect threatened and endangered species to protect them from pesticide application. These buffers have been the basis for subsequent consultations.

From 2000 to 2007, APHIS requested consultation for grasshopper and mormon cricket management activities in eastern Oregon and the Service provided letters of concurrence each year.

On February 25, 2008, APHIS sent a letter requesting consultation on the grasshopper control program for 18 counties of eastern Oregon for the 2008 season. The associated site specific environmental assessment for Klamath County was posted on the internet by APHIS on February 29, 2008.

On March 18, 2008, the Service sent you a concurrence letter. On March 24, 2008, you spoke with Trisha Roninger of my staff over the phone and asked for clarification on the Protective Measures for Applegate's milk-vetch with regards to aerial application of pesticides. Clarification is provided to in this letter.

A complete record of consultation history is on file at the Service's Klamath Falls Fish and Wildlife Office.

**Description of the Proposed Action**

Grasshopper and cricket outbreaks can compete with livestock for rangeland forage and cause damage to crops and rangeland ecosystems. APHIS plans to conduct grasshopper and Mormon cricket suppression actions to protect rangeland from infestations when requested. Grasshopper suppression programs are generally conducted: 1) after Plant Protection and Quarantine's surveys show a level of grasshopper density that could economically and environmentally endanger rangeland on public land; 2) after a request by the State or Federal land manager; and 3) if sufficient funding is acquired from Congress.

The density of eight adult grasshoppers/crickets per square yard is used as the minimum population at which a control program is considered. In response to requests for treatment,

APHIS would determine if an infestation of an economically critical level is present in the area of concern and then select the appropriate treatment, taking into account site-specific environmental factors.

Programmatic analysis of the suppression program has been described and evaluated in APHIS's 2002 Rangeland Grasshopper and Mormon Cricket Suppression Program Environmental Impact Statement (EIS) (USDA 2002) developed to support grasshopper/cricket suppression programs that could occur in 17 Western States, including Oregon. The 2002 EIS superseded the 1987 Rangeland Grasshopper Cooperative Management Program EIS (USDA 1987).

Rather than opting for a specific proposed action from the alternatives presented, the 2002 EIS analyzes in detail the environmental impacts associated with each programmatic action alternative related to grasshopper/cricket suppression based on new information and technologies. The alternatives presented in the 2002 EIS were: 1) no action; 2) insecticide applications at conventional rates and complete area coverage; and 3) Reduced Agent Area Treatments (RAATs). For the purposes of this consultation we will only address effects discussed in the 2008 BA (USAD 2008) and the site specific Environmental Assessment (EA) for Klamath County (USDA 2008a). This EA applies to proposed suppression programs that could take place from May 1 to July 31 in Klamath County, Oregon and tiers to the 2002 EIS.

New technologies addressed in the 2002 EIS include diflubenzuron, which is a new insecticide, and RAATs. Diflubenzuron is an insect growth regulator that affects the formation and/or deposition of chitin in an insect's exoskeleton. When an insect larva or nymph is exposed to diflubenzuron, the exoskeleton is weakened and the larva/nymph is unable to successfully molt, which results in death. The RAATs method relies on the effects of an insecticide to suppress grasshoppers/crickets within treated swaths while conserving grasshopper/cricket predators and parasites in swaths not directly treated.

The chemical control methods identified by AHPIS in the 2008 BA include the use of ultra low volume (ULV) sprays of the insecticides carbaryl, diflubenzuron, and malathion, and carbaryl bait applied at conventional rates and RAATs. The conventional rate of application of carbaryl is 0.5 pounds active ingredient [lbs. a.i./acre) and malathion is 0.62 lbs. a.i./acre. Conventional rates for diflubenzuron are 0.016 lbs. a.i./acre. The RAATs system uses approximately half the concentration of each chemical as conventional rate applications, and is applied to 33-50 percent of the total area (USDA 2003, pg 18-22).

These three insecticides are all currently registered for use and labeled by the U.S. Environmental Protection Agency for rangeland grasshopper treatments. All applications of these insecticides within the infested area by APHIS personnel would be conducted in strict adherence to the label directions. These insecticides could be applied aerially or by ground using the following application rates:

- 16 fluid ounces (0.50 lbs. active ingredient) of carbaryl spray per acre;
- 10 pounds (0.50 lbs. active ingredient) of 5 percent carbaryl bait per acre;
- 8 fluid ounces (0.62 lbs. active ingredient) of malathion per acre; or
- 1.0 fluid ounce (0.016 lbs. active ingredient) of diflubenzuron per acre.

