Biogeographic Information and Observation System (BIOS)

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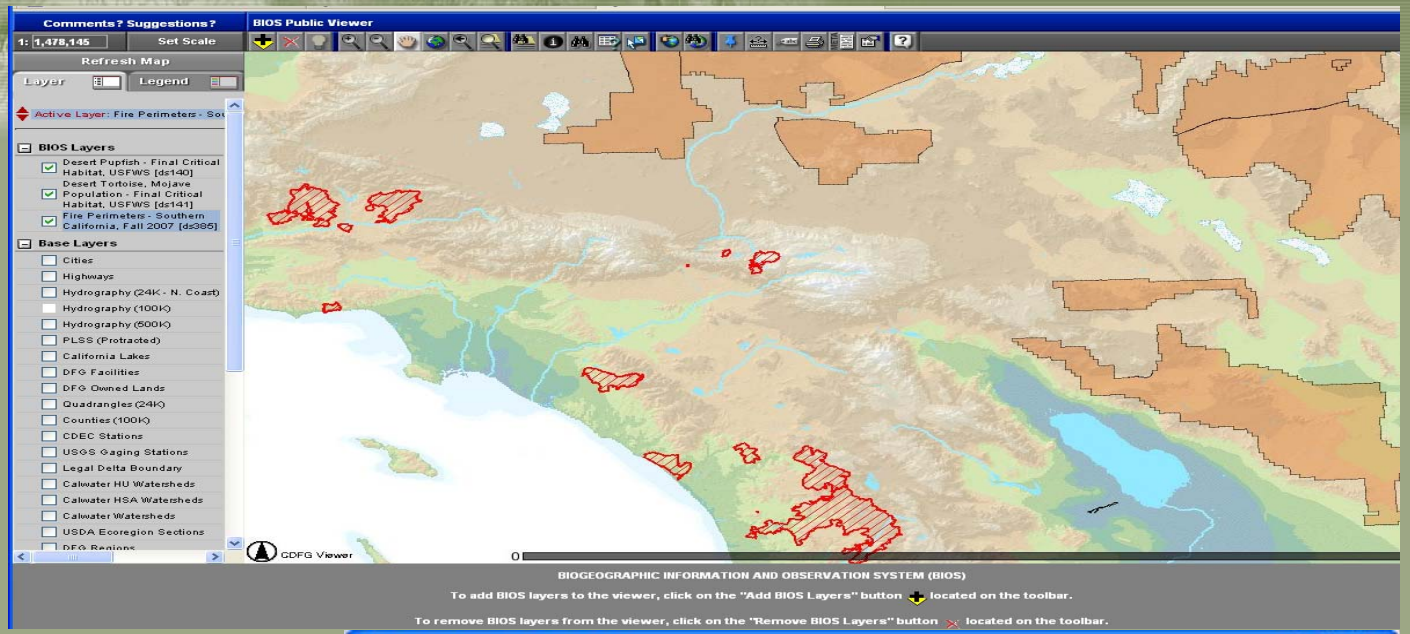
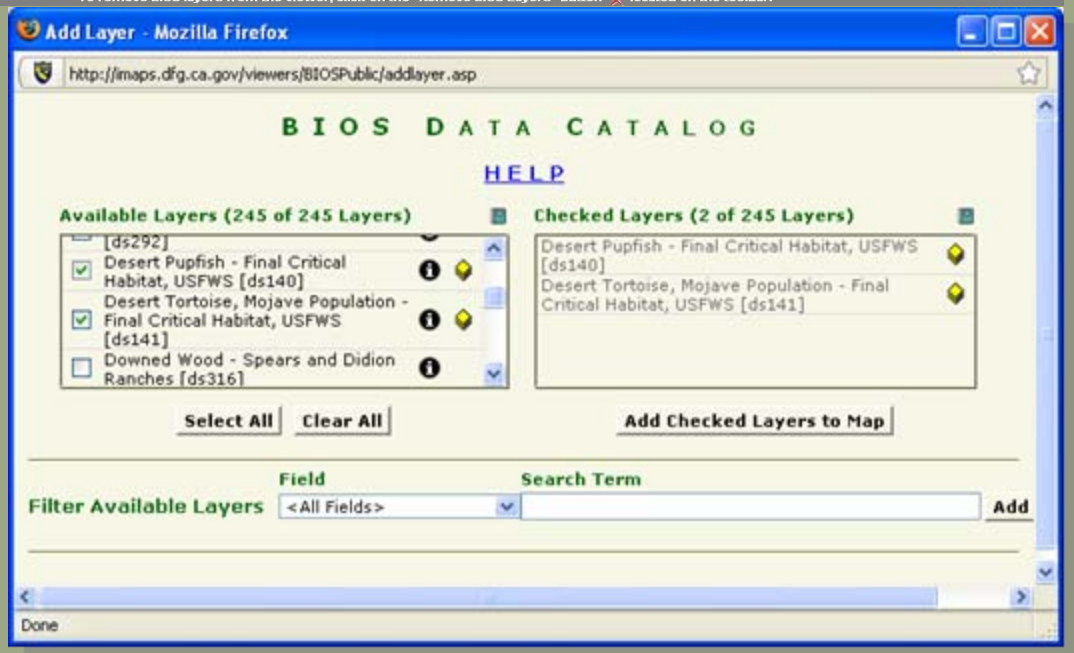


