

Planning for a Swarm of Listed Pollinator Species

IPAA Strategic Planning Conference

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The Woodlands, TX

BEVERIDGE
& DIAMOND_{PC} 



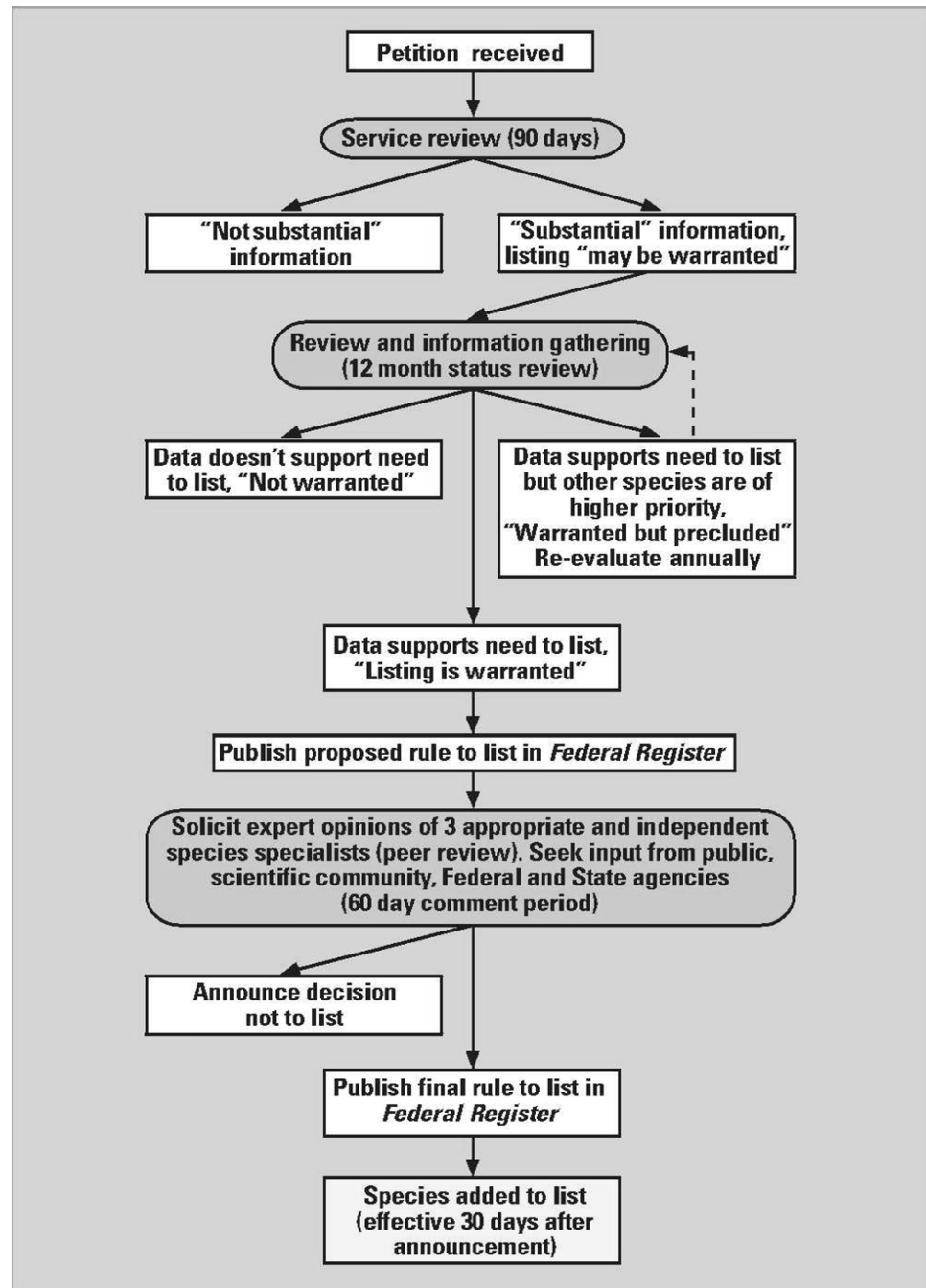
Agenda

- ESA listing petition process
 - The origin of pollinator listings
- Key pollinator species at issue
 - Monarch butterfly
 - Rusty patched bumble bee
 - Western bumble bee
 - Regal fritillary
 - Others?
- Possible implications
- Strategies for addressing possible listings

