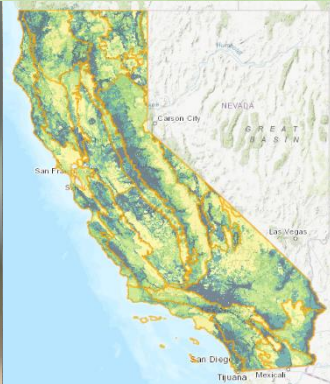




Biogeographic Data Branch GIS Resources & Tools: CNDDDB, BIOS, ACE

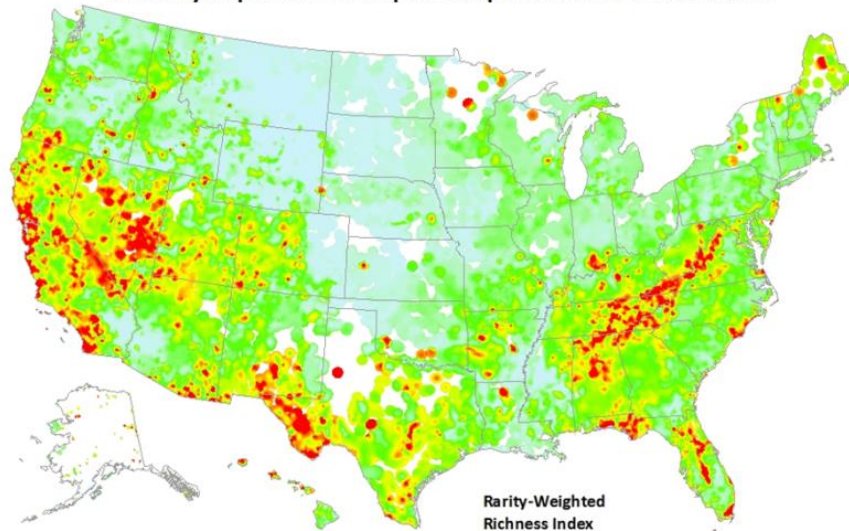
Misty Nelson, CNDDDB Lead Scientist
California GIS Council Meeting
June 14, 2018





Why we do what we do

NatureServe Rarity-Weighted Richness Model of Critically Imperiled and Imperiled Species in the United States



The continuous surface model representation of Rarity-Weighted Richness (RWR) of critically imperiled (G1) and imperiled (G2) species provides a picture of areas that represent concentrations of limited-range species and highlights locations with species composition different from adjacent areas. By combining overall species richness and the relative rarity (based on restricted distributions) of the species, this analysis points to locations that are essentially irreplaceable, and which present conservation opportunities that are found in very few other places.

Rarity-Weighted Richness Index
 High
 Low

0 100 200 Miles



Source: NatureServe and its Natural Heritage member programs 2013
 Produced by NatureServe, October 2013

*BDB Mission:
 "...to collaborate with others to collect, manage, analyze, and distribute biogeographic data for effective conservation and management of California's natural resources."*

RANK	DIVERSITY	RISK	ENDEMISM	EXTINCTIONS
1	California	Hawaii	California	Hawaii
2	Texas	California	Hawaii	Alabama
3	Arizona	Nevada	Texas	California
4	New Mexico	Alabama	Florida	Texas
5	Alabama	Utah	Utah	Georgia

How we do what we do



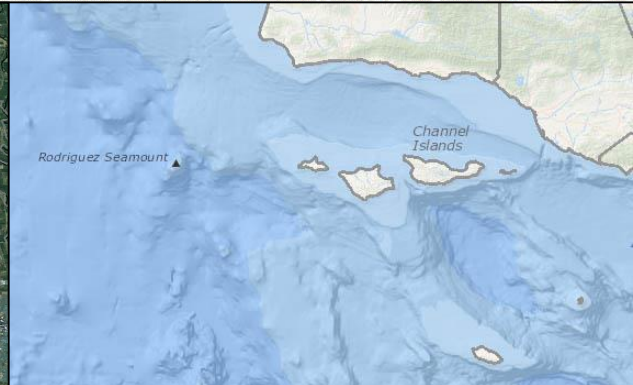
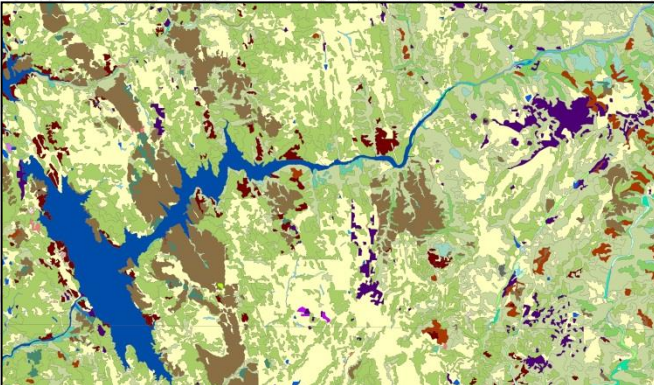
What is BIOS



Biogeographic Information and Observation System

BIOS is an internet map-based catalog of biological data.

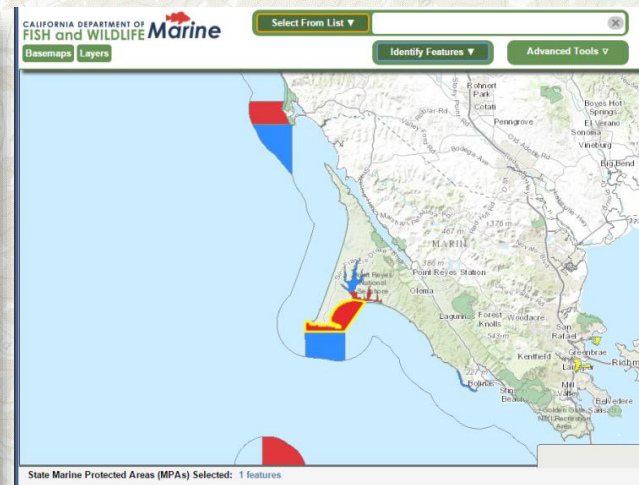
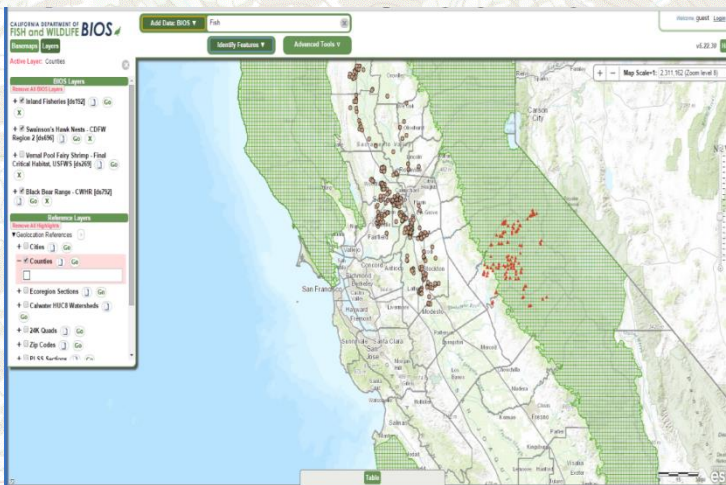
Goal: provide an integrated system to gather, manage, map, and query biological data for use by the Department and its partners.



Purpose



- Created in response to mandate to improve management of CDFW data
- Designed as a “GIS-lite” tool for those with minimal GIS experience; doesn’t require GIS software
- Primarily a data display, query, and archive tool. Analytical tools continue to evolve
- Multi-agency collaboration (USGS, CalFish, etc.)



Available Data



- 2,276 Public Datasets
- 240 Secure Datasets
- Primarily biological datasets, useful for many natural resources management activities including:
 - Sensitive species protection and enhancement
 - Habitat corridor/linkage planning
 - Renewable energy planning
 - Invasive species tracking
- Data sources include CDFW, USFWS, USGS, Consultants, NGOs, etc.
- One-time collections, as well as ongoing work
- Ownership, access, and updates driven by contributor

Example Datasets



Vegetation Classification and Mapping Program (VegCAMP) – Vegetation Mapping Projects

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Add Data: BIOS ds515

Identify Features Advanced Tools

Basemaps Layers

Active Layer: Vegetation (MCV / NVCS) Mapping Projects - California [ds515]

- + Delta Vegetation and Land Use [ds292] Go X
- + Vegetation - Pine Creek, WA and Fitzhugh Creek, WA [ds484] Go X
- + Vegetation - Suisun Marsh, 2006 [ds500] Go X
- Vegetation (MCV / NVCS) Mapping Projects - California [ds515] Go X

Map Status

- Complete
- Accuracy Assessment
- Mapping
- Survey
- Classification
- Unknown

- + Vegetation - Carrizo Plain Ecological Reserve, 2005 - 2008 [ds561] Go X
- + Vegetation - Santa Cruz Island, 2007 [ds563] Go X
- + Vegetation - Lassen Foothills [ds564] Go X
- + Vegetation - Northern Sierra Nevada Foothills [ds566] Go X

Table

The screenshot shows a web-based GIS application. The main map area displays California with various colored regions representing different vegetation mapping projects. The interface includes a search bar at the top with "ds515" entered, and several menu buttons like "Identify Features" and "Advanced Tools". A legend on the left side lists various mapping projects and their status (e.g., Complete, Accuracy Assessment, Mapping, Survey, Classification, Unknown). The map shows major cities like San Francisco, San Jose, Sacramento, Los Angeles, San Diego, Tijuana, and Mexicali, as well as geographical features like the Great Basin and the California-Nevada border.

