



CNDDDB Looks at 40: The Past, Present, and Future of the California Natural Diversity Database Program

Misty Nelson, CNDDDB Lead Scientist
CDFW Conservation Lecture Series
November 4, 2019





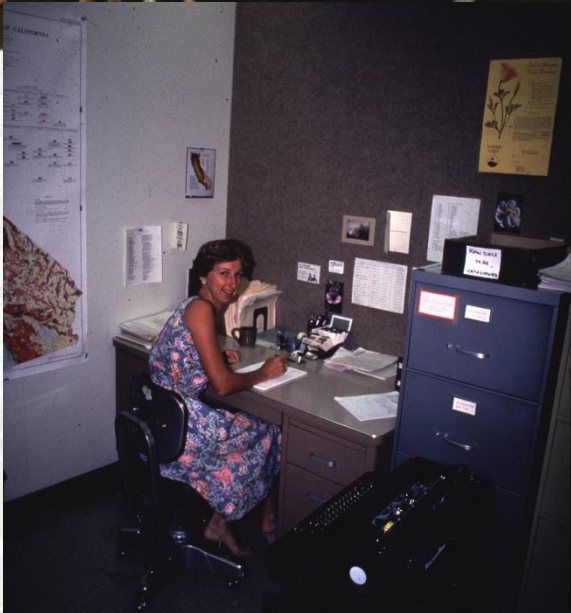
Where did we
come from?

Who are we?

Why are
we here?

Where are
we now?

Where do we
go from here?



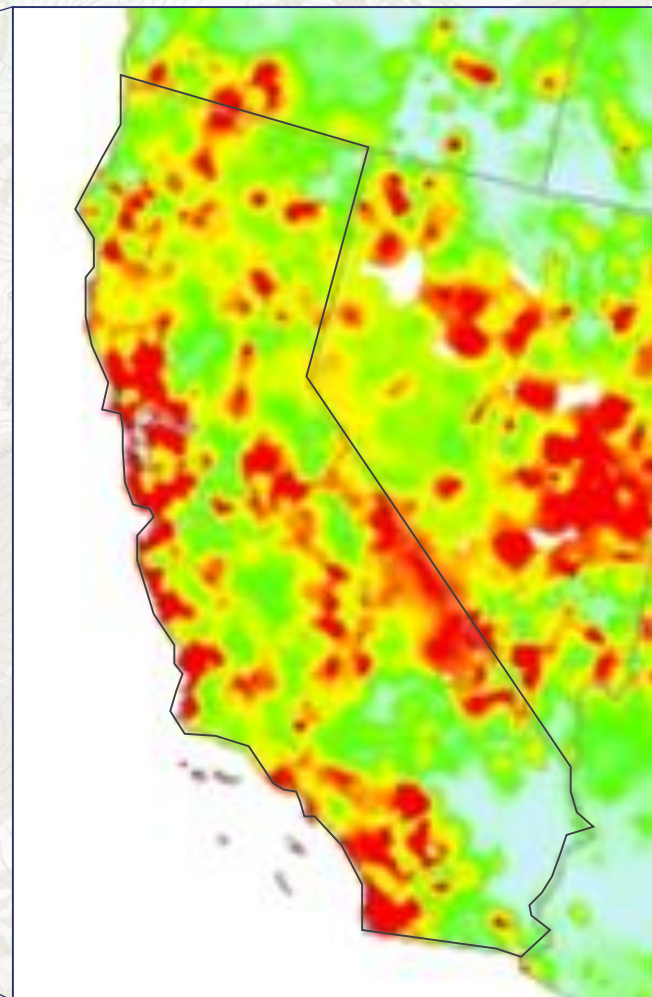
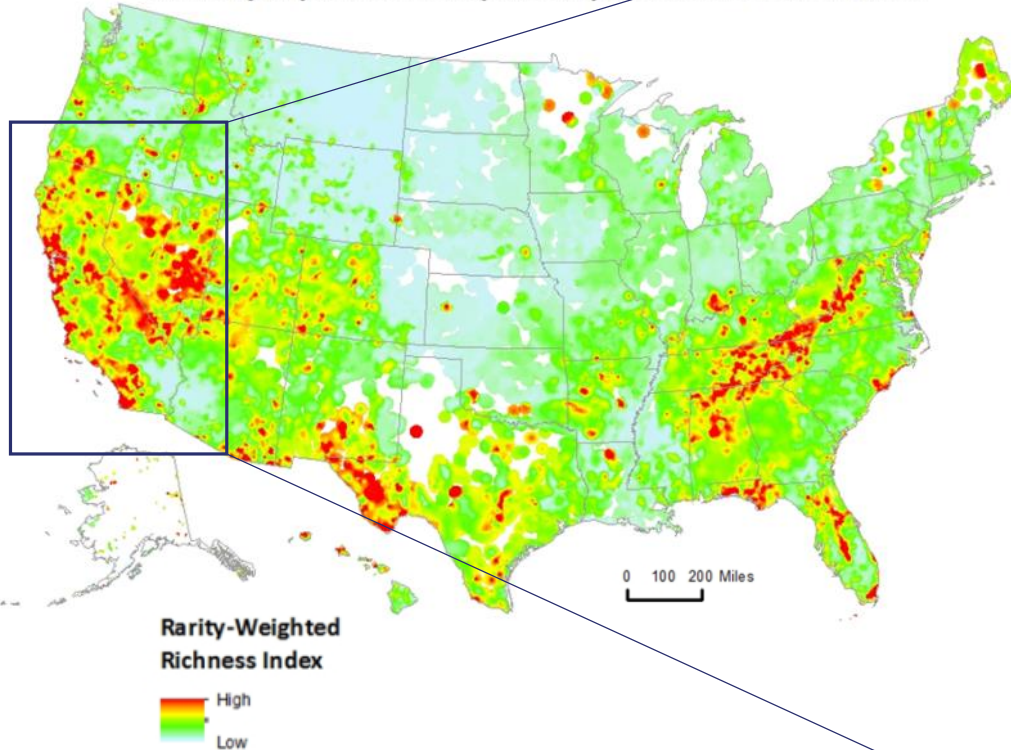




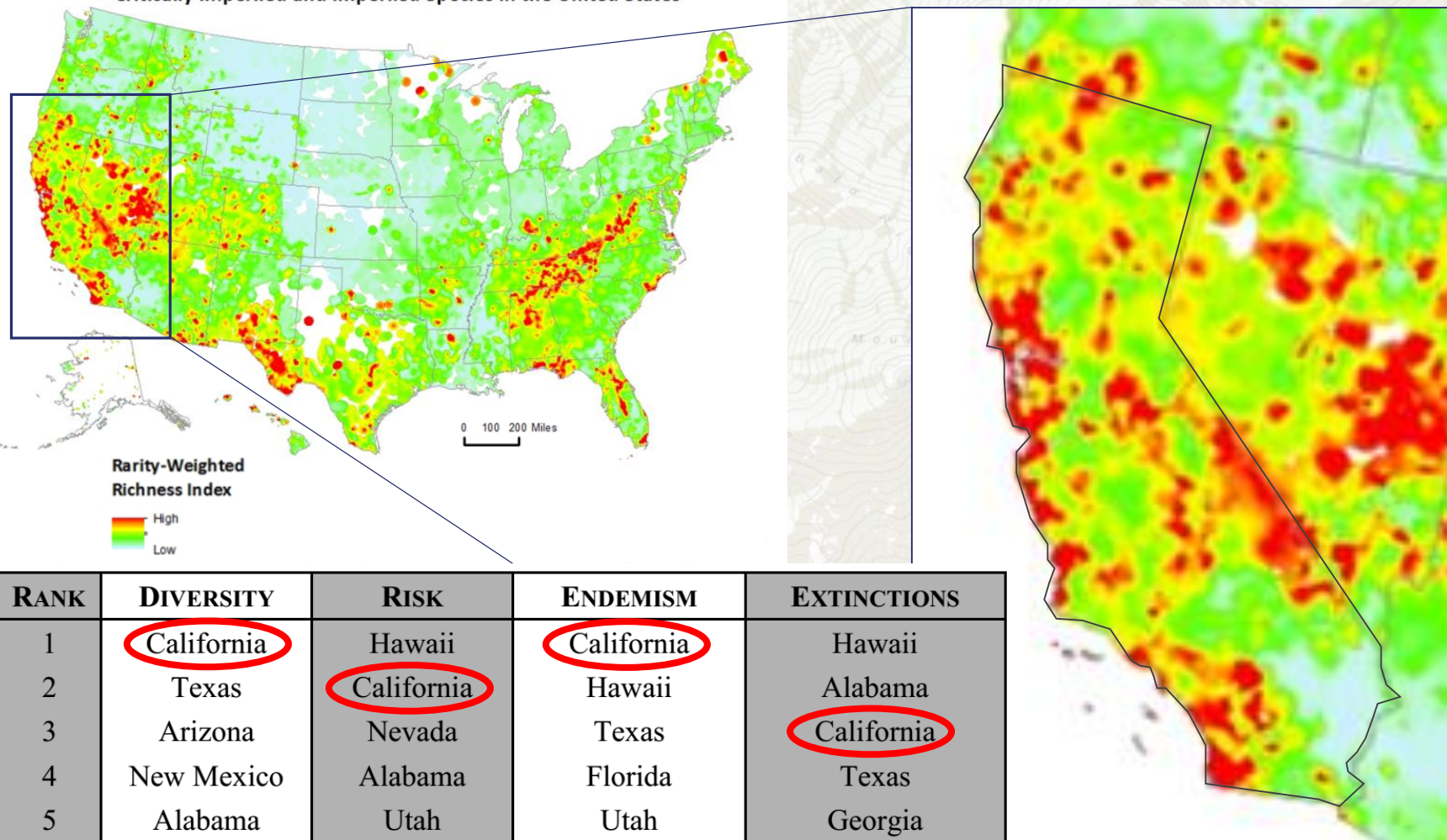
November 1979



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



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





January 1981

CALIFORNIA FISH AND GAME CODE

And selected laws from the following California Codes:

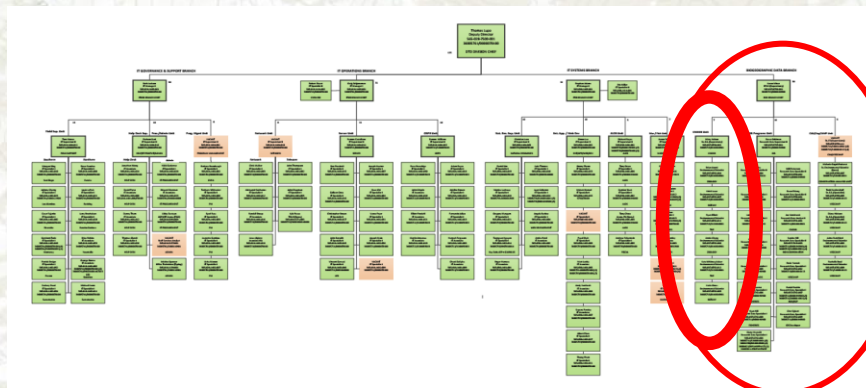
Civil • Food & Agricultural • Government
Harbors & Navigation • Health & Safety
Penal • Public Resources • Vehicle • Water



FGC Chapter 12:
Significant Natural Areas
Section 1932:
“...the department shall maintain,
expand, and keep current a data
management system, designated
the California Natural Diversity Data
Base, designed to document
information on [natural resources]”



Data & Technology Division Biogeographic Data Branch





NatureServe

Connecting Science With Conservation

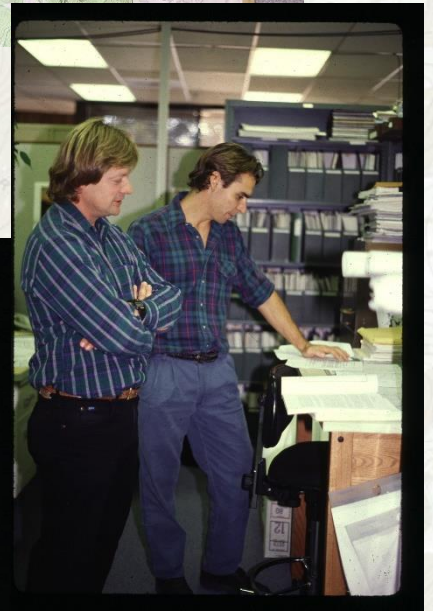
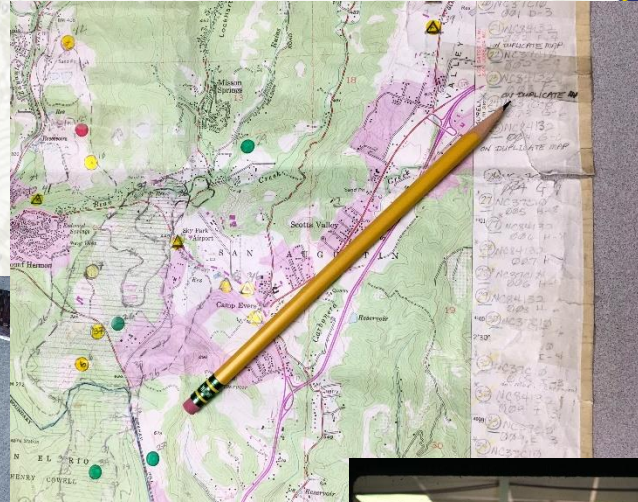
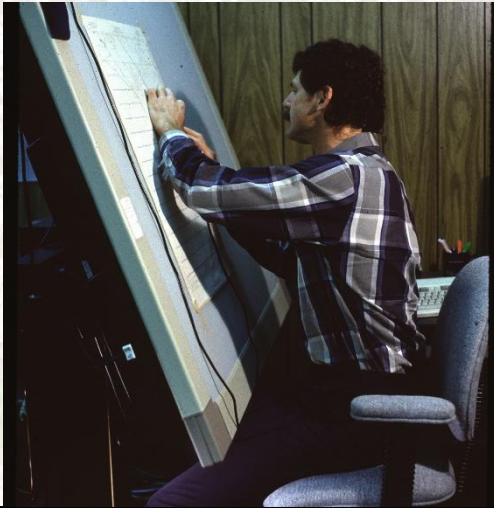


At the core of it all...