Using the RAAT method for treatment, carbaryl, malathion, or diflubenzuron would be considered under the following application rates:

- 8.0 fluid ounces (0.25 lbs. of active ingredient) of carbaryl spray per acre;
- 10.0 pounds (0.20 lbs. of active ingredient.) of 2 percent carbaryl bait per acre;
- 4.0 fluid ounces (0.31 lbs. of active ingredient) of malathion per acre; or
- 0.75 fluid ounce (0.012 lbs. of active ingredient) of diflubenzuron per acre.

The area not directly treated (the untreated swath) under the RAAT method is not standardized. In the past, the area infested with grasshoppers/crickets that remains untreated has ranged from 20 to 67 percent. Rather than suppress grasshopper/cricket populations to the greatest extent possible, the goal of RAAT is to suppress grasshopper/cricket populations to a desired level.

#### Project Design Features, Avoidance, and Mitigation Measures to Reduce Effects

APHIS has proposed several project design features to reduce the potential adverse effects of the action to listed species. These features are largely in the form of buffers around known listed species habitats and are described in the 1987 biological opinion (USDI 1987). Many of these buffers have been carried forward from earlier consultations and were determined by APHIS to result in impacts that were not likely to adversely affect listed species.

The proposed protective measures for species present in Klamath County are shown in Table 1.

<b>Species, Status, and Determination</b>	<b>Protective Measures</b>
Canada Lynx ( <i>Lynx Canadensis</i> ) (T) - No Effect	Treatment will occur in rangeland habitats. Lynx typically occupy non-rangeland habitats. Known ranges and travel corridors in Oregon will not be treated.
Northern spotted owl ( <i>Strix occidentalis caurina</i> ) (T) - No Effect	Treatment will occur in rangeland habitats. Spotted owls typically inhabit old growth forest. Known ranges in Oregon will not be treated.
Lost River sucker ( <i>Deltistes luxatus</i> ) (E) – Not Likely to Adversely Affect (NLAA)	The proposed action includes a protective buffer where no pesticides, in liquid or bait form, will be applied near the edge of the stream or water body containing standing or flowing water occupied by the federally listed species or adjacent to aquatic habitat designated or proposed as critical habitat for the species. A buffer of 0.5 miles for aerial application of pesticides diflubenzuron, carbaryl, and malathion, and a protective buffer of 500 feet for ground application will be applied.
Shortnose sucker ( <i>Chasmistes brevirostris</i> ) (E) - NLAA	
Bull trout ( <i>Salvelinus confluentus</i> ) (T) - NLAA	
Applegate's milk-vetch ( <i>Astragalus applegatei</i> ) (E) - NLAA	Aerial applications of <b>liquid</b> pesticides will not be used within 3 miles of these species occupied habitats. Within the 3 mile buffer, only carbaryl bait will be used. No ground bait application within 50 feet of known locations or critical habitat.

### Monitoring

APHIS developed an Environmental Monitoring Plan for the 2008 grasshopper suppression program and is briefly discussed in the EA (USDA 2008a). Monitoring methods include collecting dye card, water and vegetation samples for assessment of product drift. Emphasis is on determining the fate of suppression products in the environment and determining the effectiveness of avoidance buffers for listed species and the environmental fate of suppression products. Monitoring of degradation of product, movement within soil, transport to or within water bodies, and vector transport from sprayed area to non-target areas should be considered. A copy of the monitoring report will be sent to the Service.

### **Effects to the Species**

The potential environmental effects of application of carbaryl, diflubenzuron, and malathion are discussed in detail in the 2002 EIS (Environmental Consequences of Alternatives, pp. 29–71) (USDA 2003), and in the 2008 Site-Specific Environmental Assessment for Rangeland Grasshopper and Mormon Cricket Suppression Program in Klamath County, Oregon (USDA 2008a).

The buffers described in Table 1 are designed to avoid contamination of listed species habitat. APHIS believes the buffers reduce or eliminate the potential for direct exposure of the listed species and reduce the chance of indirect effects being substantial enough to adversely affect the listed species. The buffers were not derived by specific impact/distance data but are based on some field tests demonstrating the absence of detectable levels of chemical or levels below a threshold of concern, outside the buffers.

APHIS's determination is that the project design features reduce the potential effects of the action to the point that those effects are insignificant or the probability of any adverse effect is discountable and therefore, the project may affect but is not likely to adversely affect the listed species.

