July 17, 2026

Mr. William Wesela
National Policy Manager
U.S. Department of Agriculture, Animal and Plant Health Inspection Service

Re: Notice of Intent To Prepare a Programmatic Environmental Impact Statement; Grasshopper and Mormon Cricket Suppression Program

Publication Date: 6/18/2026
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Dear Mr. Wesela,

Please accept this comment, signed and submitted by the following organizations, as part of the public record for the Notice of Intent filed at the Federal Register as referenced above.

Xerces Society for Invertebrate Conservation
Animal Welfare Institute
Beyond Pesticides
Beyond Toxics
Friends of Nevada Wilderness
Hawaii Alliance for Progressive Action (HAPA)
Idaho Conservation League
Maryland Pesticide Education Network
New Mexico Climate Justice
New Mexico Wild
Oregon Natural Desert Association
PEER
People & Pollinators Action Network
Pollinator Stewardship Council
Project Eleven Hundred
Rio Grande Restoration
Southwest Native Cultures
Water Sentinels/Rio Grande Chapter of Sierra Club
Western Watersheds Project
WildEarth Guardians
Wildlife for All
Native Plant Society of Oregon, William Cusick chapter
Wyoming Outdoor Council

The U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS) oversees a suppression program for grasshoppers and Mormon crickets across 17 western states. In a typical year, APHIS authorizes and funds the application of insecticides to kill grasshoppers or crickets on hundreds of thousands of acres of western lands, sometimes

treating millions of acres. Insecticides are applied to public lands managed by the Bureau of Land Management or states, lands within Indian reservations, and private rangelands. Insecticides are usually applied by air, over large blocks measuring at least 10,000 acres, but often ranging into blocks of 100,000 acres or larger.

Through the Notice of Intent (NOI) published in the Federal Register, APHIS has invited public comments that *"further define the scope of the alternatives, potential impacts on the human environment, consistent with the National Environmental Policy Act, and issues for APHIS to consider, relevant information, studies, or analyses with respect to APHIS' proposed action."*

We are writing to you with comments on the NOI and with recommendations for the updated Programmatic Environmental Impact Statement (PEIS) to be developed for the APHIS grasshopper program, which will replace the current PEIS published in 2019.

We acknowledge that pesticides are part of the solution for grasshopper management. However, under an Integrated Pest Management (IPM) framework, their use should be minimized, not centered. We are concerned that APHIS appears to be undercutting its own responsibility for robust integrated pest management as it sets the stage for the new PEIS. The preferred alternative appears, once again, to be centering chemical control as the primary strategy for grasshopper management, rather than centering preventative management. That is not what the Court ordered.

Our overarching message is that ecologically sound pest management must be the primary goal for the APHIS grasshopper program. As such, we respectfully request that APHIS design and adopt a preferred alternative that:

- Integrates preventative approaches firmly into the grasshopper management program, especially biological, cultural, and physical tools,
- Fosters consistent and meaningful public and Tribal engagement and increases program transparency,
- Improves treatment justifications and use of targeted applications,
- Protects sensitive areas and habitats from pesticides,
- Strengthens buffers to protect aquatic habitat and drinking water, and
- Clarifies the definition of "reduced agent area treatments" (RAATS)

We are providing these recommendations because we believe they will help APHIS best implement its responsibilities under the Plant Protection Act statute and other federal laws, as discussed in the recent Court ruling.

Our comments are organized as follows:

A. Review of APHIS legal authorities
B. To meet the court mandate and legal authorities, prevention approaches should be more firmly integrated into the preferred alternative of the PEIS
C. Foster consistent and meaningful public and tribal engagement and increase program transparency
D. Improve treatment justification and use of targeted applications
E. Protect sensitive areas and habitats from pesticides
F. Strengthen buffers to protect aquatic habitat and drinking water
G. Clarify the definition of "reduced agent area treatments" (RAATS)
H. Additional issues to consider in the PEIS
I. Comments on the draft alternatives as described in the NOI

A. REVIEW OF APHIS LEGAL AUTHORITIES

A federal district Court recently determined that APHIS too narrowly interprets its responsibilities in managing grasshoppers, finding the program scope as outlined in its 2019 Environmental Impact Statement "*contrary to law because it ignores any pest management technique other than the application of pesticides.*" [1] As a result of this and other deficiencies in its environmental documents, the Court has ordered APHIS to rework its programmatic Environmental Impact Statement (EIS) and tiered Environmental Assessments.

Under the Plant Protection Act (7 U.S.C. § 7717), Congress authorized suppression and control of grasshoppers and Mormon cricket outbreaks. Under this Act, Congress has also instructed APHIS to coordinate with others for prevention efforts to protect rangeland, and authorizes funds to be made available for the prevention of actual and potential grasshopper or Mormon cricket outbreaks on Department of Interior lands. The suppression-heavy pesticide-centered approach that currently predominates is a choice, not a mandate, and ignores Congressional direction to incorporate pest prevention strategies into grasshopper management.

In addition, the Food Quality and Protection Act of 1996 (Public Law 104–170) requires that federal agencies "use Integrated Pest Management (IPM) techniques in carrying out pest management activities…and …through procurement and regulatory policies," defining IPM as "*a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.*"

B. TO MEET THE COURT MANDATE AND LEGAL AUTHORITIES, PREVENTION APPROACHES SHOULD BE MORE FIRMLY INTEGRATED INTO THE PREFERRED ALTERNATIVE OF THE PEIS

Through the preferred alternative analyzed in the new PEIS, APHIS should meaningfully increase its focus on prevention of grasshopper outbreaks and increasing the resilience of rangelands to outbreaks. The prevention strategy described in the NOI, which focuses largely on education and information sharing only on request, does not go far enough. While APHIS maintains that they do not have authority to incorporate prevention on lands managed by others, this does not match with statute or the recent court decision reviewing APHIS' 2019 FEIS. APHIS should take a more proactive approach to guiding prevention practices with partners, especially DOI agencies.

Furthermore, APHIS should incorporate prevention actions into their own management strategies. There is no compelling reason under the PPA statute that APHIS can routinely spray insecticides over lands it says it has no authority to manage but stops short of undertaking actual preventative actions.

Back in the 1990s, APHIS grappled with the imperative of minimizing the risk of its grasshopper suppression efforts, putting years of study and funding into a comprehensive Grasshopper Integrated Pest Management Project (GHIPM) (Cunningham and Sampson 1996). Unfortunately, despite promising prevention techniques explored through this effort, APHIS concluded the project by focusing on just two innovations: a) shifting most management toward chemicals targeting juvenile stages and eggs rather than adults, with the insect growth regulator insecticide diflubenzuron, and b) embracing Reduced Agent and Area Treatments (RAATS), usually implemented as skip swath sprays) as a common practice.

