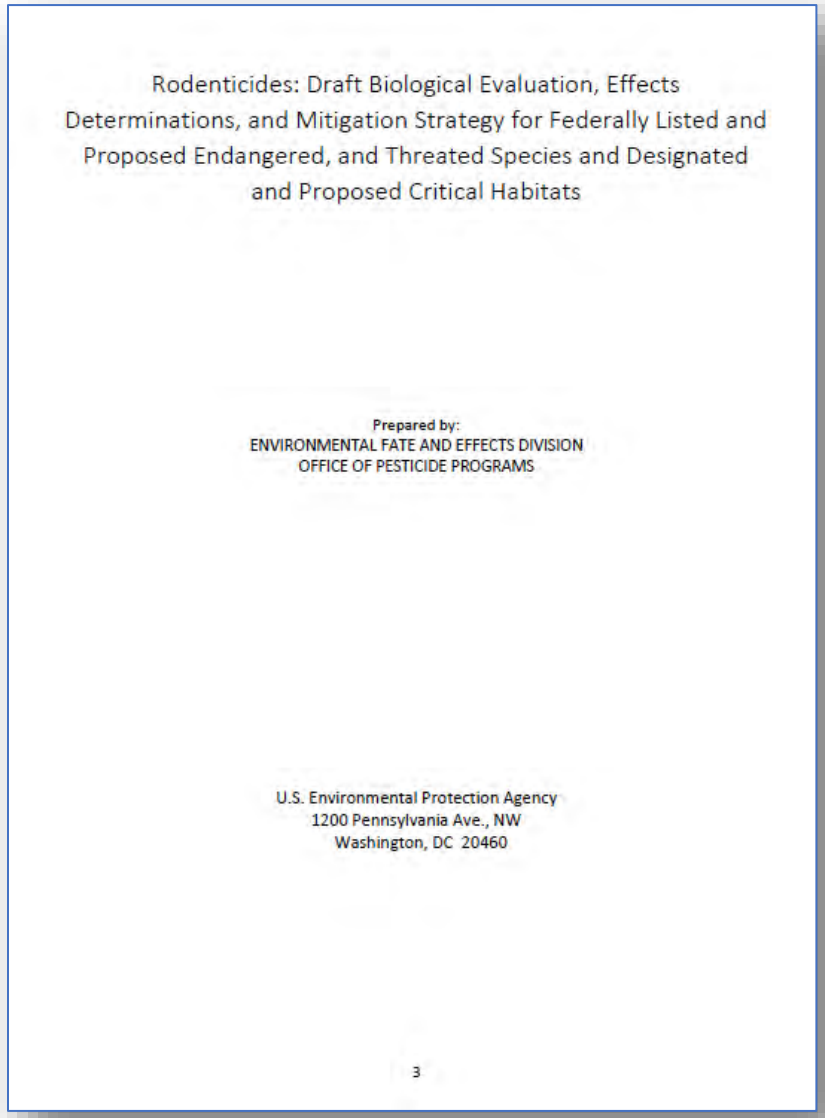
EPA's Draft Biological Evaluation for 11 Rodenticides and Mitigation Strategy


Rodenticides: Draft Biological Evaluation, Effects Determinations, and Mitigation Strategy for Federally Listed and Proposed Endangered, and Threated Species and Designated and Proposed Critical Habitats

Prepared by:
ENVIRONMENTAL FATE AND EFFECTS DIVISION
OFFICE OF PESTICIDE PROGRAMS

U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

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Co-hosted by Anticoagulant Rodenticides Task Force (ARTF) and FIFRA Endangered Species Task Force (FESTF)

January 12, 2024

Rodenticide TASK FORCE

Agenda

- Introductions
- History/Context of EPA Strategies
- History of Rodenticide ESA Consultations and previous mitigations
- Rodenticide Draft BE/Strategy Overview
- Panel (Stakeholder perspectives on mitigation measures)
  - Denny Mackley, J.D. Darr, Tom Hebert, Roger Baldwin
- How to Focus Comments
- Questions

Rodenticide TASK FORCE

FIFRA Endangered Species Task Force (FESTF) Members

ADAMA Agricultural Solutions, Ltd.
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Raleigh, NC 27604

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ARTF Member Companies

(** denotes Full Member)

- BASF Corporation
- Bell Labs
- Central Garden & Pet Company (Farnam)
- JT Eaton & Co., Inc.
- Liphatech, Inc**
- Neogen Corp.**
- PelGar International Ltd.**
- Reckitt Benckiser LLC
- Scimetrics Limited Corp.
- Unichem d.o.o
- VM Products
- Wilco Distributors**
- Woodstream Corporation

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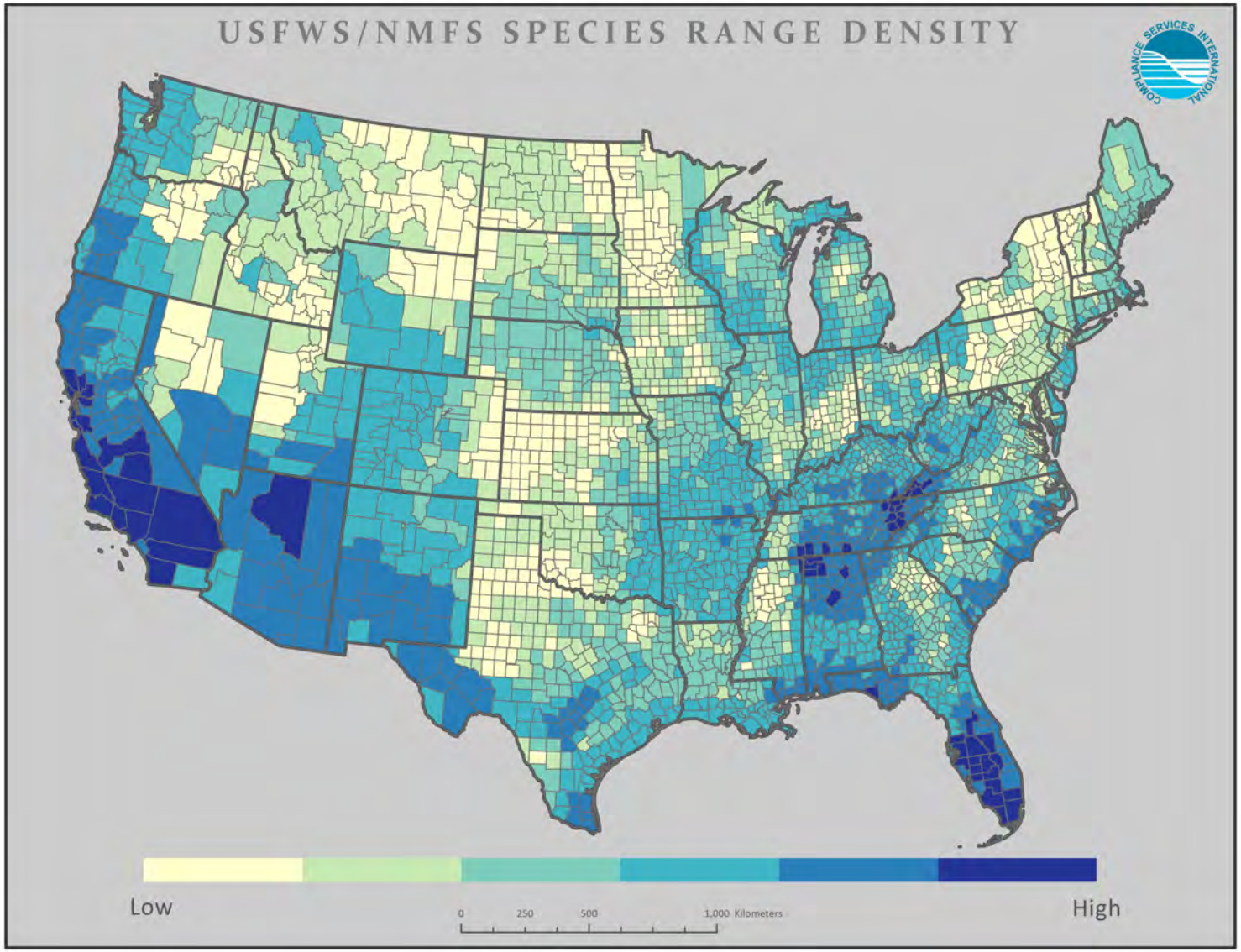
When EPA registers a pesticide under the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA), they are required to assess potential impacts to species that are listed under the Endangered Species Act (ESA).

Measures and restrictions on the use of pesticides can be required to protect endangered species.

Every county in the US has at least one ESA-listed species and impacts are local. These need to be addressed locally by the end user.



Rodenticide TASK FORCE

ESA is not new to pesticides.

However, EPA has gained momentum driven by need to reduce litigation.

POLITICS

EPA Grants Corteva 7-Year Registration for Enlist, Adds Endangered Species Considerations

January 11, 2022 (Agweb)

The EPA says prior to Jan. 11, 2022, the agency "did not consistently assess the potential effects of conventional pesticides on listed species when registering new active ingredients."

CROP PRODUCTION

Pesticide Approval System to be Revamped, According to EPA

April 13,2022 (Agweb)

White House Council on Environmental Quality Chair Brenda Mallory says the new workplan allows agriculturalists to "better protect"

What you need to know about Endangered Species Act and how to comment

The deadline for submitting comments to EPA is Jan. 30, 2023

The proposed Endangered Species Act Workplan regul
could impact everything from spray drift to surface ru

Hart | Dec 09, 2022

NEWS | PLANTS & ANIMALS

Pressured by lawsuits, EPA toughens pesticide rules to protect endangered species

JOURNALS | Science

EPA Ordered to Assess Insecticide

EPA Ordered to Make Endangered Species Act Assessment on Insecticide Cyantraniliprole by 2023

11/22/2022 | 1:15 PM CST

By Todd Neeley, DTN Staff Reporter

Connect with Todd:

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A federal appeals court ordered the EPA to complete an Endangered Species Act assessment on the insecticide cyantraniliprole. (DTN file photo)

LINCOLN, Neb. (DTN) -- The EPA has until Se
2023 to assess the insecticide cyantranilipro
endangered species and to make changes to i
include mitigation measures, the U.S. Court c
the District of Columbia Circuit ruled on Tue
ongoing legal battle.

What's more, EPA will be required to file a pr
with the court every 60 days.

In 2014, the EPA registered the pesticide wit
determining whether it would have adverse effects on endangered species. The court ruled in June 2017 that EPA violated the Endangered Species Act (ESA) by registering the insecticide "before making an ESA effects determination or consulting with other agencies."

Then in 2019, the agency was ordered by the DC Circuit to fulfill its statutory obligation. The EPA has yet to do so.

Sept. 13, 2023, 3:44 PM

EPA To Mitigate Pesticide Harms on Protected Species Under Deal

Samantha Hawkins
Legal Reporter

- EPA didn't analyze effects of 382 pesticide active ingredients
- Strategies for herbicides, insecticides due by 2024, 2025

The EPA must develop a strategy to better protect endangered species fi
settlement agreement with conservation groups that was approved Wed

The agency's herbicide strategy is due by 2024 and the insecticide strate

The deal stems from a lawsuit filed by Center for Biological Diversity and
that the agency failed to consult on the effects of 382 pesticide active ing
Endangered Species Act.

