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Mr. George Bruno
PPQ Officer
USDA, APHIS, PPQ
222 N. Havana St. Rm. 109
Spokane, Washington 99202

Subject: Concurrence on the effects determination for listed species assessed in the "2015 Biological Assessment for USDA APHIS Rangeland Grasshopper and Mormon Cricket Suppression Programs in Oregon"

Dear Mr. Bruno:

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 Endangered Species Act listed threatened or endangered species and their designated critical habitats (species with designated critical habitat are referenced by (CH)) bull trout (CH) (*Salvelinus confluentus*); Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*); Foskett speckled dace (*Rhinichthys osculus spp.*); Hutton tui chub (*Gila bicolor spp.*); Warner sucker (CH) (*Catostomus warnerensis*); Modoc sucker (CH) (*Catostomus microps*); Spalding's campion (*Silene spaldingii*); Howell's spectacular thelypody (*Thelypodium howellii* ssp. *spectabilis*); Applegate's milk vetch (*Astragalus applegatei*); slender Orcutt grass (CH) (*Orcuttia tenuis*); Oregon spotted frog (*Rana pretiosa*); yellow billed cuckoo (*Coccyzus americanus*); Borax Lake chub (CH) (*Gila boraxobius*); Lost River sucker (CH) (*Deltistes luxatus*); Shortnose sucker (CH) (*Chasmistes brevirostris*); Malheur wire-lettuce (CH) (*Stephanomeria malheurensis*); and Green's tuctoria (*Tuctoria greenei*). APHIS also included protective measures for candidate species greater sage-grouse (*Centrocercus urophasianus*) and Columbia spotted frog (*Rana luteiventris*).

Your request, with the attached biological assessment containing effects determinations for impacts to Endangered Species Act listed animals and plants (APHIS 2015), dated February 6, 2015, was received by us on March 19, 2015. The Service has reviewed your biological assessment requesting informal consultation. Our comments are provided in accordance with section 7 of the Endangered Species Act (87 stat. 884 as amended; 16 U.S.C. 1531 *et. seq.*). APHIS has reached a no effect determination for the threatened Northern spotted owl (*Strix occidentalis caurina*); McFarlane's four o'clock (*Mirabilis mcfarlanei*); Gray Wolf (*Canis*

lupus); Canada lynx (*Lynx canadensis*); and the proposed threatened North American wolverine (*Gulo gulo luscus*). The Service does not have any information indicating otherwise; therefore those species will not be considered further in our review.

The proposed action is a statewide program for grasshopper and Mormon cricket (*Anabrus simplex)* suppression activities in the following counties of Oregon: Baker, Crook, Deschutes, Gilliam, Grant, Harney, Jefferson, Lake, Klamath, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler. This consultation is based on the "2015 Biological Assessment for USDA APHIS Rangeland Grasshopper and Mormon Cricket Suppression Programs in Oregon" (APHIS 2015).

Effects to the Species

The buffers are mandatory as part of the proposed action and 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 and distance data but are based on some field tests demonstrating the absence of detectable levels of chemical or levels below a threshold of concern within the buffers.

APHIS's determination is that the project protective measures 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 project described in the biological assessment in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended. Based on the Service's review of the biological assessment we concur with APHIS's determination that grasshopper suppression actions proposed for 2015, in 17 counties of Oregon (described previously) may affect, but are not likely to adversely affect the endangered and threatened species listed above.

Our concurrence with your "not likely to adversely affect" determination for threatened and endangered species is based on the 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. Information displayed in the biological assessment on effects from application of diflubenzuron, carbaryl, and Malathion support the conclusion that adverse effects to listed species are avoided under the proposed action. APHIS will restrict or avoid insecticide applications such that indirect effects to listed species and their habitats will be insignificant and discountable.

3. APHIS will avoid applying pesticides in areas of known or potential threatened and endangered species habitat to reduce direct and indirect effects consistent with Table 1 of

the biological assessment (APHIS 2015). Potential indirect effects described in the assessment include reductions in insect prey for local populations of birds, impacts to aquatic environments, and effects on plant productivity from reductions in non-target pollinator insect populations.

4. 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 threatened and endangered species at any time. Known migratory habitats would be treated as occupied habitat unless otherwise directed by the Service prior to treatment.

5. Aerial spray applications of Malathion, carbaryl, or diflubenzuron will not occur within 0.5 mile of any flowing or standing water which contains threatened and endangered species at any time. Ground application of Malathion, carbaryl, or diflubenzuron will not occur within 500 feet of any flowing or standing water which contains threatened and endangered 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.

6. 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.

7. APHIS will monitor insecticide applications and will document compliance with the protective measures in the biological assessment. Emphasis should be on determining the effectiveness of avoidance buffers for listed species including indirect affects to prey animals and pollinators and indirect transportation of insecticide products to non-target areas, including all water bodies.