While these innovations were steps in the right direction, they fell short of the overall objective of the GHIPM project, summarized in the GHIPM project foreword as "*the need to develop environmentally responsible control methods.*" And they have failed to fulfill the more encompassing vision of the Plant Protection Act for APHIS to enact preventive measures to reduce or head off outbreaks.[2]

With the new PEIS, working with partners, APHIS has a new opportunity to balance the program as Congress intended, for the following reasons:

1) The law creates an expectation that APHIS will prevent outbreaks on DOI lands. APHIS, like other federal agencies, is expected to uphold the IPM mandate in the Food Quality and Protection Act. In the NOI, APHIS explicitly adopts the Food Quality and Protection Act definition of IPM (see above).

However, unfortunately, APHIS then states in the NOI that *"APHIS does not have the authority to dictate land management practices on Federal, State, Tribal or private lands"* (p. 5) and "*it is the land manager's responsibility to enact cultural, biological, and mechanical controls"* (p. 7-8), sidestepping the question of its own proper role under the FQPA. APHIS further attempts to narrow its role in prevention by stating in the NOI (p. 7-8):

> *"For purposes of this PEIS, APHIS will define the program's IPM strategy as the selection, integration, and implementation of pest control tactics in a systems approach based on anticipated economic, environmental, and sociological consequences. This PEIS focuses on actions taken in response to existing grasshopper outbreaks. It addresses measures used to control an outbreak and prevent it from becoming worse after it has already occurred. It does not include actions intended to prevent outbreaks from occurring in the first place. Preventive measures are already used by land management agencies and property owners as part of normal land management practices and are thus considered part of the environmental baseline for this PEIS. The implementation of such preventive efforts is not a prerequisite for APHIS to provide assistance. This analysis applies when a grasshopper outbreak occurs and assistance from APHIS is requested."*

APHIS stance for circumscribing preventive activities as solely "*measures used to control an outbreak and prevent it from becoming worse after it has already occurred"* contravenes the PPA, which instructs APHIS to "carry out a program to *control* grasshoppers and Mormon crickets on all Federal lands to protect rangeland" and states that the Secretary of Agriculture may request funding from the Secretary of Interior to be used for prevention activities *of actual or potential outbreaks* on DOI lands.

Choosing to wait for a grasshopper outbreak to be underway before *"taking action to prevent it from becoming worse"* (i.e. implementing IPM strategies only then?) is a perplexing choice. It is also likely designed to fail, because according to language APHIS used in its 2019 FEIS: *"the best grasshopper management strategies are preventative in nature and are long-term efforts that are designed to head off, rather than combat, outbreaks."*

Given the statutory language and the recent Court ruling finding that "*there is no evidence that focusing on pesticide treatments fulfills the overall purpose of the relevant statutes*", APHIS must reconsider its program direction pertaining to how it facilitates and implements preventive activities on DOI land. In short, APHIS misunderstands the extent of its authority to take preventive measures.

As one concrete example of how APHIS misunderstands its authority, consider the statement in the NOI that "APHIS does not have the authority to conduct prescribed burns, raise and manage flocks of wild fowl, or till wide swaths of rangeland to prevent grasshopper outbreaks." 91 Fed. Reg. at 36,788. This is incorrect. Congress has given APHIS broad authority to "carry out a

program to control grasshoppers and Mormon crickets on all Federal lands to protect rangeland" and has even provided APHIS with a mechanism to obtain "funds for the prevention … of actual or potential grasshopper and Mormon cricket outbreaks on Federal lands under the jurisdiction of the Secretary of the Interior." Carrying out prescribed burns and maintaining flocks of insect-eating birds are well within the bounds of APHIS's statutory authority, at least when the land manager consents to such activities.

Also, on p. 9 of the NOI *"….management agencies and property owners are expected to have administered their rangeland resources to reduce the effects of grasshopper herbivory and are coming to APHIS for assistance because preventive methods were deemed no longer effective or available."*

Expecting public land managers "*to have administered their rangeland resources to reduce the effects of grasshopper herbivory"* without proactive APHIS assistance is also unrealistic. Generally, from our experience, land management agency staff "outsource" their grasshopper management decisions to APHIS. Because APHIS to date has focused mainly on pesticide treatments, public land managers are not generally aware of or incorporating preventative practices for the purpose of averting grasshopper outbreaks. Public land managers lack the specific training, experience, and knowledge to know how to manage for grasshopper outbreaks and are generally not considering this variable in their grazing plans. It is necessary for APHIS to be more proactive with its assistance to public land managers, especially BLM staff, conveying methods to manage for healthy, resilient and diverse native rangelands that can help reduce grasshopper problems.

In the preferred alternative, APHIS describes its non-chemical IPM approach under the general category of "technical assistance." Alternative 4 does not expand upon what Alternative 1 describes in this realm, so the following language is drawn from Alternative 1:

> *"Additionally, APHIS would provide technical assistance to land management agencies and property owners* ***upon request,*** [emphasis added] *consistent with IPM strategies. This assistance would include suggesting and providing education on chemical insecticide application methods and rates as well as non-chemical grasshopper population suppression techniques such as grazing management, rangeland and species monitoring, habitat manipulation, mechanical controls, and treatment avoidance strategies."*

We believe APHIS can and should be more proactive than simply providing IPM strategies on request. Congress instructed APHIS to coordinate with others for prevention efforts to protect rangeland, and authorized funds to be made available for the prevention of actual and potential grasshopper or Mormon cricket outbreaks on Department of Interior lands. To meet this standard, under the preferred alternative of the PEIS, we strongly recommend that APHIS adopt procedures to provide explicit recommendations annually to DOI agencies on where, when, and

how to implement non-chemical preventive methods to avert and/or slow grasshopper outbreaks based on information available about environmental conditions, grasshopper populations, and current technologies/approaches.

2) APHIS and the cooperating agencies should consider preventive measures that are beyond APHIS's statutory authority. To be sure, there are certain preventive measures that can only be carried out by land managers or landowners. Luckily, BLM and the Forest Service, which manage the vast majority of the federal lands that have been subject to grasshopper treatments in the past, are both cooperating agencies. This was not the case in 2019. Because BLM and the Forest Service are now involved in the NEPA process, it is appropriate and necessary for the agencies to consider how they can all exercise their discretion in a manner consistent with the Food Quality Protection Act, which applies to all agencies. See 7 U.S.C. § 136r-1 (*"Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies, and other activities."*).

Given the participation of BLM and the Forest Service as cooperating agencies, it is not appropriate for APHIS to limit the scope of the new EIS in the way that it has. Together, the agencies must consider a full suite of IPM measures, including ones that fall outside APHIS's authority under the PPA.

3) APHIS is aware of conditions that exacerbate outbreaks and preventive practices that can help head off outbreaks.