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NEWS

EPA says three widely used pesticides driving hundreds of endangered species toward extinction

The three neonicotinoids — thiamethoxam, clothianidin, and imidacloprid — are applied as seed coatings on some 150 million acres of crops yearly, including corn and soybeans. Neonicotinoids are a group of neurotoxic insecticides used widely on farms and in urban landscapes. Plants absorb them and can be present in pollen and nectar, and have been blamed for killing bees or changing their behaviors.

By Missouri Independent

HOME > CROPS > Q&A SIX-PACK: EPA DRAFT HERBICIDE STRATEGY

EPA Proposes New Ag Herbicide Rules

Q&A Six-Pack: EPA Draft Herbicide Strategy

9/19/2023 | 8:50 AM CDT

By Jason Jenkins, DTN Crops Editor

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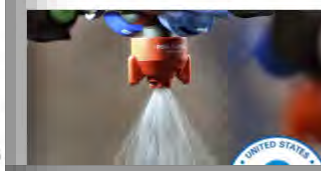

JEFFERSON CITY, Mo. (DTN) --- Use whatever idiom you want to describe it -- jump through hoops, clear the bar, check the boxes -- the cost of keeping tools in the herbicide toolbox is about to increase for U.S. farmers.

For nearly two years, the Environmental Protection Agency (EPA) has said it will no longer turn a blind eye toward the Endangered Species Act (ESA) and its legal obligation to ensure that pesticides don't jeopardize the

ESA “megasuit” driving recent changes

- In 2011, a lawsuit was filed against EPA alleging that it violated ESA when it registered or reevaluated 382 pesticide active ingredients; this was reduced to 35 active ingredients (organophosphate pesticides, **rodenticides**, insecticides, miticides, herbicides, fungicides) covering over 1000 pesticide products.
- A settlement was finalized on **Sept 12, 2023**, and the EPA must develop and release the following in a timely manner to fulfill its obligation under ESA:
  - Biological Evaluation (BEs): It addresses whether the pesticide “may affect” one or more individuals of a listed species and their critical habitats.
  - Strategies: It will identify necessary mitigation measures to address effects to listed species based on certain criteria (herbicides, insecticides, **rodenticides**, fungicides, Hawaii, offsets).
  - Vulnerable Species Project: It will develop mitigation measures to address impacts of the pesticides on vulnerable listed species (27 species currently; list will be expanded).

Rodenticide TASK FORCE

Recent Events Advancing EPA's Compliance with the ESA

January 2022	EPA announced commitment to complying with ESA and started holding stakeholder calls.
April 2022	EPA released workplan outlining ESA approach and early mitigation.
November/December 2022	EPA released updated workplan with FIFRA Interim Ecological Mitigations (IEM, incl. pick-lists) and strategies. EPA released PIDs and Federal Pilot (methomyl, carbaryl and rodenticides).
June 2023	EPA released Vulnerable Species Pilot (VSP) and StoryMaps.
July 2023	EPA released Draft Herbicide Strategy.
September 2023	"Megasuit" Settlement finalized.
November 2023	EPA released update on the Draft Vulnerable Species Pilot Project.
December 2023	EPA released **Draft Rodenticide Biological Evaluation** and proposed **Draft Rodenticide Strategy.**
**February 2024	Comments due on **Draft Rodenticide BE** and **Draft Rodenticide Strategy**
**1st Quarter 2024	Draft Insecticide Strategy expected; Offset workshop; Hawaii Strategy workshop
**2nd Quarter 2024	Final Herbicide Strategy expected
**November 2024 (or later)	Final Rodenticide Biological Evaluation and Final Rodenticide Strategy expected

Common Abbreviations

- BE – Biological Evaluation
- BO – Biological Opinion
- CH – Designated Critical Habitat
- EPA Effects Determinations:
  - NE – No Effect
  - MA – May Affect
    - NLAA – Not Likely to Adversely Affect
    - LAA – Likely to Adversely Affect
      - J – Jeopardy
      - AM – Adverse Modification
- UDL – Use Data Layer
- BLT – Bulletins Live! Two
- PULA – Pesticide Use Limitation Area

Rodenticide
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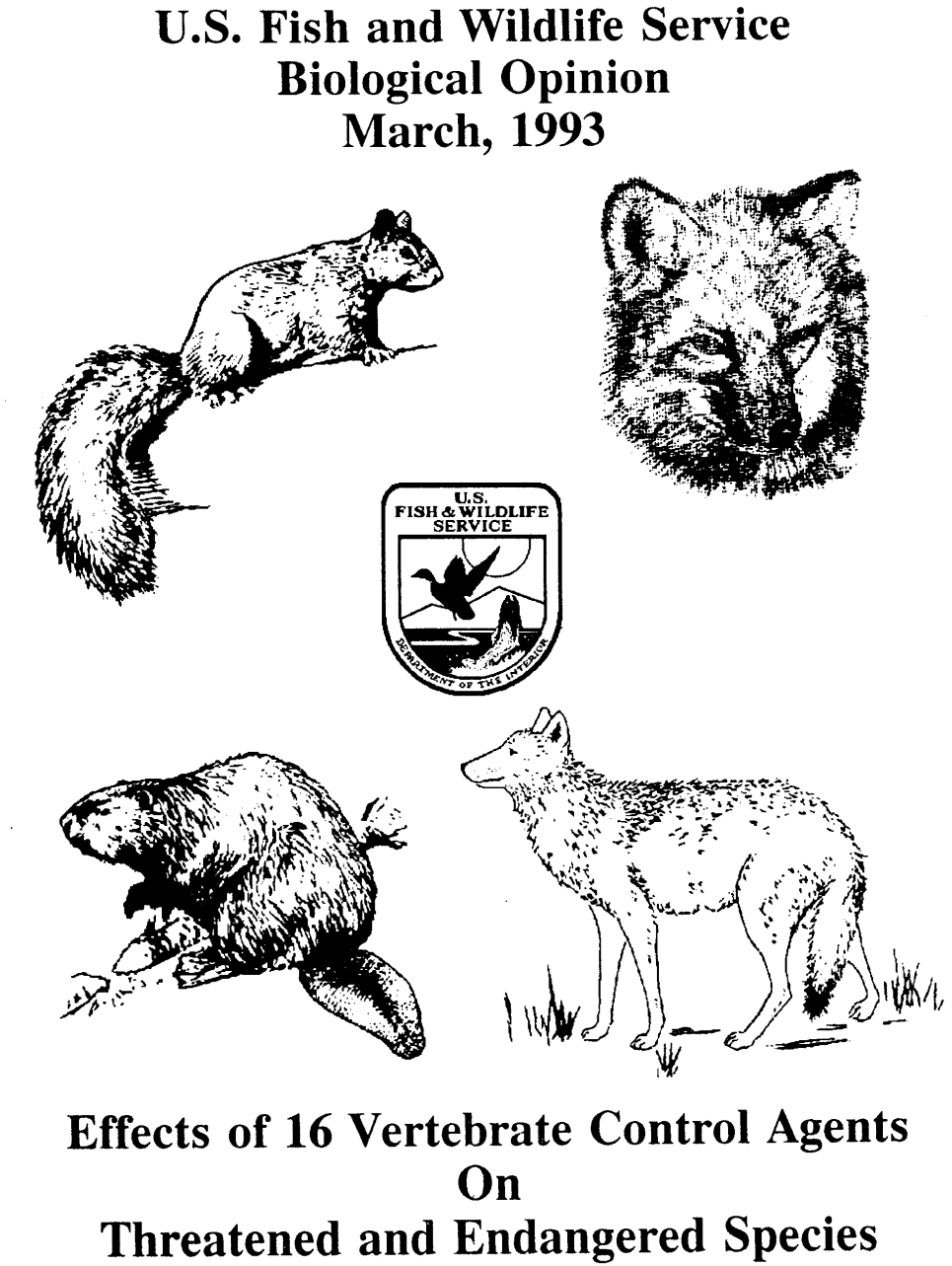
History of Rodenticide ESA Consultations and previous mitigations

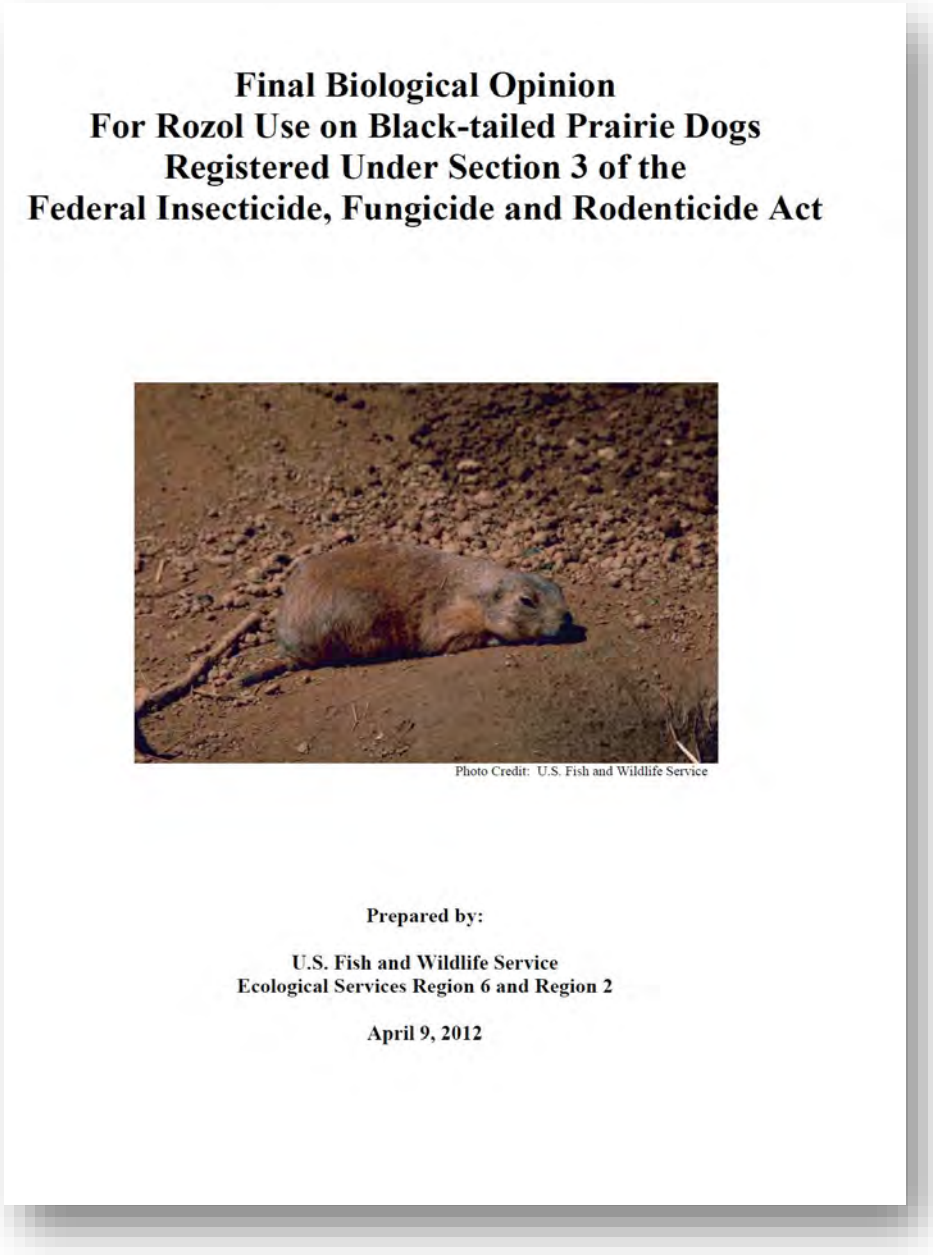
- 1993 Biological Opinion for all AIs for Vertebrate Control
- 1998 Reregistration Eligibility Decision (no consultation)
- 2008 Risk Mitigation Decision (no consultation)
- 2012 Prairie Dog Bait Biological Opinions



Rodenticide TASK FORCE

The Rozol and Kaput Prairie Dog Bait 2012 Biological Opinions

- These mitigation measures are being used as the model for the Rodenticide Strategy.
- However, they are specific to the target pest, habitat, and use pattern.
- The BOs were not fully implemented, and have not been monitored for efficacy and compliance.