8. APHIS will notify the Service before any application of pesticide to determine the location of any listed or proposed threatened or endangered listed species.

This concurrence is based on APHIS implementation of the avoidance and mitigation measures outlined above. To assist in future consultations we request that you provide our office a summary of your environmental monitoring activities conducted each year in which suppression activities are conducted. We would like to receive this summary prior to initiation of your next grasshopper and cricket suppression activity.

This informal consultation does not exempt APHIS from prohibition of take under section 7(o)(2) of the Endangered Species Act for any of the 17 species listed above. This informal consultation may be superseded by a future programmatic consultation and covers only those activities carried out in 2015. 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 or proposed 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 2015 APHIS biological assessment in accordance with the Endangered Species Act.

Proposed Designation of Critical Habitat for the Oregon Spotted Frog

Oregon spotted frog (*Rana pretiosa*)

The Oregon spotted frog is currently listed threatened under the Endangered Species Act. The Service evaluated the status of the Oregon spotted frog and on August 29, 2014, published a final rule in the Federal Register to list the Oregon spotted frog as threatened (Fish and Wildlife Service 2014). The proposed designation of critical habitat has not been finalized.

Oregon spotted frogs are known to occur in Deschutes, Klamath, Lane, Jackson, and Wasco counties, Oregon. Historically, Oregon spotted frog ranged from British Columbia to the Pit River drainage in northeastern California. Based on surveys of historical sites, the Oregon spotted frog is now absent from at least 76 percent of its former range. The majority of the remaining Oregon spotted frog populations are small and isolated. Oregon spotted frogs are found in or near perennial water bodies such as a spring, pond, lake, sluggish stream, irrigation canal, or roadside ditch. Threats to Oregon Spotted frog include habitat impact; hydrologic changes resulting from water diversions, road developments, drought, and removal of beavers; changes in water temperature and vegetation structure; increased sedimentation, increased water temperature, reduced water quality, and vegetation changes resulting from livestock grazing; predation by non-native species; inadequate existing regulatory mechanisms that result in significant negative impacts; and other natural or manmade factors.

We recommend that APHIS provide information to the Service regarding how they will avoid proposed critical habitat areas prior to commencing with spray projects. The Service is available to assist APHIS to minimize and avoid impacts to Oregon spotted frog proposed critical habitat.

Candidate species

In addition to the Endangered Species Act listed species above, the Service maintains a list of species that are candidates for listing (Fish and Wildlife Service 2012). A candidate species is one for which we have sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but for which preparation of a proposal is precluded by higher priority listing actions. Candidate species are separate from species which have been listed as threatened or endangered, in that they do not receive the regulatory protections of the Endangered Species Act. We maintain this list of candidates for a variety of reasons: to notify the public that these species are facing threats to their survival; to provide advance knowledge of potential listings that could affect decisions of planners and developers; to provide information that may stimulate and guide conservation efforts that will remove or reduce threats to these

species and possibly make listing unnecessary; to request input from interested parties to help identify those candidate species that may not require protection under the Endangered Species Act or additional species that may require the Endangered Species Act's protections; and to request necessary information for setting priorities for preparing listing proposals.

Greater Sage-Grouse (*Centrocercus urophasianus*)

In March 2010, the Service determined that protection of the greater sage-grouse under the Endangered Species Act was warranted. However, listing the greater sage-grouse was precluded by the need to address other species listings facing greater risk of extinction. The greater sage-grouse is now a candidate species for listing. Sage-grouse in Oregon are found in Union, Baker, Deschutes, Crook, Lake, Harney and Malheur Counties. Sage-grouse have not been observed in Klamath County since 1993 (Fish and Wildlife Service 2010).

In 2005, the State of Oregon, Department of Fish and Wildlife, developed "The Greater Sage-Grouse Conservation Assessment and Strategy" to help manage sage-grouse populations in Oregon. It has been updated and was adopted by the Oregon Fish and Wildlife Commission in April 2011. The strategy identifies and maps Core Areas of habitat that are essential to sage-grouse conservation. The maps and data provide a tool for planning and identifying appropriate avoidance areas and mitigation in the event of human development in sage-grouse habitats. The Core Area maps, available on ODFW's website, define areas that should be targeted for conservation actions or avoided when large scale disturbances are proposed. Core Area maps also provide a broad-scale filter to assist planners, County, State and Federal agencies in identifying areas of likely high and low resource conflicts associated with development proposals. APHIS should assure that all suppression activities conducted in Oregon are consistent with the "Greater Sage-Grouse Conservation Assessment and Strategy for Oregon".

The BLM has developed protective measures for greater sage-grouse to be implemented on BLM administered lands. The Service recommends the APHIS follow recommendation in BLM Instruction Memorandum No. 2012-043, dated December 22, 2011, for all spray activity on BLM administered lands (BLM 2011).