- An inventory of California's rarest plants and animals
 - Spatial dataset(s) with extensive tabular/text data
 - Location and status information
 - Continually updated
 - Historical archive, changes over time



The early days



GIS: A Technological Revolution



- Coded in AML
- ArcInfo software
- Brought first GIS to department
- First heritage program to use GIS



Sustained Superior
Accomplishment Award

Patrick Gaul

Technical Services Branch
Research Program Specialist I (GIS)

- Patrick has single-handedly brought the Natural Diversity Database, the Department's oldest and most important GIS data set, into conformance with new software and documentation standards.



RareFind

- Application for querying non-spatial data
- Initially distributed every 6 months on floppies
- Now fully web-based application

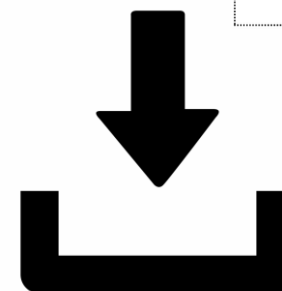
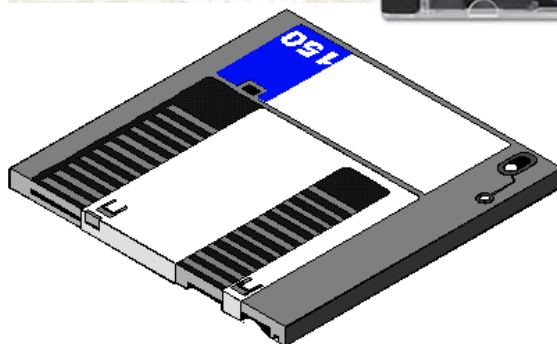


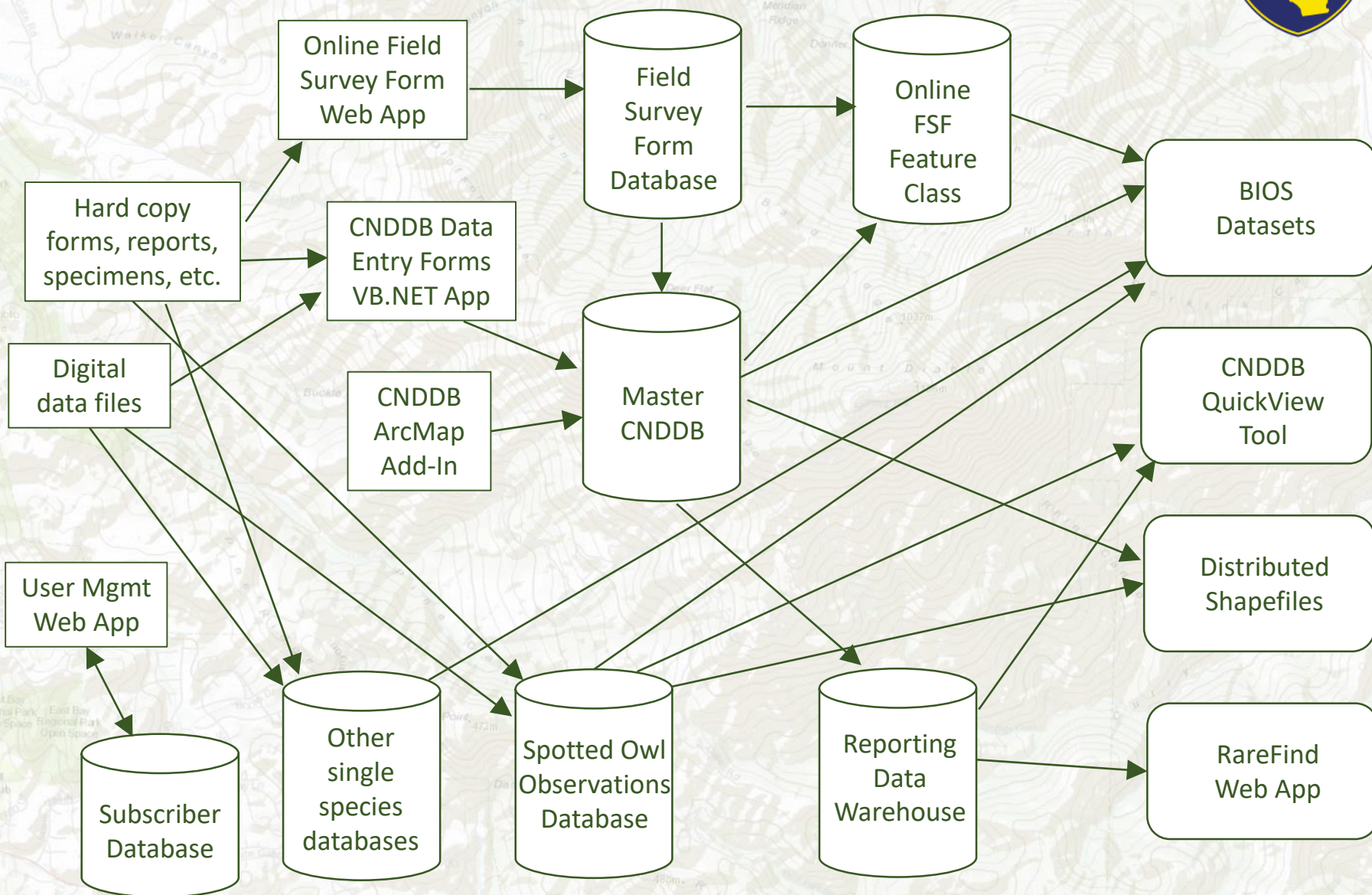
CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE *RareFind*

Username

Password

Remember Me







Time for a short informational side-trail...





Need a refresher? Visit our training page!

A screenshot of a web browser displaying the training schedule page. The browser address bar shows 'wildlife.ca.gov/Data/Training'. The page header includes the CA.GOV logo, 'Login', 'Contact Us', and a search bar. The main navigation menu lists 'Home', 'Fishing', 'Hunting', 'Licensing', 'Conservation', and 'Learning'. The page title is 'Training Schedule'. Below the title is a table with four columns: Course, When, Where, and Instructor(s).

| Course | When | Where | Instructor(s) |
|-------------------------|--|--|---|
| CNDDDB/RareFind/BIOS | October 10, 2019 9:00 a.m. - 4:00 p.m. | CDFW Office of Training and Development 1740 North Market Boulevard Sacramento, CA 95834 | Ryan Elliott Daniel Rankin |
| CNDDDB/RareFind/BIOS | December 4, 2019 9:00 a.m. - 4:00 p.m. | CDFW Office of Training and Development 1740 North Market Boulevard Sacramento, CA 95834 | Ryan Elliott Daniel Rankin |
| Spotted Owl/CNDDDB/BIOS | December 10, 2019 9:00 a.m. - 4:00 p.m. | CDFW Fort Bragg Office 32330 N. Harbor Drive Fort Bragg, CA 95437 | Kate Keiser Annie Chang Sandra Hill |
| Spotted | December 11, | CDFW Fort Bragg Office | Kate Keiser |

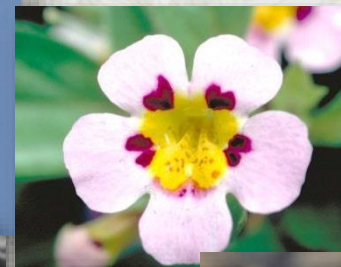
www.wildlife.ca.gov/Data/Training

What do we track?

➤ “Elements”



- 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*





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

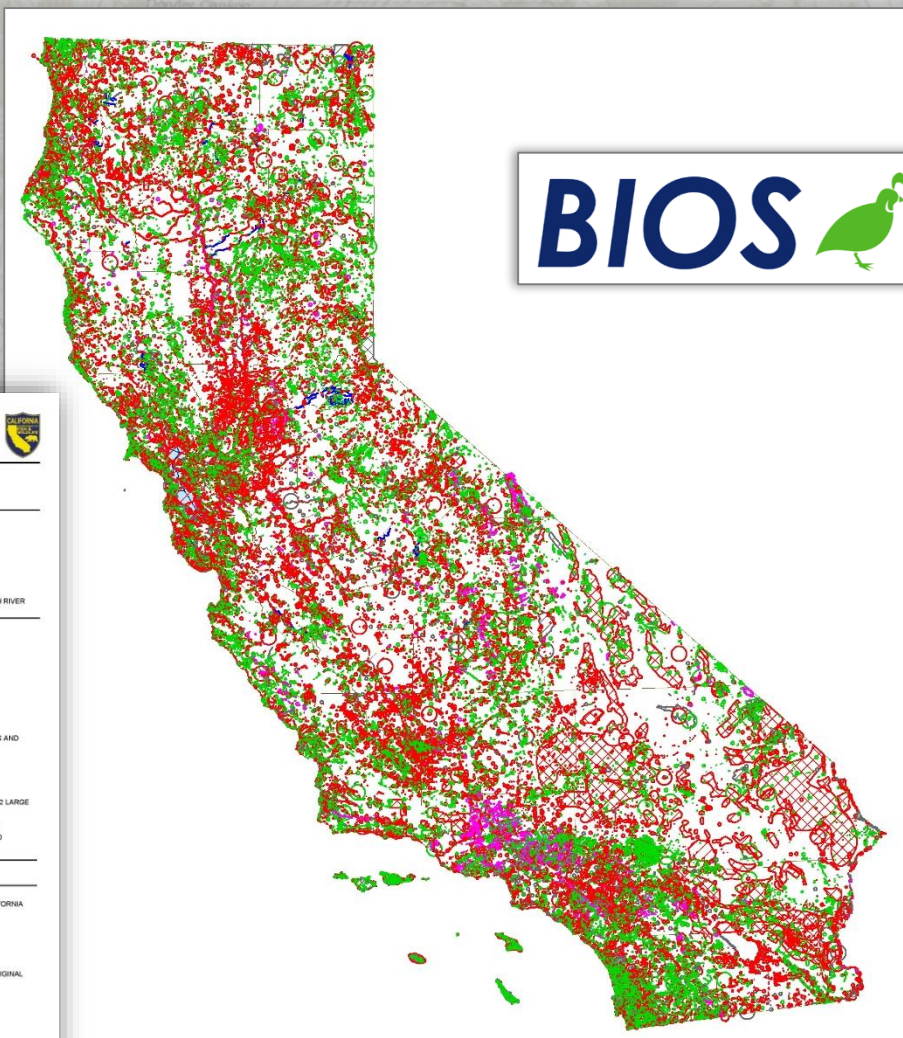
February 6, 2002

NatureServe

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

What do we track?

- Elements
- Element Occurrences



RareFind

| Occurrence Report | | California Department of Fish and Wildlife | |
|--|---|---|---|
| California Natural Diversity Database | | | |
| Map Index Number: 80800 | ED Index: 7834 | Key Quad: Antioch North (2812117) | Element Code: PCDPI 19030 |
| Occurrence Number: 1 | Occurrence Last Updated: 2010-11-23 | | |
| Scientific Name: <i>Lilaeopsis masconi</i> | Common Name: Mason's Bluetop | | |
| Listing Status: Federal: None | Rare Plant Rank: 15.1 | State: Rare | Other Lists: |
| CNDRB Element Ranks: Global: G2 | | State: S2 | |
| General Habitat: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB. | Micro Habitat: TIDAL ZONES IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M. | | |
| Last Date Observed: 2001-04-14 | Occurrence Type: Natural/Native occurrence | Last Survey Date: 2001-04-14 | Occurrence Rank: Good |
| Owner/Manager: PVT, US FWS-ANTIOCH DUNES MWR | Trend: Unknown | Presence: Presumed Extinct | |
| Location: ANTIPOCH DUNES, JUST EAST OF WESTERN PGE TOWER | | Detailed Location: SANDS UNIT OF ANTIPOCH DUNES NATIONAL WILDLIFE REFUGE. | |
| Ecological: GROWING ALONG ~800 FT OF SOUTH BANK OF RIVER. MOST ON FINE WET SAND, SOME PERCHED ON OLD WOODEN POSTS, PLUNGS AND WRECKAGE. DOMINANTS INCLUDE SCORPUS SPP. AND DESCHAMPSIA CASERTOSA. OTHER ASSOCIATES INCLUDE HYDROCOOTYLE VERTICILLATA, ETC. | | Threats: CORTADERIA SELLOANA SHOULD BE REMOVED. | |
| 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 12 X 2' AND 10' X 8' IN AREA AND SEVERAL SCATTERED PLANTS IN 1992. MORE THAN 10,000 PLANTS OBSERVED IN 2001. | | PLS#: T02N, R02E, Sec. 17 60 | Accuracy: specific area |
| | | UTM: Zone-10 N4201955 E908623 | Latitude/Longitude: 38.01485 / -121.78306 |
| | | County Summary: Quad Summary: Antioch North (2812117) | |
| Sources: | | | |
| 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 | | | |
| GREENHOUSE, J. - FIELD SURVEY FORM FOR LILAEOPSIS MASONI 2001-04-14 | | | |
| HOWARD, A. - HOWARD #28 LC #1261804 1977-08-24 | | | |
| LAKOFF, D. - FIELD SURVEY FORM FOR LATHYRUS JEPSONII VAR. JEPSONII 1992-04-26 | | | |
| MALLOCH, B. - NOTES AND MAP OF ANTIPOCH QUAD WITH POPULATION OF LILAEOPSIS MASONI: 1979-05-XX | | | |
| MATHIAS & CONSTANCE - TWO NEW LOCAL UMBELLIFERAE (APRACIACE) FROM CALIFORNIA. MACRONO 24:78-83 (ORIGINAL DESCRIPTION FOR LILAEOPSIS MASONI) 1977-0X-XX. | | | |

Occurrence Rank



A = Excellent



B = Good



C = Fair



D = Poor



X = Extirpated

?