ESA Petition/ Listing Process

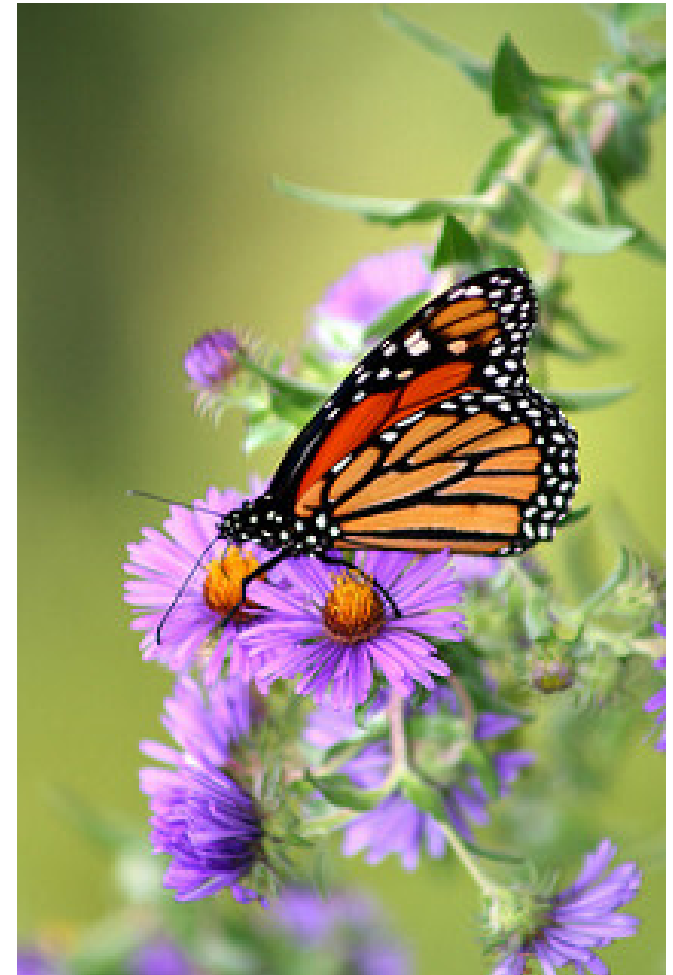
ESA § 4(b)

- Petition
- 90-day finding on Petition
 - “Substantial info”?
 - Deadline often missed
- Species status review
 - 12-month finding
- Proposed listing
- Final listing



Monarch Butterfly

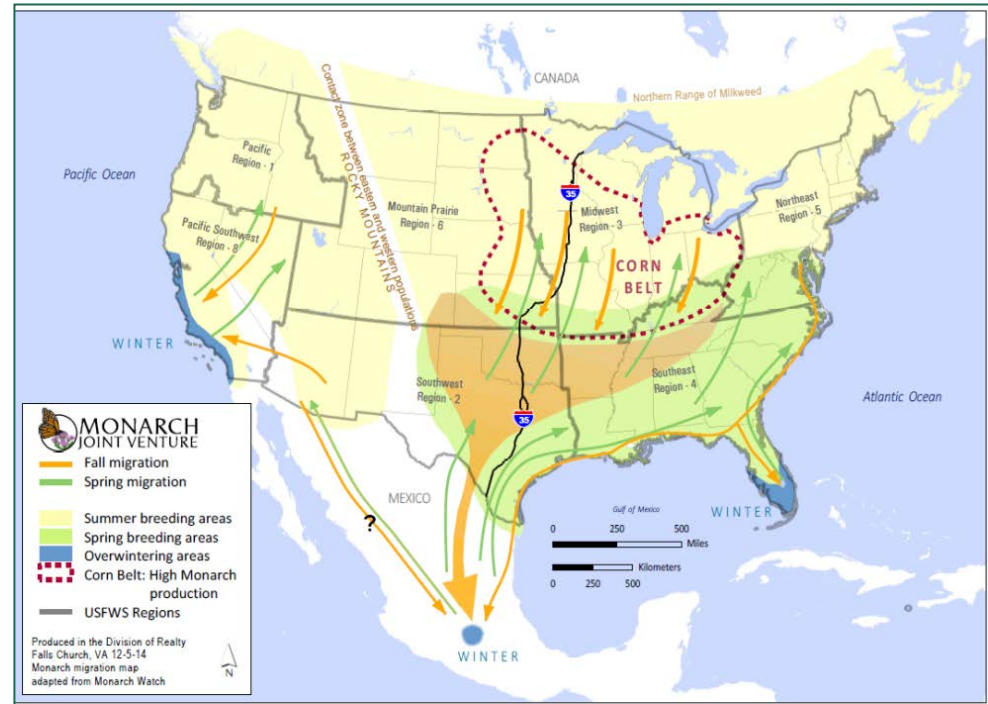
- Migratory species attracted to milkweed and a variety of nectar plants
- Common milkweed is vital for monarch survival
 - Host plant for egg-laying females
 - Only food source for monarch larva
 - Predominant food source for adult monarchs
- Native range extends from southern Canada to Mexico, across virtually the entire U.S.
 - Range varies depending on breeding areas, migration patterns, and winter roosting
 - Non-native dispersed range includes Hawaii