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PRAIRIE DOG BAIT

- Ten states
- Wheat baits treated with either diphacinone or chlorophacinone
- Rangeland and adjacent non-crop areas only

Rodenticide TASK FORCE

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PRAIRIE DOG BAIT 2012 BOs: LABEL REQUIREMENTS

- Use line-transect surveys to perform carcass searches after baiting: https://www.epa.gov/endangered-species/carcass-search-recovery-guidelines-black-tailed-prairie-dogs
- Notify the National Pesticide Information Center (NPIC) if any dead or dying nontargets are found; additional notification requirements if Endangered Species are found.

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Summary of Prairie Dog Bait 2012 BOs Conservation Measures

- Conservation Measures – incorporated into the Action to avoid and minimize adverse effects
  - Nine species-specific measures prohibit or delay application within occupied areas or critical habitat
  - EPA's Bulletins Live! Pesticide Use Limitation Areas

PRAIRIE DOG BAIT 2012 BOs: RESTRICTIONS ON LOCATION AND TIMING

- Prohibited on some Tribal Lands; within all Black-footed Ferret (BFF) reintroduction areas; and in southern New Mexico and western Texas
- Treatment period from **Oct 1 – Mar 15**, unless additional specific restrictions:
- Cannot be applied in Preble's Meadow Jumping Mouse habitat until **Nov 1**
- Shorter application window in Montana Grizzly Bear habitat: **Dec 1 to Mar 1**

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EXAMPLE – PRAIRIE DOG BAIT APPLICATION LIMITATION

Endangered Species Protection Bulletin

Application Month: January 2024
Product: All products with limitations in selected area

1 Areas where pesticide use must be limited are identified on the map. A legend is located beside the map to help pinpoint these locations.

Bulletins Live! Two: https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins

Endangered Species Protection Bulletin

Pesticide Use Limitation Summary Table

Product	AI	Use	Method	Form	Code
KAPUT COMBO PRAIRIE DOG BAIT (72500-27)	Diphacinone, Imidacloprid	Black-tailed Prairie Dog	Bait (loose)	Bait	K3
KAPUT-D PRAIRIE DOG BAIT (72500-22)	Diphacinone	Black-tailed Prairie Dog	Bait (loose)	Bait	K3
ROZOL PRAIRIE DOG BAIT (7173-286)	Chlorophacinone	Black-tailed Prairie Dog	Bait (loose)	Bait	R3

Codes and Limitations Table

Code	Limitation
K3	Kaput-D Prairie Dog Bait and Kaput COMBO Prairie Dog Bait use is limited to the period November 1 through March 15.
R3	Rozol Prairie Dog Bait use is limited to the period November 1 through March 15.

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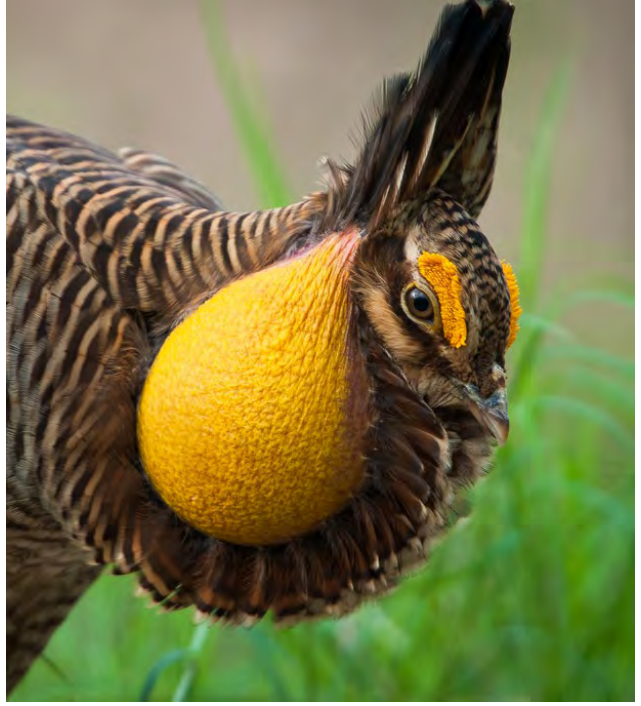

Rodenticides: Draft Biological Evaluation, Effects Determinations, and Mitigation Strategy for Federally Listed and Proposed Endangered, and Threated Species and Designated and Proposed Critical Habitats

- Released by EPA on November 30th https://www.regulations.gov/docket/EPA-HQ-OPP-2023-0567/document

- Currently in a 75-day public comment period closing **February 13th.**

Focus of Comments

EPA seeks feedback (page 94) on:

- Effectiveness of the measures for reducing the potential for exposure to listed species and their designated critical habitat
- Feasibility of measures
- Enforceability of measures

Whooping Crane, USFWS

Rodenticide TASK FORCE

Draft Biological Evaluation of 11 Rodenticides

- Purpose is to make **effect determinations** and **predict** whether there is a potential likelihood that current registrations of 11 rodenticides may lead to a **future jeopardy or adverse modification** finding by the USFWS or NMFS for listed species and their CHs.
- EPA included a Draft Rodenticide Strategy (mitigations) as part of the draft Biological Evaluation. “This plan will be known as the Rodenticide Strategy that the Agency described in its November 2022 update to its ESA Workplan.”
  - “Rodenticide Strategy focuses on proposed mitigation measures that have been identified to reduce exposures where EPA made predictions of potential likelihood of future jeopardy for listed species and adverse modification for critical habitats based on current uses and label restrictions in this draft BE.” pg. 88
- Final BE and mitigation measures in the final strategy will inform consultation with the FWS.

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Biological Evaluation: Effects Determinations

Grouped by species' diet, rodenticide mode of action, and use pattern:

1) Species are either Primary Consumers (may eat bait directly) or Secondary Consumers (prey upon or scavenge animals that have consumed bait);
2) The 11 rodenticides grouped into FGARs, SGARs, Bromethalin, Cholecalciferol, Strychnine, Zinc Phosphide;
3) Use patterns: Bait station, in-burrow, broadcast;
4) Determinations based on exposure (including overlap of species locations with use sites) and potential impacts of rodenticides to prey, pollination, habitat, or dispersal for each ESA listed species.

Rodenticide TASK FORCE

Summary of Effects Determinations

- Total of 1,784 ESA-listed species considered
  - No Effect: 1,576
    - All aquatics, plants, and animals not expected to be exposed due to diet, habitat, behavior
  - Not Likely Adversely Affect: 72
  - May Affect/No Jeopardy: 63
  - May Affect/Jeopardy: 73

Table E-2. Number of Listed Species Effects Determinations Including Predictions of the Potential Likelihood of Future Jeopardy by Taxon[1,2]

Taxon	Number of Species	NE	Specific Determinations and Predictions Across Use Patterns and by A.I. or group											
			Bait Station			Burrow			Broadcast			Feral Hog Bait Station		
			NLAA	LAA, No J	LAA, J	NLAA	LAA, No J	LAA, J	NLAA	LAA, No J	LAA, J	NLAA	LAA, No J	LAA, J
First Generation Anticoagulant Rodenticides (FGARs)[3]														
Mammals	98	24	30	23	21	24	19	31	21	16	37	65	8	1
Birds	95	25	54	9	7	54	15	1	28	24	18	68	0	2
Amphibians[5]	45	11	34	0	0	29	5	0	22	12	0	34	0	0
Reptiles	53	23	16	10	4	16	14	0	1	24	5	29	1	0
Second Generation Anticoagulant Rodenticides (SGARs)[4]														
Mammals	98	24	30	23	21	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Birds	95	25	54	9	7	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Amphibians[5]	45	11	34	0	0	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Reptiles	53	23	16	10	4	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Bromethalin														
Mammals	98	24	30	24	20	24	20	30	N/A	N/A	N/A	N/A	N/A	N/A
Birds	95	25	54	16	0	54	16	0	N/A	N/A	N/A	N/A	N/A	N/A
Amphibians[5]	45	11	34	0	0	29	5	0	N/A	N/A	N/A	N/A	N/A	N/A
Reptiles	53	23	16	14	0	16	14	0	N/A	N/A	N/A	N/A	N/A	N/A
Cholecalciferol														
Mammals	98	24	30	24	20	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Birds	95	25	70	0	0	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Amphibians[5]	45	11	34	0	0	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Reptiles	53	23	30	0	0	N/A[6]	N/A[6]	N/A[6]	N/A	N/A	N/A	N/A	N/A	N/A
Strychnine														
Mammals	98	24	N/A	N/A	N/A	24	20	30	N/A	N/A	N/A	N/A	N/A	N/A
Birds	95	25	N/A	N/A	N/A	58	12	0	N/A	N/A	N/A	N/A	N/A	N/A
Amphibians[5]	45	11	N/A	N/A	N/A	29	5	0	N/A	N/A	N/A	N/A	N/A	N/A
Reptiles	53	23	N/A	N/A	N/A	18	12	0	N/A	N/A	N/A	N/A	N/A	N/A
Zinc Phosphide														
Mammals	98	24	24	19	31	24	19	31	21	21	32	N/A	N/A	N/A
Birds	95	25	54	16	0	54	16	0	28	16	26	N/A	N/A	N/A
Amphibians[5]	45	11	34	0	0	29	5	0	22	12	0	N/A	N/A	N/A
Reptiles	53	23	16	14	0	16	14	0	6	24	0	N/A	N/A	N/A

N/A = Not a Registered Use Pattern

[1] EPA made effects determinations and predictions of the potential likelihood of future jeopardy for listed species and the details on these can be found in **Appendix B.**

[2] Reflects listed species current as of April 2023 and delisting of several of those species as of October 2023. https://www.fws.gov/press-release/2023-10/21-species-delisted-

[3] FGARs are chlorophacinone, diphacinone (and its sodium salt), and warfarin (and its sodium salt).