APHIS acknowledges that overgrazing and degraded rangeland conditions contribute to population spikes for certain pest grasshoppers (see for example recent Environmental Assessments that tie grasshoppers to these conditions at USDA APHIS 2026(a); USDA APHIS 2026 (b)), and there are numerous scientific papers that show these conditions are associated with grasshopper outbreaks (Murray et al. 2016; Lightfoot 2018; Onsager 2000; Pfadt 1982; Fielding and Brusven 1993, 1995, 1996; Wyoming 1994). Yet in the NOI, APHIS fails to articulate a robust strategy to work with land managers to address those conditions before administering chemical treatments. As of 2024, 50% of BLM grazing allotments fail to meet land health standards. To fully implement its responsibilities, APHIS could consider requiring responsible preventive practices, including addressing overgrazing and maintaining healthy plant cover, prior to implementing any insecticide treatment.

In the NOI, APHIS describes various cultural, physical, and biological control methods for grasshopper management. For example, APHIS describes cultural control as:

> *"Examples of land and habitat management practices that reduce pest survival, reproduction, or spread. These methods involve the practice of moving livestock from field to field in a way that allows the grass or other plants they eat to recover and grow.*

During the late nineteenth century, several cultural control methods were developed to help remove grasshoppers from agricultural lands. Examples of such methods include grazing management, conservation of game birds, crop rotation, irrigation, vegetation control, removing favorable breeding sites, and maintaining healthy plant cover to reduce bare ground. These strategies appear to offer great potential for reducing the effects of periodic grasshopper outbreaks on cultivated cropland."

In addition, in Alternative 1, APHIS writes that it could provide education on *"non-chemical grasshopper population suppression techniques such as grazing management, rangeland and species monitoring, habitat manipulation, mechanical controls, and treatment avoidance strategies."* (NOI p. 11)

These inclusions demonstrate that APHIS is aware of and able to recommend effective methods to head off grasshopper outbreaks. There is no valid reason why these should be provided only on request to DOI agencies.

While the efficacy of particular practices will vary among ecoregions and site types, APHIS can incorporate more site-specific measures in its recommendations.

3) Prioritizing non-chemical prevention strategies aligns with federal statute, rangeland health, and conservation needs. Preventive approaches for grasshopper and Mormon cricket management are especially relevant on BLM public lands considering statutory direction; the important role of grasshoppers as nutrient cyclers and prey for wildlife; and the need to slow a concerning decline of beneficial insects, such as pollinators, in Western rangelands. Each of these elements is discussed below.

Statute: BLM is the largest natural land manager in the country. Recognizing the multi-faceted benefits that public natural lands provide, Congress has directed that BLM manage its public lands:*"…in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use."* (Federal Land Policy and Management Act of 1976)

The repeated large-scale use of insecticides over BLM lands weakens native invertebrate populations, undermining BLM's ability to fulfill these directives. Invertebrates are the heart of a healthy landscape, playing crucial roles in maintaining ecosystems as they provide an array of ecological services such as food for wildlife; biological pest control; pollination; plant seed dispersal; water filtration; decomposition; and soil health. Harm to native insect populations compromises a wide variety of ecological functions.

Rangeland health: While grasshoppers and Mormon crickets can temporarily impact livestock forage and certain crops when an outbreak occurs, grasshoppers can also have substantial, less-recognized positive impacts on rangeland health. Due to grasshoppers' ability to rapidly cycle nutrients through arid ecosystems, grasshoppers can enhance longer-term productivity (Belovsky and Slade 2000) or increase soil nutrients (Rebh and Welti 2025). Within the Palouse Prairie, Belovsky and Slade documented peak net aboveground primary production (NPP) occurring when adult grasshopper densities measured approximately 20/square meter. This is approximately double the standard economic threshold of 8 grasshoppers per square yard (9.47 per square meter). Rehb and Welti (2025) compared herbivore effects in northeastern Montana on sites with variable grasshopper densities of 1.24 - 12.25 adults per square meter, finding that increasing grasshopper densities increased soil phosphorus.

Moreover, the sporadically high populations of grasshoppers and Mormon crickets function as an abundant, high protein food source for dozens of species of birds, fishes, reptiles and mammals who likely benefit from orthopteran periodic resource pulses (Peterson 1969; Tyus and Minckley 1988; Knowlton 1948; McEwen et al. 1996; Yang et al. 2008). Selected examples of species that feed on grasshoppers include Greater Sage-Grouse (which has experienced huge declines in population), brown trout, fox, and leopard lizards.

Heavy reliance on grasshopper insecticides on public lands puts these functions at risk, and is particularly concerning when APHIS lacks processes to demonstrate that it is using pesticides as a last resort tool, and only on lands where treatments have been economically justified.

Overdependence on grasshopper insecticides also puts non-pest native arthropods at risk. This includes non-pest grasshoppers that usually co-exist with pest species. Diflubenzuron, carbaryl, chlorantraniliprole, and malathion have been linked with lethal and sub-lethal effects to a range of non-target arthropods in laboratory and field studies, including when testing concentrations comparable to the low rates used in the APHIS program (Mommaerts et al. 2006; Camp et al. 2020, Quinn et al. 1991, Litsey et al. 2021; Graham et al. 2008; and others as referenced in previous comment letters). Commercially important bee species may be at risk as well; Kegley et al. (2024) found that honey bee colony health exhibited increasingly poor outcomes as hive pollen concentrations of neonics and diflubenzuron in combination increased.

Conservation needs**:** Within the rangeland systems where grasshopper or Mormon cricket treatments could occur, eight once-common rangeland insects have dwindled to the point that they are under consideration for Endangered Species Act listing. These include two butterfly and six bumble bee species: monarch butterfly (*Danaus plexippus*); western regal fritillary (*Argynnis idalia occidentalis*); Suckley's cuckoo bumble bee (*Bombus suckleyi*); western bumble bee (*Bombus occidentalis*); Morrison bumble bee (*Bombus morrisoni*); southern plains bumble bee (*Bombus fraternus*); variable cuckoo bumble bee (*Bombus variabilis*); and American bumble

bee (*Bombus pensylvanicus*). Pesticide use is linked to the threats to six of these species already.[3]