Example Datasets



VegCAMP – Fish Slough Vegetation Map and Plots

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Add Data: BIOS ▼ DS985

Filter by extent ? Identify Features ▼ Advanced Tools ▼

Active Layer: Vegetation (MCV / NVCS) Mapping Projects - California [ds515]

Canyon National Parks Vegetation Mapping Project [ds984] Go X

Vegetation - Fish Slough [ds985] Go X

MapClass

- Populus fremontii
- Rosa woodsii Provisional
- Artemisia tridentata-Ephedra nevadensis
- Ephedra nevadensis
- Grayia spinosa-Atriplex confertifolia
- Psoralea argophylla (arborescens, polydenius)
- Menodora spinescens-Atriplex confertifolia
- Atriplex canescens-Psoralea argophylla (arborescens, polydenius) Provisional
- Atriplex confertifolia
- Atriplex confertifolia-Krascheninnikovia lanata
- Atriplex confertifolia-Psoralea argophylla (arborescens, polydenius) Provisional
- Ericameria cooperi Provisional
- Ericameria nauseosa
- Ericameria nauseosa/Sporobolus airoides
- Ericameria teretifolia

Table

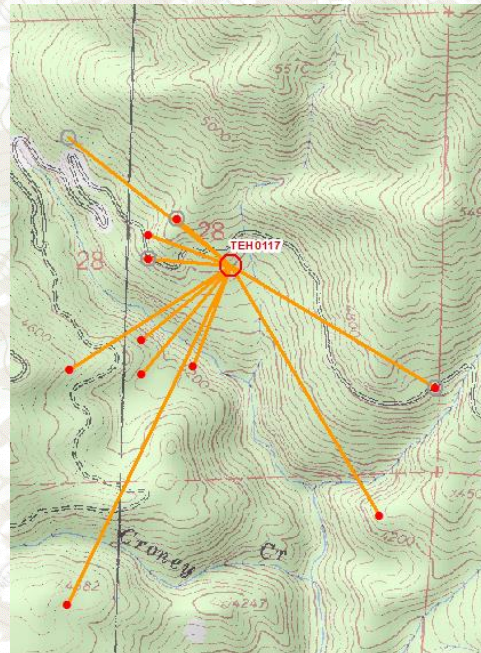
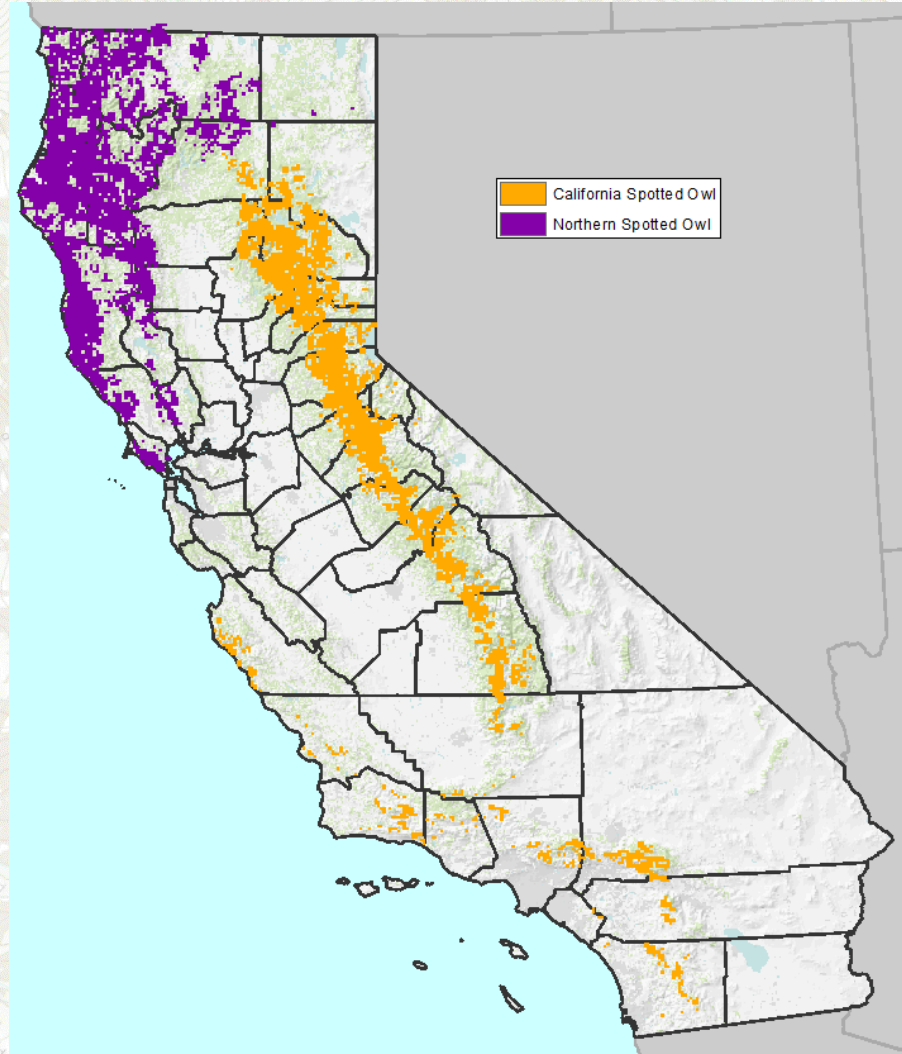


Example Datasets



Focal taxa data – Spotted Owl Observations Database

- Northern & California Spotted Owls
- Includes positive and negative survey data
- Observations tied to Activity Centers when appropriate



- Positive Observation
- Negative Observation
- Activity Center
- Not Valid Activity Center
- ◇ Abandoned
- Spider Diagram

BIOS Website



- Access to the BIOS Data Viewer
- Tutorials
- Instructions for data submission, including metadata standards
- List of most recent data updates
- Data downloads
- Survey protocols and standards

The screenshot shows the BIOS website interface. At the top, there are navigation tabs: Home, Fishing, Hunting, Licenses & Permits, Conservation, Learning, and Explore. Below the tabs, the main content area is titled "Biogeographic Information and Observation System (BIOS)". It includes a description of the system, a note about browser compatibility ("BIOS 5 Viewers - Please use @Firefox or @Chrome for best performance."), and a list of viewer options: "BIOS Viewer (Public & Secure)", "CNDDB_GOV / Spotted Owl Viewer", "CNDDB_COM / Spotted Owl Viewer", and "Oct 2017 NorCal Fire Response". Each viewer option has associated password requirements. A "Timberland Resources" section is also visible. On the right side, there is a sidebar with the BIOS logo and a list of links: "About BIOS", "BIOS / CNDDB Training and Tutorials", "Data" (with sub-links for Public Datasets, Contract Language, Submitting Data, etc.), "Partners", and "Contact BIOS Staff".

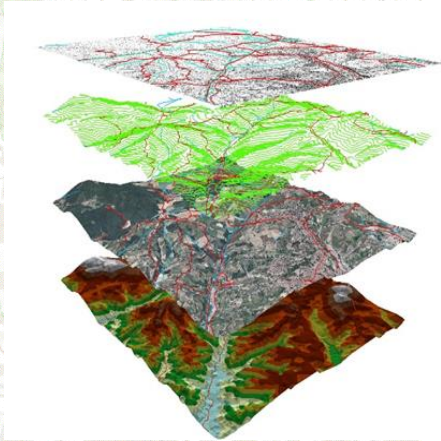
www.wildlife.ca.gov/Data/BIOS
BIOS@wildlife.ca.gov



What is ACE?



