

Request for Public Input on Proposed Action:

2004 Oregon Grasshopper and Mormon Cricket Suppression Program

Need for Proposed Action

Grasshoppers and/or Mormon crickets (hereafter referred to collectively as grasshoppers) are native to Western rangelands. They are part of a complex of organisms that play a role in nutrient cycling by reducing plant material through their digestive system, and serving as food for other species.

However, grasshoppers have the potential for sudden and explosive population increases. When grasshopper numbers become extreme, their feeding on available vegetation can lead to denuded areas, thus eliminating seed production and increasing soil erosion. Forage and habitat for some wildlife species and livestock will also be reduced. Rare plants may be adversely impacted by severe grasshopper feeding. Outbreak populations can also invade cropland damaging or destroying cultivated crops.

Outbreaks are difficult to predict because they depend greatly on climatic variables that cannot be predicted. To assist in predicting where potential grasshopper outbreaks may occur, the Animal and Plant Health Inspection Service (APHIS) and Oregon Department of Agriculture (ODA) conduct annual surveys of grasshopper populations in Oregon. Results of the 2003 survey can be found at <http://www.oda.state.or.us/Plant/index.html>. Adult survey is completed in July and August in an attempt to determine where outbreaks may occur the following year. Spring survey is conducted in May and June to confirm population trends. Findings are reported to interested land managers and public agencies.

Management tools such as mechanical control, biological control, cultural control, and/or selective use of chemicals can be implemented by farmers, ranchers and land managers to delay or avert economic grasshopper outbreaks.

However, grasshopper populations can build up to economic infestation levels despite even the best land management and other efforts to prevent outbreaks. At such a time, a rapid and effective response may be requested and needed to reduce the destruction of rangeland vegetation. In some cases, a response is also needed to prevent grasshopper migration to cropland adjacent to rangeland.

APHIS' authority for cooperation in this suppression program is based on Section 417 of the Plant Protection Act of 2000 (7 U.S.C. § 7717). In general this statute

directs APHIS to control actual or potential economic grasshopper outbreaks on Federal, State, or private lands. APHIS' participation is subject to available funds, and the written request of a State or Federal land manager. We emphasize that a request for APHIS assistance is voluntary.

To comply with the National Environmental Policy Act (NEPA), APHIS completed an Environmental Impact Statement document "Rangeland Grasshopper and Mormon Cricket Suppression Program, Final Environmental Impact Statement, June 21, 2002" (2002 FEIS) concerning suppression of grasshopper populations in 17 Western States, including Oregon. The 2002 FEIS describes the actions available to APHIS to reduce the destruction caused by grasshopper populations. The 2002 FEIS can be found online at the APHIS web site, <http://www.aphis.usda.gov/ppd/es/gh.html>. Additionally, APHIS will prepare one or more Environmental Assessment(s) (EA) for grasshopper suppression programs in Oregon in 2004.

Proposed Action

Subject to available funds and stipulations of the Plant Protection Act, APHIS would respond to requests from land managers for grasshopper suppression. APHIS would then conduct evaluations to determine if populations warrant suppression. The evaluation will include species composition, population density, stage of grasshopper development, value of threatened resources, and environmental risks associated with treatments. If warranted, APHIS would treat only the area of the outbreak with regard to environmental protections and other safeguards determined necessary for that site. Treatments may begin as early as May, but normally take place in June and July.

Grasshoppers have the potential reach economic levels on the rangeland scattered throughout Oregon east of the Cascade Range. Because it is not possible to predict exactly where an outbreak will occur it is necessary to describe the entire area. The proposed suppression program area includes rangeland in the counties of Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and, Wheeler. A map of historical economic populations in Oregon can be found in Appendix 2, map 3, of the 2003 EA, <http://www.oda.state.or.us/plant/ppd/Ent/gh/index.html>. It is unlikely a treatment request will occur outside these historical areas in 2004.

Up to 100 species of grasshoppers may occur within the proposed suppression area. Of these, no more than ten species have been known to reach outbreak status and threaten crops and/or valuable range resources in Oregon during the past five decades. The widespread grasshopper outbreaks of the mid-1980s were comprised primarily of the *Melanoplis* group (*M. sanguinipes*, *M. foedus*, *M. femurrubrum*, *M. packardii*, and *M. bivittatus*). Localized outbreaks in the 1990s

and early 2000s have included mainly *Camnula pellucida*. Other economically damaging species in Oregon are *Aulocara elliotti*, *Oedaleonotus enigma*, *Agenotettix deorum*, and *Hesperotettix viridis*.

This area can be divided into six “level three” ecoregions based on similarities in geography, climate, and plant and animal communities. They are Eastern Cascades Slopes and Foothills, Columbia Plateau, Blue Mountains, Snake River Plain, Central Basin and Range, and Northern Basin and Range. The main feature that these ecoregions share is the dry climate created by rain shadow effect of the Cascade Range.