Monarch Butterfly

Alleged threats to survival:

- Rapid loss of milkweed habitat due to increased pesticide use
- **Deforestation and increased development**
- Conversion of grasslands to corn and soy fields for biofuel production
- Illegal logging of overwintering habitat
- Agricultural expansion
- Climate change
 - o Increased drought decreases abundance and quality of milkweed



Fall and Spring Migration range courtesy of U.S Fish and Wildlife Service

Monarch Butterfly – ESA Status

Listing under review by FWS

Petition for listing submitted

by Center for Biological Diversity (“CBD”), Center for Food Safety (“CFS”), the Xerces Society for Invertebrate Conservation (“Xerces”) and Dr. Lincoln Bowser

(August 26, 2014)

Requested designation of critical habitat, SPR consideration and development of a 4(d) rule

Affirmative 90-Day Finding published by FWS

(December 31, 2014)

12-Month Finding due

(December 31, 2015)

Notice of intent to sue

submitted by CBD and CFS over alleged failure to produce a 12-month listing decision

(January 5, 2016)

Rusty Patched Bumble Bee

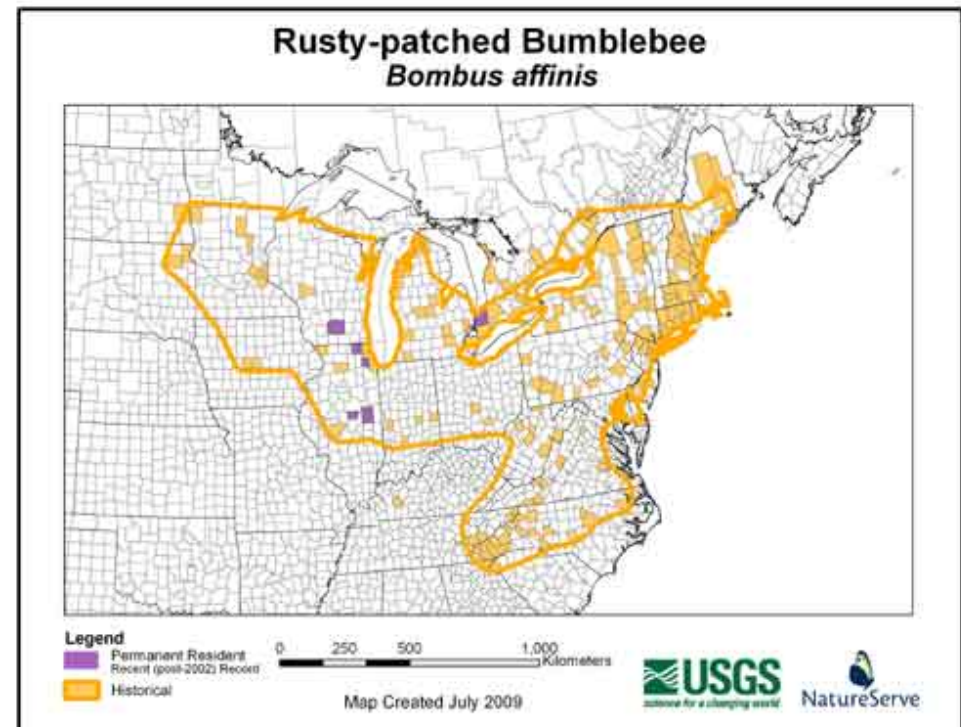
- Pollinator of wildflowers, fruits, and seeds
- Distinctive rusty-colored patch on abdomen
- Endemic to North America
- Historic range covers Eastern and Midwestern U.S. and Ontario
 - Estimated 87% decline in population over past decade
 - Predominantly found now in IL, IN, MN, OH and WI
- Requires 3 different habitats (foraging, nesting, hibernating) in temperate climates, *e.g.*, sand dunes, farmland, marshes, forests