Areas of Conservation Emphasis



BIODIVERSITY



SIGNIFICANT HABITATS



Areas of Conservation Emphasis

CONNECTIVITY



CLIMATE RESILIENCE



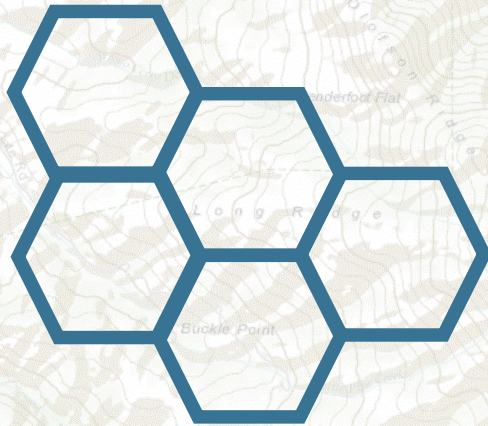
RECREATION



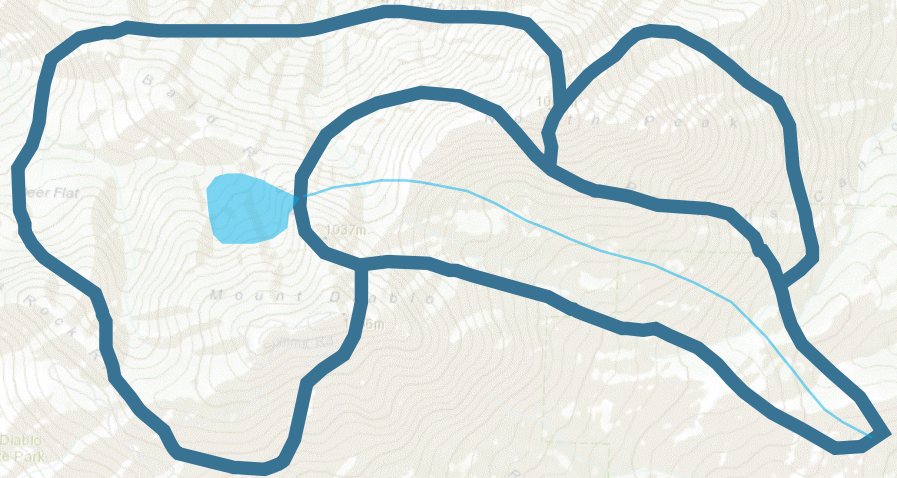
What is ACE?



ACE: ANALYSIS UNITS



Terrestrial
hexagon grid
standard size
2.5 miles² (1600 acres)




Aquatic
HUC 12 watersheds
variable size
4 - 425 miles²

What is ACE?









← → ↻ <https://map.dfg.ca.gov/ace/>

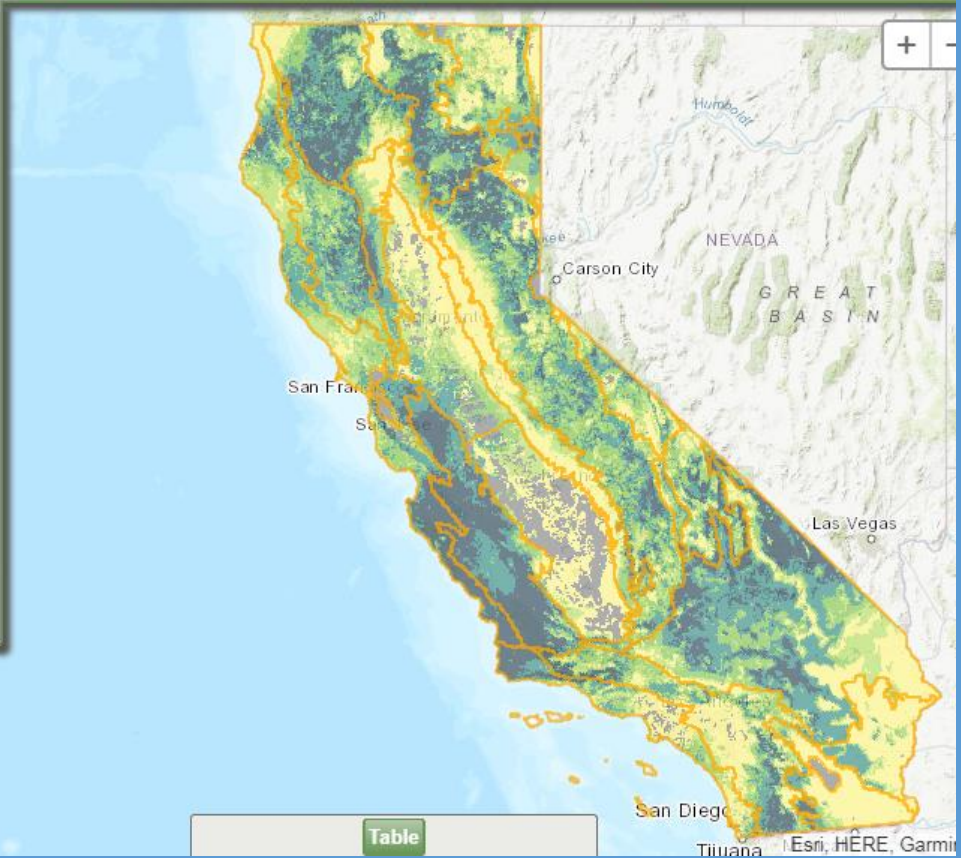
CALIFORNIA DEPARTMENT OF FISH and WILDLIFE  **Areas of Conservation Emphasis**

Add Data: BIOS ▼ ace state ✕

Basemaps **Layers** **Identify Features** ▼ **Advanced Tools** ▼

Active Layer: Terrestrial Climate Change Resilience [ds2738]

- + Terrestrial Connectivity [ds2734] 
- ▼ **Climate Resilience**
 - Terrestrial Climate Change Resilience [ds2738] 
 - Climate Resilience Rank**
 - 5 - high
 - 4
 - 3
 - 2
 - 1 - low
 - No Data
- ▶ **SWAP** 
- ▼ **Stressors** 
 - ▼ **Sea Level Rise**
 - + Sea Level Rise Inundation Model - Sacramento San Joaquin Delta - UC Berkeley [ds2694] 
 - + Sea Level Rise Inundation Model - San Francisco Bay - UC Berkeley [ds2695] 

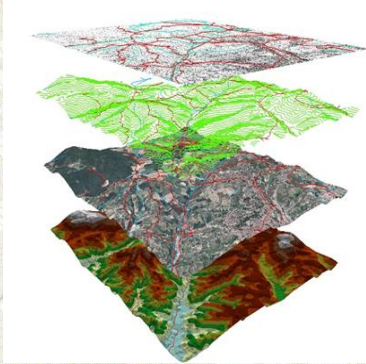


Table

Potential Uses



- Identify conservation elements present at a site
- Compare relative value between sites
- Evaluate location and relative juxtaposition of conservation elements, land ownership, stressors, etc.



East Bay Regional Park Open Space

East Bay Regional Park Open Space

Stone Valley Rd

Windy Point

ACE Website



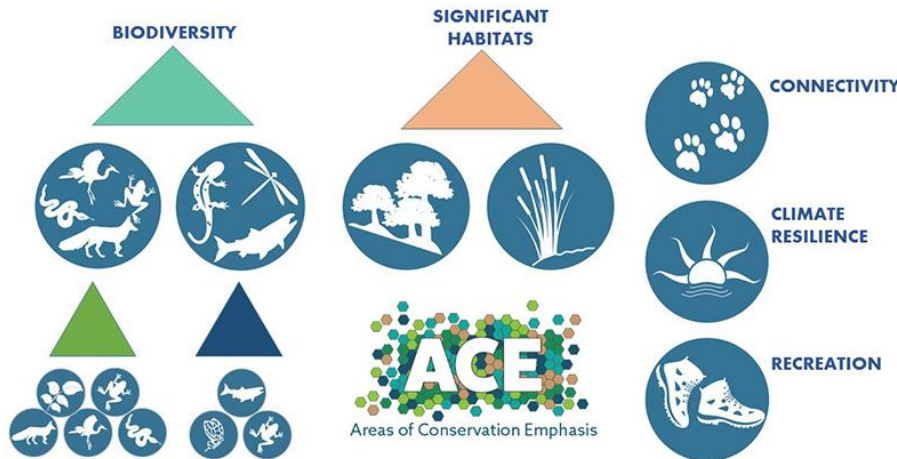
Home | Data | Analysis | ACE

Areas of Conservation Emphasis (ACE)

What is ACE?

ACE is a CDFW effort to analyze large amounts of map-based data in a targeted, strategic way, and expressed visually, so decisions can be informed around important goals like conservation of biodiversity, habitat connectivity, and climate change resiliency. The ACE maps provide a coarse level view of information for conservation planning purposes, ranging from ecological research and modeling to local land-use planning and conservation decision-making. However, they do not replace the need for site-specific evaluation of biological resources and should not be used for regulatory purposes.

All ACE data layers are limited by the accuracy, scale, extent of coverage, and completeness of the input data at the time they were run. We highly recommend reviewing available metadata and ACE Factsheets (found in the folders below) prior to interpreting these data. The ACE data are dynamic and will be updated periodically as new data warrant. A new and improved version, ACE 3.0, was released in February 2018, and we welcome feedback on this latest version.