Average January temperatures in this area range from 24.2° F in Wallowa County to 37.4° F in Jefferson County, with 30.9° F the average for the region. Average July temperatures range from 63° F in Wallowa County to 75.6° F in Malheur County, with 69.0° F the average for the region. Annual precipitation ranges from 30.85” in Hood River County to a low of 9.15” in Sherman. The average annual precipitation for the entire region is 13.62”.

This area is composed of several watersheds or drainages, most flow into the Columbia River or its major tributary the Snake River. Major drainages are the Deschutes, John Day, Middle Columbia, and Middle and Lower Snake. Most of the southern part of this area lies within the Great Basin hydrologic region. In this arid area, large through-flowing rivers have not developed, and each watershed drains to its lowest point, where water is lost to evaporation and groundwater recharge. The southwestern side contains drainages that flow directly to the Pacific Ocean via the Klamath or Sacramento River systems.

Grassland, shrubland, and woodlands are present across the general area. Grasshopper treatments would occur only in grass and shrublands, not in forests. The rangelands are utilized for cattle and sheep grazing. They provide habitat for native and introduced game and non-game animal species. They are in an accelerated state of ecological change due to invasion by exotic plant species, changes in fire patterns, and intervention by humans.

Elevation and topography within the overall area vary considerably, from below 500 feet along the Columbia River to mountains over 9000 feet. Treatments would occur primarily on flatlands, foothills, and adjacent to cropland. Most suppression treatments would occur at elevations below 6000 feet.

Three insecticides were examined in the 2002 FEIS and are thus available for APHIS to use in grasshopper suppression. They are malathion, carbaryl, and diflubenzuron. Diflubenzuron is a chitin inhibitor, while the other two are broad spectrum contact insecticides. They may be applied by ground or air. All are liquid formulations, but carbaryl is also available in bait form. Only one treatment would be applied to any location per year.

Proposed Alternatives

1. No Action Alternative

Under the no action alternative, APHIS would not fund or participate in any program to suppress grasshopper infestations.

2. Insecticide Applications at Conventional Rates and Complete Area Coverage Alternative

Under this alternative, carbaryl, diflubenzuron (Dimilin®), or malathion will be employed. Applications would cover all treatable sites within the infested area (total or blanket coverage) per label directions. The application rates under this alternative are as follows:

- 16.0 fluid ounces (0.50 pound active ingredient (lb a.i.)) of carbaryl spray per acre,
- 10.0 pounds (0.50 lb a.i.) of 5% carbaryl bait per acre,
- fluid ounce (0.016 lb a.i.) of diflubenzuron per acre, or
- 8.0 fluid ounces (0.62 lb a.i.) of malathion per acre.

3. Reduced Agent Area Treatments (RAATs) Alternative

RAATs, is a recently developed grasshopper suppression method in which the rate of insecticide is reduced from conventional levels, and treated swaths are alternated with swaths that are not treated. The RAATs strategy relies on the effects of an insecticide to suppress grasshoppers within treated swaths while conserving grasshopper predators and parasites in swaths not treated. Carbaryl, diflubenzuron, or malathion would be considered under this alternative at the following application rates:

- 8.0 fluid ounces (0.25 lb a.i.) of carbaryl spray per acre,
- 10.0 pounds (0.20 lb a.i.) of 2 percent carbaryl bait per acre,
- 0.75 fluid ounce (0.012 lb a.i.) of diflubenzuron per acre, or
- 4.0 fluid ounces (0.31 lb a.i.) of malathion per acre.

Potential Issues

During development of the EIS and during grasshopper suppression programs in Oregon carried out in the past, some potential issues have been identified. These issues must be further clarified and additional issues may be identified through public comment or environmental analysis.

Human health – Exposure of humans to insecticides could result from treatments. Application crews would be exposed to insecticides, as could individuals who wander onto treated rangeland.

Non-target species – Native and non-native species in the treated area might be exposed to insecticides. Food, forage, pollination, and shelter for rangeland species may be impacted by the selection of alternatives.

Socioeconomic impacts – Livestock owners, crop growers, beekeepers, etc. who operate on or near rangeland could be exposed to lost earnings potential by decisions made on the alternatives. The general public who utilize rangeland for recreation and other activities might find the aesthetics of the rangeland impacted by selection of alternatives.

Cumulative impacts – Actions by parties other than APHIS might have cumulative impacts.

Synergistic effects – Actions by parties other than APHIS might have synergistic effects.

Threatened and endanger species – T&E species may be affected by selection of alternatives. APHIS will apply measures to protect species listed or proposed for listing under the Endangered Species Act (ESA), which may occur in treatment areas, from adverse effects.

Cultural resources – Native American cultural resources may be impacted by selection of alternatives.

Special considerations – Certain populations such as children, minorities, and low income groups may be disproportionately impacted by decisions on the alternatives.

Please submit written comments to:

Grasshopper EA
USDA APHIS PPQ
6135 NE 80th Avenue, Suite A-5
Portland, OR 97218

Comments received by January 15, 2004 will be most helpful to this analysis, and all comments received before completion of the environmental analysis/analyses will be considered. Comments received in response to this program will be made available for public inspection at our office and will be released in their entirety if requested pursuant to the Freedom of Information Act.