- What is it?
- Some Examples…
- Why Was it Created
- How Might it Help You?
- Future Plans

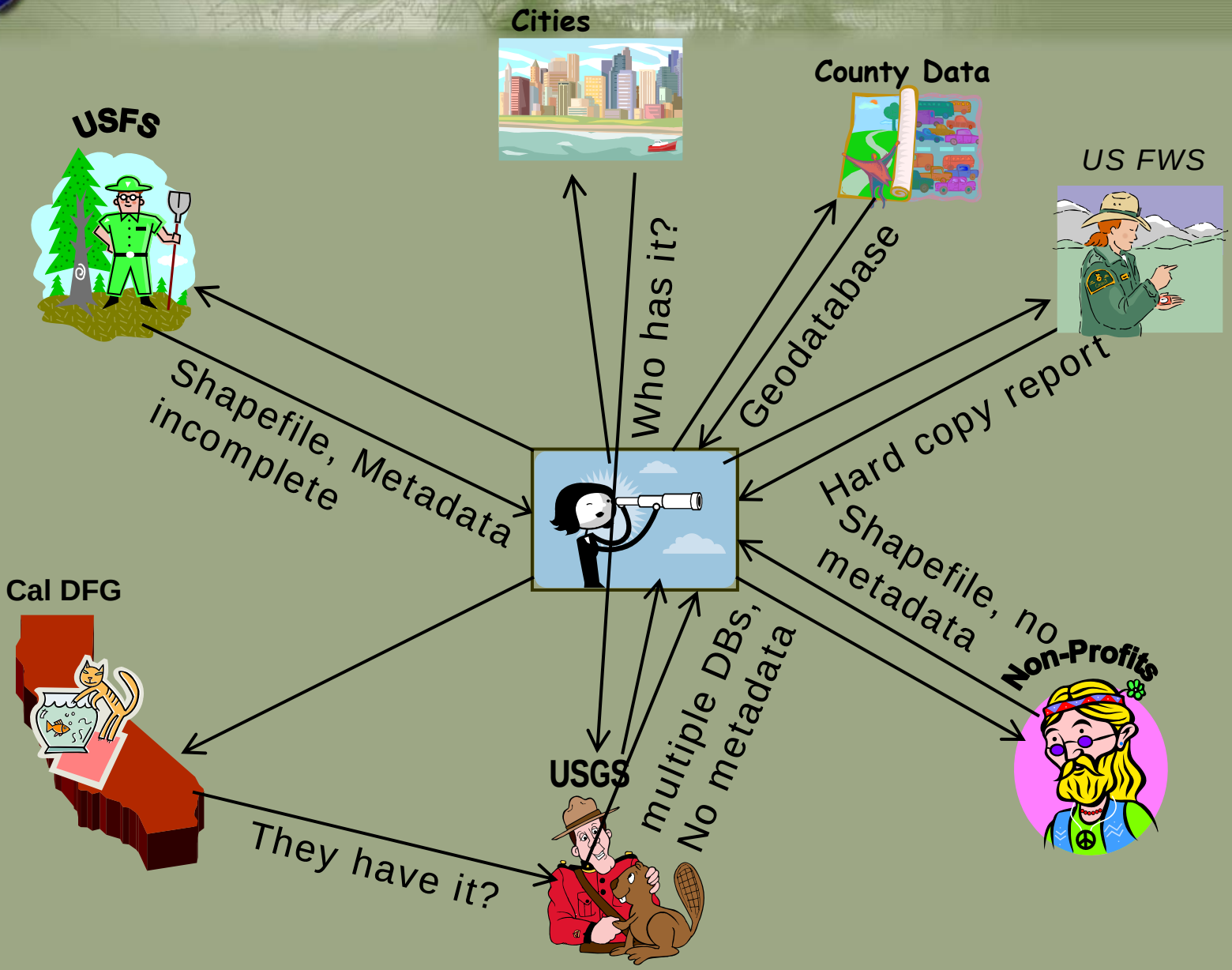


Why Create BIOS?

The challenges . . .

- Environmental resource data collection is increasing rapidly.
- Previously collected data are disappearing as employees change jobs or retire – "it's 'lost' in a filing cabinet/garage" problem…
- There is a lack of standardization in how data are recorded, stored and shared.

Typical Data Management Scenario

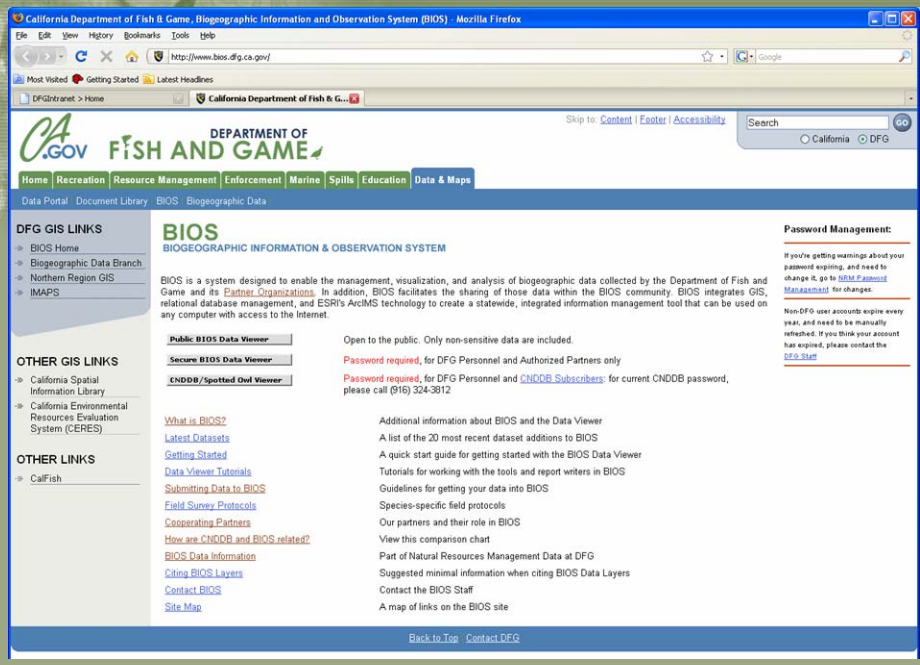


Why Create BIOS?

- Need for transparency in government decision-making
- Data/maps frequently not easily viewable, particularly with other features/resources.
- Need to protect our investment in data.
- Action to correct this will avert future crisis.

BIOS as Part of the Solution. . .

- Create an information system to locate and integrate hardcopy and digital data.
- Establish a data management system that provides a standard structure without confining the ability to gather or analyze data.
- Provide an information distribution system to facilitate use of the data by DFG employees, partners and the public.