U = Unknown

Symbology

- 80 meter radius circle (point)



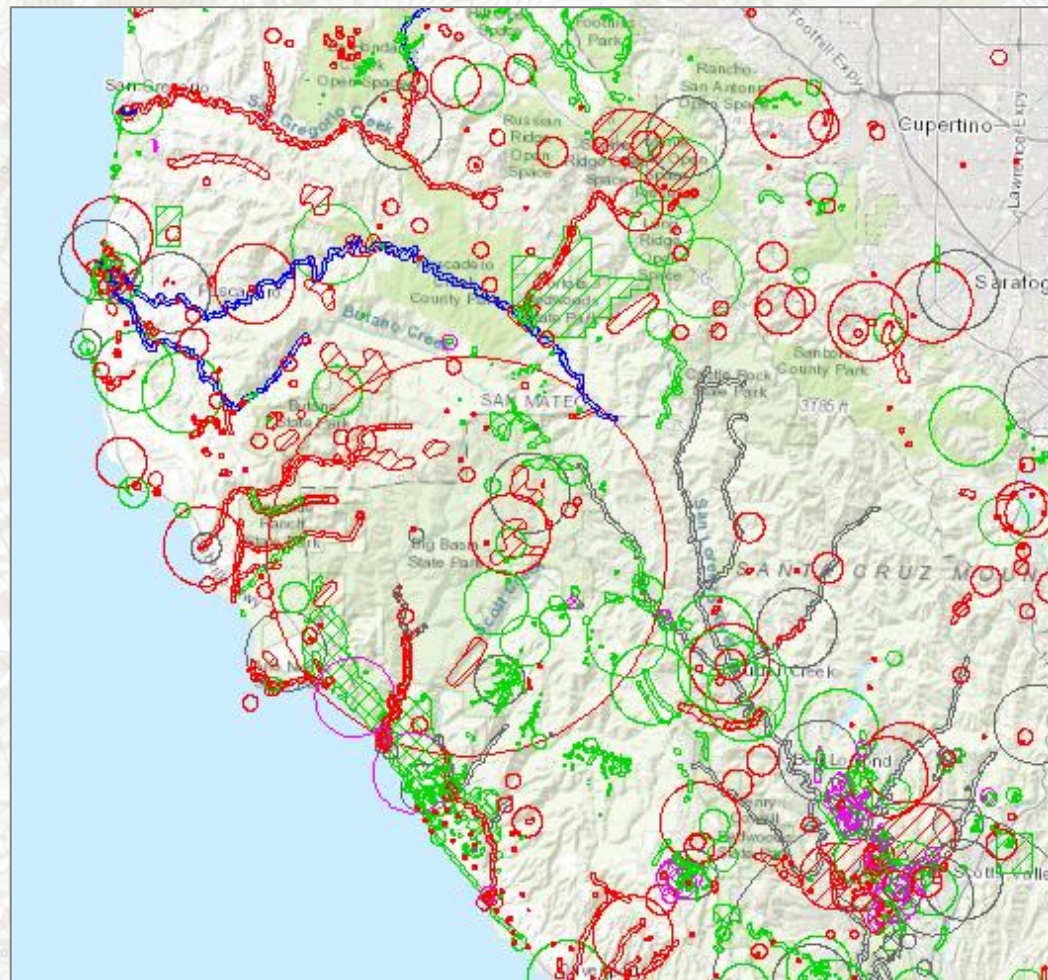
Specific bounded area



Non-specific bounded area



Increasing spatial uncertainty



Plants Animals Terrestrial Communities Aquatic Communities Multiple EOs

What do we *not* track?