- [Launch ACE Viewer](#)
CDFW map viewers will perform best in **Mozilla Firefox** or **Google Chrome** browsers.
- [ACE Viewer Guide \(PDF\)](#)
- [Download GIS Data](#)

Related Information

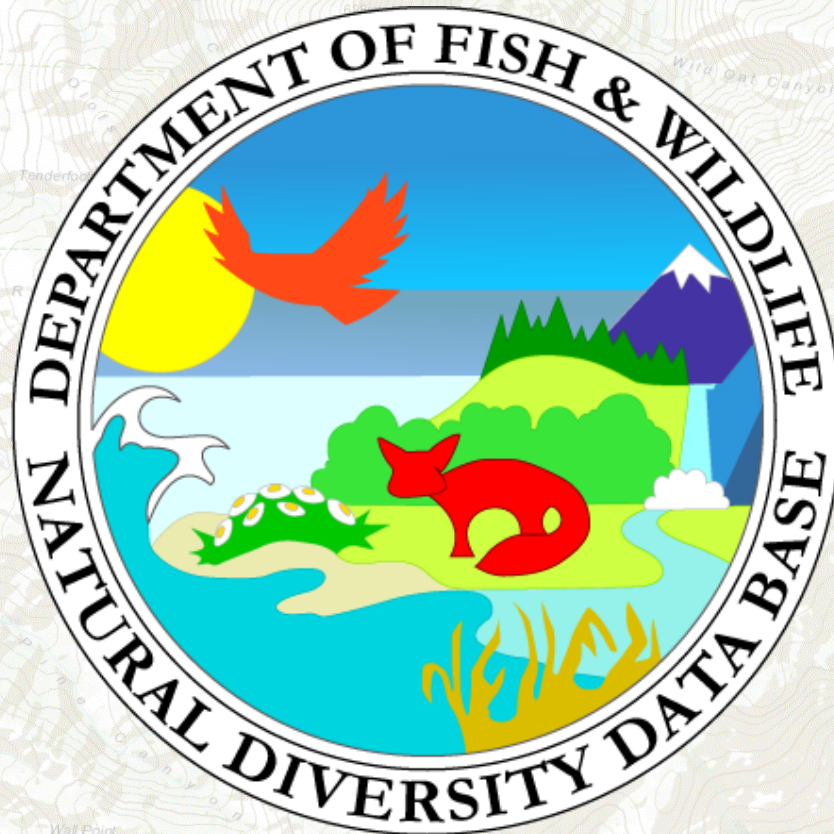
- [BIOS](#)
- [California Wildlife Habitat Relationships](#)
- [CA Natural Diversity Database](#)
- [State Wildlife Action Plan](#)

Conservation Data Analysis

- [Sierra Nevada Foothills Connectivity Modeling Project](#)
- [Climate Change Vulnerability Assessment](#)
- [ACE](#)

<https://www.wildlife.ca.gov/Data/Analysis/ACE>

Melanie Gogol-Prokurat: Melanie.Gogol-Prokurat@wildlife.ca.gov



California Natural Diversity Database



What is CNDDDB?

- An inventory of California's rarest plants and animals
 - Continually updated
 - Location and status information
 - GIS dataset with extensive tabular/text data



California Natural Diversity Database



What is CNDDDB?



“Last of the least, best of the rest”



California Natural Diversity Database



What do we track?

- State and/or Federally listed or candidate species
- CNPS listed taxa (plants only)
- California Species of Special Concern (animals only)
- Species recommended for inclusion on the list by recognized experts
- Special biological “situations”
- Natural communities



California Natural Diversity Database



What do we track?

➤ “Elements”





Element Ranks

- G1 - G5: Worldwide condition of the full species. From extremely rare (G1) to very common (G5).
- T1 - T5: Worldwide condition of the subspecies/variety. From extremely rare (T1) to very common (T5).
- S1 - S5: Statewide condition of the species or subspecies/variety. From extremely rare (S1) to very common (S5).

Example: *Coryphantha vivipara* var. *rosea*, Rank: **G5T3S1**

G5 – full species is common from Southern Canada through Northern Mexico

T3 – variety only found from far SE California through southern Nevada and into NW Arizona

S1 – Within California, variety is restricted to a handful of sites, all within 25 miles of the Nevada border





What do we track?

- Elements
- Element Occurrences (“EOs”)

Definition:

“An area of land and/or water in which a species or natural community is, or was, present” that has *“practical conservation value”*

ELEMENT OCCURRENCE DATA STANDARD

February 6, 2002

NatureServe

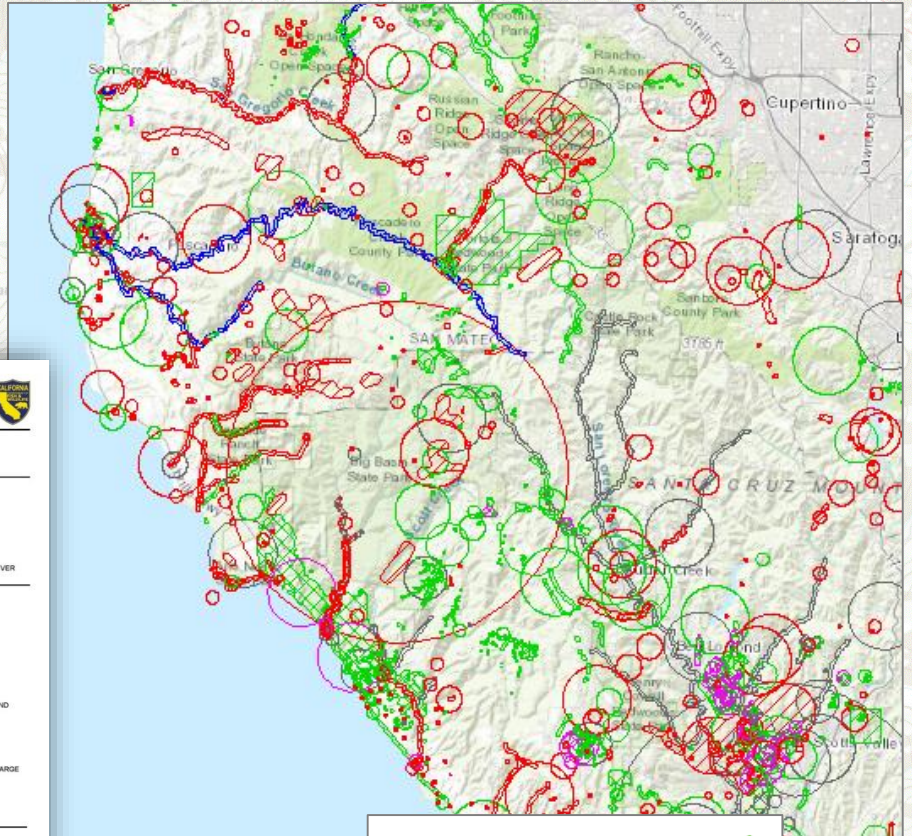
in cooperation with the
Network of Natural Heritage Programs
and Conservation Data Centers

California Natural Diversity Database



What do we track?

- Elements
- Element Occurrences



Occurrence Report
California Department of Fish and Wildlife
California Natural Diversity Database

Map Index Number: 80800	ED Index: 7034	Key Quad: Antioch North (2812117)	Element Code: PDM1 0030
Occurrence Number: 1	Occurrence Last Updated: 2010-11-23		

<p>Scientific Name: <i>Lilaeopsis masoni</i></p> <p>Listing Status: Federal: None State: Rare Global: G2 State: S2</p> <p>CNDRB Element Ranks: State: S2</p>	<p>Common Name: Mason's Lilaeopsis</p> <p>Rare Plant Rank: 1B.1</p> <p>Other Lists:</p>
---	--

<p>General Habitat: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.</p> <p>Last Date Observed: 2001-04-14</p> <p>Last Survey Date: 2001-04-14</p> <p>Owner/Manager: PVT, USFWS-ANTIOCH DUNES MWR</p> <p>Presence: Presumed Extinct</p> <p>Location: ANTIOCH DUNES, JUST EAST OF WESTERN PGE TOWER</p> <p>Detailed Location: SARCIS UNIT OF ANTIOCH DUNES NATIONAL WILDLIFE REFUGE.</p> <p>Biological: GROWING ALONG ~800 FT OF SOUTH BANK OF RIVER. MOST ON FINE WET SAND, SOME PERCHED ON OLD WOODEN POSTS, PLUNGS AND WIRE MESH. DOMINANTS INCLUDE SCORPUS SPP. AND DESCHAMPSIA CASERTOSA. OTHER ASSOCIATES INCLUDE HYDROCOOTYLE VERTICILLATA, ETC.</p> <p>Threats: CORTADERIA SELLOANA SHOULD BE REMOVED.</p> <p>General: A SMALL COLONY OF SEVERAL DOZEN PLANTS HAVE BEEN OBSERVED IN 1977-1979 - ~1 SQUARE FT OF PLANTS OBSERVED IN 1989. 2 LARGE PATCHES OF 7 X 7 AND 10 X 8 IN AREA AND SEVERAL SCATTERED PLANTS IN 1992. MORE THAN 10,000 PLANTS OBSERVED IN 2001.</p> <p>PLSB: T02N, R02E, Sec. 17 60</p> <p>UTM: Zone-10 N4201955 E908623</p> <p>County Summary: Quad Summary: Antioch North (2812117)</p> <p>Source: DEBECKER, S. - FIELD SURVEY FORM FOR LILAEOPSIS MASONI 1988-10-05 GOLDEN, M. & P. FIEDLER - FINAL REPORT: CHARACTERIZATION OF THE HABITAT FOR LILAEOPSIS MASONI, A CALIFORNIA STATE LISTED RARE SPECIES 1991-06-03 GREY-FR001 GREENHOUSE, J. - FIELD SURVEY FORM FOR LILAEOPSIS MASONI 2001-04-14 HOW775001 HOWARD, A. - HOWARD #28 LC #126104 1977-08-24 LAK927007 LAKE, D.E. - FIELD SURVEY FORM FOR LATHYRUS JEPSONI VAR. JEPSONI 1992-04-26 MAL78J006 MALLOCH, B. - NOTES AND MAP OF ANTIOCH QUAD WITH POPULATION OF LILAEOPSIS MASONI: 1978-05-XX MAT77A001 MATHIAS & CONSTANCE - TWO NEW LOCAL UMBELLIFERAE (APIACEAE) FROM CALIFORNIA. MACRONO 24:78-43 (ORIGINAL DESCRIPTION FOR LILAEOPSIS MASONI) 1973-00-XX.</p>	<p>Micro Habitat: TIDAL ZONES IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.</p> <p>Occurrence Type: Natural/Native occurrence</p> <p>Occurrence Rank: Good</p> <p>Trend: Unknown</p>
--	---