[4] SGARs are brodifacoum, bromadiolone, difenacoum and difethialone.

[5] "Amphibians" include those species that have both a terrestrial and aquatic phase.

[6] For cholecalciferol and two of the SGARs (bromadiolone and difethialone), the only registered burrow uses are structural applications within 100 ft of a building and the bait station effects determinations for these chemicals are considered protective of this use.

NE = no effect; NLAA = not likely to adversely affect; LAA = likely to adversely affect; J = jeopardy; no J = no jeopardy

Rodenticide TASK FORCE

CH Effects Determinations

- For each CH, a single effect determination was made for the 11 rodenticides collectively, without consideration of specific chemical or use pattern.

- EPA further evaluated the LAA CH determinations and made predictions about the potential likelihood of future adverse modification based on essential physical and biological features (PBFs) related to habitat quality for species that utilize small mammal burrows and rely on small mammal prey.

*Adverse Modification = the habitat can no longer support the species

Rodenticide TASK FORCE

CH Effects Determinations

Adverse Modification for 4 critical habitats:

- California tiger salamander
  - Small mammal burrows are an essential PBF for this species
- Alameda whipsnake
  - Small mammal burrows are an essential PBF for this species
- Mexican spotted owl
  - Mammals are a main dietary item, and the maintenance of available prey species is an essential PBF.
- Northern spotted owl
  - Mammals are a main dietary item, and the maintenance of available prey species is an essential PBF.

Geographic Extent of Jeopardy Species and Adverse Modification of Critical Habitat

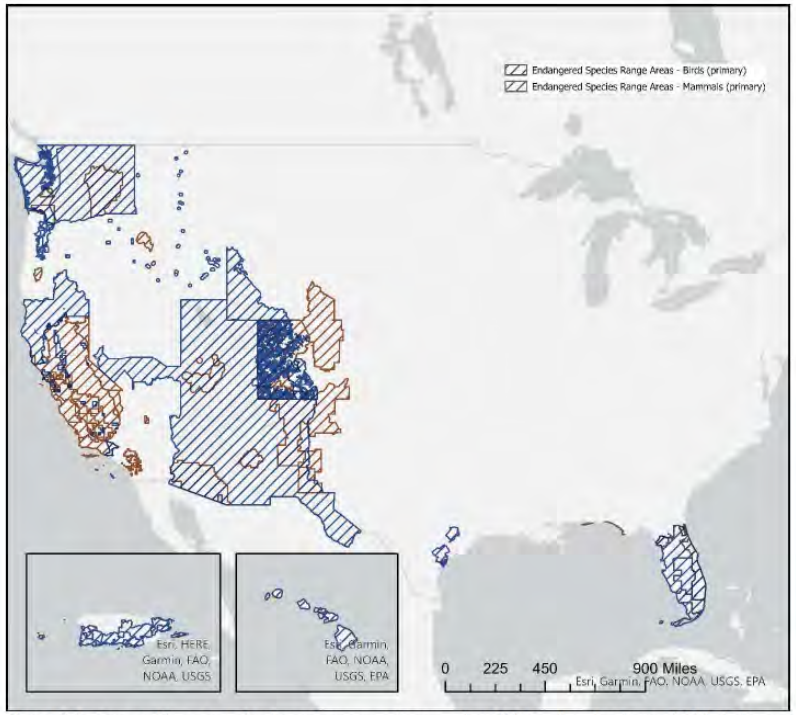


Figure 6-1. Geographic extent of primary consumers' range, that EPA Predicted as Potential Likely Future Jeopardy. Birds are blue and mammals are brown. There are no species' ranges contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no ranges for species in AK.

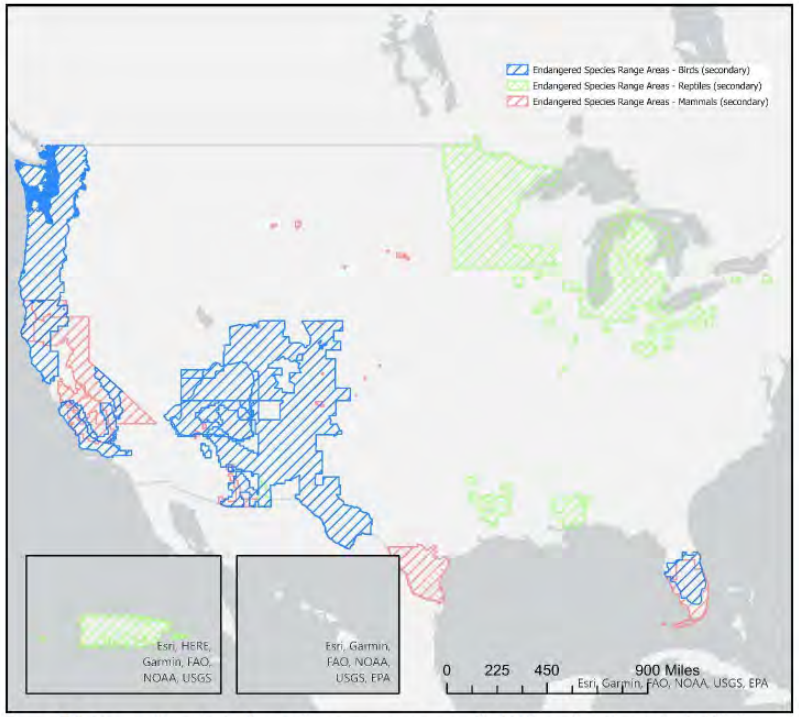


Figure 6-2. Geographic extent of secondary consumers ranges that EPA predicted as potential likely future jeopardy. Birds are blue, mammals are red, reptiles are green. There are no species' ranges contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no ranges for species in AK.

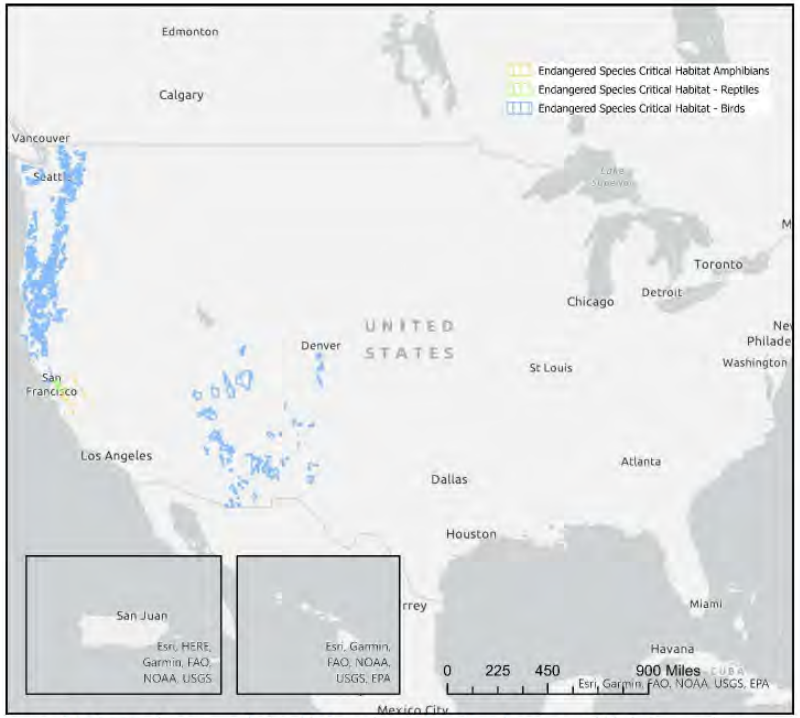


Figure 6-3. Geographic extent of critical habitat that EPA predicted as potential likely future adverse habitat modification. Birds are blue and reptiles are green (near San Francisco). There are no species' critical habitats contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no critical habitats for species in AK.

- The maps on pages 99-101 represent the species ranges as delineated by FWS and designated critical habitat for the species with likely future jeopardy and/or likely adverse modification determinations by EPA in the draft biological evaluations.
- "The entire range of each species and CH is presented, not accounting for overlap with areas that represent rodenticide use areas" (pg. 98)