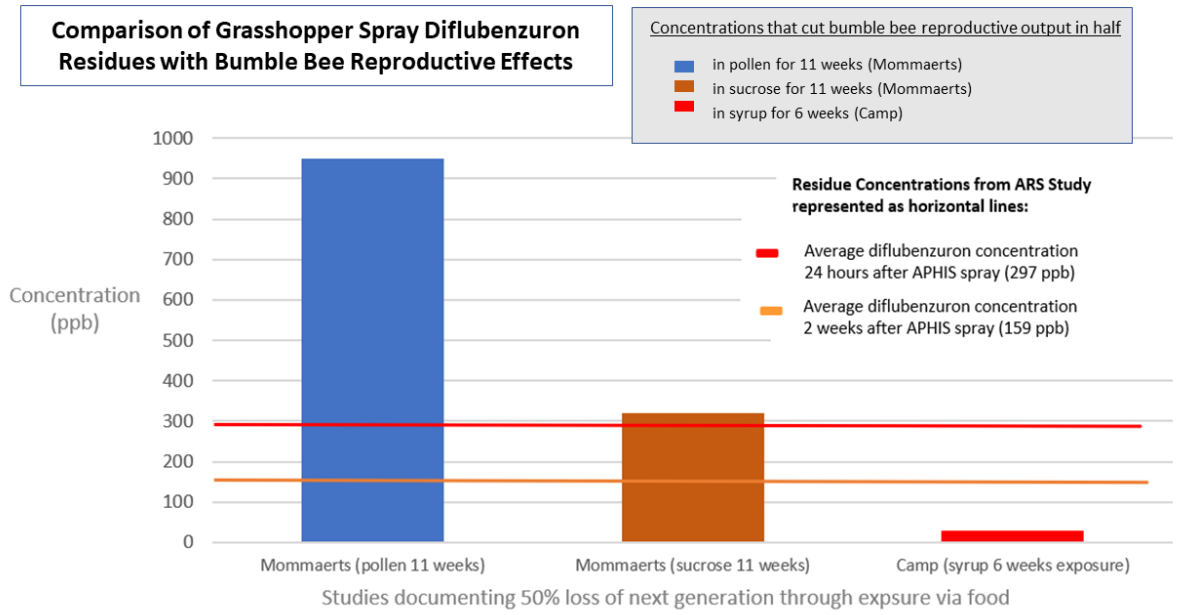
Beyond the six bumble bee species identified above, two additional bumble bee species native to western rangelands have declined in population or disappeared entirely from lands they used to occupy, including *Bombus terricola* and *B. fervidus* (Hatfield et al. 2015).

Bumble bees help perpetuate a wide array of native plants, which in turn sustain wildlife on our public lands. Bumble bees are also attracted to forage and other crops of the West, including alfalfa, leguminous forage crops, and chickpeas, and some evidence shows they enhance pollination of alfalfa (USDA 2015; Haedo et al. 2022).

Common and widespread butterfly species are also declining, with the largest and steepest declines in the Mountain-Prairie and Southwest regions. APHIS grasshopper and Mormon cricket treatments regularly occur within these regions, although we do not yet know if there is any causative relationship. Strikingly, the ratio of declining to increasing butterfly species is 13:1. Overall abundance decreases are estimated at 22% from the years 2000–2020. Insecticide use is identified as one of the potential causes of these declines. (Edwards et al. 2025).

While APHIS has insisted that its sprays do not affect bees, unpublished data collected by the USDA Agricultural Research Service in 2024 throws that assertion into question. The study measured diflubenzuron residues left on flowers after an APHIS spray in Prairie County, Montana (see USDA APHIS 2026 (a)). The average concentrations of diflubenzuron residues detected on plant tissue for the samples collected 24 hours and 14 days after the treatment are cause for concern as they exceeded or approached concentrations found in other studies to cut reproductive output in half. See Figure 1 below.

Figure 1. Graphical Representation of Diflubenzuron Residues Post Grasshopper Spray with Toxic Outcomes Reported in Scientific Literature



In conclusion, integrating cultural and other non-chemical preventative approaches firmly into the grasshopper management program is the most sensible approach forward. Recently, voices in extension and the National Grasshopper Management Board are echoing this message (Rodbell et al. 2025; Glassman-Hughes 2025). With the new PEIS, APHIS has a chance to work with BLM, other land managers, and science partners to test and develop land management prevention techniques that meaningfully address conditions hospitable to economically harmful grasshopper outbreaks.

C. FOSTER CONSISTENT AND MEANINGFUL PUBLIC AND TRIBAL ENGAGEMENT AND INCREASE PROGRAM TRANSPARENCY

We strongly urge that APHIS create operational procedures that foster consistent and meaningful public engagement and increase transparency about its activities under the new PEIS, regardless of which alternative is ultimately selected.

APHIS conducts important work: gathering data to assess the likelihood of outbreaks; undertaking valuable outreach with producers located near outbreak areas and coordinating with states, counties and other federal agencies. However, there is a need for APHIS to improve its information sharing with the general public, including communities who may rely on these lands for their livelihood, water, recreation, or because they simply care about these public lands and the wildlife and plants they harbor. Currently, there is inadequate public disclosure

about planned treatments, even though APHIS often knows months in advance where it might treat. The lack of public disclosure drew scrutiny by Congress in 2023. This came about after pushback by thousands of New Mexicans, including members and representatives of indigenous Nations, who learned at the last minute of a planned APHIS aerial spray over 39 square miles of mostly BLM lands with liquid carbaryl (considered a likely carcinogen by the Environmental Protection Agency). APHIS and BLM could have informed the public of this planned spray (and others) long before it had been put up for contract.

For far too long, APHIS has shielded its planning and execution of actual spray activities from meaningful public input by framing outbreak response as an emergency. Yet it is clear that planning for actual treatments begins months in advance, with data being shared among a small group of stakeholders (i.e. state agencies, producers within the spray area, etc.). Such information and data can and should be disseminated publicly, considering the potential harm from and public concern about pesticide applications, especially to public lands.

A lack of notification and a less than robust public engagement strategy can have real world consequences. For example, APHIS has overlooked organic farms operating close to proposed spray areas. APHIS has failed to provide timely notification to organic producers, state organic associations, or certifiers of planned sprays. Should organic farms be contaminated by a chemical which does not adhere to National Organic Program standards, their organic certification could be jeopardized. The Montana Organic Association asked for such notification, and expressed concern about inadequate disclosure of drift expectations, food chain effects, and impacts to the aquatic and terrestrial environment (Montana Organic Association, 2021)

Similarly, because of a lack of notification and limited public engagement, APHIS has come very close to disrupting large ongoing ecological research studies in Montana.

APHIS dismisses the likelihood of individual health effects by pointing to low population densities, and relying on EPA's assessments. However, low residential population densities do not mean low public use. In addition, EPA's assessments don't anticipate public land use. People may nap, wild forage and spend extended periods of time on public lands, and may be more than a day's distance from medical services. People visiting who may be sensitive, allergic, or asthmatic could experience more severe repercussions of exposure to pesticides and deserve more consideration under APHIS' program, including notification of spray areas on public lands in advance.

In the PEIS, APHIS should also note that consultation with Tribes regarding actions on public land is required under the NHPA (National Historic Preservation Act). In the past, APHIS has appeared to have a narrow conception of what might be of interest to Tribes, framing cultural sites largely as "rock formations and carvings" (NOI, p. 20). Places of cultural significance include far more than rock formations, structures and rock imagery. They also include plants,

animals, water, and more. The only way for the Agency to identify the full range of places of cultural significance in the project area is through robust consultation.

Merely sending a letter to Tribal representatives is not enough. Proposed actions may have cultural implications of which APHIS is not aware. For example, there may be Tribes with historical and cultural connections to the proposed treatment areas that have traditional associations with grasshoppers. APHIS must meaningfully consult with potentially interested Tribes on the proposed actions, including actions on public land, before it can move forward with such actions.