Government Version - Dated March, 5 2013 - Biogeographic Data Branch
Report Printed on Tuesday, March 26, 2013

Page 1 of 1
Information Expires 9/8/2013

RareFind



California Natural Diversity Database



Symbology

● 80 meter radius circle (point)



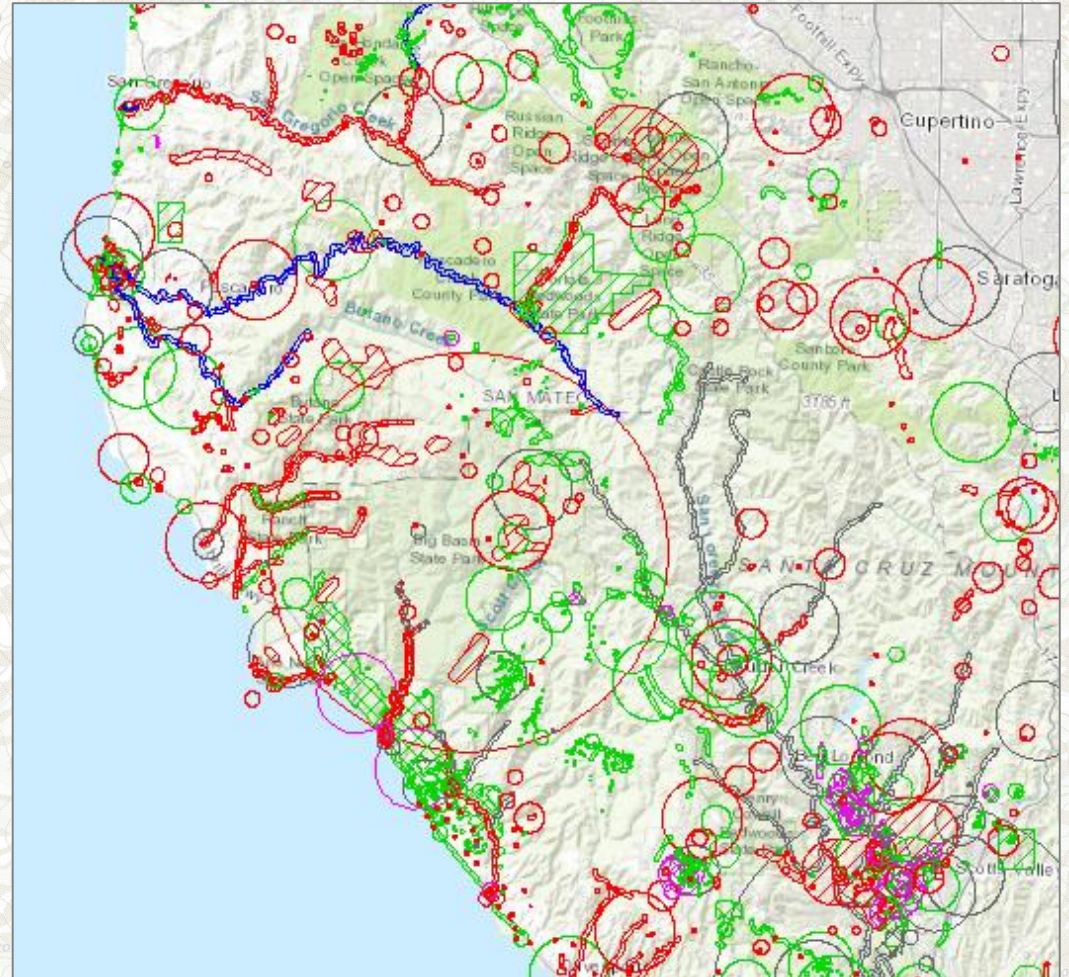
Specific bounded area



Non-specific bounded area



Increasing spatial uncertainty



Plants Animals Terrestrial Communities Aquatic Communities Multiple EOs

California Natural Diversity Database



Occurrence Rank



A = Excellent



B = Good



C = Fair



D = Poor



X = Extirpated

?

U = Unknown

California Natural Diversity Database



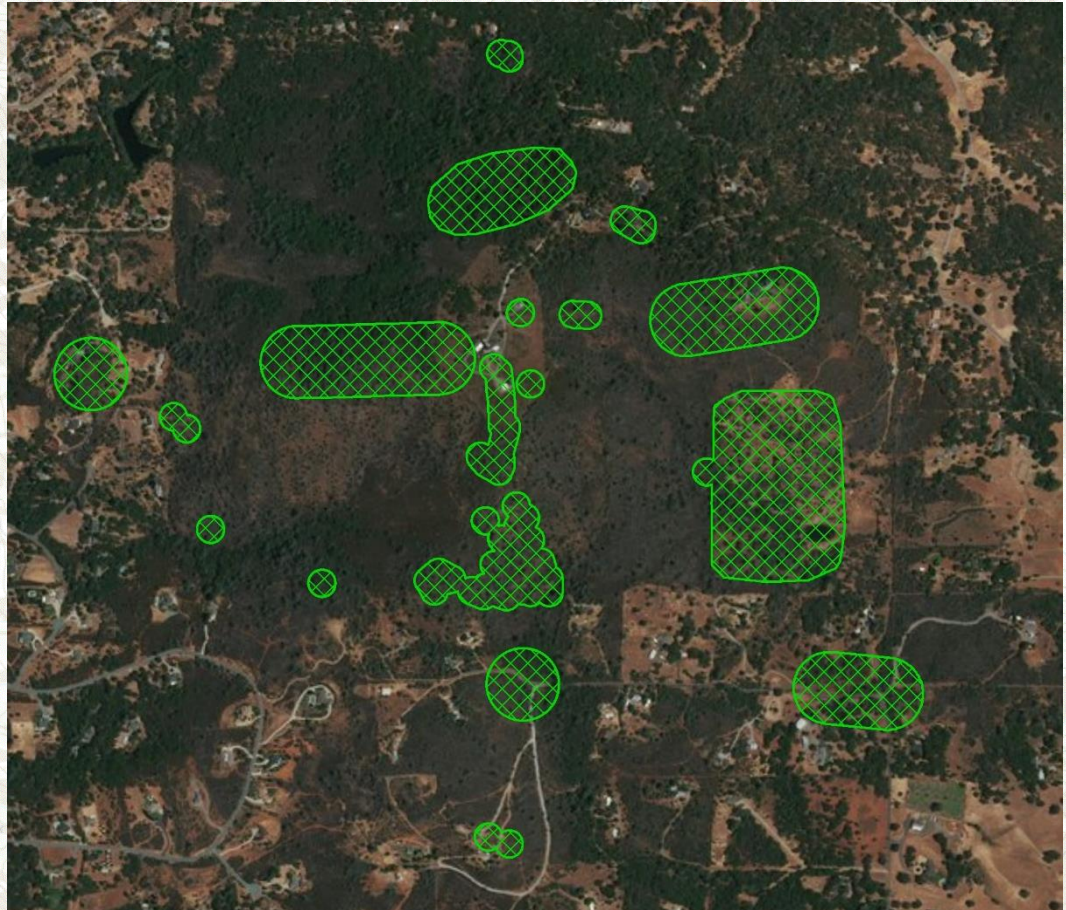
Element:



© 2006 Stan Shebs

Pine Hill Flannelbush
(*Fremontodendron decumbens*)