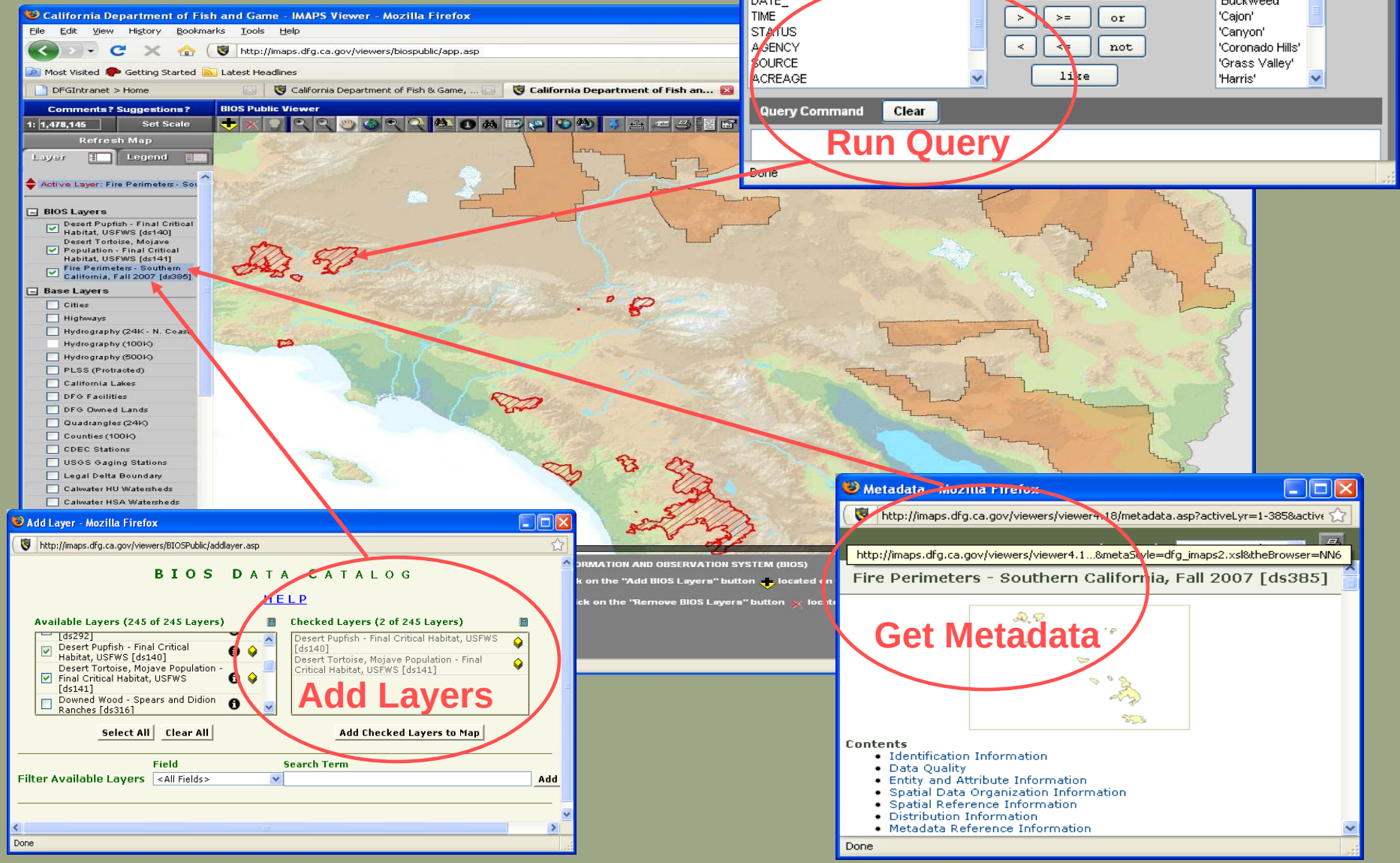
What is BIOS?

BIOS is a system for archiving and viewing **biogeographic information** in DFG (and information held by partners) and facilitating the sharing of that information with DFG employees, partners and the public.

It is an evolving **collaboration tool/system** and expected to change in response to DFG and partner needs and suggestions.