### **Conclusion**

The Service reviewed the proposed project described in the BA in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). Based on the Service's review of the biological assessment, we concur with APHIS's determination that grasshopper and cricket suppression actions proposed for 2008 in Klamath County, Oregon, may affect, but are not likely to adversely affect the federally threatened bull trout (*Salvelinus confluentus*), and the federally endangered Lost River sucker (*Deltistes luxatus*), shortnose sucker (*Chasmistes brevirostris*), and Applegate's milk vetch (*Astragalus applegatei*).

This concurrence is based on the aforementioned conservation measures that will be incorporated into the action. We also considered the following factors as described in the proposed action.

1. All applicable Federal, State, Tribal, and local environmental laws and regulations will be followed in conducting suppression activities.
2. APHIS will avoid applying pesticides in areas of known or potential federally listed species habitat to reduce direct and indirect effects consistent with Table 1 of this letter. By restricting insecticide applications, direct and indirect effects to listed species and their habitats will be insignificant and discountable.

3. Pesticides will not be applied in areas known to have a high water table, or where sub surface leaching is likely. Carbaryl bait will not be applied within 500 feet of any flowing water which contains federally listed species at any time. Known migratory habitats would be treated as occupied habitat unless otherwise directed by the Service prior to treatment.
4. Aerial spray applications of malathion, carbaryl, or diflubenzuron will not occur within 0.5 miles of any flowing or standing water which contains federally listed species at any time. Known migratory habitats would be treated as occupied habitat unless otherwise directed by the Service prior to treatment. Aerial application of pesticides will not occur when winds exceed 10 miles per hour. To avoid drift and volatilization, aerial application of pesticides will not be conducted when it is raining or rain is imminent, when foliage is wet, when it is foggy, when temperature exceeds 80 degrees Fahrenheit, when there is air turbulence, or when a temperature inversion exists in the project area. Boundaries and buffers will be clearly marked. Aircraft used in aerial application will be equipped with systems to prevent nozzle dribble when the spray mechanism is disabled and emergency shut off valves to minimize pesticide loss in the event of broken lines, or system malfunctions. For spray applications, all equipment and specifications related to nozzle types, spray pressure, and nozzle orientation will adhere to the 2006 prospectus (USDA 2006).
5. All mixing and loading will be done in approved areas where spills cannot enter any body of water. All pesticide tanks will be leak proof and constructed of corrosion resistant materials. Aircraft used in aerial application will be equipped with APHIS-approved differentially corrected global positioning systems that guide pilots along desired flight paths with an accuracy of plus or minus three feet. Free flying will not be allowed.
6. APHIS will monitor insecticide applications and will document compliance with the assessment's protective measures. Emphasis should be on determining the effectiveness of avoidance buffers for listed species including indirect affects to prey animals and indirect transportation of insecticide products to non-target areas, including water bodies. This information has been provided to the Service in past years and will continue annually.
7. APHIS will notify the Service before any application of pesticide to confirm that all protective measures are to be implemented.

This informal consultation may be superseded by a future National programmatic consultation and covers only those activities carried out in 2008. APHIS should consult with the Service if the proposed action or habitat conditions are changed, a new species is listed or proposed, new information reveals effects of the agency action on listed species that were not addressed in this consultation; or if critical habitat is designated that may be affected by the actions. This concludes informal consultation on the proposed actions outlined in the 2008 APHIS Biological Assessment in accordance with the Act.

We look forward to further coordination, as described in the proposed action, to determine and review the areas to be treated, timing of application, and assurance of application of appropriate protective and avoidance measures.

If you have any questions regarding this consultation for Klamath County, please contact me or Trisha Roninger of my staff at (541) 885-2505.

Sincerely,



for Curt Mullis  
Field Supervisor

cc:

Nancy Gilbert, FWS, Bend, OR

Alan Mauer, FWS, Bend, OR

State Supervisor, Portland Fish & Wildlife Office, Portland, OR

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Tom Collom, ODFW, Klamath Falls, OR

**References**

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- [USDA] US Department of Agriculture Animal and Plant Health Inspection Service. 2006. Site specific environmental assessment rangeland grasshopper and Mormon cricket suppression program, Oregon. March 27, 2006.
- [USDA] US Department of Agriculture Animal and Plant Health Inspection Service. 2008. 2008 Biological assessment for USDA APHIS rangeland grasshopper/Mormon cricket suppression programs in Oregon. February 25, 2008.
- [USDA] US Department of Agriculture Animal and Plant Health Inspection Service. 2008a. Site specific environmental assessment rangeland grasshopper and Mormon cricket suppression program, Klamath County, Oregon. February 29, 2008.
- [USDI] US Department of Interior, Fish and Wildlife Service, 1987. APHIS's 1987 rangeland grasshopper cooperative management program biological opinion.