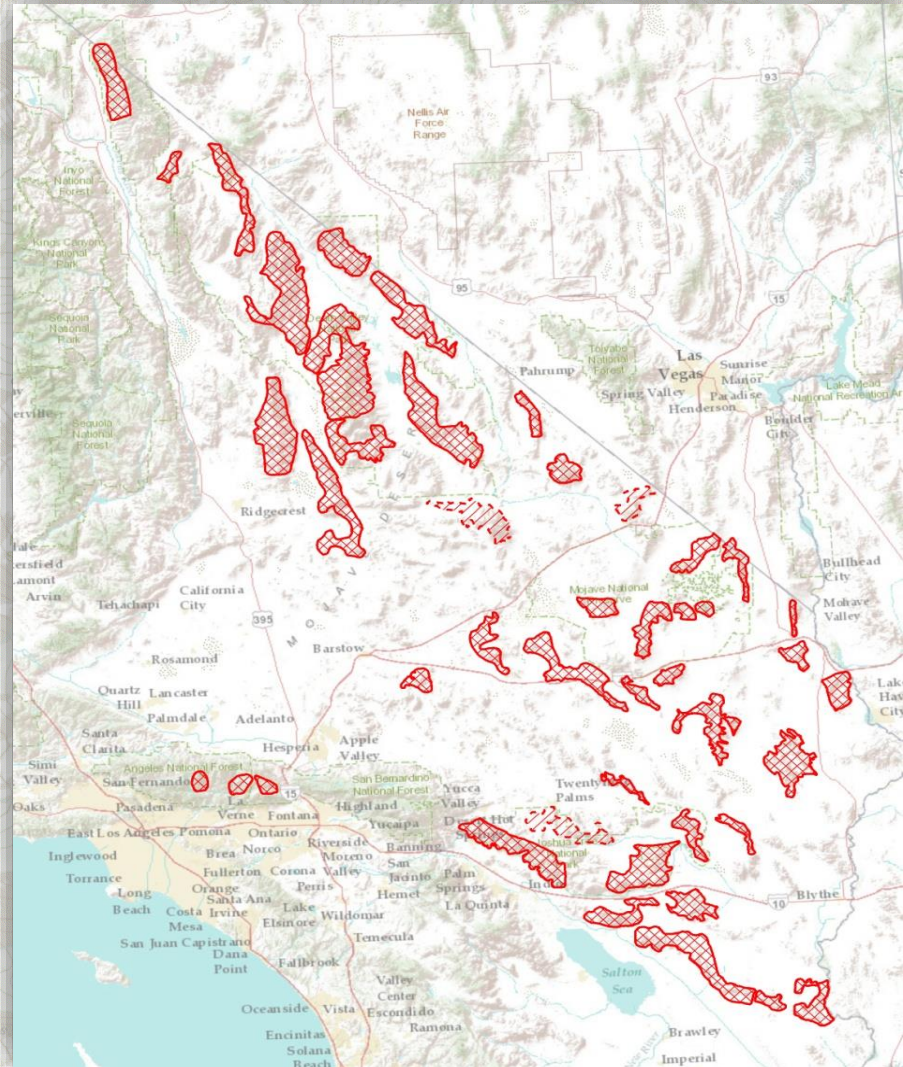
Element Occurrence #14146:



California Natural Diversity Database



Bighorn Sheep
(*Ovis canadensis*)



California Natural Diversity Database



Giant Garter Snake
(*Thamnophis gigas*)



California Natural Diversity Database



What do we *not* track?