Rusty Patched Bumble Bee

Alleged threats to survival:

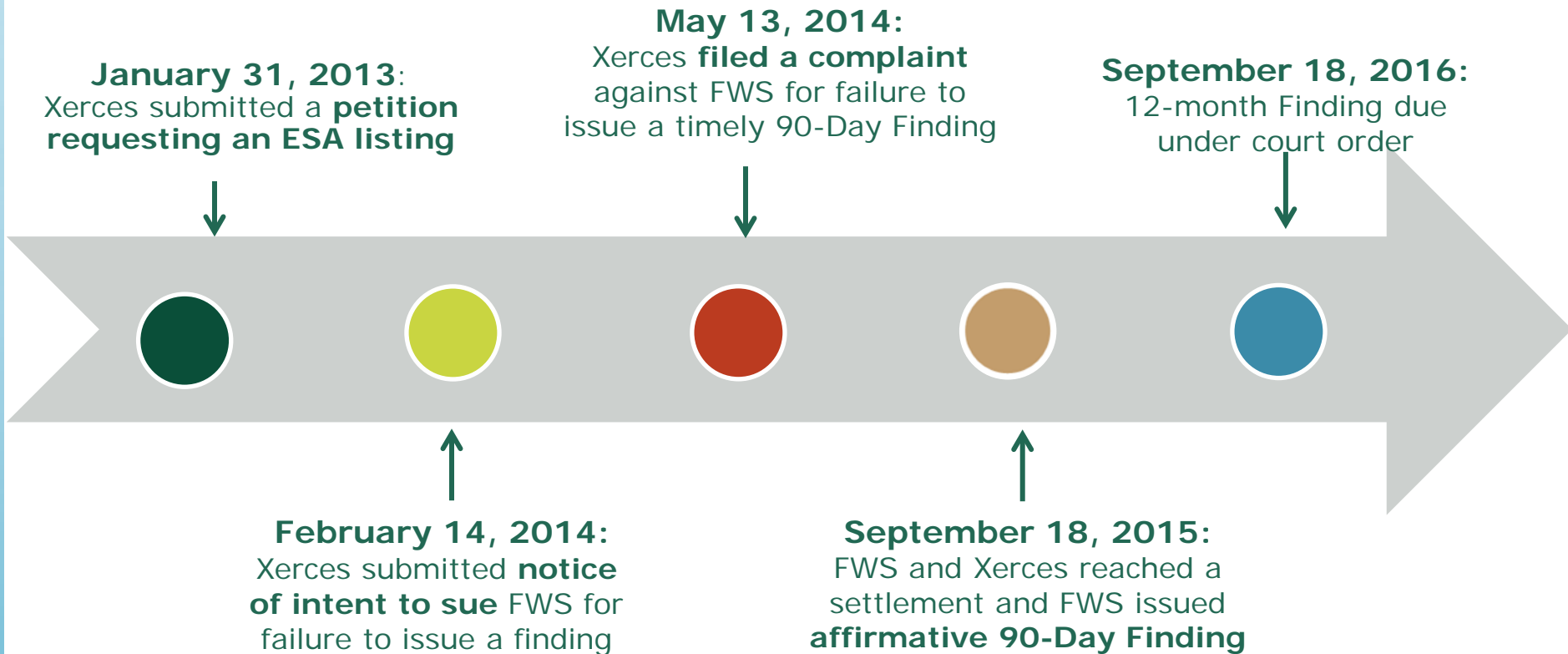
- Pests and disease
 - Microparasites, macroparasites, pathogen spillover
- Insecticides
- **Deforestation/increased development**
- Population dynamics and structure
- Climate change
- Competition with commercial honeybees
- Agricultural expansion
- Fire and fire suppression