The new USDA NEPA regulations give APHIS the authority to go beyond the bare minimum requirements and engage the public more meaningfully. With the new PEIS, we see a few ways for APHIS (in coordination with BLM) to improve its efforts at public and Tribal engagement:

- Provide proactive public Information sharing with broader audiences. We strongly recommend that APHIS share spring survey data and maps in real time, post treatment requests as they are received, and post pre-spray notifications (maps, planned spray dates, chemicals to be used, method of application, acres and APHIS evaluations of and recommendations for planned treatments). Environmental monitoring reports should also be posted annually. Operating with transparency would help rebuild public trust, inform people's decisions to minimize exposure and harm, and could uncover concerns that APHIS hadn't considered in its more general Environmental Assessments which are no longer specific by year.
- Initiate timely consultation with Tribes and Pueblos on grasshopper management and treatment approaches and projects. Indigenous peoples rely on their ancestral lands for food, income, medicines, ceremonies, and perpetuation of their cultures and way of life. Tribal consultation is a formal, two-way, government-to-government dialogue between official representatives of sovereign nations and the government on matters of significance to Indigenous nations. Tribal consultation is an ongoing living process, with an open-door policy, not periodically one and done.
- Utilize a collaborative approach in developing the PEIS, specifically inviting key stakeholders into the process. These should include balanced representation from Tribal governments, producers and producer organizations, scientists and local cooperative extension, conservation districts, and conservation organizations. Examples of such collaborative processes include the Malheur National Wildlife Refuge Comprehensive Conservation Plan effort, and the Blackfoot Challenge.

D. IMPROVE TREATMENT JUSTIFICATION AND USE OF TARGETED APPLICATIONS

Available data raises serious questions as to whether the size of APHIS' treatment areas are justified through statistically relevant survey efforts. APHIS frequently delineates huge treatment areas. A single treatment block can measure hundreds of square miles.

Economic thresholds are a cornerstone of IPM. While APHIS has used economic thresholds for some time, APHIS typically cites Parker (1939) as the source for the oft-used 8 grasshoppers per square yard density that APHIS considers economically damaging. In the NOI, APHIS references Parker but signals that it intends to leave actual treatment decisions to professional judgement: (p. 6)

> *"The ratio of eight adult grasshoppers per square yard has been used as the minimum population at which suppression activities will be considered. This figure was derived by Parker (1939) as the level of infestation at which grasshoppers generally begin to compete with livestock for available forage. While the Act itself does not define* [an economic threshold]*, APHIS recognizes that "levels of economic infestation" has been interpreted differently in past documents. For purposes of this PEIS, the phrase "levels of economic infestation" is the threshold at which grasshopper or Mormon cricket populations pose a demonstrable risk of significant economic harm to agricultural resources, rangelands, or other managed lands, based on monitoring data and professional judgment."*

There are four shortcomings in APHIS' current and planned use of economic thresholds that could cause APHIS to overestimate the threat of grasshoppers and treat more acres than needed, described below. This is an important aspect of IPM that APHIS should spend the time to get right before finalizing the PEIS.

1) First, as noted, APHIS considers treatment potentially warranted wherever grasshopper densities measure 8 per square yard or higher. As mentioned, this economic threshold is drawn from Parker (1939) even though Parker actually seems to indicate that at a level of 8 grasshoppers per square yard, grasshoppers are **not** particularly harmful: At 8 grasshoppers per square yard, Parker describes only *"slight injury to **crops** but not enough to cause much comment…"* Only when Parker describes higher densities is damage to crops is clear: *"24 or 32 grasshoppers per square yard, which is enough to injury **crops** severely.*" [emphasis added] (Parker 1939 p. 19)

Additionally, Parker was likely referencing adult densities, since his 1939 document makes no reference to any particular nymph instar stage. In modern times, APHIS treatments occur based on nymph counts. Nymphs are subject to high mortality from predators, parasitoids, and

pathogens so decisions about suppression treatments targeted at this life stage should be tied specifically to nymphal, not adult thresholds. Many practitioners have developed or recommended more appropriate measures of the economic threshold for particular states or regions and site types (see for example Davis et al. 1992). Unlike APHIS' standardized 8 per square yard threshold, other practitioners often include specific nymph economic thresholds. Nymph thresholds tend to be substantially higher than 8 individuals per square yard in these practitioner papers and extension documents, reflecting the fact that densities of grasshoppers decline due to natural causes as grasshoppers move through their nymphal stages (Hewitt and Onsager 1983).

Furthermore, nowhere does Parker associate 8, or 24, or 32 grasshoppers/square yard with damage to **range forage** on uncultivated lands, which is what the APHIS program is supposed to protect.

Finally, it should also be remembered that Parker's report was published near the conclusion of the largest and longest drought and extreme heat event ever recorded in the United States (drought.gov).

In short, Parker is outdated, inadequate for making decisions on rangeland treatments, written during a historic drought, and not a reasonable source for an economic threshold in today's world.

2) Second, APHIS survey points designed to assess densities across landscapes often hug accessible portions of rangeland along roads. This can introduce bias into survey estimates especially since ditches may support higher grasshopper densities (Whipple et al. 2012) and large survey gaps may occur over less accessible landscapes. We understand the issue of limited access across less-accessible areas. Still, APHIS could consider more intensive and systematic surveys in addition to developing sound methods of modeling grasshopper populations to best reflect vegetation condition, composition, topography, and other variables that affect grasshopper densities so as to avoid over-treatment (see below).

3) Third, APHIS often explains that it treats BLM lands to protect nearby privately owned farms and ranches. The implication is that forage on the public lands themselves is not significantly threatened. If this is true, there may be more efficient and less ecologically harmful ways of helping private landowners. Extension services in most Western states provide guidance for producers on both non-chemical and chemical methods for protecting their lands from grasshopper outbreaks.

Moreover, under the PPA statute, while adjacent lands are allowable to consider in treatment decisions, it is only adjacent owners of "rangeland" that are called out in the Act. The law makes no provision for APHIS to protect crops, even forage crops.

4) APHIS is now saying it will allow local managers to make treatment decisions based on professional judgement. While this makes sense, given the many variables that can influence development of an outbreak, we believe that in the absence of clear training and guidance, managers are likely to default to the Parker threshold, as it has been deeply embedded in APHIS grasshopper thinking for decades.

So what is the resolution? In the PEIS, APHIS should:

1) Commit to making its treatment decisions transparent and reasoned. The NOI makes clear that the standard for treatment is "demonstrable risk of significant economic harm". On public lands at least, the full data set and reasoning through which APHIS arrives at this conclusion should be publicly documented for each treatment area.
2) Identify published research that identifies the adult *and nymphal* densities at which range forage damage has been documented in different regions and under different conditions, and utilize nymphal thresholds to make decisions about treatments conducted on grasshopper/Mormon cricket populations at the nymphal stages.