*"The facts, Ma'am.
Just the facts."*



Anecdotal information



Soaring/transient birds

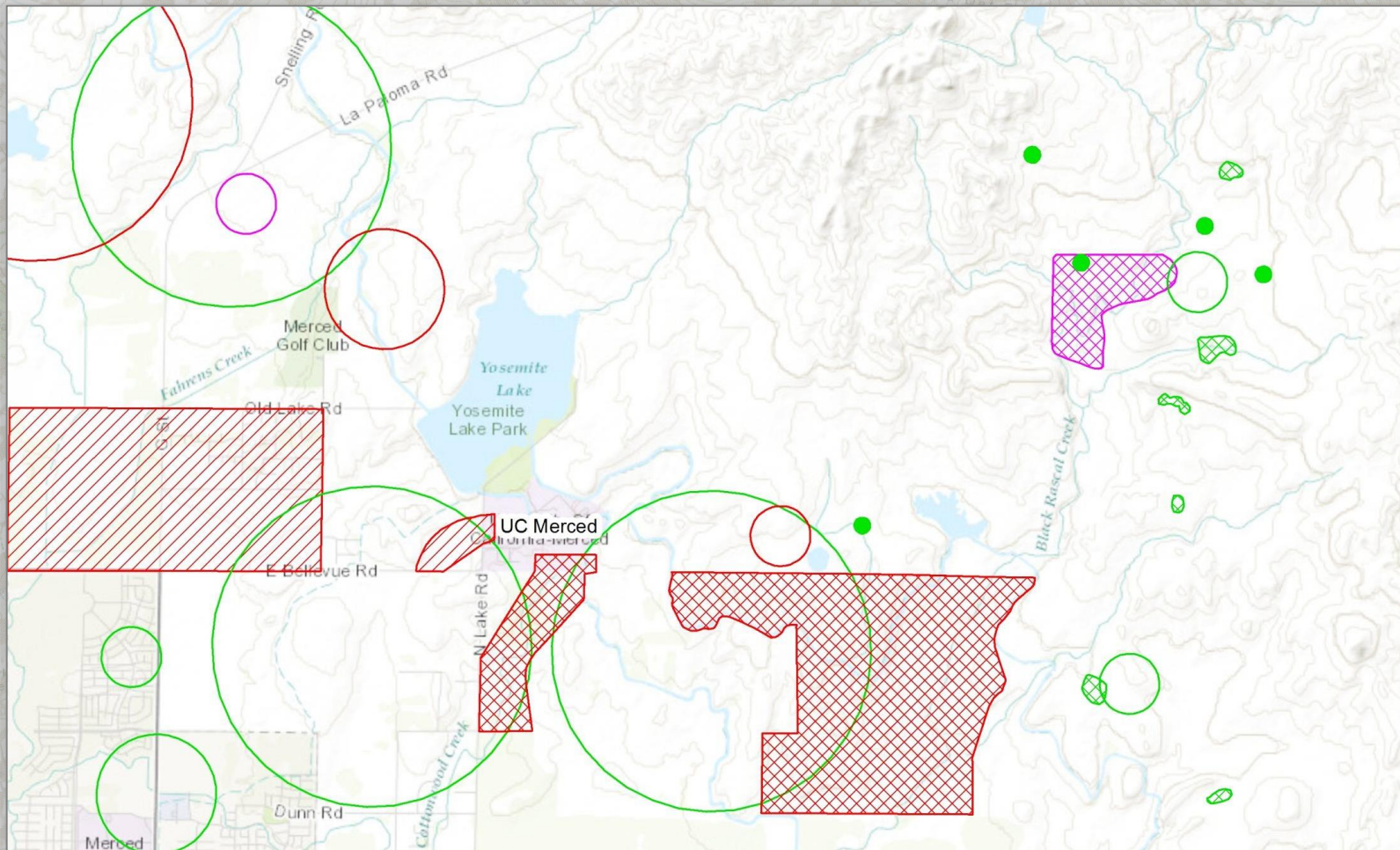
NO DATA ≠ NOT THERE

Negative data

California Natural Diversity Database



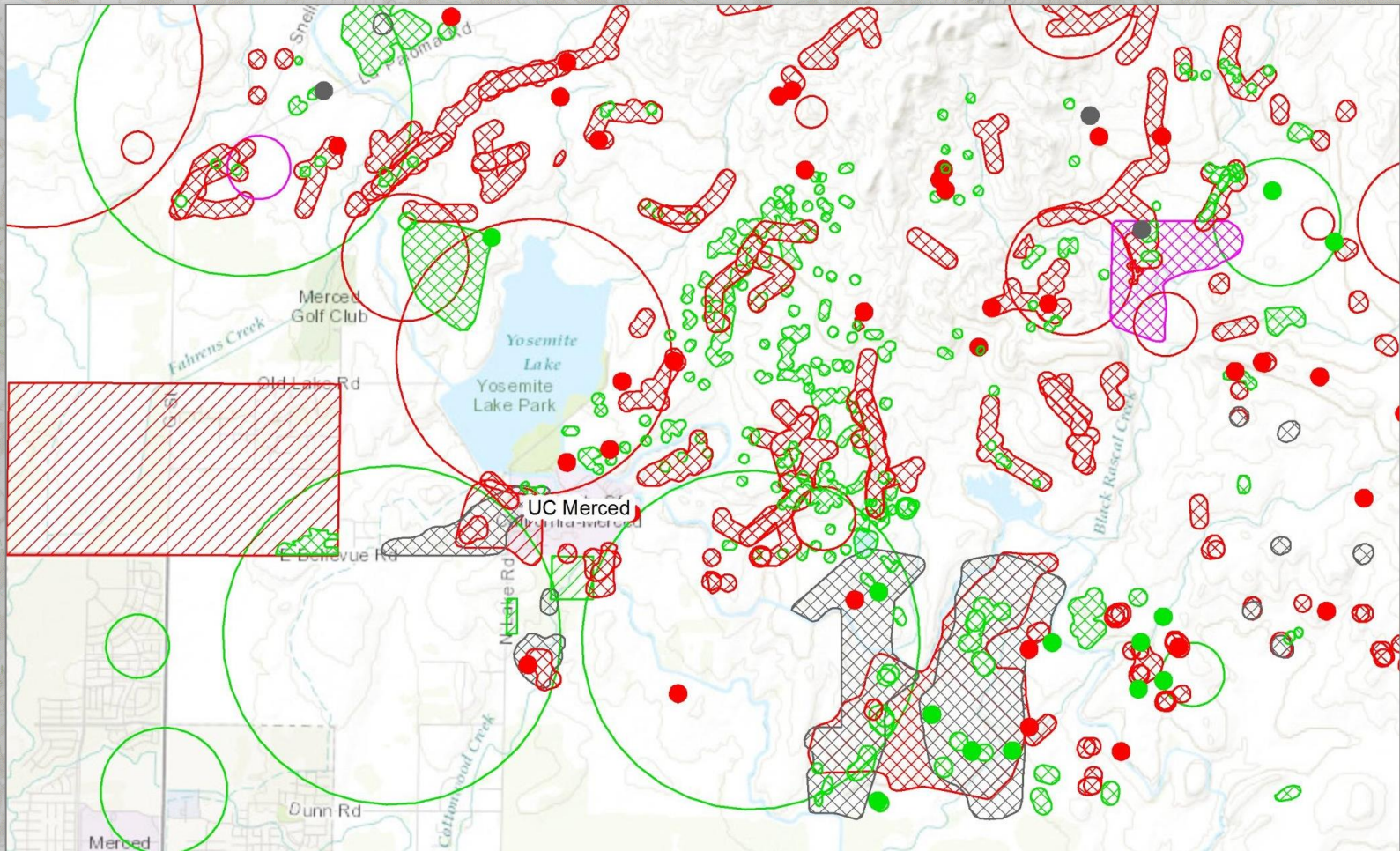
Example: CNDDDB data from 2000, near UC Merced



California Natural Diversity Database



Example: 2013 CNDDDB data, after surveys



California Natural Diversity Database



CNDDDB is a **POSITIVE DETECTION** database

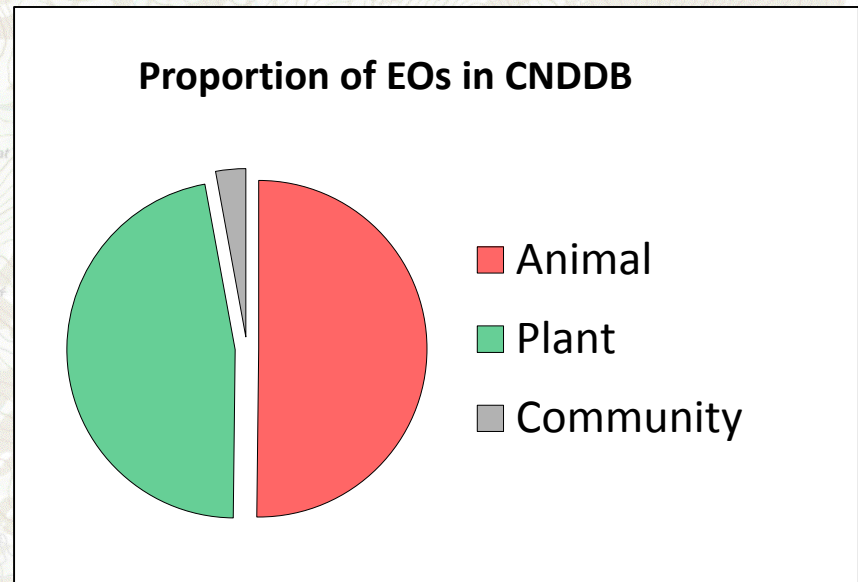
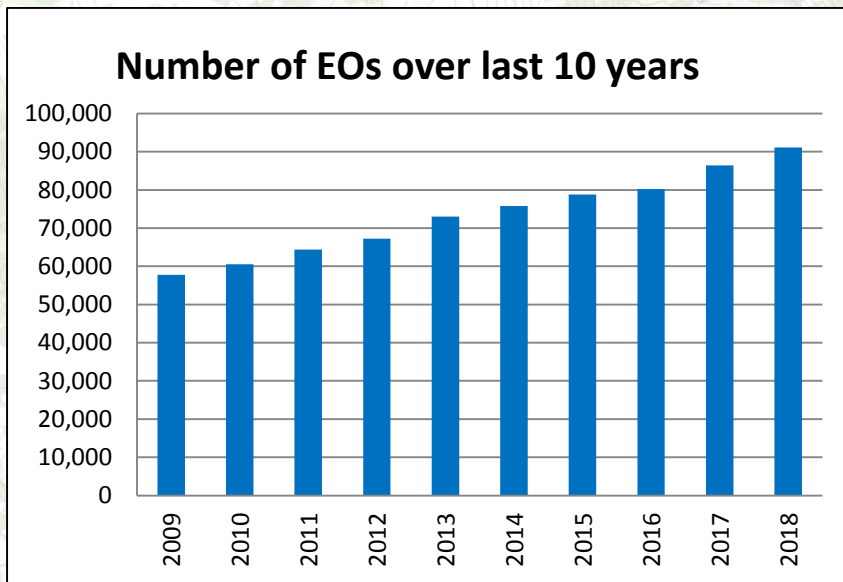
- We do not predict where species *might* occur
- We do not report negative (absence) data
Exception: extirpation of previously-mapped occurrence



California Natural Diversity Database



As of May 2018: >92,000 EOs using 220,000+ sources



Each month:

1000+ new sources received

600-800 Element Occurrences added/updated

California Natural Diversity Database



CNDDDB Data Uses

- Environmental review - CEQA
- Regional conservation planning
- State and Federal Endangered Species acts
- Research
- Emergency response planning?



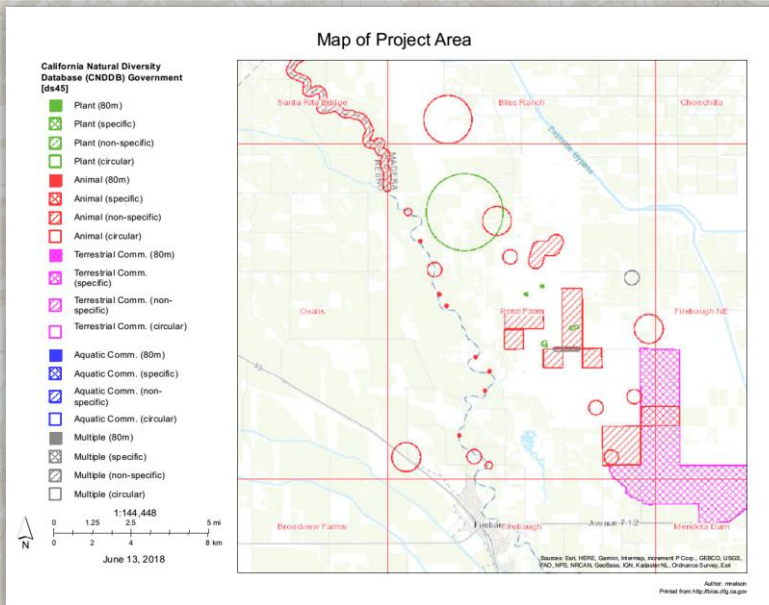



California Natural Diversity Database

How do you access CNDDDB?

Subscription services

- Map overlays/text reports
- Individual USGS 7.5' quads






Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: BIOS selection

Map Index Number: 13361	EO Index: 27262
Key Quad: Poso Farm (3612084)	Element Code: ABNKC19070
Occurrence Number: 37	Occurrence Last Updated: 2000-01-27

Scientific Name: <i>Buteo swainsoni</i>	Common Name: Swainson's hawk
Listing Status: Federal: None	Rare Plant Rank:
State: Threatened	Other Lists: BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern
CNDDDB Element Ranks: Global: G5	
State: S3	

General Habitat: BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, & AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.	Micro Habitat: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.
---	--

Last Date Observed: 1979-08-02	Occurrence Type: Natural/Native occurrence
Last Survey Date: 1983-07-28	Occurrence Rank: Unknown
Owner/Manager: UNKNOWN	Trend: Unknown
Presence: Presumed Extant	

Location:
SAN JOAQUIN RIVER, 0.2 MILE NORTH OF BEHYMER AVENUE, NORTH OF FIREBAUGH.

Detailed Location:

Ecological:

Threats:

General:
DFG SWHA #FR001. ADULT BIRD OBSERVED IN 1979 AND 1981, BUT NO NEST WAS LOCATED. NO BIRDS WERE FOUND DURING A SURVEY ON 28 JUL 1983.