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



Anecdotal information

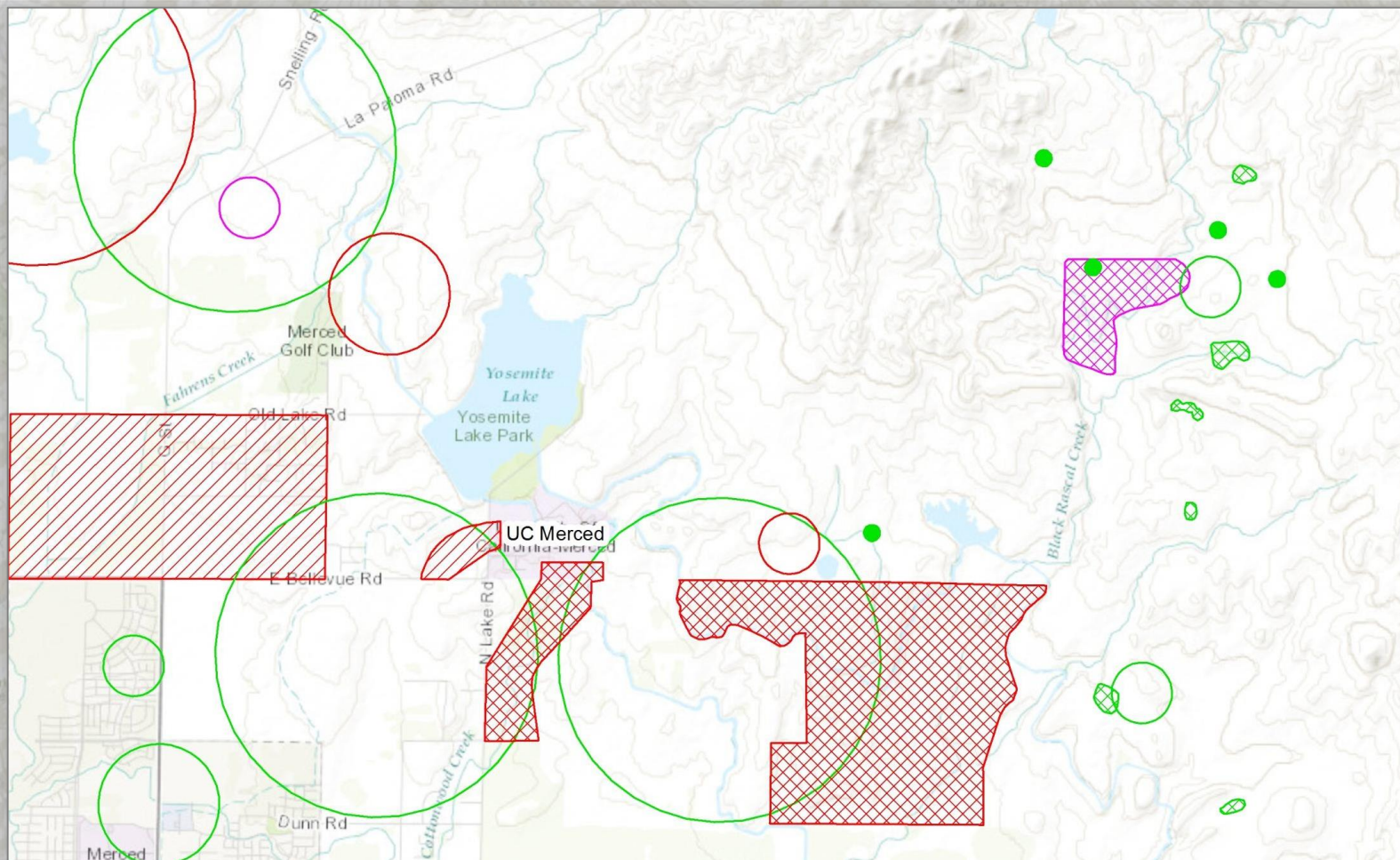


Soaring/transient birds

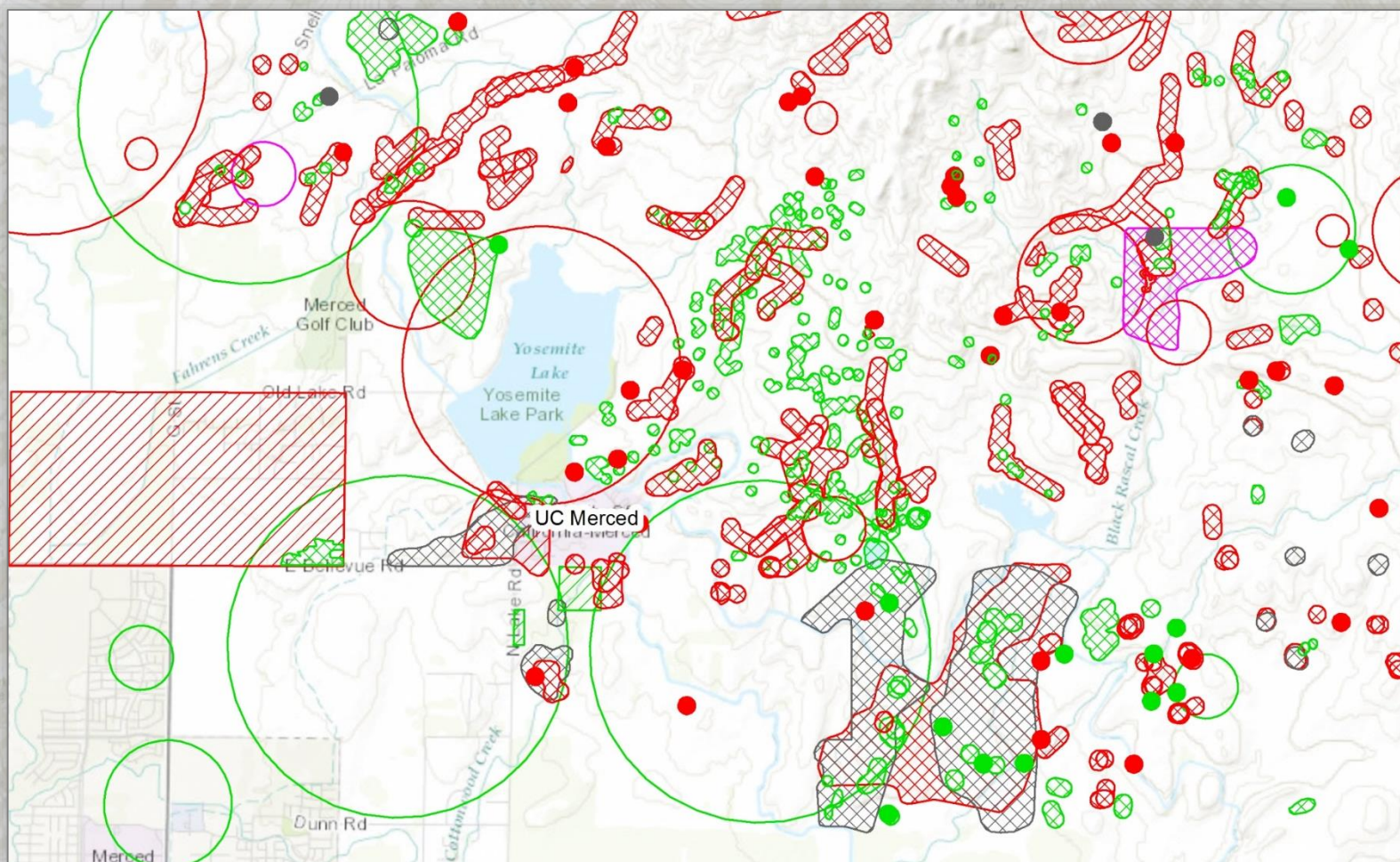
NO DATA ≠ NOT THERE

Negative data

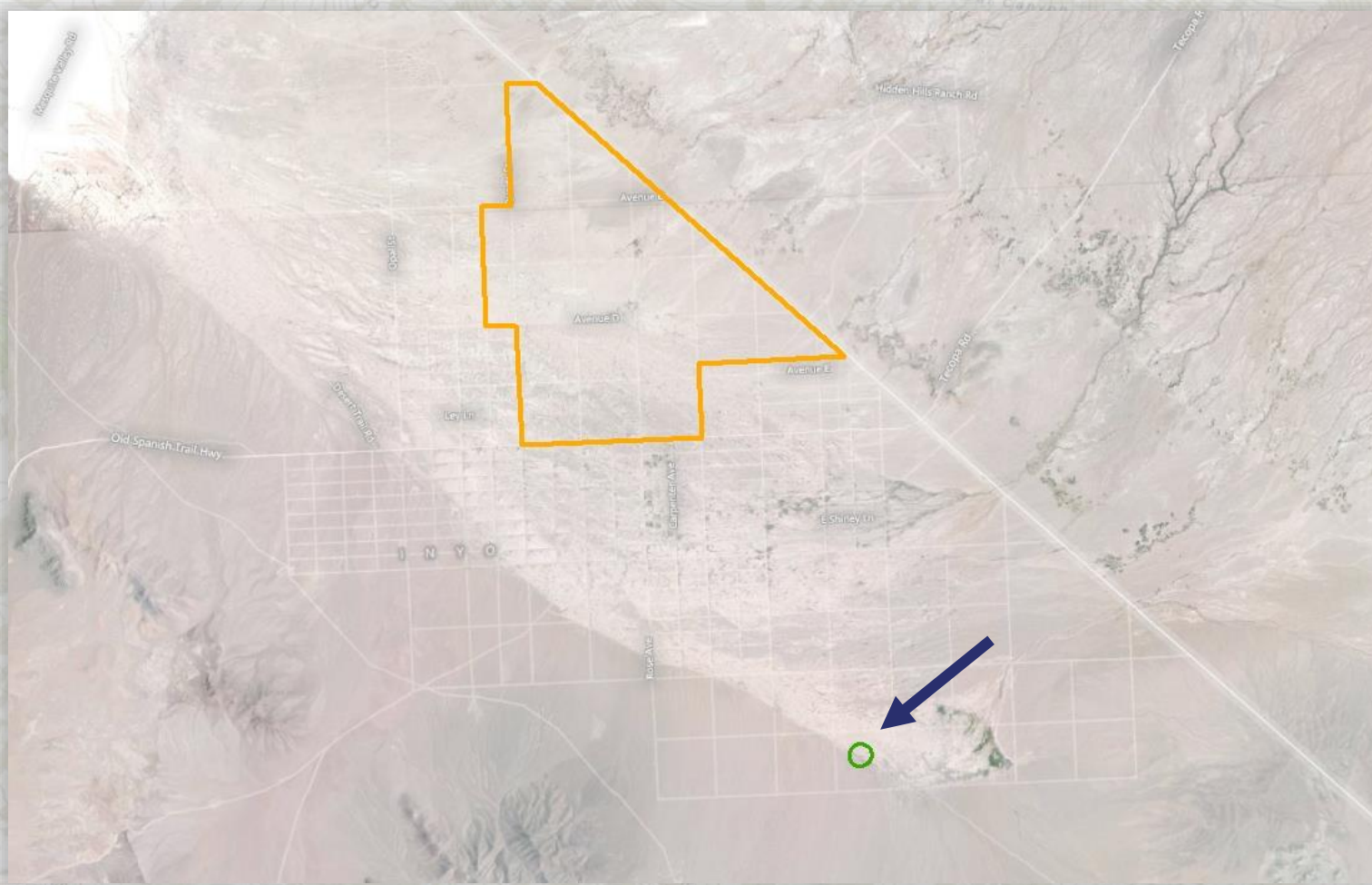
Example: CNDDDB data from 2000, near UC Merced



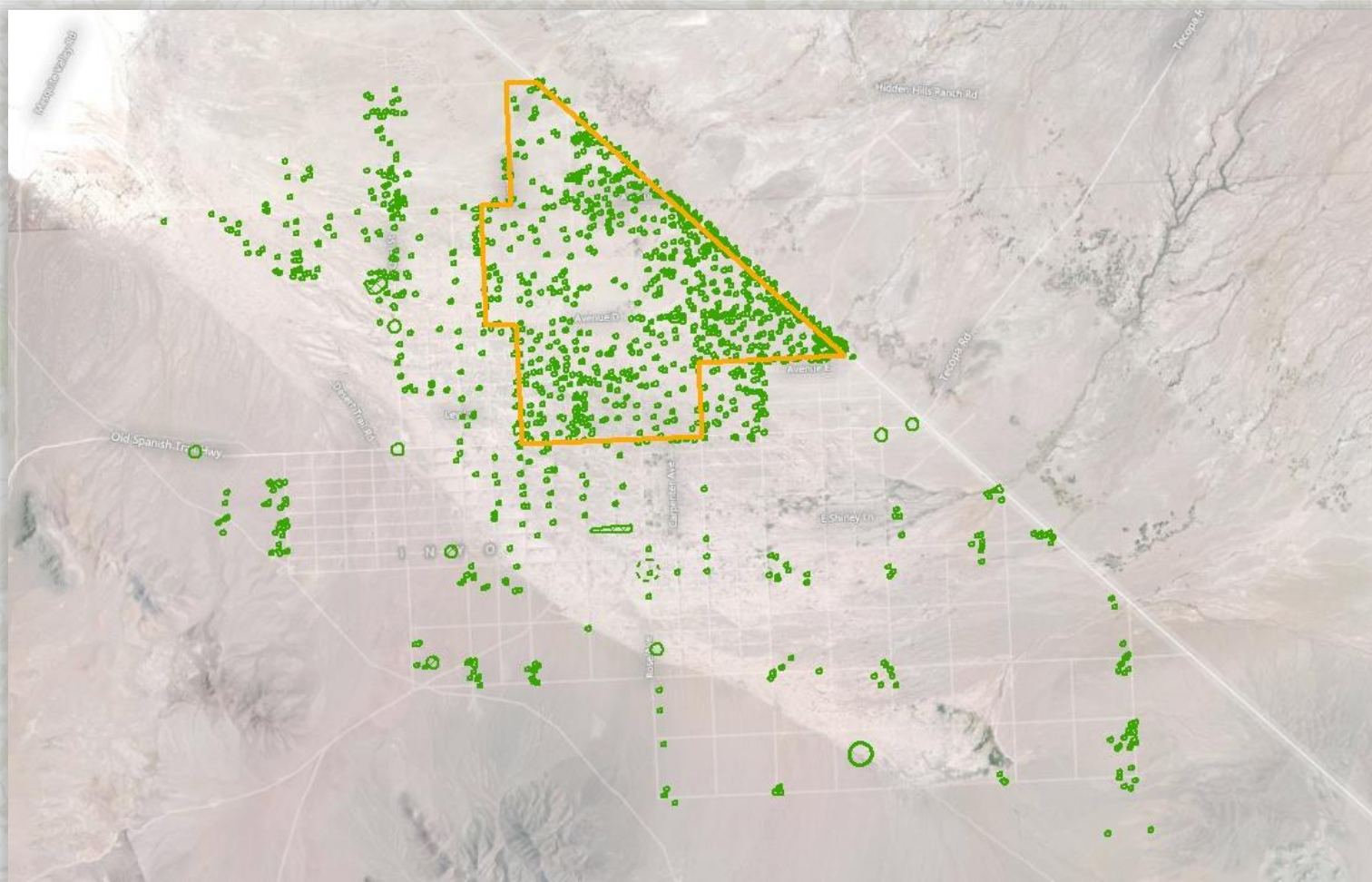
Example: 2013 CNDDDB data, after surveys



Example: 2008 CNDDDB data near Pahrump Valley



Example: 2013 CNDDDB data near Pahrump Valley



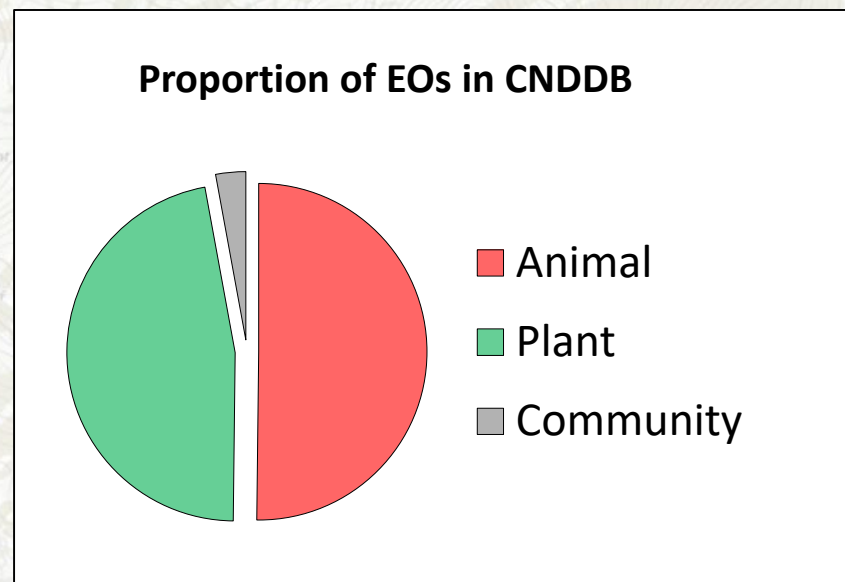
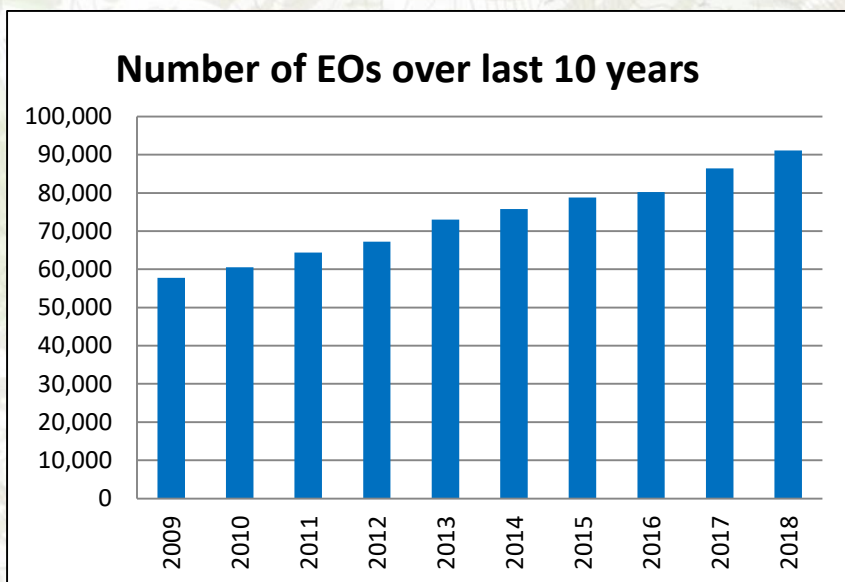


Giant Garter Snake
(*Thamnophis gigas*)





As of Oct. 2019: **94,099** EOs and **247,935** sources



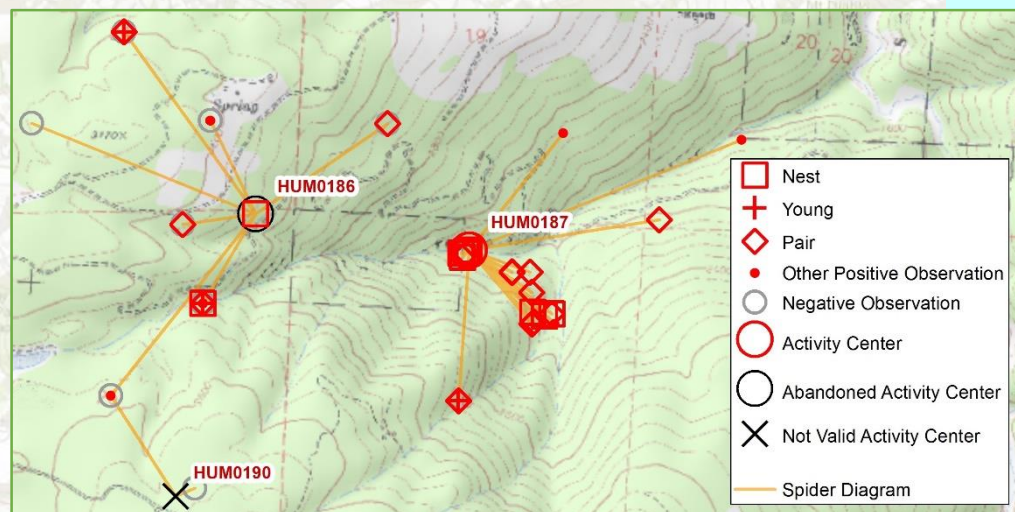
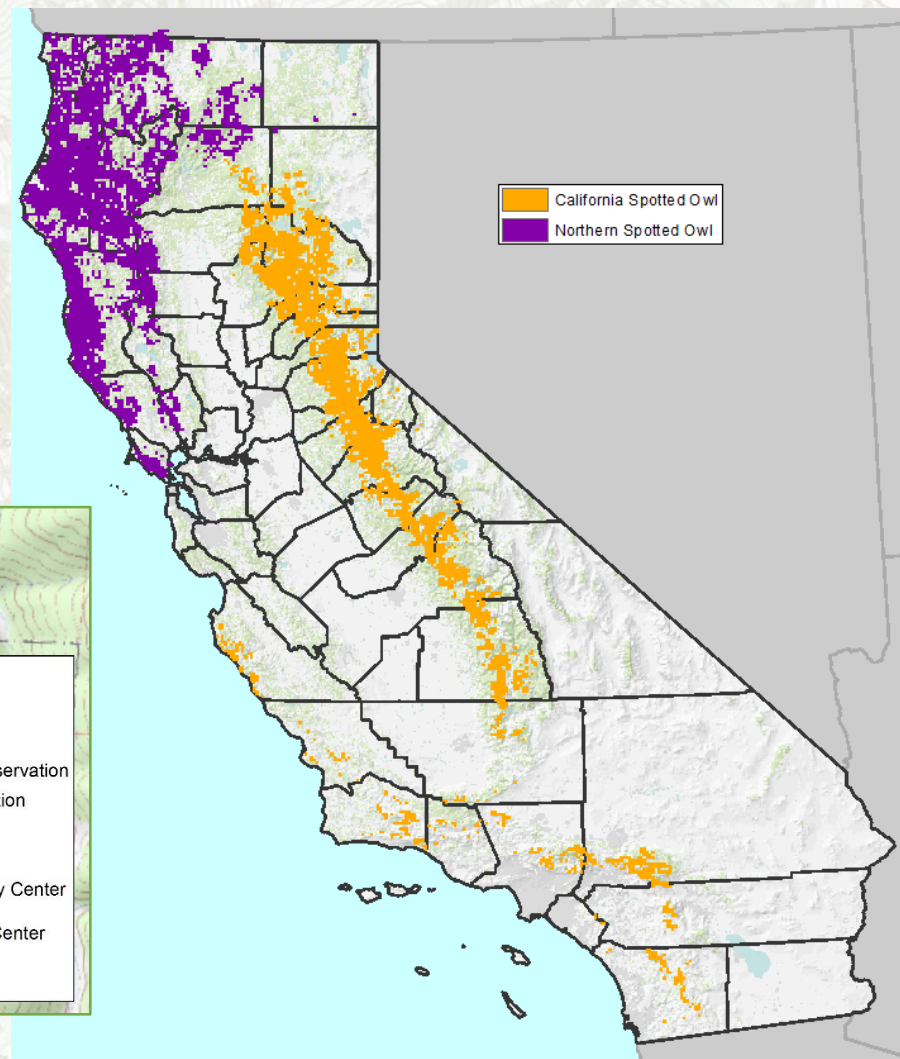
Each month:

1000+ new sources received

500-800 Element Occurrences added/updated

Focal taxa data – Spotted Owl Observations Database

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



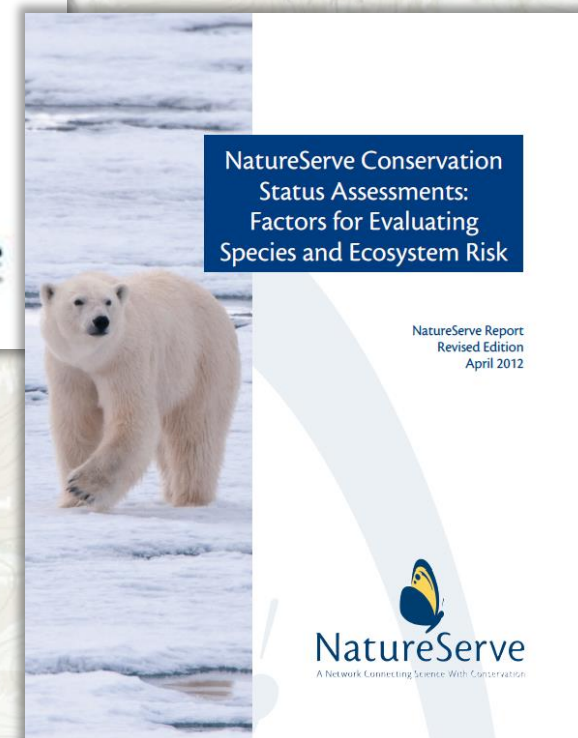
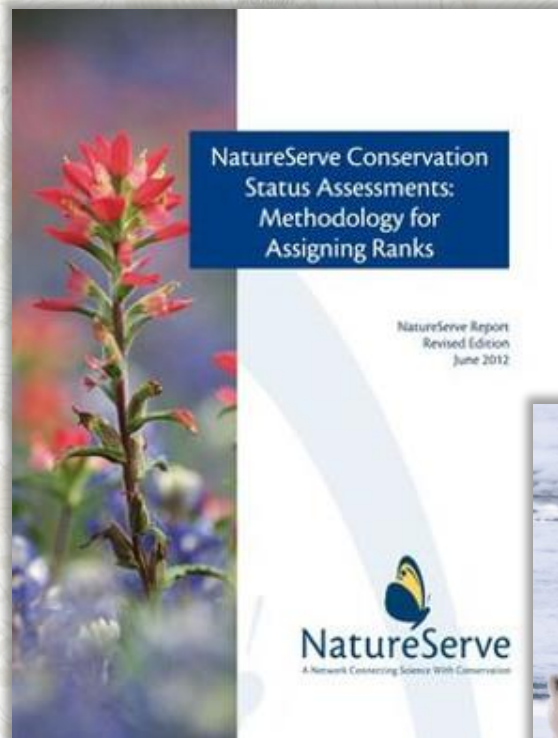
What do we track?

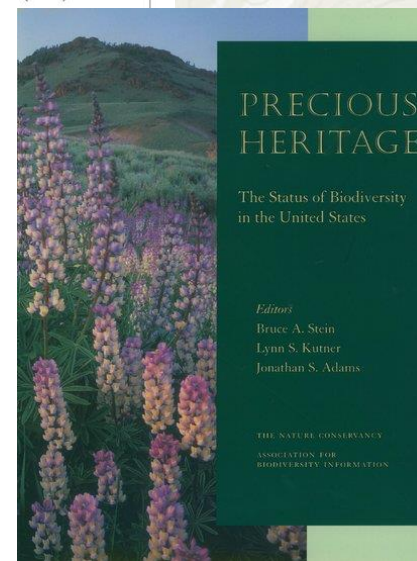
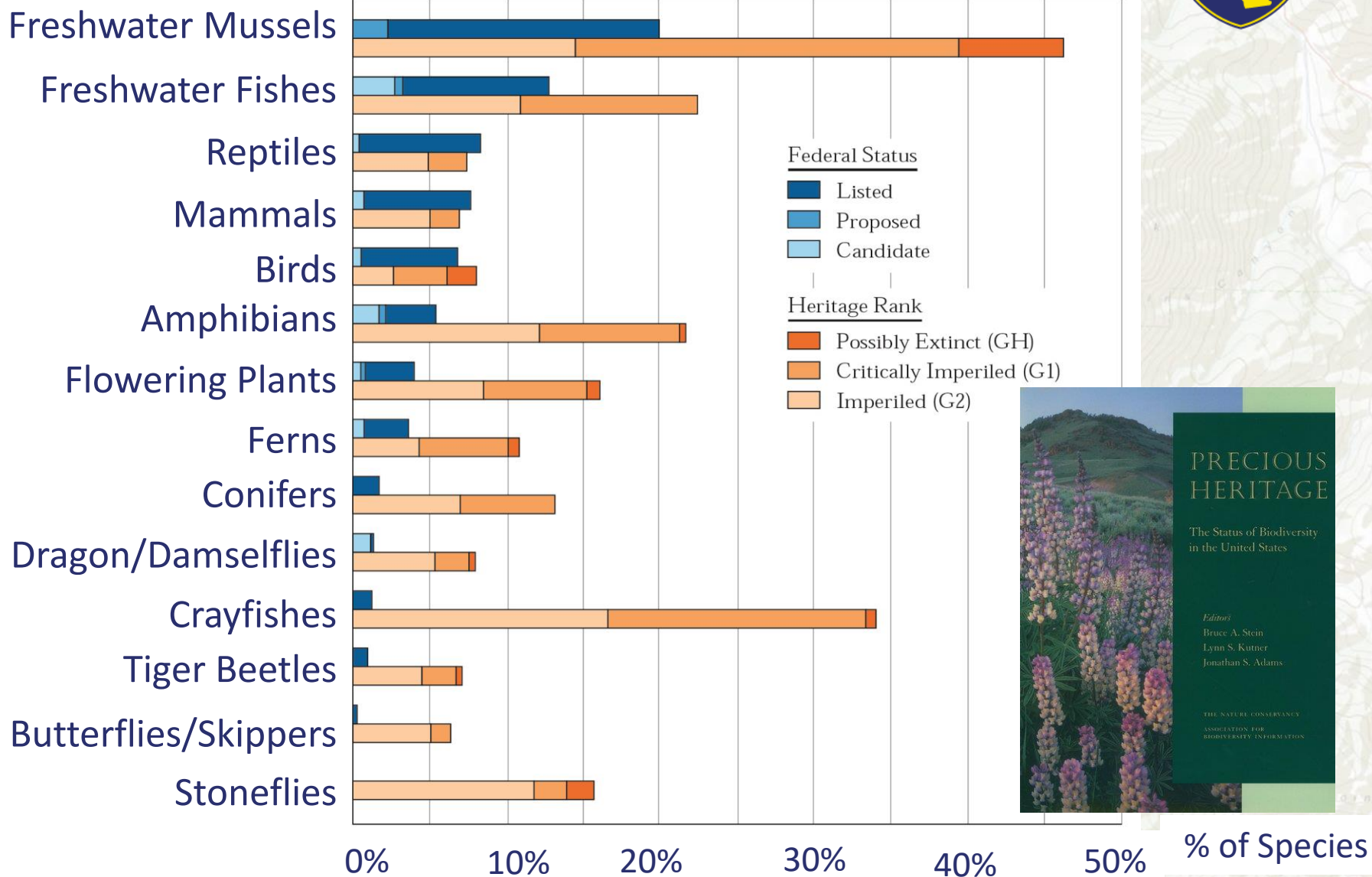
- Elements
- Element Occurrences
- Element Ranks

G-rank: Global, full species

S-rank: State/Province

- 5 – Secure
- 4 – Apparently Secure
- 3 – Vulnerable
- 2 – Imperiled
- 1 – Critically Imperiled
- H – Possibly Extirpated/Extinct
- X – Presumed Extirpated/Extinct

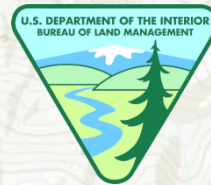






Where do we get our data?

- Direct Submissions
 - Survey forms
 - Scientific permit data
 - Environmental Impact Surveys
- Specimens
- Published reports & manuscripts
- Review of data repositories
- Citizen science



California Native Species Field Survey Form

Species Found? No Yes

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Habitat Description (plant communities, dominant, associates, subdominants, associates)

Site Information (Overall site occurrence quality/utility (site + population): Excellent Good Fair Poor

Site Information (Overall site occurrence quality/utility (site + population): Excellent Good Fair Poor


Photograph: Yes No

USGS
science for a changing world

In Cooperation with U.S. Environmental Protection Agency

Experimental Repatriation of Mountain Yellow-legged Frogs (*Rana muscosa*) in the Sierra Nevada of California

By Gary M. Fellers, David F. Bradford, David Pratt, and Leslie Wood



Open-File Report 2008-1144

U.S. Department of the Interior
U.S. Geological Survey
Western Ecological Research Center



A key partner



CALIFORNIA
NATIVE PLANT SOCIETY



Accessing CNDDDB Data

Subscription services

- 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

Elements
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 |
|--------------|----------------------------------|-------------------------|--------------|------------|---------------|-------------|------------|----|
| ☑ / CA | Case sensitive filter... | | | | | | | |
| ☑ / CA | Abies amabilis | Pacific silver fir | PGPM01010 | 9 | 0 | G5 | S3 | Nk |
| ☑ / CA | Abies bracteata | bristlecone fir | PGPM01030 | 18 | 18 | G2 | S2 | Nk |
| ☑ / CA | Abies lasiocarpa var. lasiocarpa | subalpine fir | PGPM01072 | 12 | 12 | G5T5 | S3 | Nk |
| ☑ / CA | Abiaulatus schlingeri | Oso Flaco robber fly | IDIP42010 | 3 | 3 | G1 | S1 | Nk |
| ☑ / CA | Abronia alpina | Ramshaw Meadows abronia | PDNYC01020 | 1 | 1 | G2 | S2 | C. |
| ☑ / CA | Abronia maritima | red sand-verbena | PDNYC010E0 | 0 | 0 | G4T | S3T | Nk |
| ☑ / CA | Abronia mana 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 ABLAUTUS 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 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 (90m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (90m)

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

San Francisco

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

Esri



Accessing CNDDDB Data

CALIFORNIA FISH AND GAME CODE

And selected laws from the following California Codes:

**Civil • Food & Agricultural • Government
Harbors & Navigation • Health & Safety
Penal • Public Resources • Vehicle • Water**



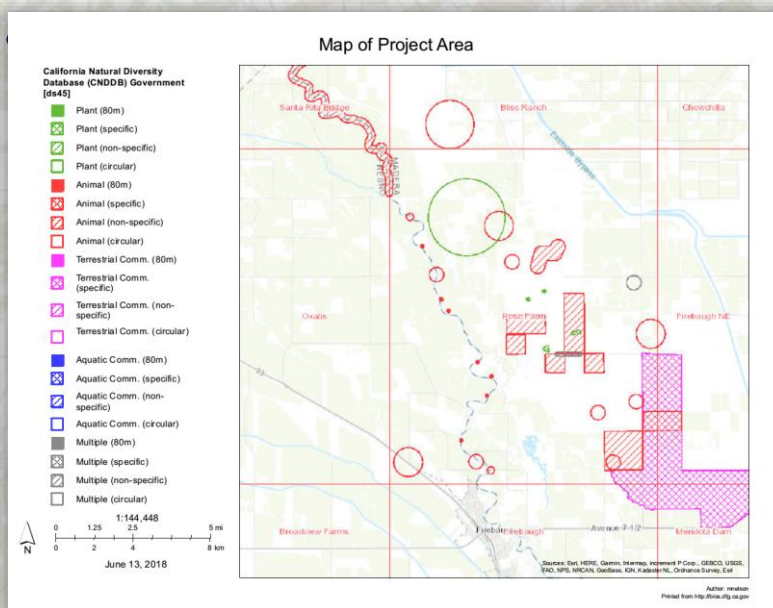
FGC 1932(e):
“Ensure cost sharing by all who use
the data management system...”