Through its survey and monitoring effort, APHIS can and should also work to keep treatments small and targeted--only as large as the area where clear justification of economic harm has been demonstrated and disclosed.

This aligns with a key goal of IPM— to "*minimize economic, health, and ecological risk*" (as stated in the federal Food Quality and Protection Act).

Below, we lay out more details on how APHIS might make this part of its operating strategy.

- First, many state extension services already identify nymphal thresholds. As long as APHIS prioritizes treatments at nymphal stages (as it has for many years), nymphal thresholds rather than adult thresholds should be used to determine whether populations justify treatment. See for example Torell and Huddleston 1987; Wanner 2020; Knodel et al. 2024; Campbell 2016; Gebre-Amlak and Peairs 2018; and many other extension sources as detailed in previous comment letters from Xerces.

- Second, more intensive surveys, possibly using drones or other systems that allow for more efficient and systematic monitoring of big western landscapes would allow for more targeted early intervention.

- Third, APHIS could invest in research that might facilitate better prediction of grasshopper and Mormon cricket movements so that public lands are not doused pre-emptively to protect nearby private lands.

- Fourth, APHIS could consider investments in more precise and low-impact approaches, such as border treatments (they seem underutilized) or "hot spot" treatments that target localized, high-density infestations before they expand into more serious outbreaks (Huddleston et al. 2000, Lockwood et al. 1996). For example, Idaho's APHIS office utilizes mainly road treatments on federal lands to treat Mormon cricket outbreaks. Narrow, 150 - 1250 foot border treatments along susceptible agricultural areas are consistent with extension recommendations from various states (see for example Hein and Campbell 2008).

- Fifth, the federal government could consider a support program for producers affected by grasshoppers. The APHIS suppression program is already a type of subsidy that doesn't necessarily guarantee sufficient feed. A federal insurance program or cash payout could mitigate the cost of natural herbivory? Since livestock producers do not have the same access to insurance as row crop producers, making more insurance options available so that producers could weather occasional grasshopper outbreaks would be a sound supportive option for livestock producers. Such an insurance option could also be used to incentivize preventative practices by structuring the program so that insurance payments are made only when outbreaks are unavoidable despite best practice preventative efforts in place.

Making sure any treatments are targeted and only occur where damaging thresholds have been documented has multiple benefits, including conserving natural enemies of grasshoppers and Mormon crickets (especially arthropod natural enemies), as well as reducing accidental pollution of water and waterways from drift (documented to travel at least twice as far as APHIS' most generous buffer of 500 feet - see Lum 2019 which documents a drift incident past 1000 feet). Other benefits include avoiding unintended harm to the fish and wildlife that consume grasshoppers and other insects affected by the insecticides, fewer taxpayer dollars spent on chemicals, aircraft, and contract administration, and improved rangeland health.

E. PROTECT SENSITIVE AREAS AND HABITATS FROM PESTICIDES

Insecticide applications to specially designated lands compromises their ecological, cultural, and recreational values. In the NOI APHIS states "*APHIS would also continue employing avoidance of treatment in areas with documented occurrences of rare grasshopper species, key pollinator habitat, and other sensitive ecological areas* (p 11). On page 21 of the NOI, APHIS explicitly mentions designations including Wilderness Areas, National Parks, or Monuments and Areas of

Critical Environmental Concern, going on to write *"Such areas or other similar designations from various land management agencies would not be recommended for grasshopper suppression activities, and APHIS will attempt to determine any such special designations with the land manager prior to conducting grasshopper suppression treatments.*"

These statements, while hopeful, depart rather significantly from what we have observed in recent APHIS spray plans, where Wilderness Study Areas, National Wildlife Refuges, Important Bird Areas, National Monuments, Sage Grouse Priority Areas, Sagebrush Collaborative Landscapes, and Areas of Critical Ecologic Concern[4] have been routinely included inside spray boundaries **as shown in Table 1.**

These areas, as well as designated critical habitats for endangered and threatened species, habitats important for proposed species, and other National Conservation Lands should instead be off-limits to sprays. These lands have values that transcend simple forage calculations. In addition, treating these areas could compromise the purposes for which they were designated. They also act as important refugia for species that may be facing significant threats but are not specifically protected.

The previous EIS did not analyze effects to these specially designated lands. If APHIS believes that even occasionally such areas will be included, the EIS must examine the effects to such areas.

We urge APHIS to designate these and similar areas such as key recreational sites off-limits to pesticide applications across the board, similar to the way APHIS avoids applications over perennial waters by default.

Table 1. Areas where grasshopper/cricket activity has overlapped specially designated lands and important habitats for native and declining species

(Note, there are likely more than listed here due to incomplete knowledge about where APHIS treats)

Wilderness or Wilderness Study Areas
• Wyoming: A number of overlaps with treatment areas where concentrated west of state Highway 25 • Montana**:** WSAs Overlaps south of Lake Fork Peck, also east of Musselshell River • Oregon: Several areas east of Steens and near Fort McDermitt • Nevada: slivers east of Carson city • Idaho: Great Rift WSA (eastern Idaho near Minidoka, some overlay)

Important Bird Areas

Montana:

- Musselshell Sage-Steppe (many blocks overlap)
- Glaciated Prairie Sage-Steppe (many overlaps)
- Tongue River (adjacent)
- Powder-Carter Sage-Steppe

Idaho

- Craters of the Moon Nat. Monument/Preserve

Oregon

- Malheur NWR
- Steens Mountain
- Oregon Canyon and Trout Creek Mountain Woodlands

Sage Grouse and Sage Brush

Sage Grouse Priority Areas

Wyoming (Using Wyoming SG Core and Connectivity Areas, v.4 last updated 09/2021, WGFD)

- Washakie Core Area
- Grass Creek Core Area
- Natrona Core Area
- South Pass Core Area

Montana

(using core areas modeled by FWS in 2023 (see Greater Sage-Grouse (GRSG) Cores map)

- Overlaps in Phillips County between Malta and UL Bend Refuge
- Some overlap in Musselshell County north of Roundup

(using Executive Order Sage-Grouse Layers (Core, Connectivity and General Habitat, Mont FWParks, updated 10/2024)

- Overlaps with several core areas in Central part of state, a small amount of overlap in SE part of state.

Idaho (using Idaho Sage Grouse Task Force Managment Zones, last updated 04/2024, IFG)

- Large Owyee area has much overlap w/ sage grouse areas ranked “Important”

All – Sagebrush Collaborative Restoration Landscapes

Montana: Some large sprays that have occurred within the designation in N. Central portion of the state.