PLSS: T12S, R14E, Sec. 17, SE (M)	Accuracy: 1/5 mile	Area (acres): 0
UTM: Zone-10 N4084936 E726399	Latitude/Longitude: 36.88327 / -120.45962	Elevation (feet): 140

County Summary: Fresno, Madera	Quad Summary: Poso Farm (3612084)
---------------------------------------	--

Sources:

DFG84U0003 CALIFORNIA DEPARTMENT OF FISH & GAME - SWAINSON'S HAWK NEST RECORDS FROM DFG NONGAME BIRDS & MAMMALS SECTION (WILDLIFE BRANCH); MISSING, 1994-10-XX

DFG94U0003 DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994, 1994-XX-XX

Government Version -- Dated June, 1 2018 -- Biogeographic Data Branch
Report Printed on Wednesday, June 13, 2018

Page 1 of 36
Information Expires 12/1/2018



California Natural Diversity Database

How do you access CNDDDB?

Subscription services

- Map overlays/text reports
- Annual Subscription
 - CNDDDB in BIOS
 - RareFind 5
 - GIS dataset
 - Includes Spotted Owl Observations Database access
 - Government or Commercial

RareFind

Version 5 | User: bacord | Signoff

Query Results Occurrence details Reports BIOS Export/Import Help Query tool for CNDDDB

Change visible columns 3,832 elements returned from a total of 3,832 elements in CNDDDB.

Image Search	Scientific Name †	Common Name	Element Code	Total Occs	Returned Occs	Global Rank	State Rank	FC
Q1 / Ca	Care sensitive filler...							
Q1 / Ca	Abies amabilis	Pacific silver fir	PGPM01010	9	0	G5	S3	Nk
Q1 / Ca	Abies bracteata	bristlecone fir	PGPM01030	18	18	G2	S2	Nk
Q1 / Ca	Abies lasiocarpa var. lasiocarpa	subalpine fir	PGPM01072	12	12	G5T5	S3	Nk
Q1 / Ca	Abiaulax schlingeri	Oso Flaco robber fly	IDIP42010	3	3	G1	S1	Nk
Q1 / Ca	Abronia alpina	Ramshaw Meadows abronia	PDNYC01020	1	1	G2	S2	C.
Q1 / Ca	Abronia maritima	red sand-verberna	PDNYC010E0	0	0	G4T	S3T	Nk
Q1 / Ca	Abronia nana var. covillei	Coville's dwarf abronia	PDNYC010H1	0	0	G4T3	S3.2	Nk

Occurrences by Selected Element View Map 3 occurrences returned from a total of 3 occurrences for ABLAUTUX SCHLINGERI †

#	Occ Number †	ECode	Date Entered Last Seen	Date Seen Last Seen	Presence	Accuracy	County
1	58267	1964-07-19	1964-07-19		Presumed Extant	Circular feature with a 600 meter radius (2/5)	
2	58268	1962-08-11	1962-08-11		Presumed Extant	Non-specific bounded area	
3	58269	1965-09-07	1965-09-07		Presumed Extant	Non-specific bounded area	

BIOS

BIOS viewer 5.65.02 x CNDDDB RareFind 5

https://map.dfg.ca.gov/bios/?bookmark=326

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Active Layer: California Natural Diversity Database (CNDDDB) Government [0445]

Geographic and Selections BIOS Layers

- + Spotted Owl Observations [04704]
- + Spotted Owl Observations Spider Diagram [04705]
- + Unprocessed Data from CNDDDB Online Field Survey Form [041002]
- + Northern Spotted Owl - Final Critical Habitat - USFWS [04106]
- + California Natural Diversity Database (CNDDDB) Government [0445]

Symbology

- Plant (50m)
- Plant (specific)
- Plant (non-specific)
- Plant (conservatory)
- Animal (50m)

Map Scale: 1: 1,155,561 (Zoom level 9)

San Francisco

Esri HERE DeLorme NAVI DSSS NOAA EPA NPS USGS



California Natural Diversity Database

Free & publicly available:

- QuickView Tool in BIOS
 - Summarized to county or USGS 7.5' quad
 - Quad data by species
 - Includes unmapped records

BIOS viewer 5.65.02 x CNDDB Maps and Data x BIOS viewer 5.65.02 x CNDDB QuickView Tool x

https://map.dfg.ca.gov/bios/?tool=cnddbQuick

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE BIOS

Map Scale=1: 9,244,649 (Zoom level 6)

CNDDB QuickView Menu

User Guide | CNDDB Home Page

--Zoom to a Quad--

Select a tool below and click on the map

- List CNDDB Species for a Quad
- List CNDDB Species for 9 Quads
- List CNDDB Species for a County

View CNDDB Quad Data by Species

Rana boylei (toothill yellow-legged frog)

Found in: 672 Quads

Federal_Status: None

State_Status: Candidate Threatened

CDFW_Status: SSC

Legend: Mapped (purple), Unprocessed (light blue)

Clear Highlighted Quads

Map Scale=1: 577,791 (Zoom level 10)

CNDDB QuickView Menu

User Guide | CNDDB Home Page

--Zoom to a Quad--

Select a tool below and click on the map

- List CNDDB Species for a Quad
- List CNDDB Species for 9 Quads
- List CNDDB Species for a County

View CNDDB Quad Data by Species

CNDDB 9-Quad Species List 373 records.

Element_Type	Scientific_Name	Common_Name	Element_Code	Federal_Status	State_Status	CDFW_Status	CA_Rare_Plant_Rank	Quad_Code	Quad_Name	Data_Status	Taxonomic_Sort
1 Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3812225	Petaluma River	Mapped	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
2 Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3812235	Glen Ellen	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense

Map Scale=1: 577,791 (Zoom level 10)

CNDDB QuickView Menu

User Guide | CNDDB Home Page

--Zoom to a Quad--

Select a tool below and click on the map

- List CNDDB Species for a Quad
- List CNDDB Species for 9 Quads
- List CNDDB Species for a County

View CNDDB Quad Data by Species

Rana boylei (toothill yellow-legged frog)

Found in: 407 Quads

Federal_Status: None

State_Status: Threatened

CDFW_Status: None


Legend: Mapped (purple), Unprocessed (light blue)

Clear Highlighted Quads

California Natural Diversity Database



Submitting data to CNDDDB

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Submitting Data to the CNDDDB

The CNDDDB accepts data on rare species in a number of formats. The method of submission will likely depend on the amount of data that was collected, the format the data was collected in, and the type of project being carried out. For all data submissions, the more information that is provided to the CNDDDB on population size, site condition, threats, etc., the better the CNDDDB can assign an accurate occurrence rank to the site. The occurrence rank is then taken into consideration when determining rarity status and when prioritizing sites for conservation purposes.

Below are the most common ways data is submitted to the CNDDDB. **The preferred method of data submission for animal detections is the CNDDDB Online Field Survey Form.** If you are unclear as to how to submit your data, please [contact the CNDDDB](#) and we can work with you to determine the best way to submit your data.


Online Field Survey Form	PDF Field Survey Form	Digital Data	Other
--	---------------------------------------	------------------------------	-----------------------

Online Field Survey Form

[CNDDDB Online Field Survey Form](#)

This Internet application allows users to fill out and submit a field survey form online. It contains a mapping tool to help pinpoint the survey location, and allows users to generate PDF reports of their data submissions. All previous online submissions are saved with your account so that you can view your previous online submissions and be confident that your form was submitted to the CNDDDB.

- **First time users will need to set up an account. The**



California Natural Diversity Database

- [About the CNDDDB](#)
- [CNDDDB News](#)
- [CNDDDB QuickView Tool](#)
- [CNDDDB and Spotted Owl Data Viewer](#)
- [RareFind](#)
- [Submitting Data](#)
- [CNDDDB Tutorials and Training](#)
- [Monthly Data Updates](#)

www.wildlife.ca.gov/Data/CNDDDB/Submitting-Data

California Natural Diversity Database



**Thank
you!**

[Home](#) | [Explore](#) | [Organization](#) | **BDB**

Biogeographic Data Branch

Good management of scientific data is a critical issue for the Department. The Biogeographic Data Branch (BDB) performs a leadership, policy and standards setting role for biological and geographic data management activities for the entire Department, its contractors, and partner organizations.

BDB provides GIS support for all CDFW branches. This structure facilitates inter-branch teamwork and GIS workload balancing as changing conditions warrant.

BDB contains biological data development programs that are especially dependent and closely linked with GIS and emerging related technologies. These data development activities include vegetation mapping, rare species tracking, species range mapping, aggregation of existing incongruent data sources and decision support systems.

Biogeographic Data Branch (BDB) Programs

Conservation Analysis Unit (CAU) Projects:

- [ACE](#): Areas of Conservation Emphasis
- [Climate Change](#): Climate Change Vulnerability of Rare Plants
- [CWHR](#): California Wildlife Habitat Relationships

[BIOS](#): *Biogeographic Information and Observation System online mapping tool*

[CNDDDB](#): *California Natural Diversity Database*

[VegCAMP](#): *Vegetation Classification and Mapping Program*

[GIS](#): *Geographic Information Systems services and support*

www.wildlife.ca.gov/Explore/Organization/BDB