

California Department of Fish and Game: Our Role in Ecological Risk Assessment

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California Department of Fish and Game (DFG)



How does DFG Contribute to Environmental Cleanup?

- Review and oversight of ecological risk assessment, remediation, and restoration
 - Wildlife knowledge & access to species life history information
 - Species occurrence and survey methods
 - Ecotoxicology expertise
 - Optimize remediation, avoidance/mitigation, and habitat restoration
- Authority to collect damages for natural resource injury



The DFG as a Trustee

- Trustee = agency authorized to manage and protect resources for the public
- Governor delegated trustee authority to Resources Agency
- Secretary of Resources Agency designated DFG to act on behalf of the public as a state trustee for natural resources pursuant to CERCLA
- The Mission of the Department of Fish and Game is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.



DFG ARARs pursuant to CERCLA

- Applicable or Relevant and Appropriate Requirements =ARARs
- Promulgated authority for state standards
 - California Fish and Game Code
 - <http://www.leginfo.ca.gov/calaw.html>
 - Title 14 California Code of Regulations
 - <http://ccr.oal.ca.gov>
- Developed as site-specific list based on habitat and species likely to occur



Potential Co-Trustees

- Coordinate with other agencies when overlapping trusteeship
 - United States Fish and Wildlife Service (USFWS) — dual state and federally listed species
 - National Oceanic and Atmospheric Administration (NOAA)- particularly marine resources or certain anadromous fish
 - Other State Agencies



DFG

- DFG HQ
 - Habitat Conservation and Planning (CEQA and CESA)
- DFG Regional Biologists
- OSPR
 - Spill Response
 - NRDA
 - CERCLA sites



DFG Habitat Conservation and Planning Branch

- Conservation plans for habitat or species
- Environmental review under CEQA
- Incidental Take under CESA
- Special status species coordinators
- Contact
 - Headquarters, Scott Flint: sflint@dfg.ca.gov
(<http://www.dfg.ca.gov/hcpb/index.shtml>)



DFG Regions



- Identify appropriate field survey measures
- Identify avoidance and mitigation measures
- Coordinate with regional conservation planning
- Identify important local resources



DFG-OSPR & Natural Resource Damages

- Based upon amount of *restoration* needed to “make the environment and public whole” (OPA 90 Rule, CERCLA)
 - Evaluate injuries to species and their habitats
 - Identify appropriate restoration
 - Scale amount of restoration necessary to compensate for injuries



DFG-OSPR & Ecological Risk Assessment

- Review and oversight through reimbursable agreement
 - Selection of ecological receptors
 - Identify exposure factor information for each receptor
 - Identify appropriate toxicity benchmarks and reference values
 - Focus on individual rather than population



Ecological Receptors

- Identify habitat type
- Feeding guilds for birds and mammals
 - Herbivore, insectivore/invertivore, omnivore, carnivore
 - Representative species for each
- Communities for lower trophic levels
 - Terrestrial plants
 - Soil invertebrates
 - Aquatic plants and invertebrates



Selecting Representative Species

- Based on presence on-site
 - Field surveys
 - http://www.dfg.ca.gov/hcpb/species/stds_gdl/survmonitr.shtml
 - Existing biological reports
 - e.g., INRMP or county natural resource plans
- Based on location or habitat type
 - Bios
 - <http://bios.dfg.ca.gov/>
 - California Wildlife Habitat Relationships
 - <http://www.dfg.ca.gov/bdb/html/cwhr.html>
- Preference for special status species
 - CA endangered, threatened, fully protected, or species of special concern
 - <http://www.dfg.ca.gov/hcpb/species/species.shtml>
 - CNDDDB and RareFind
 - <http://www.dfg.ca.gov/whdab/html/cnddb.html>



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Biogeographic Data Branch

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C N D D B

CALIFORNIA NATURAL DIVERSITY DATABASE

The **California Natural Diversity Database (CNDDDB)** is a program that inventories the status and locations of rare plants and animals in California. CNDDDB staff work with partners to maintain current lists of rare species as well as maintain an ever-growing database of GIS-mapped locations for these species.



[What is the CNDDDB?](#)

— Additional information about CNDDDB

[Subscribe to the CNDDDB](#)

— Fill and print order form (PDF). You may also call Information Services at (916) 324-3812.

[CNDDDB Quick Viewer](#)

— A public map application that provides access to CNDDDB data at the 7.5' Quadrangle and County level.