Areas of Critical Environmental Concern

Wyoming:

- Wyoming: Lander Slope ACEC and Twin Creek ACEC (south of Wind River Reservation)

Montana:

- Some overlap south of Charles M. Russell NWR

Other states: Analysis incomplete

National Monument or National Recreation Area

- Montana: Bighorn Canyon NRA (MT) and Upper Missouri River Breaks (slivers, could be mapping error)

National Wildlife Refuges

- Oregon: Malheur Nat. Wildlife Refuge
- Montana: War Horse NWR (some overlap and highly surrounded)

American Indian Reservations

Montana:

- Huge areas Crow and North Cheyenne and Fort Belknap, repeated sprays; spray over Fort Peck, Flathead

F. STRENGTHEN BUFFERS TO PROTECT AQUATIC HABITAT AND DRINKING WATER

Surface water, riparian, and wetland habitats can receive and channel contaminants through direct overspray, drift or runoff from direct or nearby pesticide applications. Water is arguably the West's most valuable resource.

Diflubenzuron, carbaryl, and chlorantraniliprole are all toxic at very low concentrations to aquatic invertebrates (see Appendices A-2, A-3, A-5, A-6, and A-8 in the Revised Biological Assessment for the APHIS Rangeland Grasshopper and Mormon Cricket Suppression Program - USDA APHIS 2024).

Aquatic invertebrates are important in nutrient cycling, as prey items for fish and other vertebrates, and in maintaining water quality.

In 2004, the US Environmental Protection Agency (EPA) classified carbaryl as "likely to be carcinogenic in humans." Since 2006, all uses of carbaryl have been banned in the EU due to concerns over its carcinogenic properties. Additional research on carbaryl's mutagenic, genotoxic, and nitrosatable properties are discussed in Erickson et. al. (2025). APHIS should incorporate this research into the new PEIS.

The PEIS should specifically consider the issue of water quality and watershed health, and we recommend adoption of buffers along all ephemeral and intermittent stream segments. Current

operational guidelines for the APHIS program do not mandate spray buffers for seasonally dry watercourses, also known as ephemeral and intermittent streams (Levick et al. 2008). This is a serious oversight that jeopardizes ecological health. Ephemeral and intermittent streams are common in most parts of the west, and represent >80% of all streams in Arizona, New Mexico, Nevada, Utah, Colorado and California, while comprising 86 percent of South Dakota's streams, 81 percent in Kansas, and 84 percent in North Dakota.

Ephemeral and intermittent streams are integral to watershed systems, can be found intermingled with perennial stretches, and contribute greatly to habitat, water quality, and overall watershed function. Because of the relatively higher moisture content in arid and semi-arid region streams, vegetation and wildlife abundance and diversity in and near them is proportionally higher than in the surrounding uplands. Anyone familiar with watersheds in the interior west knows that summer rains can transform a streambed overnight from parched to flooding. These events may only last a brief period but can mobilize and transport contaminants. If pesticides are present, these can jeopardize wildlife habitat and water quality.

Expand buffers along perennial stream segments and wetlands: A drift incident in Nevada due to an APHIS diflubenzuron spray in 2019 was recorded, and the state investigation (Lum 2019) detected diflubenzuron on homeowner plants more than 1,000 feet from the spray area perimeter. Due to the documented drift at this distance, the state official who completed the investigation recommended increasing the no spray buffer around any sensitive site to ¼ mile. We ask that APHIS expand its buffers to be at least ¼ mile (1320 feet) around perennial stream segments and wetlands. Currently, APHIS buffers around perennial streams and wetlands are only 50-500 feet.

Finally, APHIS should clarify how buffers are measured when riparian vegetation is present. We recommend that riparian buffers be measured from the outermost edge of the riparian vegetation strip, not from the bank itself.

G. CLARIFY THE DEFINITION OF "REDUCED AGENT AREA TREATMENTS" (RAATS)

In the NOI, APHIS represents RAATS as follows:

> *"Under the RAATs method, parallel swaths of insecticide treated rangeland are alternated with untreated swaths. In addition, the rate of insecticide sprayed from the application vehicle is reduced to half the conventional treatment rate. Because the RAATs application method typically alternates treated and untreated swaths,* ***and*** [emphasis added by commenters] *the insecticide is sprayed at lower rates, the volume of insecticide applied per protected acre of rangeland is less than half of full coverage at conventional label rate insecticide applications.*

Yet a review of APHIS documents shows that the agency has not implemented RAATS in this way consistently. The 2019 EIS does not explicitly require a reduced rate for an application to be framed as "RAATS" nor does it require skipped swaths, nor does it require both to be used in conjunction. See APHIS 2019 FEIS (p. 5) "...*the RAATs strategy uses a reduced rate by alternating treatment swaths in a spray block, reducing application rates,* ***or*** *both."* [Emphasis added]

Furthermore, a review of APHIS contract solicitations issued for 2023 and 2024 and posted at sam.gov shows that none of 13 solicitations issued for aerial diflubenzuron applications specified the diflubenzuron reduced rate (0.75 oz/acre, equivalent to 0.012 lb a.i./acre) that the EIS associates with RAATs (see APHIS 2019 FEIS, Table 2-1, p. 25). Instead, all thirteen solicitations specified the conventional rate (1.0 oz/acre, equivalent to 0.016 lb a.i./acre).

Because the implementation and analysis of the program hinges heavily on RAATS, the public deserves a consistent definition and description of how RAATS will be implemented, across the program. This has important implications for effects analysis especially when considering residue concentrations, since the full rate can be significantly higher than the conventional rate, as described in Table 2-1 of the 2019 FEIS, meaning that toxic residues experienced by ecological systems and people will also be higher:

- Diflubenzuron conventional 1.33X higher than the "RAATS rate"
- Carbaryl bait conventional is 2.5X higher than the "RAATS rate"
- Liquid carbaryl conventional is twice as high as the "RAATS rate"
- Liquid chlorantraniliprole conventional is 1.54X higher than the "RAATS rate"
- Liquid malathion conventional is twice as high as the "RAATS rate."

H. ADDITIONAL ISSUES TO CONSIDER IN THE NEW PEIS

In addition to the issues raised above, we ask that APHIS consider the following additional issues as it develops the new PEIS:

1) **Direct effects of program treatments to non-target invertebrates, including pollinators, non-pest grasshoppers, and natural enemies, as well as indirect effects to the ecosystems they support.** This discussion should incorporate an updated literature review through at least 2026, and include specific analysis of effects to petitioned, proposed, and other documented declining species.

2) **Indirect effects of program treatments to plants,** especially rare species and those with highly specific pollinator relationships (example - yuccas and their yucca moths). As above, this discussion should incorporate an updated literature review, and include specific analysis of effects to petitioned, proposed, and other documented declining species.