Rodenticide TASK FORCE

Geographic Extent of Jeopardy Species: Data Example

Map from EPA's Draft BE

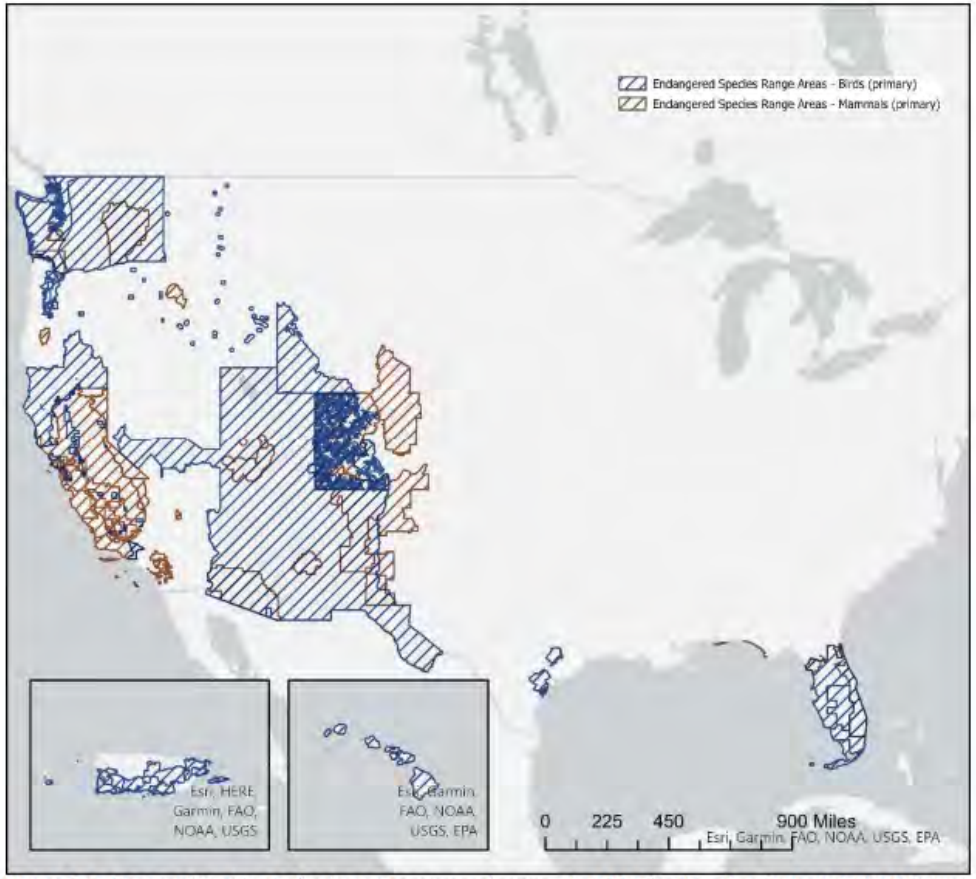
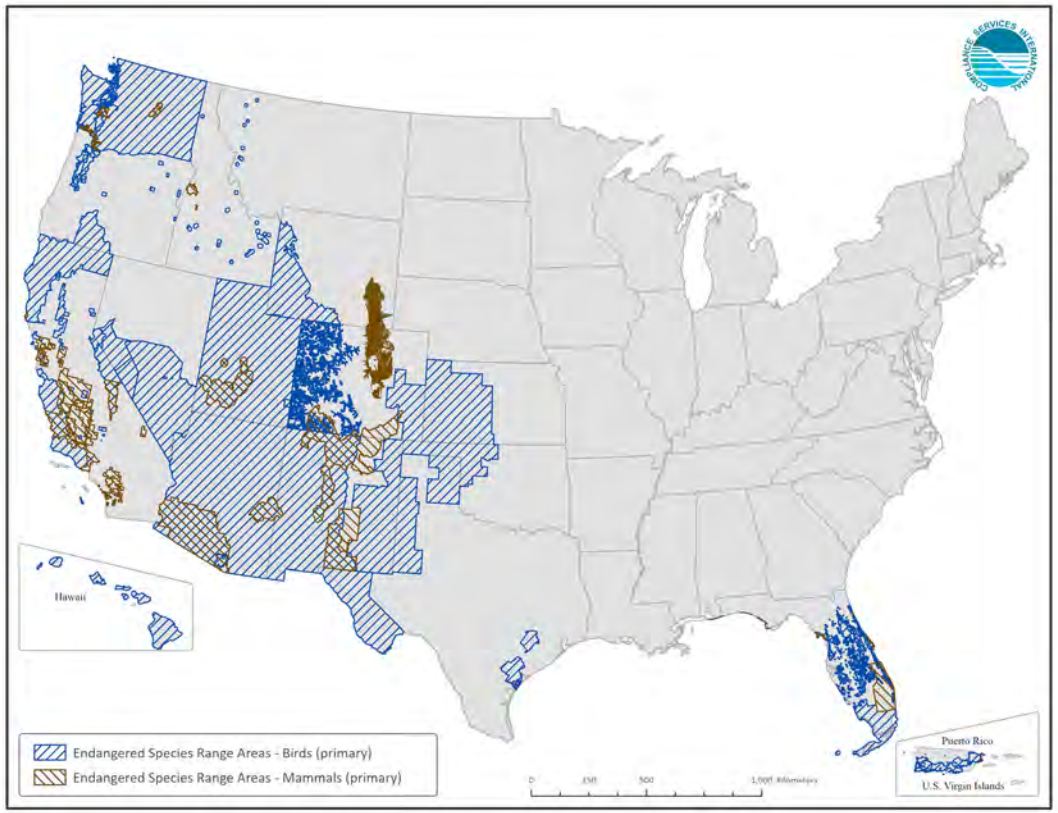


Figure 6-1. Geographic extent of primary consumers' range, that EPA Predicted as Potential Likely Future Jeopardy. Birds are blue and mammals are brown. There are no species' ranges contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no ranges for species in AK.

Map recreated using species from Table C-1 and 12/5/23 ranges downloaded from FWS ECOS



- "EPA used the spatial dataset available as of February 2022" (pg. 19)
- A spatial overlap analysis, comparing where species are located with rodenticide use areas, was one component of EPA's effects determinations.
- Changes or updates in the spatial extent of species and use site locations can result in changes to overlap.

Rodenticide TASK FORCE

Draft Rodenticide Strategy

- Purpose: **mitigation measures** to reduce exposures of listed species to the 11 rodenticides, as proposed in the Draft BE.
- Species with predicted determinations of potential likelihood of future Jeopardy and potential likelihood of future Adverse Modification (AM) for CHs.
- The proposed mitigation measures are also intended to minimize take of those species where EPA made LAA determinations.
- Proposed mitigation measures in the draft rodenticide strategy come from the Rodenticide PIDs, including the ESA Pilot Memo that addressed 3 pilot species representing different routes of exposure with updates for species-specific measures with a likely J/AM prediction in the draft BE.
- Once the Rodenticide Strategy is finalized, mitigation measures implemented through 1) label changes; and 2) geographically-specific and species-specific mitigations in Bulletins Live Two!

Rodenticide TASK FORCE

Bulletins Live! Two: https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins

Role of PIDs and BE in Mitigations

The PID Mitigations:

- Address identified adverse effects to human health and the environment, including general wildlife issues, under FIFRA
- Must balance economic and social costs and benefits
- Mitigation measures finalized in the Interim Decision
- ID label changes go into effect

The BE Mitigations:

- Effects Determinations based on current labeled uses, without proposed mitigations
- Mitigate for adverse effects identified to Endangered Species and their Critical Habitat under ESA
- Only purpose is to minimize take for LAA species, and prevent J/AM

Rodenticide TASK FORCE

Role of PIDs and BE in Mitigations

The BE Mitigations (cont.):

- Under ESA, there is **no** consideration of the impacts of the mitigation measures to human health, economics, non-ESA species
- Broad, national-level mitigation measures necessary to reduce impacts to wildlife in general, as well as Endangered Species in particular, will go onto the label (these are the ones in the PIDs – think of it as double duty for non-listed and listed species, and laying the foundation for the ESA mitigation measures).
- Species-specific and/or geographically specific mitigation measures will be implemented through Bulletins Live! Two.

Summary of Mitigation Categories

Table 5-1. General Summary of Mitigation Categories by Grouped Species and Rodenticide AI/Group

Rodenticide ai/group	Mammals		Birds		Reptiles	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
FGAR	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11
SGAR	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11
Bromethalin	2, 3, 5, 8, 9	8, 9, 10, 11	2, 3, 5, 8, 9	8, 9, 10, 11	2, 3, 5, 8, 9	8, 9, 10, 11
Cholecalciferol	2, 3, 5	NA	NA	NA	NA	NA
Strychnine	1, 4, 6, 7, 8	8, 9, 10, 11	1, 4, 6, 7, 8	8, 9, 10, 11	1, 4, 6, 7, 8	8, 9, 10, 11
Zinc Phosphide	1, 2, 4, 5, 6, 8	8, 9, 10, 11	1, 2, 4, 5, 6, 8	8, 9, 10, 11	1, 2, 4, 5, 6, 8	8, 9, 10, 11

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Table 5-1 specifies the proposed mitigation options for the draft Rodenticide Strategy applicable by groups of listed species for which EPA made draft "may affect" determinations (mammals, birds, reptiles) for each rodenticide active ingredient/group. The table defines mitigation measures for mammals, birds, and reptiles for which EPA predicted a potential likelihood of future J. The proposed mitigation measures are specific to active ingredient and exposure route (primary - direct consumption of rodenticide or secondary - consumption of poisoned prey) within each listed species group. A short description of each mitigation measure is given at the bottom of the table.

Table 5-1. General Summary of Mitigation Categories by Grouped Species and Rodenticide AI/Group

Rodenticide ai/group	Mammals		Birds		Reptiles	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
FGAR	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11
SGAR	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7, 8	8, 9, 10, 11
Bromethalin	2, 3, 5, 8, 9	8, 9, 10, 11	2, 3, 5, 8, 9	8, 9, 10, 11	2, 3, 5, 8, 9	8, 9, 10, 11
Cholecalciferol	2, 3, 5	NA	NA	NA	NA	NA
Strychnine	1, 4, 6, 7, 8	8, 9, 10, 11	1, 4, 6, 7, 8	8, 9, 10, 11	1, 4, 6, 7, 8	8, 9, 10, 11
Zinc Phosphide	1, 2, 4, 5, 6, 8	8, 9, 10, 11	1, 2, 4, 5, 6, 8	8, 9, 10, 11	1, 2, 4, 5, 6, 8	8, 9, 10, 11

1 Post-application follow-up to dispose of spilled or kicked-out bait
2 Use of bait stations that exclude listed species by size or behavior
3 Restriction of consumer products to non-refillable bait stations
4 Classification of rodenticides as RUP
5 Placement of bait stations within five feet of structures
6 Prohibition of broadcast and in-burrow uses in areas or at times of the year when listed animals have access to the treated area
7 Do not apply directly to water
8 Establishment of Endangered Species Bulletins to implement specific mitigations needed in limited geographical areas or at times of year to protect particular species
9 Post-application follow-up to report dead or dying animals to EPA's Pesticide Incident Reporting website as soon as possible (https:/www.epa.gov/pesticide-incidents)
10 Post-Application Follow-Up: Carcass Search, Collection, and Disposal statements
11 Prohibition of use

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Proposed Mitigation Measures (Table 5-2)

Proposed mitigation measures to address the J/AM determinations in the 'Crosswalk' Table 5.2:

- Lists each proposed mitigation measure
- Which rodenticides it was applied to in the PIDs
- Far right column = Rodenticide Strategy

PIDS/ESA Pilot Memo

Rodenticide Strategy

Table 5-2. Crosswalk of Mitigation Measures from the Rodenticide PIDs (including the ESA pilot memo) and Draft Rodenticide Strategy

Mitigation Measure	Anticoagulant Rodenticides PID	Bromethalin/ Cholecalciferol PID	Zinc Phosphide PID	Strychnine PID	Draft Strategy
RUP classification	All SGAR products; all FGAR products in packages ≥ 4 lbs.	All bromethalin and cholecalciferol products in packages ≥ 4 lbs.	All ZP products	All strychnine products	Consistent with any future registration review decision, RUP classification would also apply to areas/times that relevant species have access to treated areas
General use consumer packaging size requirements ≤ 1 lb. and formulated as ready-to-use non-refillable bait stations	All FGAR products	All bromethalin and cholecalciferol products	NA	NA	For consumer use products
Restriction of broadcast use in field cropped areas, rangeland, pastureland and fallow land	Chlorophacinone and diphacinone products registered for use in these areas	NA	NA	NA	In areas/times that relevant species have access to treated areas
Restriction of broadcast and spot treatment for turf, lawns, golf courses, campsites, and other recreation areas (per RMD)	All FGAR products registered for use in these areas	NA	All ZP products registered for use in these areas	NA	In areas/times that relevant species have access to treated areas
Prohibition of broadcast and in-burrow treatment for all other uses within the species range and/or designated critical habitat	ESA pilot memo – do not apply via broadcast/in-burrow for all 7 ARs (SKR). Do not broadcast chlorophacinone (APC). Do not apply via broadcast (extended beyond range) for chlorophacinone and diphacinone (CC)	ESA pilot memo – do not apply via broadcast/in-burrow for bromethalin (SKR)	ESA pilot memo – do not apply via broadcast/ in-burrow for ZP (SKR). Do not broadcast (APC). Do not apply via broadcast (extended beyond range) for ZP (CC)	ESA pilot memo – do not apply via in-burrow (SKR)	In areas/times that relevant species have access to treated areas