The Service's 12-Month Findings for Petitions to List the Greater Sage-Grouse as Threatened or Endangered, identified pesticide use as a potential threat under Factor E: Other Natural or Manmade Factors Affecting the Species' Continued Existence (Fish and Wildlife Service 2010). Although a reduction in insect population levels resulting from insecticide application potentially affects nesting sage-grouse females and chicks (Willis *et al.* 1993, p. 40; Schroeder *et al.* 1999, p. 16), no information was found as to whether insecticides are impacting survivorship or productivity of the greater sage-grouse.

Eng (1952, pp. 332, 334) noted that after a pesticide was sprayed to reduce grasshoppers, songbird and corvid nestling deaths ranged from 50 to 100 percent depending on the chemical used, and stated it appeared that nestling development was adversely affected due to the reduction in grasshoppers. Potts (1986 as cited in Connelly and Blus 1991, p. 93) determined that reduced food supply resulting from the use of pesticides ultimately resulted in high starvation rates of partridge chicks (*Perdix perdix*). In a similar study on partridges, Rands (1985, pp. 51-53) found that pesticide application adversely affected brood size and chick survival by reducing chick food supplies.

Despite the potential effects of pesticides, the Service could find no information to indicate that the use of the chemicals currently approved for use for rangeland grasshopper and Mormon cricket suppression programs, at current levels, negatively affects greater sage-grouse population numbers. Schroeder *et al.*'s (1999, p.16) literature review found that the loss of insects can have significant impacts on nesting females and chicks, but those impacts were not detailed.

Insect reduction as a result of rangeland grasshopper control has been found to reduce brood sizes in a wild sage-grouse population (Johnson 1987). In order to reduce the reliance on insecticides for control of rangeland grasshoppers, Johnson (1987) recommends the use of "Integrated Pest Management" (IPM) for control of rangeland grasshoppers. IPM uses naturally occurring pest controls such as weather, disease, predators, parasites, physical and chemical control, as well as habitat modification to keep grasshoppers from surpassing intolerable levels (Johnson 1987). In addition, sage-grouse brood areas should be located if not already known, and protected from insecticide spraying (Johnson 1987). Grasshopper control should also be delayed in brood rearing areas to allow for maximal chick development before spraying reduces their insect forage (Johnson 1987). The Service recommends APHIS use these guidelines to avoid pesticide spraying of nesting and brood rearing areas for sage-grouse in order to prevent further declines from current sage-grouse population levels.

The Service recommends APHIS study the potential effect of the rangeland grasshopper and Mormon cricket control program on sage-grouse, particularly within nesting and brood rearing habitat. We request that APHIS provide us with information regarding how they will avoid areas occupied by sage-grouse during time periods of sage-grouse chick foraging and development.

Columbia spotted frog (*Rana luteiventris*) Great Basin Distinct Population Segment (DPS)

The Columbia spotted frog Great Basin DPS is known to occur in Lake, Harney, Malheur, and Grant counties, Oregon. In addition to the counties in Oregon, the Columbia spotted frog, Great Basin DPS is also known to occur in portions of Idaho and Nevada. In southeastern Oregon, the historical and current range of Columbia spotted frogs appear to be widely distributed throughout southeastern Oregon, but local populations within this general area appear to be isolated from each other by either natural or human-induced habitat disruptions.

Threats to Columbia spotted frog include poor management of habitat including water development, improper grazing, mining activities, and nonnative species. The Service has designated a listing priority number of nine for the Columbia spotted frog Great Basin DPS based on imminent threats of moderate magnitude.

Columbia spotted frog also occur in counties where you propose treatment, please contact us for location information for the species. The Service recommends APHIS avoid pesticide spraying of known habitat for Columbia spotted frog and buffer the area surrounding spotted frog habitat similar to measures taken for listed fish species and Oregon spotted frog covered under this consultation in order to reduce risk of exposure of Columbia spotted frogs to pesticide chemicals. We recommend that APHIS provide information to the Service regarding how they will avoid areas occupied by Columbia spotted frogs prior to commencing with spray projects. The Service is available to assist APHIS to minimize and avoid impacts to Columbia spotted frogs.

areas occupied by Columbia spotted frogs prior to commencing with spray projects. The Service is available to assist APHIS to minimize and avoid impacts to Columbia spotted frogs.

We appreciate the opportunity to work with you on this action. Please note that the proposed action requires further coordination to inform the Service of pesticide application activities in areas of any listed threatened or endangered species. If you have any questions regarding this informal consultation, please contact Alan Mauer or me at (541) 383-7146.

Sincerely,

Nancy Gilbert

Nancy Gilbert
Field Supervisor

cc: Chip Dale, ODFW, Bend, Oregon
Robert Hooton, ODFW, Bend, Oregon
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