



U.S. Fish & Wildlife Service

# FIFRA and the ESA: U.S. Fish & Wildlife Service Perspective



Endangered Species Program  
Division of Environmental Quality

## Differences from NMFS

- In general, analyses will not differ from those performed by NMFS
- Most differences related to breadth of species between agencies



American burying beetle,  
*endangered*

# Species

- NMFS manages ~70 listed species (marines turtles, mammals, fish, coral, abalone, seagrass)
- FWS manages ~1300 species

## Animals

- Birds
- Mammals
- Reptiles
- Amphibians
- Fish
- Crustaceans
- Freshwater mussels
- Arachnids
- Insects
- Snails

## Plants

- Conifers
- Ferns
- Flowering Plants
- Lichens



*Black footed ferret,  
endangered*

# Reliance on surrogates

Toxicity data derived from surrogates that may not be closely related taxonomically

represented by

- Reptiles  
(alligators, snakes, lizards, turtles/tortoises) Birds
- Amphibians  
(frogs, toads, salamanders) Fish  
Birds
- Terrestrial inverts  
(beetles, butterflies & moths, flies, spiders, snails) Honeybee
- Freshwater inverts  
(mussels, damselflies, amphipods, crayfish, shrimp) Daphnia

# Reliance on surrogates

Example: freshwater mussels (surrogate = daphnia)

- US has greatest mussel diversity in world
- ~70% of species in peril
- 73 species listed under ESA
- Generally sessile filter-feeders
- Complex life stages
  - Distinct life stages (glochidia, juvenile, adult)
  - Dependant on host species for reproduction
- Shown to be exquisitely sensitive to some contaminants (e.g. ammonia, copper)



*Winged mapleleaf,  
endangered*

# Habitat

- Greater variety of habitats
  - Forest, prairie, karst, wetlands, freshwater, estuarine, mangrove, desert, etc.
- More species with designated critical habitat
  - 594 designations



*Platte River, critical habitat*

# Data

For many species, our data set is less complete

- Life history
- Population estimates
- Distinct locations



*Ocelot, endangered*

# Routes of Exposure

For terrestrial species, additional routes of exposure must be considered

- Dermal
- Inhalation
- Food web
  - residues in plants
  - soil ingestion
  - secondary exposure



Audubon's Crested Caracara,  
*threatened*

# Endpoints

Greater breadth of species may lead to different endpoints of effects

- Physiological parameters
- Life history



*Pallid sturgeon,  
endangered*

# Action Area

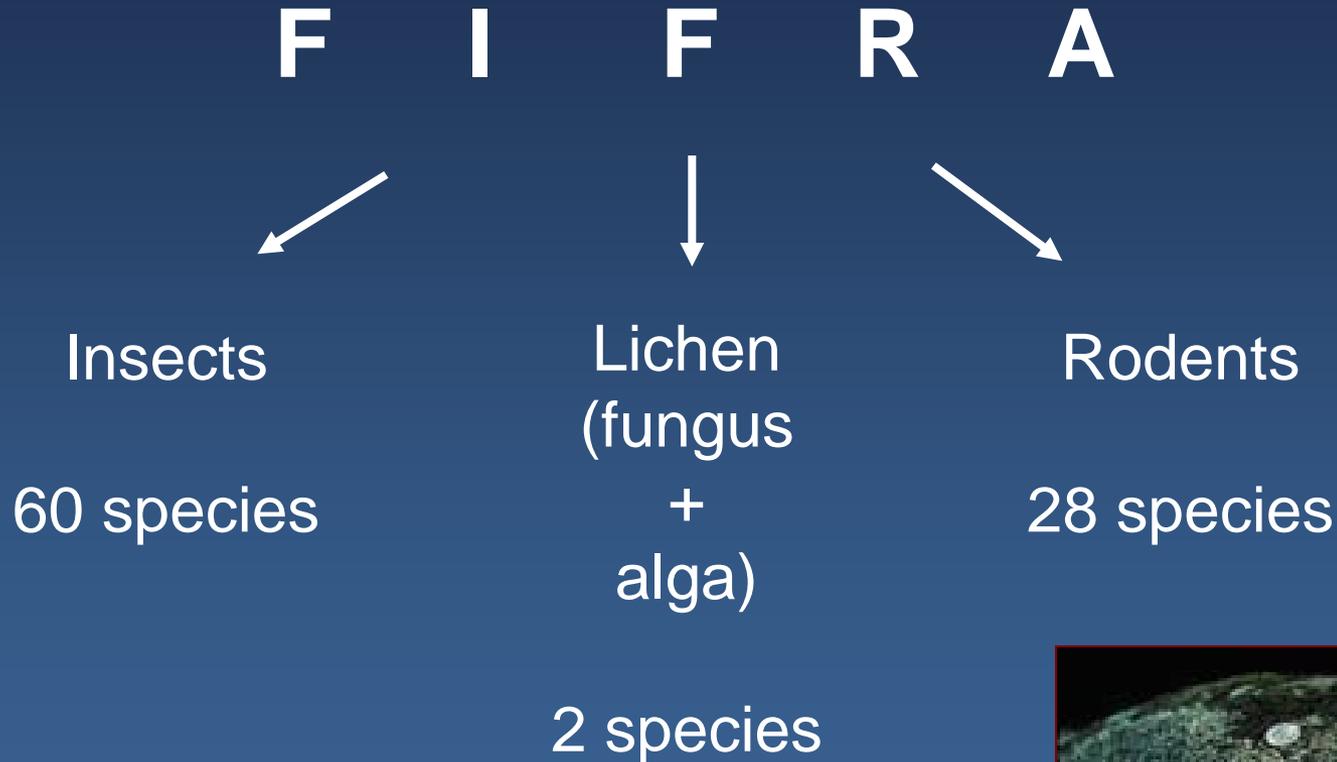
Greater breadth of species may lead to different endpoints of effects

- Maybe be more difficult to define
- Must consider both terrestrial and aquatic fate of pesticides



*Bluemask Darter, endangered*

# Listed species as target species



Rock gnome lichen, *endangered*

# Listed species as target species

Plants = 792 listed species



Green pitcher-plant, *threatened*

# Mitigation

- Conservation banking
- Safe harbor agreements



*Polar Bear, threatened*

# Questions?



Desert tortoise, *threatened*