Rodenticide TASK FORCE

Mitigation Measures Summary

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Table 5-2. Crosswalk of Mitigation Measures from the Rodenticide PIDs (including the ESA pilot memo) and Draft Rodenticide Strategy

Mitigation Measure	Anticoagulant Rodenticides PID	Bromethalin/ Cholecalciferol PID	Zinc Phosphide PID	Strychnine PID	Draft Strategy
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General use consumer packaging size requirements ≤ 1 lb. and formulated as ready-to-use non-refillable bait stations	All FGAR products	All bromethalin and cholecalciferol products	NA	NA	For consumer use products
Restriction of broadcast use in field cropped areas, rangeland, pastureland and fallow land	Chlorophacinone and diphacinone products registered for use in these areas	NA	NA	NA	In areas/times that relevant species have access to treated areas
Restriction of broadcast and spot treatment for turf, lawns, golf courses, campsites, and other recreation areas (per RMD)	All FGAR products registered for use in these areas	NA	All ZP products registered for use in these areas	NA	In areas/times that relevant species have access to treated areas
Prohibition of broadcast and in-burrow treatment for all other uses within the species range and/or designated critical habitat	ESA pilot memo – do not apply via broadcast/in-burrow for all 7 ARs (SKR). Do not broadcast chlorophacinone (APC). Do not apply via broadcast (extended beyond range) for chlorophacinone and diphacinone (CC)	ESA pilot memo – do not apply via broadcast/in-burrow for bromethalin (SKR)	ESA pilot memo – do not apply via broadcast/ in-burrow for ZP (SKR). Do not broadcast (APC). Do not apply via broadcast (extended beyond range) for ZP (CC)	ESA pilot memo – do not apply via in-burrow (SKR)	In areas/times that relevant species have access to treated areas

Mitigation Measures Summary

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Mitigation Measure	Anticoagulant Rodenticides PID	Bromethalin/ Cholecalciferol PID	Zinc Phosphide PID	Strychnine PID	Draft Strategy
Mandatory carcass search, disposal, bait-spill/kick-out, and reporting requirements	Mandatory for FGAR products registered for use in fields and other non-structural use sites; ESA – pilot memo mandatory and more restrictive than PID for chlorophacinone and diphacinone products within range (CC) and warfarin critical habitat (CC)	Mandatory for bromethalin and cholecalciferol products registered for use in fields and other non-structural use sites	Mandatory for ZP products registered for use in fields and other non-structural use sites. ESA pilot memo – mandatory and more restrictive for ZP products within range of CC	Mandatory for all strychnine products. ESA Pilot memo – mandatory and more restrictive for strychnine products within range and critical habitat	Mandatory carcass search and disposal for SGAR products. Mandatory carcass search and disposal for FGARs and non-anticoagulant products within the range of listed species
Advisory carcass search, disposal, and reporting	All SGAR and FGAR products registered for use in structural use sites and all FGAR general use products	All bromethalin and cholecalciferol products registered for use in structural use sites and all bromethalin and cholecalciferol general use products	NA	NA	General use products
Include Bulletins Live! Two on product labels (excluding homeowner/ residential use products)	All SGAR and FGAR products	All bromethalin and cholecalciferol products	All ZP products	All strychnine products	Consistent with the PIDs
Updates to Terms and Conditions of Registration for registrant stewardship programs	All SGAR and FGAR products	All bromethalin and cholecalciferol products	All ZP products	All strychnine products	Include stewardship as a Best Management Practice to support other mitigation measures and to help reduce take
Exclusionary bait stations	ESA pilot memo – chlorophacinone (SKR)	ESA pilot memo – bromethalin (SKR)	ESA pilot memo – all ZP products	NA	For species and behavior as appropriate
Buffer to the range and critical habitat in addition to prohibition of broadcast applications in those areas for species with secondary consumer exposure	ESA pilot memo – do not apply within 200 yards (air) or 40 yards (ground) of range for chlorophacinone and diphacinone (CC)	NA	ESA pilot memo – do not apply within 200 yards (air) or 40 yards (ground) of range for ZP (CC)	NA	NA. This was proposed in the ESA Pilot memo but has been reconsidered and will not be included in the BE

Rodenticide TASK FORCE

Mitigation Measures Summary

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Mitigation Measure	Anticoagulant Rodenticides PID	Bromethalin/ Cholecalciferol PID	Zinc Phosphide PID	Strychnine PID	Draft Strategy
Do not apply directly to water	NA	NA	NA	NA	Update any labels that do not already have this language
Reduction of distance of bait station placement from man-made structures. This would apply to mammals that cannot be excluded using bait stations	NA	NA	NA	NA	For all bait station products registered for uses within the range of listed mammals with primary consumer exposure
Cover burrow hole after application for in-burrow applications in fields and other non-structural use sites	NA	NA	NA	NA	Update any labels registered for use to control target pests that maintain closed burrow systems (i.e., pocket gophers) that do not already have this language. This would not apply to products registered for use to control target pests that maintain open burrow systems (i.e., Norway rat)
Use prohibitions during certain times of year	NA	NA	NA	NA	Prohibit use within the listed species' range during certain times of year when primary or secondary consumers might be exposed (i.e., if the species is active or has migrated into the area)

NA = Not applicable

Geographic Extent of Jeopardy Species and Adverse Modification of Critical Habitat

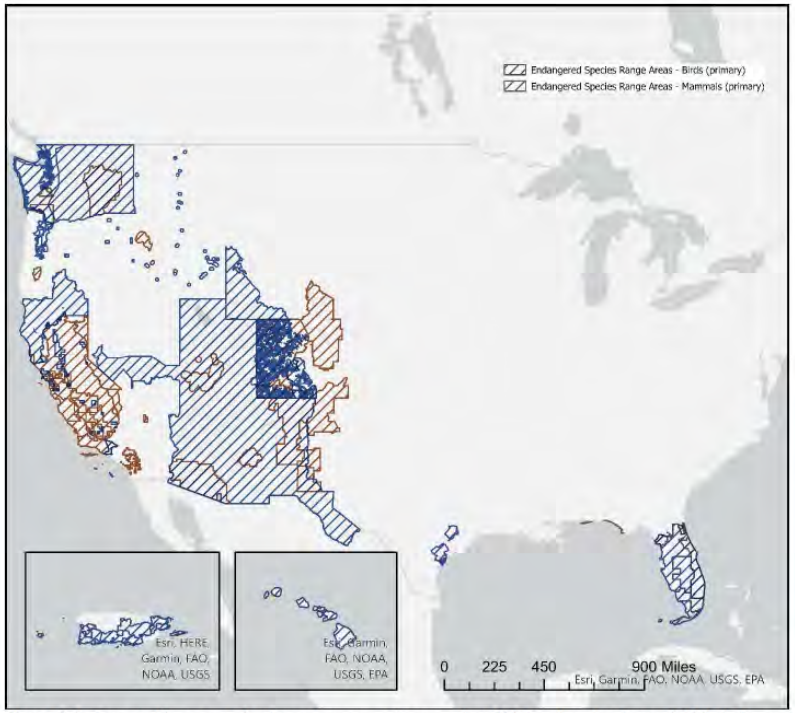

Figure 6-1. Geographic extent of primary consumers' range, that EPA Predicted as Potential Likely Future Jeopardy. Birds are blue and mammals are brown. There are no species' ranges contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no ranges for species in AK.

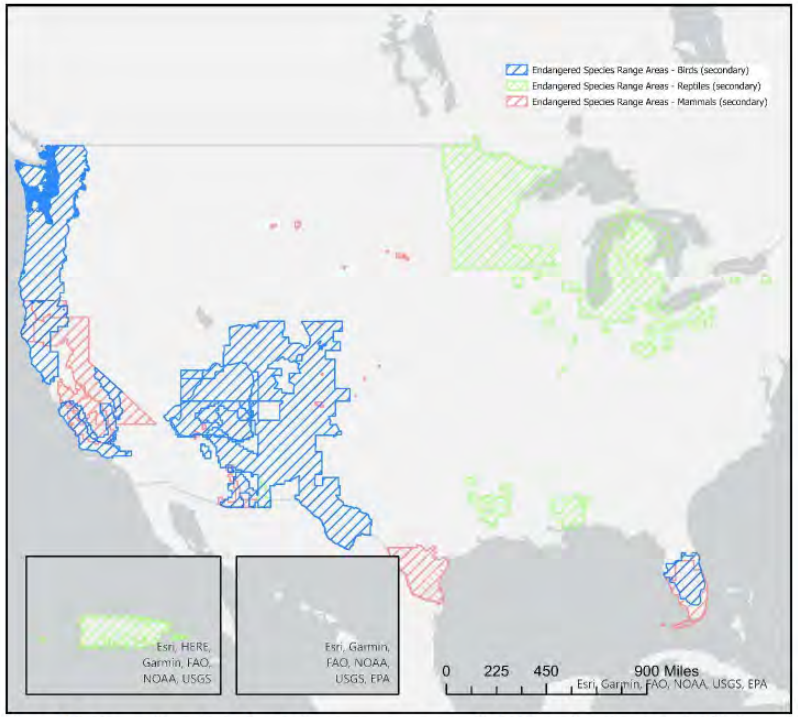

Figure 6-2. Geographic extent of secondary consumers ranges that EPA predicted as potential likely future jeopardy. Birds are blue, mammals are red, reptiles are green. There are no species' ranges contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no ranges for species in AK.

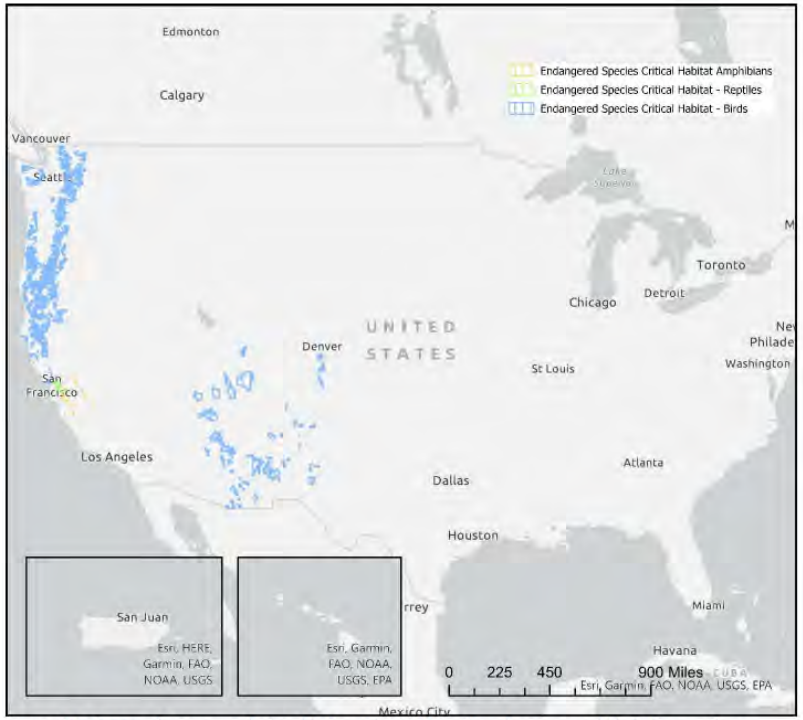

Figure 6-3. Geographic extent of critical habitat that EPA predicted as potential likely future adverse habitat modification. Birds are blue and reptiles are green (near San Francisco). There are no species' critical habitats contained in areas of the CONUS that are not displayed in the above map. Similarly, there are no critical habitats for species in AK.