Credit: University of Wisconsin LaCrosse

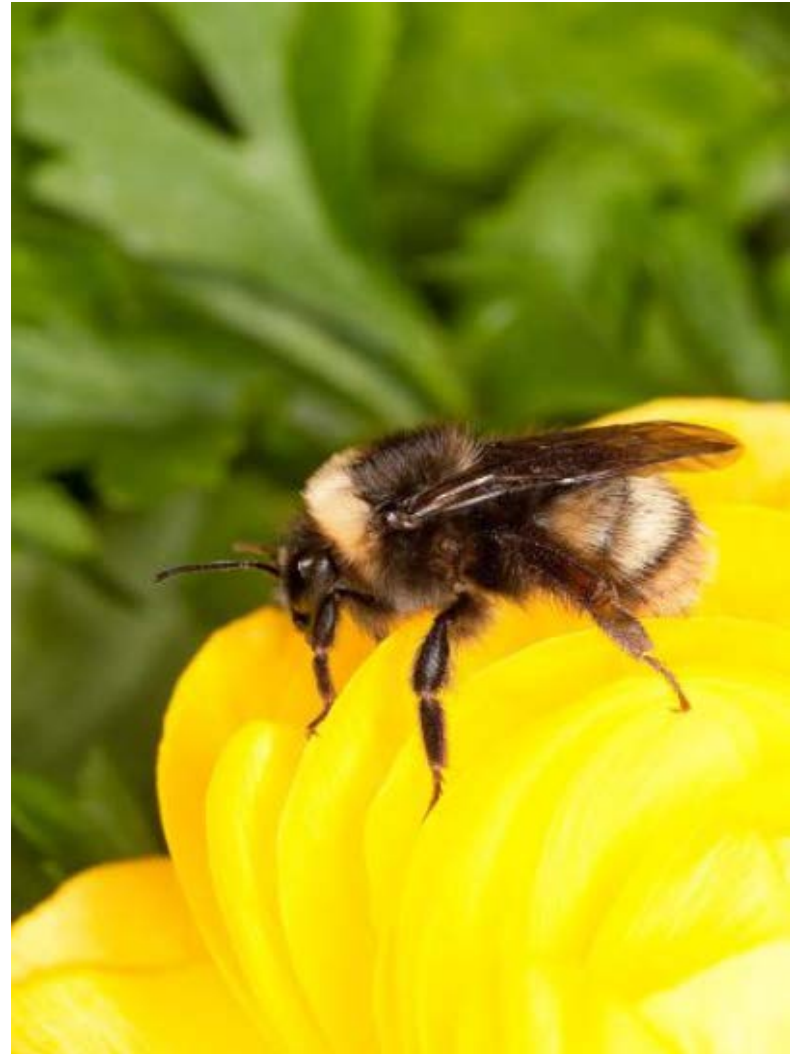
Rusty Patched Bumble Bee – ESA Status

Listing under review by FWS



Western Bumble Bee

- “Generalist” pollinators that do not depend on any specific flower type
- Certain plants rely solely on western bumble bees for pollination
- Ability to perform “buzz pollination” which is necessary to pollinate tomatoes, cranberries, and blueberries
- Colonies are annual
 - Each year, the queen emerges from hibernation and selects a nest site
- Once considered the most abundant bumble bee in western North America
- Historical range extends from western U.S. north through Alaska and Canada



Western Bumble Bee

Alleged threats to survival:

- Commercial bumblebee rearing
 - Spreads pests and diseases
- **Habitat alteration or destruction**
 - Reduces food supply and nest sites
- Pesticides and insecticides
- Fire and fire suppression
- Invasive plants and animals
- Population dynamics and structure
- Climate change