[CNDDDB/Spotted Owl Viewer](#)

— A restricted map application that provides access to the CNDDDB, Spotted Owl and other data. **A password is required to access this application.** For DFG



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Homepages:
[DFG](#) [BIOS](#)

BIOS Information

- [What is BIOS?](#)
- [Submitting Data to BIOS](#)
- [Field Survey Protocols](#)

DFG GIS Links

- [Biogeographic Data Branch](#)
- [Northern California - North Coast Region ISB](#)
- [ITB Geographic Information System](#)
- [IMAPS](#)

Other GIS Links

- [California Spatial Information Library](#)
- [California Environmental Resources Evaluation System \(CERES\)](#)

Other Links

BIOGEOGRAPHIC INFORMATION & OBSERVATION SYSTEM (BIOS)



California Department of Fish and Game

Biogeographic Data Branch and Northern California North Coast Region



BIOS

BIOGEOGRAPHIC INFORMATION AND OBSERVATION SYSTEM

BIOS is a system designed to enable the management, visualization, and analysis of biogeographic data collected by the Department of Fish and Game and its [Partner Organizations](#). In addition, BIOS facilitates the sharing of those data within the BIOS community. BIOS integrates GIS, relational database management, and ESRI's ArcIMS technology to create a statewide, integrated information management tool that can be used on any computer with access to the Internet.

- Public BIOS Data Viewer** - Open to the public. Only non-sensitive data are included.
- Secure BIOS Data Viewer** - Password required, for DFG Personnel and Authorized Partners only
- CNDDDB/Spotted Owl Viewer** - Password required, for DFG Personnel and [CNDDDB Subscribers](#) only
 Subscribers: for current CNDDDB password, please call (916) 324-3812
- [What is BIOS?](#) - Additional information about BIOS and the Data Viewer
- [Getting Started](#) - A quick start guide for getting started with the BIOS Data Viewer



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California Wildlife Habitat Relationships

California Wildlife Habitat Relationships (CWHR) is a state-of-the-art information system for California's wildlife. CWHR contains life history, geographic range, habitat relationships, and management information on 692 species of amphibians, reptiles, birds, and mammals known to occur in the state. CWHR products are available to anyone interested in understanding, conserving, and managing California's wildlife.



[Read more about the CWHR System and its components.](#)

[Link to a demonstration of CWHR System software.](#)

(Demonstration designed by Jeremy Lockwood, California Department of Forestry and Fire Protection)

Direct Links to Downloads

[CWHR Version 8.1 Software and User's Manual \(2005\)](#) (110 mb for minimal install; 700 mb for full install)
[CWHR GIS Data \(2005\)](#)



CNDDDB Example - Grass Valley Area

California Department of Fish and Game Natural Diversity Database

CNDDDB Search of the Grass Valley and Chicago Park USGS 7.5-minute quadrangles

Rare, Threatened or Endangered Plants

- Brandegee's clarkia, *Clarkia biloba ssp. brandegeae*
- Follett's monardella, *Monardella follettii*
- Pine Hill flannelbush, *Fremontodendron decumbens* (Fed: Endangered, State: Rare)
- Scadden Flat checkerbloom, *Sidalcea stipularis* (State: Endangered)
- Stebbins's morning-glory, *Calystegia stebbinsii* (Fed: Endangered, State: Endangered)
- brownish beaked-rush, *Rhynchospora capitellata*
- red-anthered rush, *Juncus marginatus var. marginatus*

Special Status Amphibians and Reptiles

- Coast (California) horned lizard, *Phrynosoma coronatum (frontale population)*
- foothill yellow-legged frog, *Rana boylei*

Special Status Mammals

- Pacific fisher, *Martes pennanti (pacifica) DPS* (Fed: Candidate)



Special status plants with recorded occurrences within Grass Valley area

Clarkia biloba



Calystegia stebbinsii



Sidalcea stipularis



Special status plants with recorded occurrences within Grass Valley area (continued)

*Fremontodendron
decumbens*



*Monardella
follettii*



*Juncus
marginatus*



*Rhynchospora
capitellata*



Special status animals with recorded occurrences within Grass Valley area

Coast horned lizard



Pacific fisher



Foothill yellow-legged frog



DFG-OSPR Inputs to Remedial/Removal Action

- Promote cleanup levels that are protective of wildlife
- Select remedial action that maximizes risk reduction, but minimizes habitat destruction to the extent possible
- Facilitate coordination with DFG Regions and USFWS to identify avoidance or mitigation measures
- Evaluate residual risk to wildlife and identify suitable biological monitoring
- Assist in primary habitat restoration
- Identify ARARs



Conclusions

- DFG as trustee for fish and wildlife resources
- DFG input into site cleanups
 - Identify wildlife habitats, sensitive natural communities, and appropriate ecological receptors
 - Provide information on wildlife life histories, appropriate toxicity values
 - Help define remedial actions that benefit wildlife and sensitive natural communities by reducing contamination while avoiding or mitigating wildlife impacts



Any Questions?