Figures represent the "entire geographic ranges" that "EPA has predicted to be potential likely J from one or more rodenticides and/or use patterns." "These figures indicate that proposed mitigations to protect listed species and CH will not be required in the entire United States." (pg. 99)

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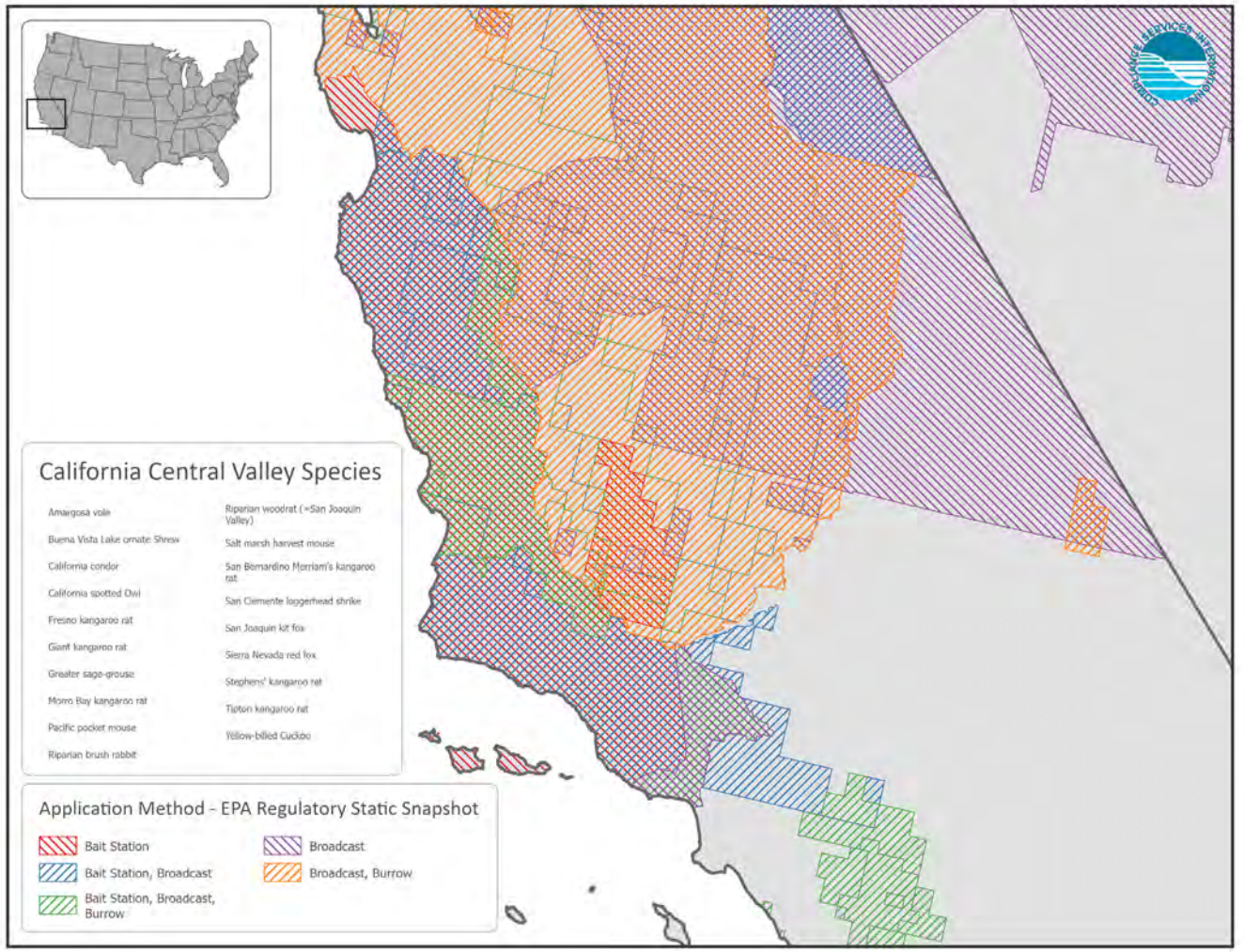
Implementing the Draft Rodenticide Strategy

- Some proposed mitigation measures are general label statements and others are only intended to be species-specific. The species-specific proposed mitigation measures would be implemented within a geographically-specific area.
- “However, it is important to note that EPA intends for these ranges to be refined in space and time where the listed species are potentially exposed to rodenticide use and therefore, anticipates areas of mitigation to be smaller than the entire ranges presented here. In other words, any pesticide use limitation area (PULA) will likely be smaller in geographical extent than the species and CH ranges.” (pg. 69)



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Application Method - EPA Regulatory Static Snapshot

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Example

- All applications would be subject to general label mitigations

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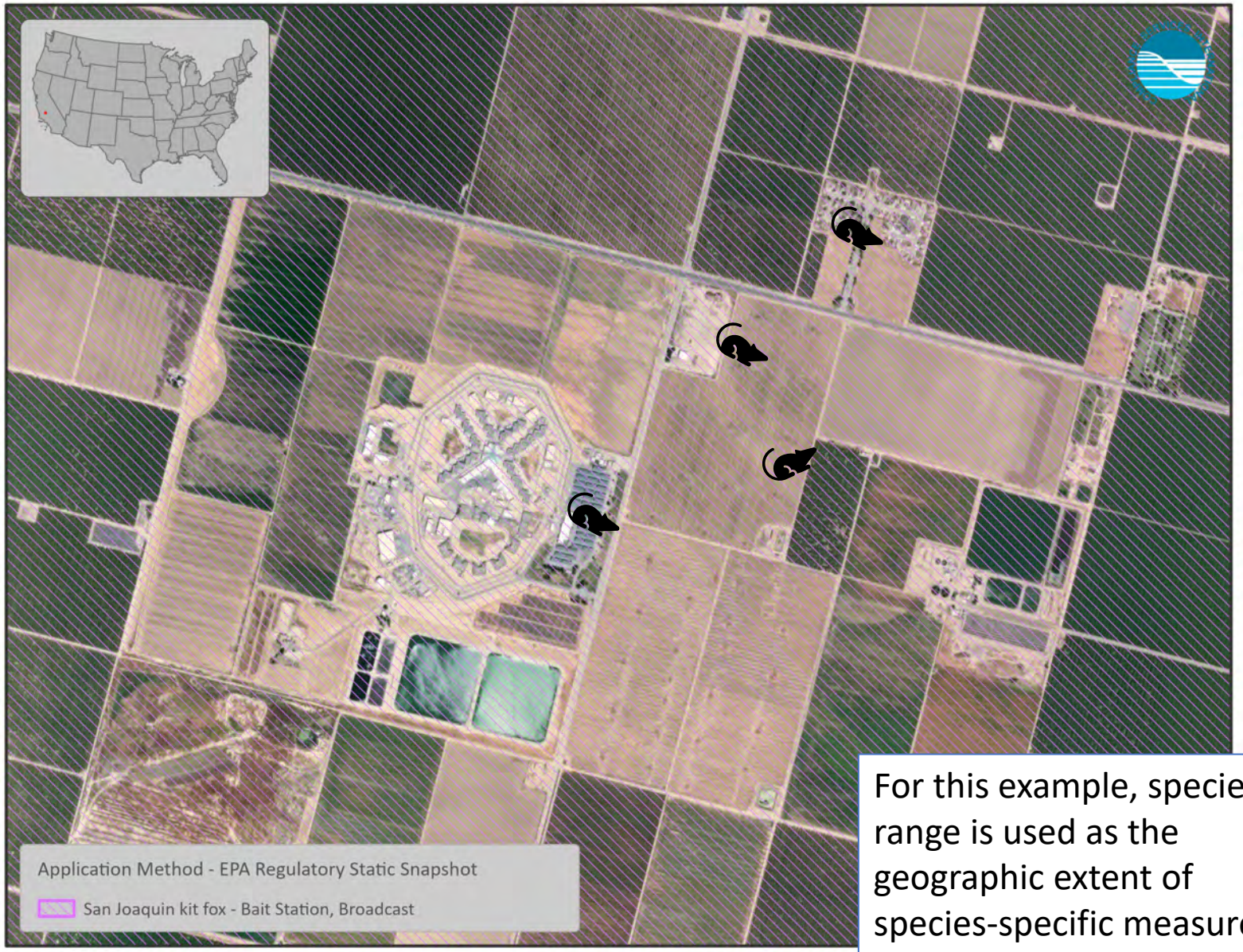
If applying in this area, geographic-specific mitigations (such as those applicable in areas/times that relevant species have access to treated areas) would also be applicable.

- Table C-1 (pg 115)
- San Joaquin kit fox (secondary exposure)
  - Bait Station (FGAR and SGAR)
  - Broadcast (FGAR)



For this example, species range is used as the geographic extent of species-specific measures, but this could change.