3) **Drift from spray areas** is an important issue to consider within the PEIS. Because the majority of APHIS treatments occur using aerial methods and ULV technology, which is designed to disperse very small droplets across a wide area, pesticides can travel a long distance from where they are applied. Recently APHIS completed a consultation with U.S. Fish and Wildlife Service, in which it used non-conservative assumptions to estimate drift, including assuming that the lower "RAATS rate" would always be used (USDA APHIS 2024). As described above, actual spray solicitations from 2023-2024 tell a different story. None of the 13 solicitations from that period used the lower RAATS rate. The upshot is that by using non-conservative assumptions in the drift analysis, APHIS caused drift to appear so minor that even threatened and endangered plants receive only a 50-foot buffer from aerial sprays that are known to travel a minimum of 1000 feet. There was no explanation for why APHIS so drastically revised its assumptions compared to its 2010 consultation on endangered and threatened anadromous fish with National Marine Fisheries Service (USDA APHIS 2010).

4) **Liquid Carbaryl:** In the preferred alternative, we ask that APHIS drop the use of liquid carbaryl (in addition to the proposal to drop malathion), at least over public lands and within watersheds that supply drinking water or support aquatic recreation. Carbaryl is a broad-spectrum insecticide, meaning it can harm a wide variety of insects. It is also toxic to birds, fish, aquatic insects, and mammals and is considered a likely human carcinogen. Because of its very high toxicity to honey bees (the surrogate test species), the Environmental Protection Agency label for Sevin XLR Plus specifies "Do not apply to target crops or weeds in bloom." It is nearly impossible to aerially spray native rangelands in spring and summer and not find at least some blooming plants. In addition, carbaryl's other toxic effects are concerning.

5) **Review of the Draft PEIS.** On page 22 of the NOI, APHIS describes the schedule for the Decision-Making Process. Notably, APHIS makes no mention of sharing an analysis of public comments on this NOI. Nor does APHIS seem to be planning to release a Draft PEIS for public review, as has long been the norm in the EIS process. Given the significant public controversy over this program, and the program's potential for impacts to a wide range of species, we ask that APHIS publish a Draft PEIS at the Federal Register with a 30-day public comment period.

7) **Cumulative impacts over time**. In the NOI, APHIS states that *"grasshopper program suppression treatments occur on a minute fraction of the western rangeland annually."*

While this may be technically correct at the scale of the entire western rangeland system, it is also true that treatments are occurring on extremely large areas at the regional scale. Some of the lands treated are sensitive and vitally important for many species that are not distributed across the entire Western rangeland but only occur regionally and are also in

decline (examples include Greater Sage-Grouse, various bumble bee species, certain Lepidopterans, and mussels). These regionally concentrated treatment areas could lead to significant impact over time. For example, over the last 20 years, treatments have been concentrated in eastern and central Montana, central Wyoming, southwest Idaho, southeastern Oregon, and northern Nevada. Furthermore, treatments occur either repeatedly on some lands or close enough in proximity to potentially engender cumulative impacts to the ecosystem over time, especially with the use of longer-lived pesticides such as chlorantraniliprole. Repeated sprays over time have been associated with greater frequency and severity of grasshopper outbreaks (Lockwood et al. 1988). In the EIS analysis, we strongly recommend that APHIS identify and map grasshopper suppression treatments at least from 1980-present, highlight overlapping treatment areas, and discuss cumulative effects within that context.

H. COMMENTS ON ALTERNATIVES DESCRIBED IN THE NOI

Alternative 1: No Action (Continue current program). Note that the description here varies from that used in the existing EIS, especially this sentence: "Under the RAATs method, parallel swaths of insecticide treated rangeland are alternated with untreated swaths. **In addition,** the rate of insecticide sprayed from the application vehicle is reduced to half the conventional treatment rate. Under the current program, RAATs is described as follows in the 2019 FEIS (p. 5): "*...the RAATs strategy uses a reduced rate by alternating treatment swaths in a spray block, reducing application rates,* ***or*** *both."* [Emphasis added]

As stated above, APHIS should clarify its definition of RAATs. Regardless, we do not support this alternative as written.

Alternative 2: Survey Monitoring and Technical Assistance Only. This alternative has essential components within APHIS' grasshopper management responsibilities. A robust monitoring program and technical assistance to minimize the likelihood of outbreaks are valuable aspects of a program. That said, as written, Alternative 2 may not fulfill statutory direction under the Plant Protection Act, since at times some intervention, whether it be cultural, chemical or other, might be justified to suppress economically harmful grasshopper or cricket outbreaks. APHIS should consider whether there is a better intermediate alternative to develop.

Alternative 3: Surveys, Monitoring, Tech Assistance and Biopesticides with Adaptive Management: We support analysis of this alternative and would like to see analysis of effects on non-target invertebrates and broader ecosystem effects.

Alternative 4. Combination of Alternatives 1 and 3 with Modifications (Preferred Alternative). This alternative drops the use of malathion, which we support. We strongly recommend that this alternative also drop the use of liquid carbaryl – see our reasoning above. This alternative also specifies that only RAATS would be used for application. While we tentatively support this concept, the elasticity of APHIS' RAATS definition leaves us with questions about how this will actually be implemented. Will it mean a 50% skipped swath under all circumstances? Will it mean that APHIS will only use the lower rates of the chemicals (e.g. 0.75 oz/acre for diflubenzuron)? APHIS must further clarify. In addition, we strongly urge that APHIS include in this alternative (or the ultimate preferred alternative) all the additional recommendations we made earlier in this letter.

Please take these comments into consideration as you embark upon the development of the new or supplemental EIS.

Sincerely,

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[1] Marco A. Hernandez, XERCES SOCIETY FOR INVERTEBRATE CONSERVATION and CENTER FOR BIOLOGICAL DIVERSITY, Plaintiffs, v. KEVIN SHEA, in His Official Capacity as Administrator of the Animal and Plant Health Inspection Service; and the ANIMAL AND PLANT HEALTH INSPECTION SERVICE, Federal Defendants, and STATE OF WYOMING and STATE OF MONTANA, Intervenor-Defendants. (United States District Court For The District of Oregon 2024), https://biologicaldiversity.org/programs/environmental_health/pdfs/AUSDA-APHIS-insecticide-western-states-ruling-08022024.pdf.

[2] At the time, some of the negative effects of diflubenzuron had not yet come to light.

[3] Pesticide threats are discussed in listing proposals or 90-day findings at regulations.gov for Monarch butterfly (*Danaus plexippus)* at Docket FWS-R3-ES-2024-0137; Western bumble bee (*Bombus occidentalis*) at Docket FWS-R6-ES-2016-0023; Southern Plains bumble bee (*B. fraternus*) at Docket FWS-R3-ES-2023-0137; Suckley's cuckoo bumble bee (*B. suckleyi)* at Docket FWS–R7–ES–2020–0097; Morrison bumble bee (*B. morrisoni*) at Docket FWS-R2-ES-2024-0099; and Western regal fritillary *(Argynnis idalia occidentalis)* at Docket FWS-R6-ES-2023-0182.

[4] FLPMA also created ACECs (Areas of Critical Environmental Concern) "*where special management attention is required…to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards*."