Credit: Xerces Society

Western Bumble Bee – ESA Status

Petition findings under review by FWS

**September
15, 2015**

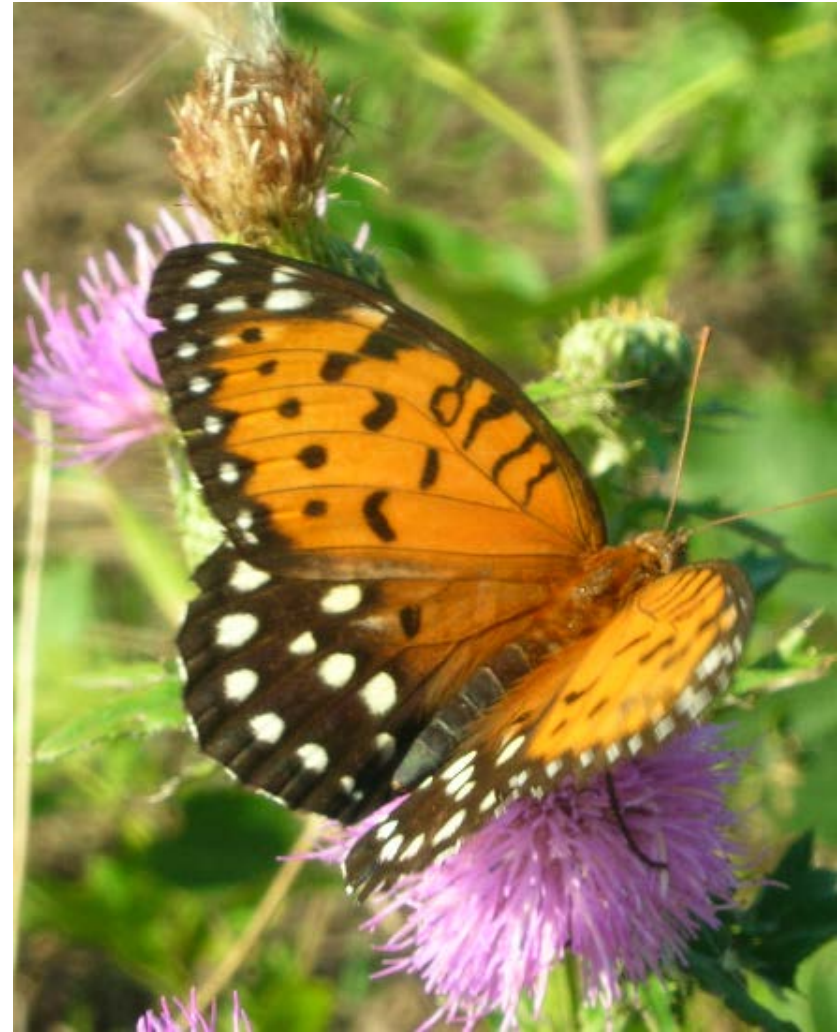
- Defenders of Wildlife petitioned FWS to list the western bumble bee as threatened or endangered and designate critical habitat

Status

- Petition findings not yet made (deadline was 12/15/15)

Regal Fritillary

- Prairie-specialist butterfly
- Various violet species vital for survival
 - Food source for larva
 - Life cycle coincides with perennial violet foliage in the spring
 - Predominant food source for adults
- Feeds on a variety of nectar plants
- Historic range extended from Colorado to the Atlantic Ocean and north to Canada
 - Current range limited to grassland prairies



Regal Fritillary

Alleged threats to survival:

- **Habitat fragmentation and destruction**
 - Limits or reduces violet population density
 - Increases intraspecific genetic vulnerability and vulnerability
- Insecticides and herbicides
- Synergistic effects
- Climate change
- Environmental threats
 - Prescribed burns
 - Late frosts



Credit: Fish and Wildlife Service

Regal Fritillary – ESA Status

Listing under review by FWS

April 24, 2013

- **Petition to list as threatened or endangered** and designate critical habitat submitted by Wild Earth Guardians

September 18, 2015

- FWS issued an **affirmative 90-Day Finding** on the petition
 - Agency found substantial scientific or commercial information indicating that a listing may be warranted

September 18, 2016

- **12-month Finding** due

What Does It All Mean?

- Nationwide impacts
- More species to come
 - Blue Calamintha Bee
 - Affirmative 90-Day Finding (9/18/15)
 - Great Basin Silverspot Butterfly
 - Affirmative 90-Day Finding (1/12/16)
 - Yellow Banded Bumble Bee
 - 90-Day Finding deadline missed
 - Honey Bee??
- Obstacles to project development



Strategies for Addressing Potential Listing Decisions

- Track proposed listings in Fed. Reg.
- Comment on 90-day findings/proposed listing decisions
 - Support “not warranted” determinations
- Prepare (develop STAMs if species listed)
- Candidate conservation agreements
- Incidental take permit/habitat conservation plan
- Develop Safe Harbor Agreements
- Establish/maintain excellent agency relationships!

Questions?



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Photo Credits

Rusty patched bumble bee, Johanna James Heinz

Western bumble bee, Stephen Ausmus, USDA ARS

Regal fritillary, Sarah Bailey

Blue calamintha bee, Tim Lethbridge

Great Basin silverspot, USDA

Yellow banded bumble bee, Mardon Erbland

Honey bee, Maciej A. Czyzewski