Accessing CNDDDB Data

Subscription services

- Annual Subscription
- Text reports + PDF maps



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

Query Criteria: BIOS selection

Map Index Number: 13361
Key Quad: Poso Farm (3612084)
Occurrence Number: 37

EO Index: 27282
Element Code: ABNKC19070
Occurrence Last Updated: 2000-01-27

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: Federal: None
State: Threatened

Rare Plant Rank:
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
Last Survey Date: 1983-07-28
Owner/Manager: UNKNOWN

Occurrence Type: Natural/Native occurrence
Occurrence Rank: 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 BIRDS 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)
UTM: Zone-10 N4084936 E726399

Accuracy: 1/5 mile
Latitude/Longitude: 36.88327 / -120.45962

Area (acres): 0
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



Accessing CNDDDB Data

Free & publicly available:

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

Now with Spotted Owl data!

CHDDDB QuickView Menu
User Guide | CHDDDB Home Page

--Zoom to a Quad--
Select a tool below and click on the map

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

View CHDDDB Quad Data by Species

Rana boylei (toothill yellow-legged frog)
Found in: 672 Quads
Federal_Status: None
State_Status: Candidate Threatened
CDFW_Status: SSC

Mapped
Unprocessed

Clear Highlighted Quads

| Element_Type | Scientific_Name | Common_Name | Element_Code | Federal_Status | State_Status | CDFW_Status | CA_Rare_Plant_Rank | Geot_Code | Quad_Name | Data_Status | Taxonomic_Sort |
|--------------|------------------------------------|-----------------------------|--------------|----------------|--------------|-------------|--------------------|-----------|----------------|------------------------|------------------------------------|
| 1 | Amphibia - Ambystoma californiense | California tiger salamander | AAAAAG1183 | Threatened | Threatened | VL | | 3812225 | Pikilama River | Mapped | Amphibia - Ambystoma californiense |
| 2 | Amphibia - Ambystoma californiense | California tiger salamander | AAAAAG1183 | Threatened | Threatened | VL | | 3812230 | Glen Ellen | Mapped and Unprocessed | Amphibia - Ambystoma californiense |

CHDDDB QuickView Menu
User Guide | CHDDDB Home Page

--Zoom to a Quad--
Select a tool below and click on the map

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

View CHDDDB Quad Data by Species

Rana boylei (toothill yellow-legged frog)
Found in: 407 Quads
Federal_Status: None
State_Status: Threatened
CDFW_Status: None

Mapped
Unprocessed

Clear Highlighted Quads



CNDDDB data are used to inform:

- Environmental review/permitting – CEQA/CESA
- Regional conservation planning
- State and Federal Endangered Species acts
- Research

Southern California Mountain Lions.

Threatened or Endangered?...

Petition to California Endangered Species Act

Mountain Lion Foundation Center for Biological Diversity

**Multi-Species Habitat Conservation Plan/
Natural Community Conservation Plan**

Town of Apple Valley

August 3, 2015

apps.wildlife.ca.gov/ace/

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE

ACE

Areas of Conservation Emphasis

Add Data: BIOS

Click here to search and see list of datasets

Hello, Misty.Nelson@wildlife.ca.gov Log off

Basemaps Layers

Identify Features

Advanced Tools

v3.0.1905 Help

Active Layer: Terrestrial Connectivity [ds2734]

ACE Layers

- Ecoregion Sections
- WBD HUC12 Watersheds
- ACE v3.0 Model
 - Species Biodiversity
 - Species Biodiversity [ds2769]
 - Ecoreg Biodiversity Rank
 - 5 - high
 - 4
 - 3
 - 2
 - 1 - low
 - Terrestrial Biodiversity
 - Aquatic Biodiversity
 - Significant Habitats
 - Connectivity
 - Terrestrial Connectivity [ds2734]
 - Climate Resilience
 - SWAP

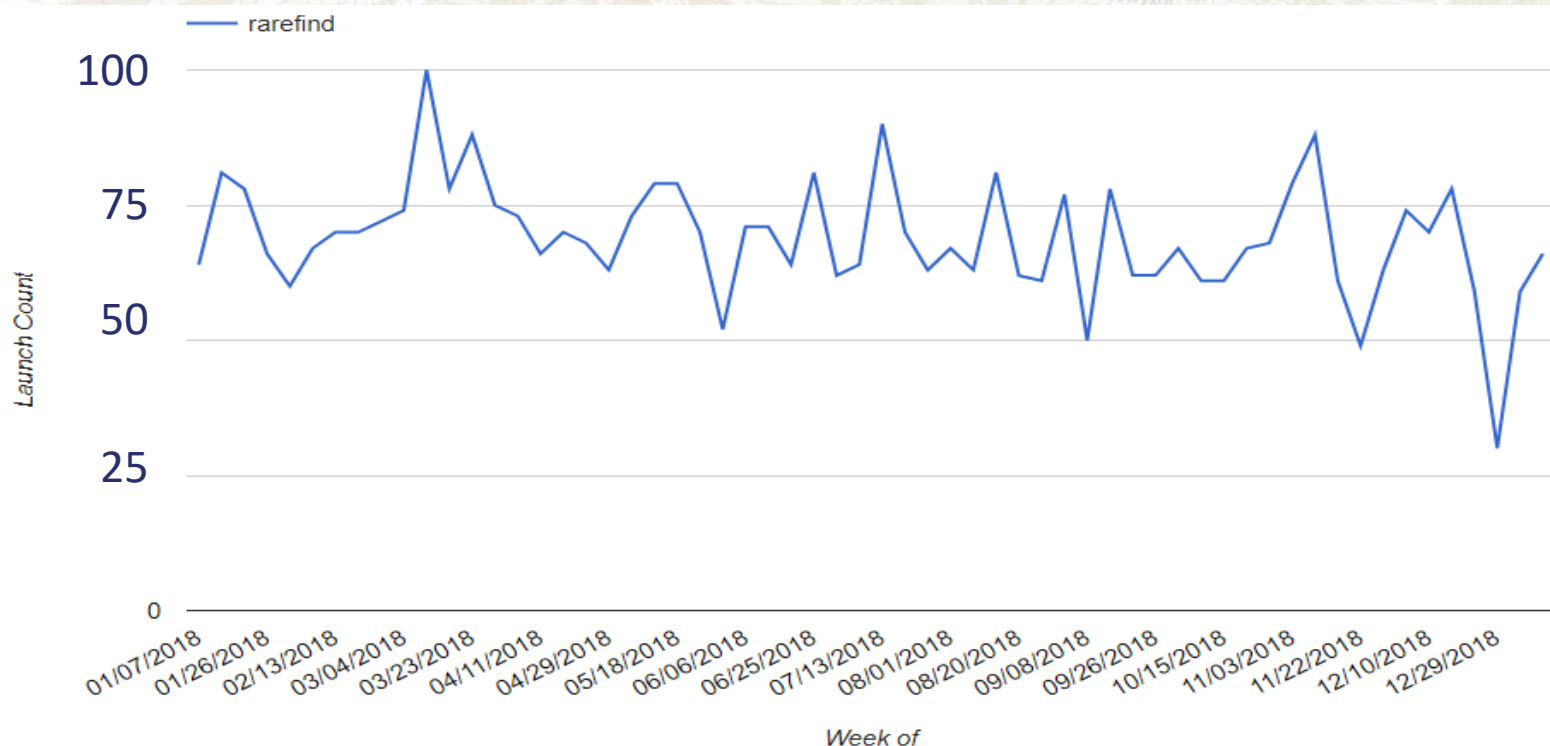
Map Scale: 1: 9,244,649 (Zoom level 6)

Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS



RareFind

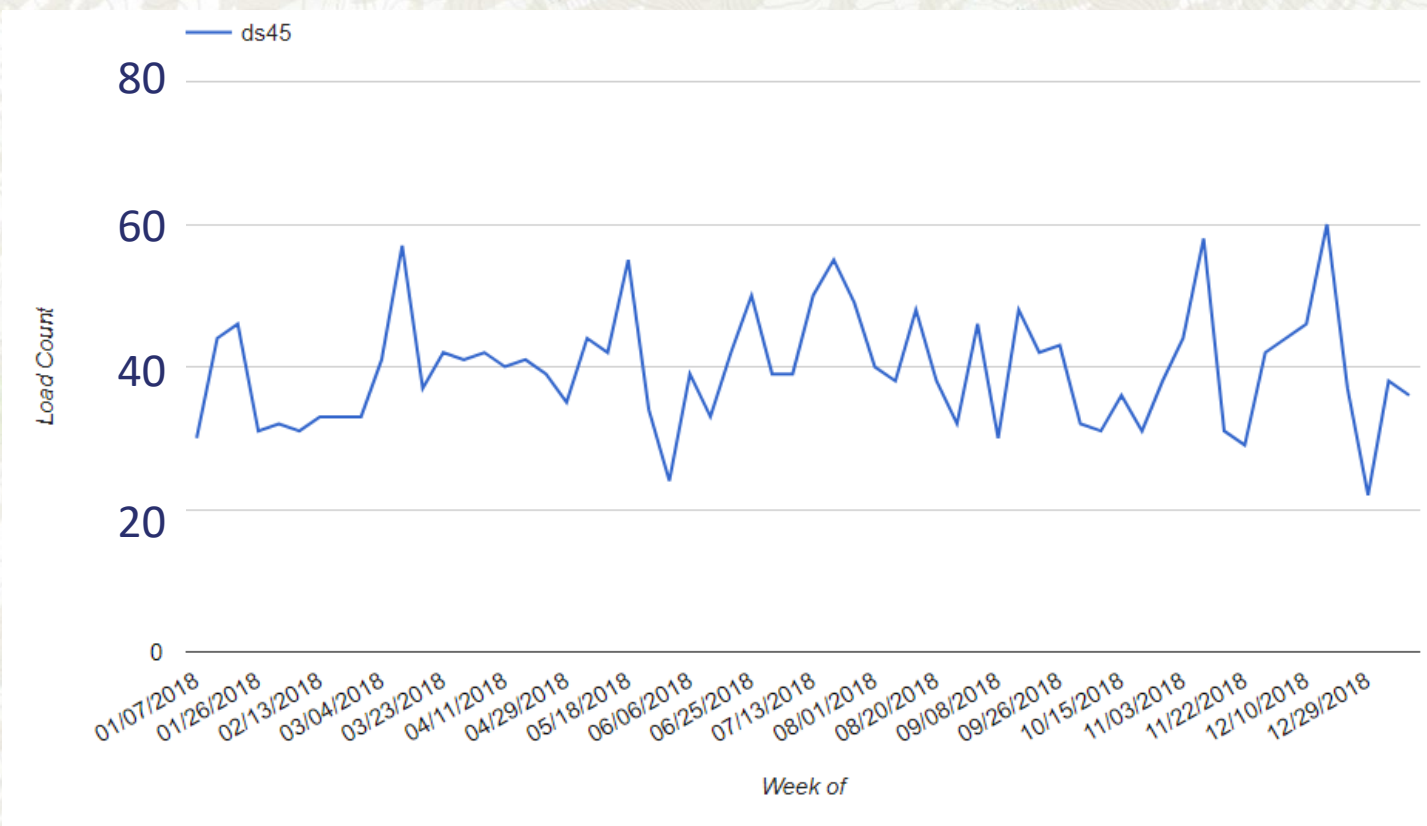
2018 Total: 29,253



Average Daily Launches per Week



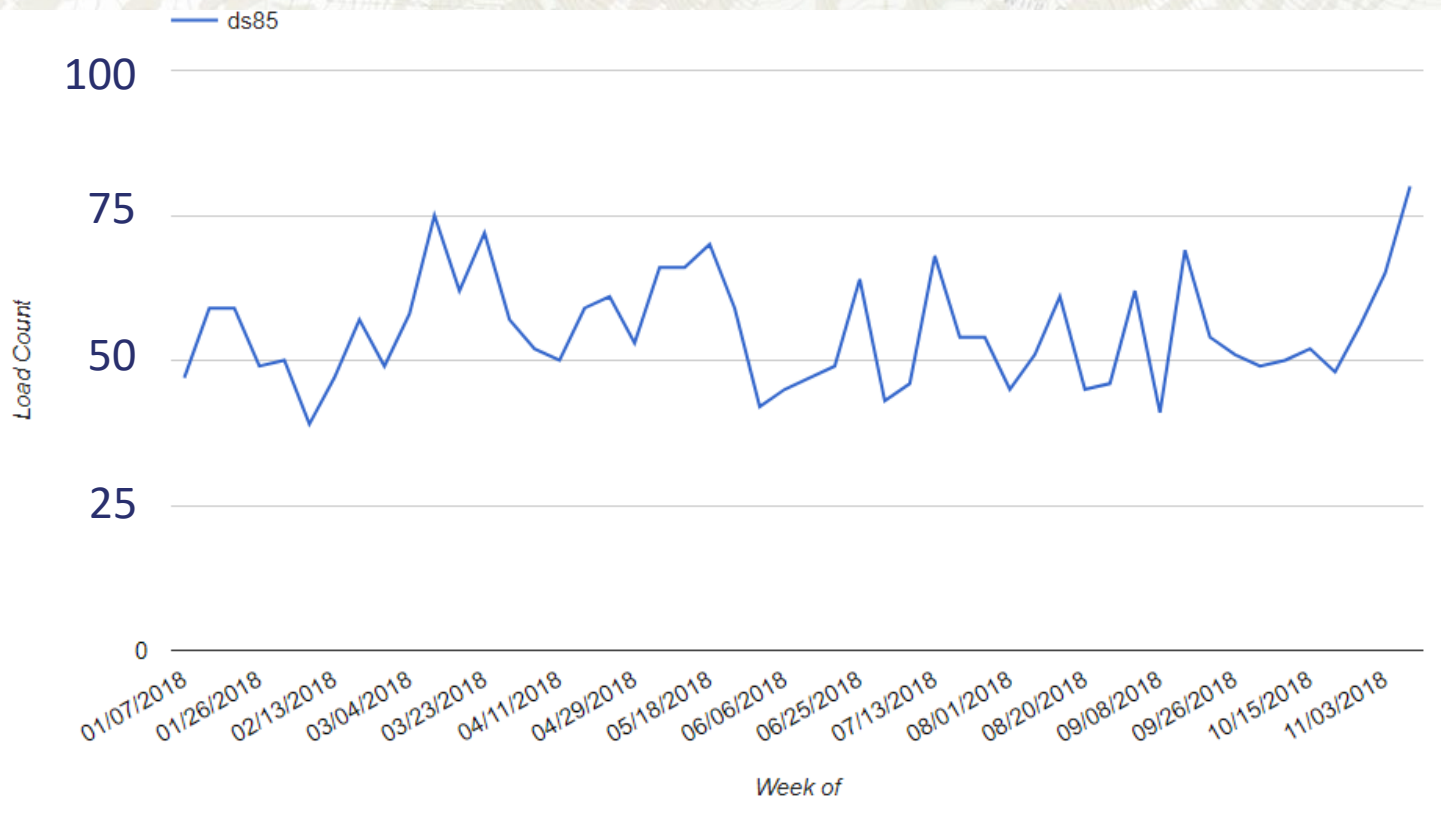
2018 Total: **16,979**



Average Daily Loads per Week
(Government)



2018 Total: **19,479**

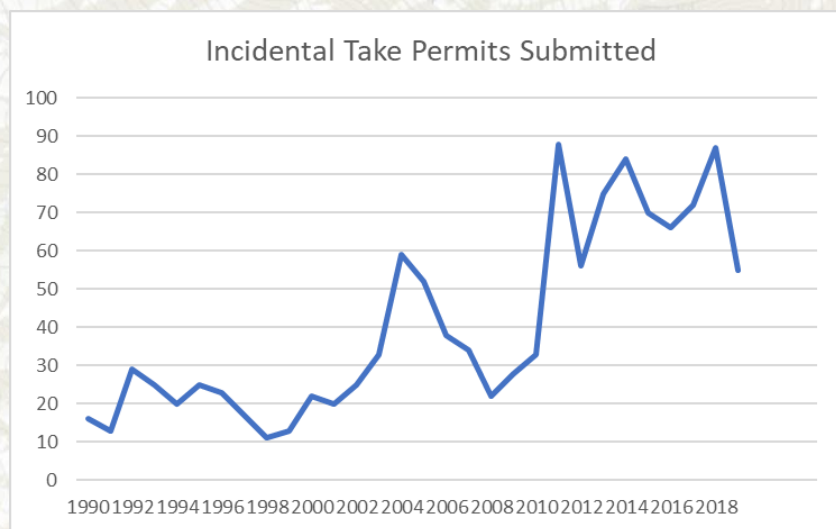


Average Daily Loads per Week
(Commercial)



Key challenges:

- Increasing data supply and demand
- Changing technology
- Limited resources



Key challenges (con't):

- Data backlog
 - More incoming data
 - Time-consuming mapping and QC process
- Turn-around time for incorporation of submitted data
- EO model doesn't work well for all species

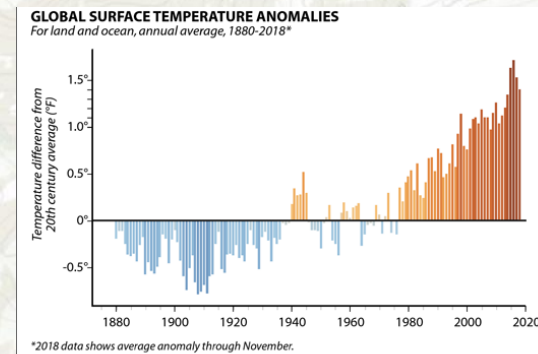
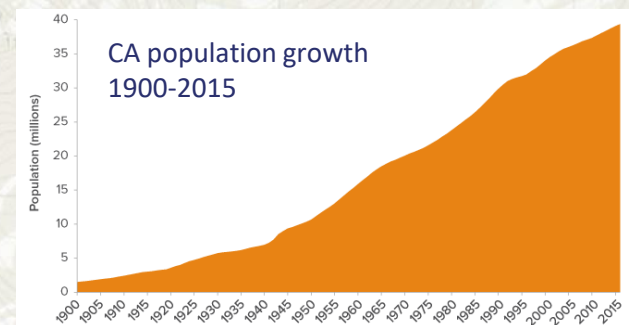
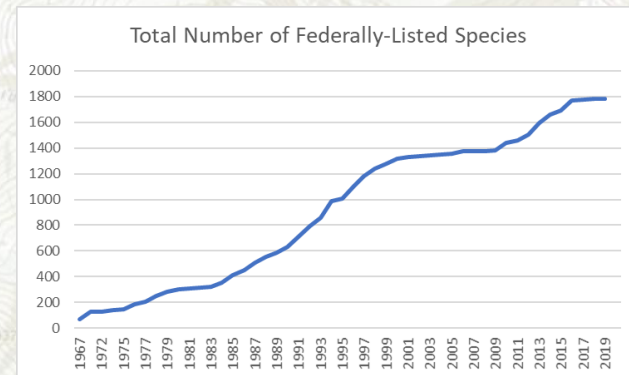


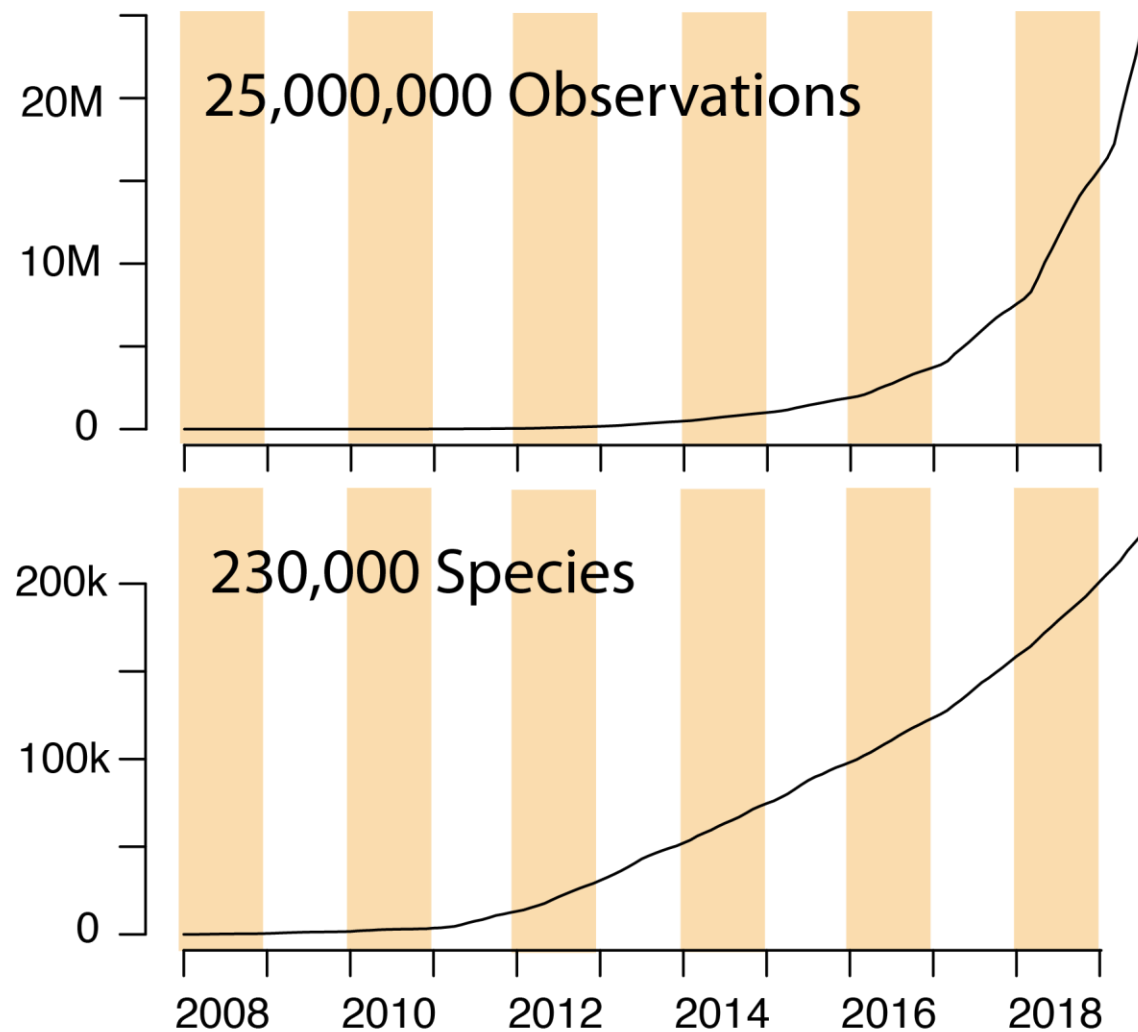
Image credit: Luca Galuzzi

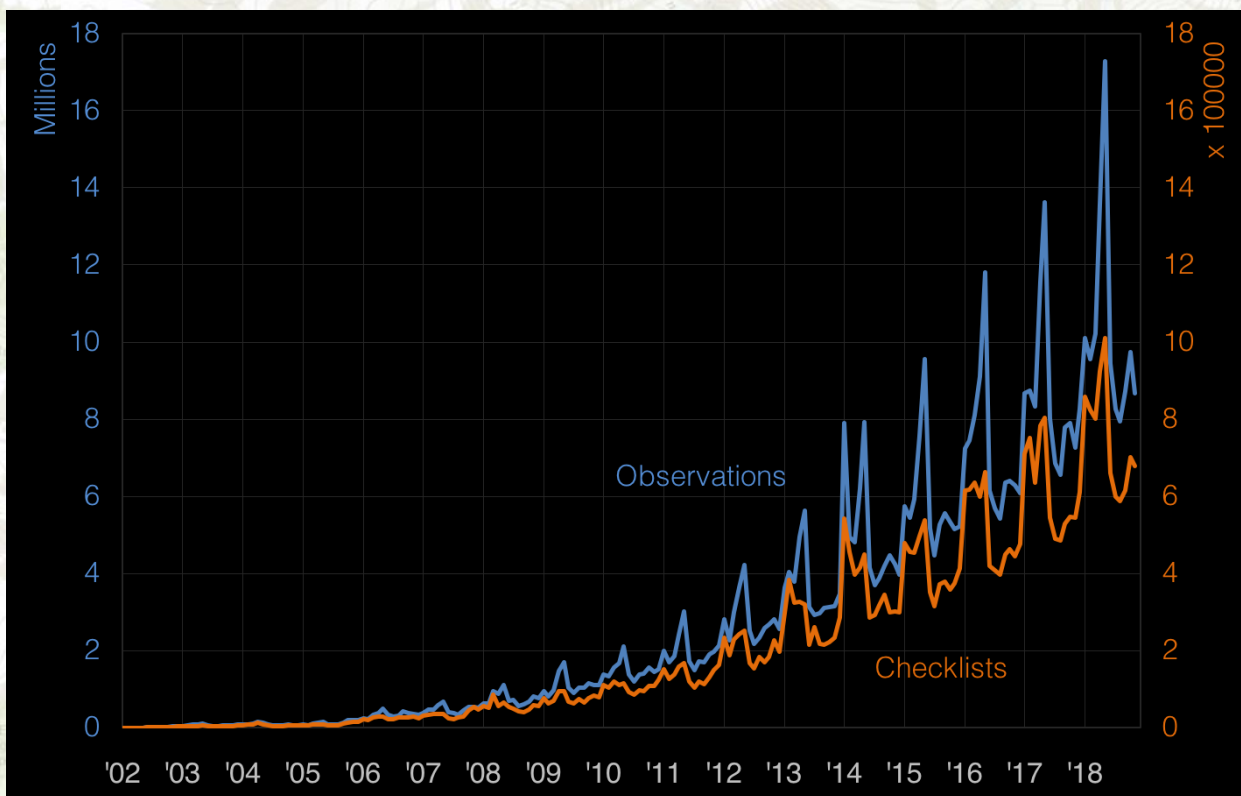


Key challenges (con't):

- # at-risk/protected species
- Pressures/threats
- Population growth & development
- Climate change
- Invasive species
- Permits requiring data submission (e.g., SCPs)
- New consumers of data – e.g., Cannabis
- ArcGIS Online and other platforms
- Citizen science







eBird

590 million
observations!