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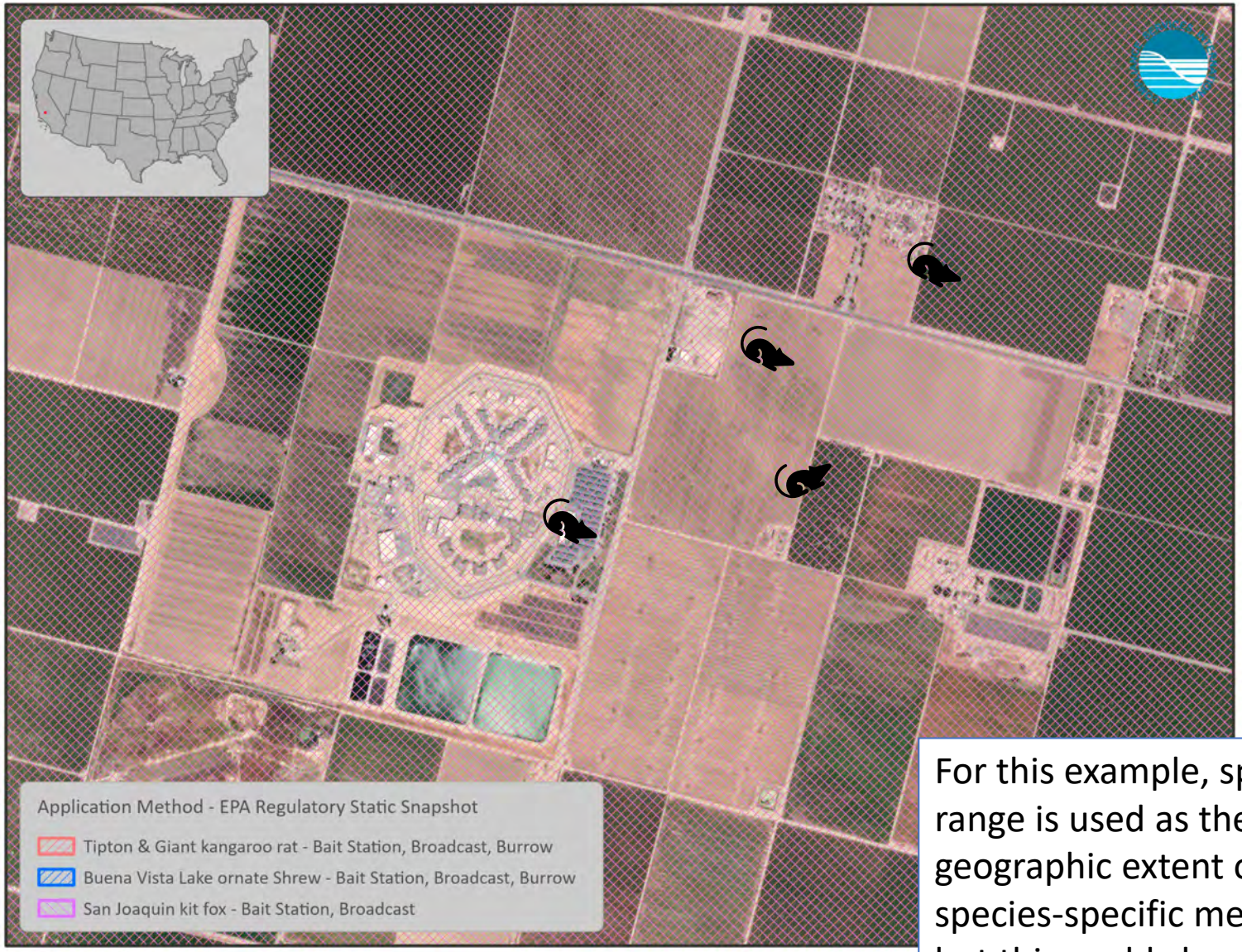
If applying in this area, geographic specific mitigations (such as those that are applicable in areas/times that relevant species have access to treated areas) would also be applicable

- San Joaquin kit fox (secondary exposure)
  - Bait Station (FGAR and SGAR)
  - Broadcast (FGAR)
- Buena Vista Lake Ornate Shrew, Tipton & Giant kangaroo rat (primary exposure)
  - Bait Station (FGAR, SGAR, cholecalciferol, bromethalin, and ZnP)
  - Broadcast (FGAR, ZnP)
  - Burrow (FGARs, bromethalin, strychnine, and ZnP)
- Different timing, area, and other restrictions may be needed based on species behavior, size, or diet.



For this example, species range is used as the geographic extent of species-specific measures, but this could change

Rodenticide TASK FORCE

Panel Discussion

- Denny Mackley – Logan County, Kansas, Noxious Weed Department
- J.D. Darr – National Pest Management Association
- Tom Hebert – Public Policy Consultant
- Roger Baldwin – University of California Davis

Some Perspectives from Animal Agriculture on Proposed Federal Rodenticide Policies*

Tom Hebert

Public Policy Consultant, Washington DC

1-12-2024

***These comments are drawn from the perspective and substance of the comments submitted by several animal agriculture groups on EPA's 2023 Proposed Interim Decisions involving rodenticides**

Good Rodenticide Policies **Can and Should** Support Use Practices that …

1. Cause no or minimal harm to non-target species
2. Not drive concentration of production into larger and larger animal farming operations
3. Protect the health, safety and welfare of farm animals, and protect the quality and safety of the foods produced by animal agriculture

Cause no or minimal harm to non-target species

- Animal agriculture supports this objective
- But a sweeping, broad-brush approach is neither necessary or appropriate
- EPA has lots of data on non-target species harms
- But EPA's data is severely limited and not informative beyond knowing there is a problem to be addressed – the question is, how is that best done?
- Need to know how these harms are occurring – use patterns, pathways of exposure, contributions to harms
- Industry **wants** to conduct the studies to answer these questions – needs EPA to partner with us
- Only then can sound, accurate and effective policies be formulated

Not drive concentration of production into larger and larger animal farming operations

- Restricted use designation for all products & everywhere is both overkill and devastating
- Expensive
- Certified applicators – major biosecurity issues, as well as non-universal availability and concerns over expertise on and commitment to animal operations
- Record keeping and carcass searches
- Liability for failure to perform
- Large operations can afford these costs
- Adds to pressure to get big or get out of farming

Protect the health, safety and welfare of farm animals and food we produce

- Animal health and biosecurity issues from bringing outside people (rodent control services) onto animal operations
  - Catastrophic losses due to spread of contagion
  - For example, hi-path avian influenza has led to the loss of life of 13 million laying hens since Nov 3 – just this one outbreak – last outbreak lost 15 million hens
- Bio security includes restricting or eliminating people coming to the farm
- Rats and mice are
  - Disease vectors for animals
  - Vectors for food safety pathogens -- **FDA requires** controls under mandatory egg and milk safety regulations

Potential Impact of U.S. EPA's *Rodenticides: Draft Biological Evaluation* on California Agriculture

Roger A. Baldwin

Professor of Cooperative Extension-UC Davis

UC CE University of California Cooperative Extension

UCDAVIS COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

Are Rodents a Concern in CA Ag?

Rodent Damage

The total estimated revenue lost annually in the 10 counties in CA due to bird and rodent damage to 22 selected crops ranged from $168 million to $504 million (in 2009 dollars).**

**Source: Shwiff et al. 2009

Management Actions

- Currently focus on an integrated approach that includes multiple strategies.

Management Actions

- Currently focus on an integrated approach that includes multiple strategies.
- Rodenticides are an important/preferred part of this approach**
  - Quick and easy to apply
  - Highly efficacious

**Source: Baldwin et al. 2014

Impact of Proposed Mitigation Efforts

Alter where rodenticides can be used:

- California condor and voles

Impact of Proposed Mitigation Efforts

Alter where rodenticides can be used:

- California condor and voles
- Use of bait stations in agricultural fields

Do Mitigation Efforts Affect Efficacy?

Zinc phosphide application strategies

- Bait stations?
- Within-burrow?

Will Mitigation Efforts Be Effective?

Carcass searches

- 82-91% of CA ground squirrels die belowground (Baldwin et al. 2021)
- We observed <0.07 ground squirrels per acre when conducting carcass searches; density dependent and search effort dependent.

Will Mitigation Efforts Be Effective?

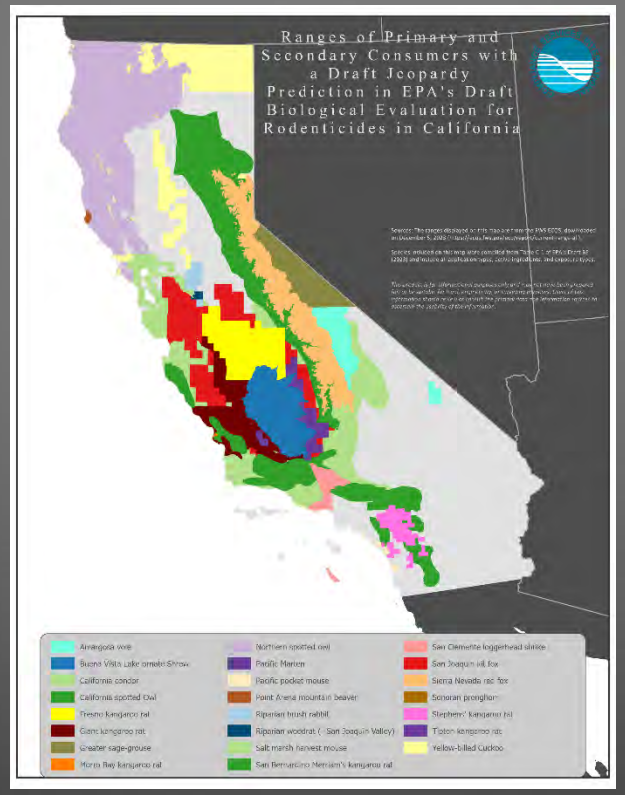
Secondary exposure risk from zinc phosphide

- Carcass searches and other limitations on use of zinc phosphide in certain areas.
- Zinc phosphide has very low to almost non-existent secondary exposure risk.

Will Mitigation Efforts Be Effective?

Species distribution maps

- Cover large areas where the species is not found, nor likely ever would be.
- Such broad delineations are quite punitive; reductions could be equally effective.



Are Alternative Options Safe/Safer

Other options have risks that need to be considered

- Burrow fumigants can have greater detrimental impacts than rodenticides in some settings.

Are Alternative Options Safe/Safer

Other options have risks that need to be considered

- Burrow fumigants can have greater detrimental impacts than rodenticides in some settings.
- Traps result in non-target captures.

Are Alternative Options Safe/Safer

Other options have risks that need to be considered

- Burrow fumigants can have greater detrimental impacts than rodenticides in some settings.
- Traps result in non-target captures.
- Barn owl boxes can have negative impacts on T&E species (Zaitzove-Raz et al. 2020).

Final Thoughts

- There is a collective desire to reduce nontarget exposure to rodenticides.

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- Proposed actions would likely eliminate the use of rodenticides in many settings for much of California.

Final Thoughts

- There is a collective desire to reduce nontarget exposure to rodenticides.
- Proposed actions would likely eliminate the use of rodenticides in many settings for much of California.
- Further refinement of proposed actions would likely achieve the same goals while continuing to allow use of rodenticides to manage rodents in agriculture and other settings.

TIPS FOR COMMENTING

- EPA requested feedback on the mitigation measures (page 94):
  - Effectiveness
  - Feasibility (ability to implement - cost, labor, applicator safety, other factors)
  - Enforceability
- If something is not workable, explain why with **specifics**, and provide an **alternative solution** if possible.
- Personalize your comments to you/your organization
- Provide supporting data/research – and even photos – with references.

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Comment Submission Information

Comment deadline is February 13th

Link to Docket:
https://www.regulations.gov/docket/EPA-HQ-OPP-2023-0567

Link to Comment:

https://www.regulations.gov/commenton/EPA-HQ-OPP-2023-0567-0001

Rodenticide
TASK FORCE

Reach out!

- Rodenticide Task Force (ARTF)
  - Katie Swift, Chair, Rodenticide Task Force swiftk@liphatech.com
- FIFRA Endangered Species Task Force (FESTF)
  - Ashlea Frank, Principal Consultant at Compliance Services International and Consultant to the FIFRA Endangered Species Task Force afrank@complianceservices.com
  - Dr. Leah Duzy, Principal Consultant at Compliance Services International and Consultant to the FIFRA Endangered Species Task Force lduzy@complianceservices.com
  - Bernalyn McGaughey, President/CEO at Compliance Services International and Project Manager for the FIFRA Endangered Species Task Force bmcgaughey@complianceservics.com

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Questions

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