<https://ebird.org/news/ebird-2018-year-in-review>

Why CNDDDB? An analogy...

?





Data backlog solutions

- ~~Accept less data~~
- Track fewer species
 - No longer mapping Rank 3 & 4 plants
 - Zoology prioritization
- Increase capacity
 - Service-based budgeting?
- Do something differently
 - Online field survey form
 - Observations data



Observations Data Management

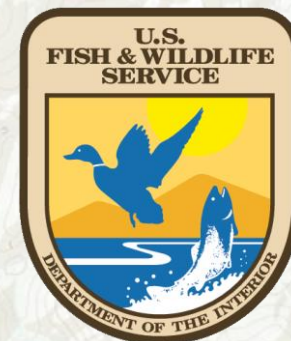
- MTNHP database template
- USFWS-CSU Chico project
 - Application for data entry
- NatureServe Observations Data Standard
 - Survey123 template



MONTANA
**Natural Heritage
Program**



**GEOGRAPHICAL
INFORMATION CENTER**
California State University, Chico

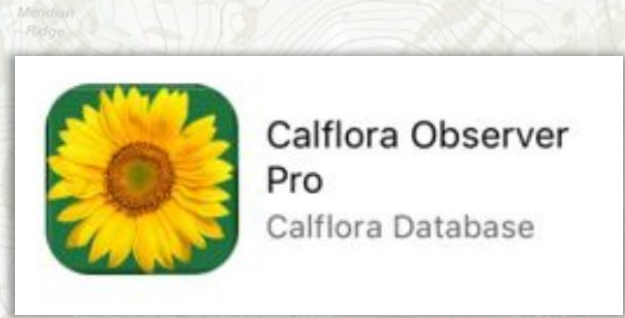


NatureServe





New technology



ArcGIS Online

inaturalist.org/projects/california-natural-diversity-database

iNaturalist Explore Community More Log In or Sign Up

« Projects Terms & Rules | Join this project

Protecting California's rarest elements of natural diversity

ADD OBSERVATIONS

California Natural Diversity Database

Stats

| Totals | Most Observations | Most Species | Most Observed Species |
|--------------------------------|---|--|--|
| 11689 Observations » | cwarrows 1588 observations | damontighe 252 species | Foothill Yellow-legged Frog 597 observations |
| 1552 Species » | robberfly 1373 observations | robberfly 227 species | California Newt 257 observations |
| 1446 People » | mgruen 893 observations | cwarrows 161 species | San Diegan Legless Lizard 219 observations |
| | damontighe 806 observations | silversea_starsong 155 species | Monterey Pine 195 observations |
| | sea-kangaroo 491 observations | yargeritaville 143 species | Monarch 186 observations |



Internal Action Planning

- Mission, vision, values
- Paperless workflow
- Documentation
- Evaluate processes and methodology
- Outreach
- Partnerships
 - Data exchange
 - Prioritization
 - Ranking?
- Improve stakeholder engagement/feedback

“...to advance conservation of California’s natural heritage and at-risk ecological resources through collection and synthesis of biological records, sharing of information, honoring the legacy of scientific inquiry, and engaging stakeholders to ensure relevancy.”





CNDDDB News blog

The screenshot shows a web browser window displaying the CNDDDB News blog page. The browser's address bar shows the URL `wildlife.ca.gov/Data/CNDDDB/News`. The page header includes the California Department of Fish and Wildlife logo and navigation links for Home, Fishing, Hunting, Licensing, Conservation, and Learning. The main content area is titled "CNDDDB News" and features a post for "Photos Of The Month: October" dated October 31, 2019. The post includes a photograph of a porcupine and a sign-up form for email updates. A sidebar on the right lists "MOST RECENT" posts, including the current one and others from October 28, 2019.

← → ↻ 🏠 🔒 wildlife.ca.gov/Data/CNDDDB/News 🔍 ☆ 📄 🌐 M ☰

CA.Gov Login Contact Us Google Custom Search 🔍 🌐


CALIFORNIA DEPARTMENT OF **Fish and Wildlife**

Home Fishing Hunting Licensing Conservation Learning

CNDDDB News


Photos Of The Month: October

October 31, 2019



Erethizon dorsatum – North American porcupine

Submitted by Laura Cockrell, California Department of Fish and Wildlife



Sign up to receive CNDDDB News updates by email.

Email

Subscribe

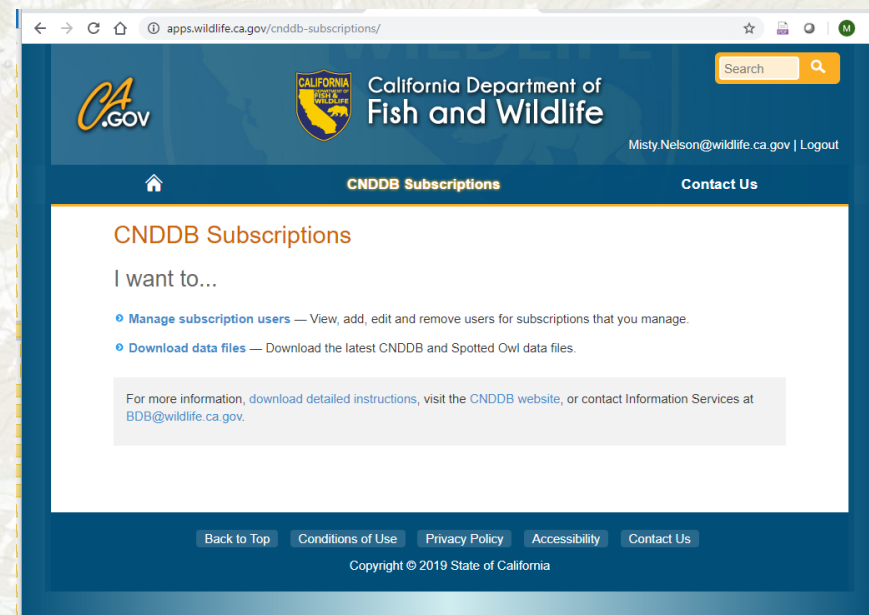
MOST RECENT

- Photos of the Month: October
October 31, 2019
- Conservation Lecture Series Presents:
October 28, 2019
- Taxon of the Week: *Monotropa uniflora*
October 21, 2019



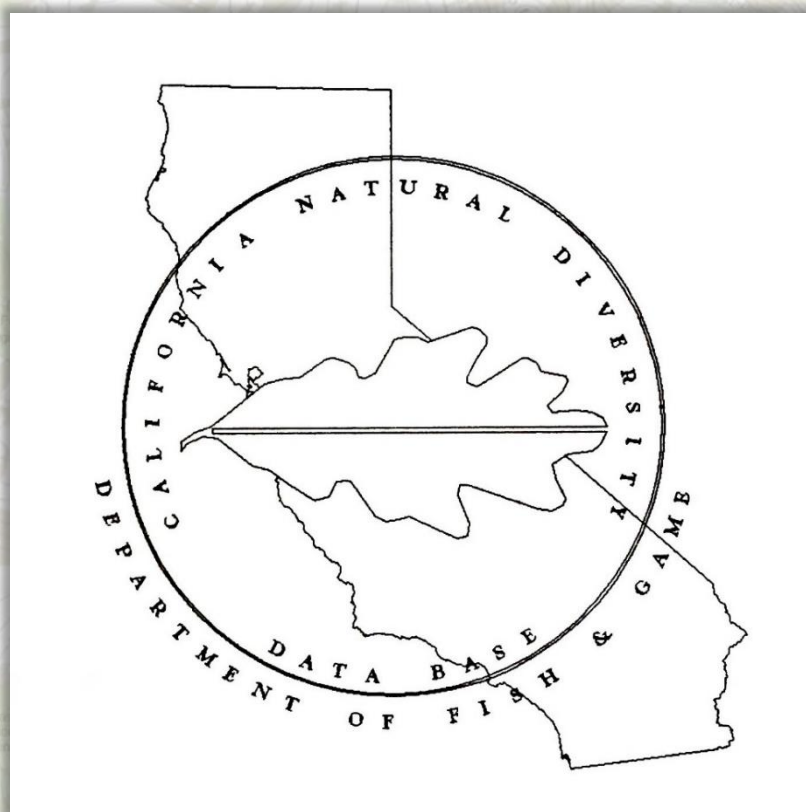
User Management System

- Initiated out of IT security concerns
- Individual self-service login accounts
- Web app for authorized user management
- Messaging directly to users
 - Training opportunities
 - Updates
 - Surveys/feedback
- Better understanding of how data and tools are being accessed and used





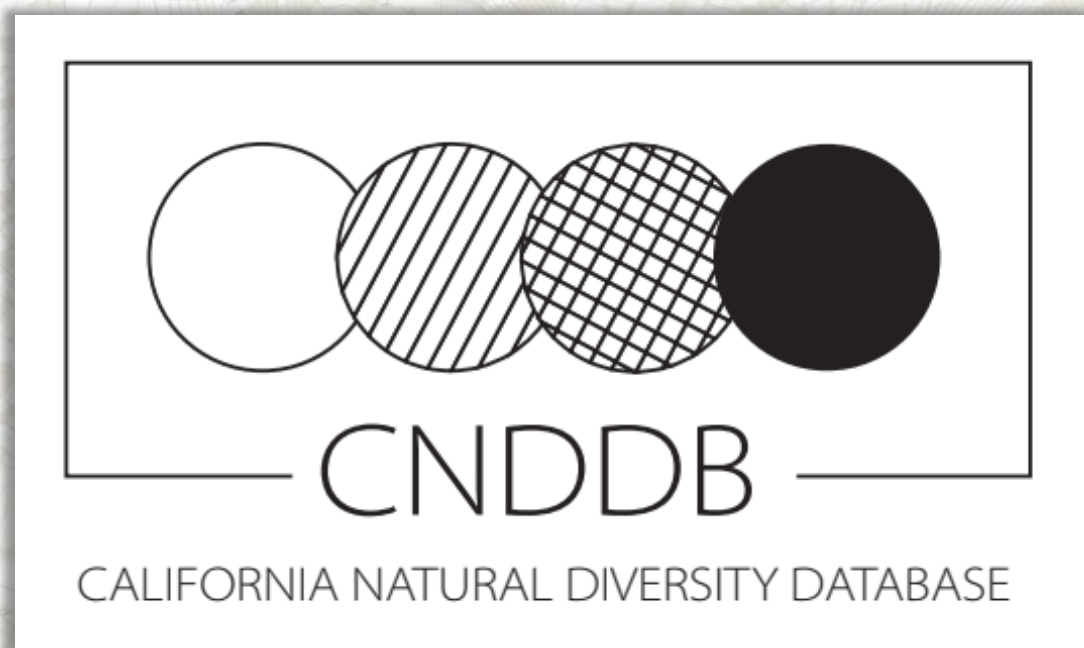
And last but not least...



Past



Present



Future!



Please submit your data!

The screenshot shows the website's header with the CA.GOV logo and the California Department of Fish and Wildlife logo. A search bar is located in the top right. Below the header is a navigation menu with links for Home, Fishing, Hunting, Licenses & Permits, Conservation, Learning, and Explore. The main content area is titled 'Submitting Data to the CNDDDB' and includes a paragraph explaining the data submission process. Below this is a section for 'California Natural Diversity Database' with a list of links: About the CNDDB, CNDDB News, CNDDB QuickView Tool, CNDDB and Spotted Owl Data Viewer, RareFind, Submitting Data, CNDDB Tutorials and Training, and Monthly Data Updates. A table below the text lists submission methods: Online Field Survey Form, PDF Field Survey Form, Digital Data, and Other. The Online Field Survey Form is highlighted, and a button labeled 'CNDDB Online Field Survey Form' is visible. A note states: 'First time users will need to set up an account. The'.

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



The screenshot shows the iNaturalist project page for the California Natural Diversity Database. The page features a header with navigation options like 'Explore', 'Community', and 'More'. Below the header is a large banner image with the text 'Protecting California's rarest elements of natural diversity' and a prominent red 'ADD OBSERVATIONS' button. Underneath the banner, there are several smaller images of various species. A 'Stats' section is visible, providing a summary of observations and species counts.

| Totals | Most Observations | Most Species | Most Observed Species |
|----------------------|---|--|--|
| 11689 Observations » | cwbarrows 1588 observations | damontighe 252 species | Foothill Yellow-legged Frog 597 observations |
| 1552 Species » | robberfly 1373 observations | robberfly 227 species | California Newt 257 observations |
| 1446 People » | mrguen 893 observations | cwbarrows 161 species | San Diegan Legless Lizard 219 observations |
| | damontighe 806 observations | silversea_starsong 155 species | Monterey Pine 195 observations |
| | sea-kangaroo 491 observations | yargentaville 143 species | Monarch 186 observations |

Join our iNaturalist Project
www.inaturalist.org/projects/california-natural-diversity-database

THANK YOU!

The screenshot shows the California Department of Fish & Wildlife website, specifically the CNDDDB News section. The page features a navigation bar with options like 'Home', 'Fishing', 'Hunting', 'Licensing', 'Conservation', and 'Learning'. The main content area displays a news article titled '(Inter-) National Badger Day, 2019' dated October 6, 2019. The article includes a photograph of a badger and text describing the event. On the right side, there is a sign-up form for email updates and a 'MOST RECENT' section listing recent news items.

Sign up for our blog
<https://www.wildlife.ca.gov/Data/CNDDDB/News>