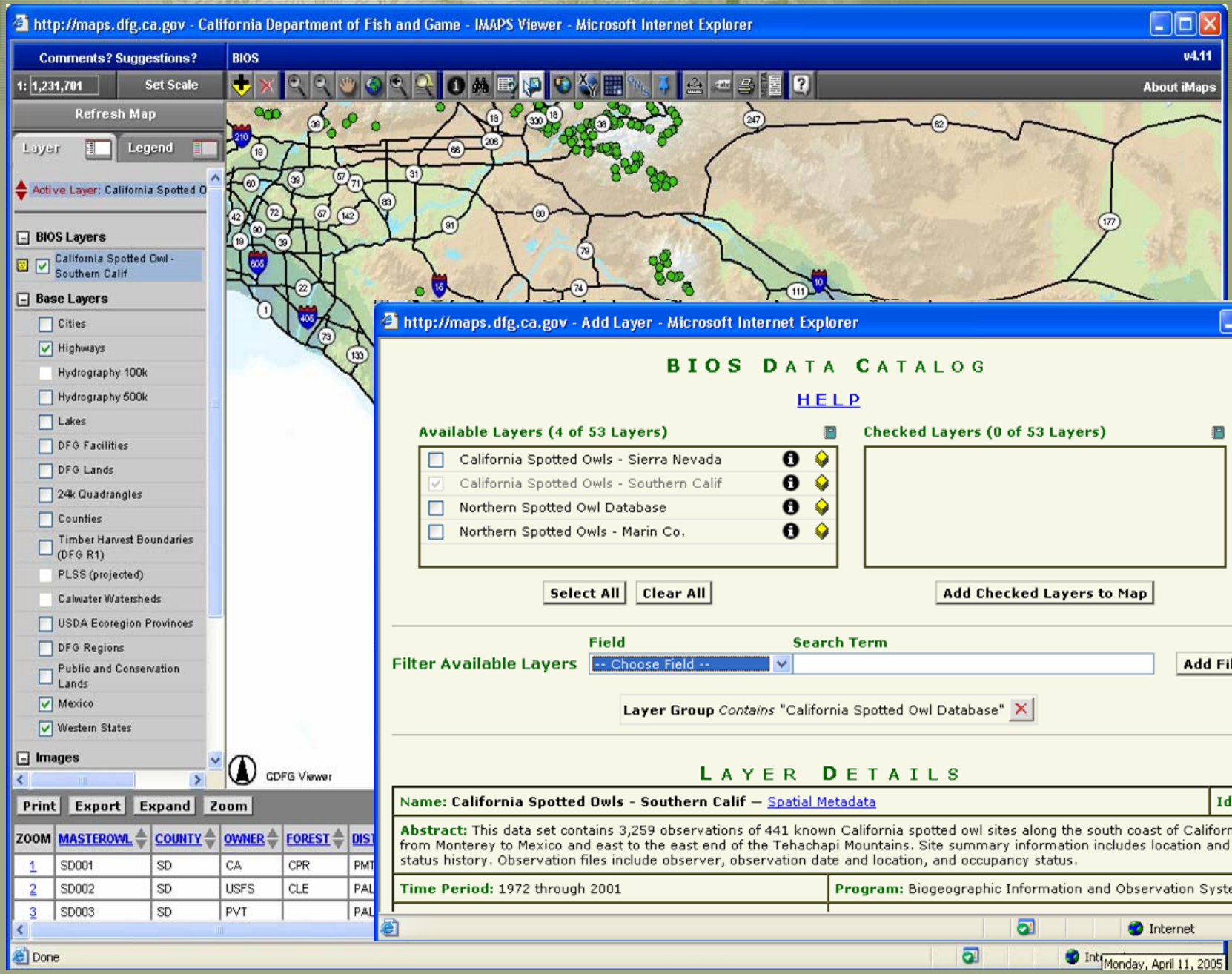
Biogeographic Information and Observation System

BIOS Custom ArcIMS Viewer



Data in BIOS

- Internet Map Service (Browser) with:
  - Nearly 300 public datasets
  - Approx. 250 limited access, secure datasets including >65,000 records in Calif. Natural Diversity Database (CNDDB)
  - More than 500 total datasets (and growing)


http://maps.dfg.ca.gov - California Department of Fish and Game - IMAPS Viewer - Microsoft Internet Explorer
Comments? Suggestions?
BIOS
v4.11
1: 1,231,701
Set Scale
About iMaps
Refresh Map
Layer
Legend
Active Layer: California Spotted O
BIOS Layers
California Spotted Owl - Southern Calif
Base Layers
Cities
Highways
Hydrography 100k
Hydrography 500k
Lakes
DFG Facilities
DFG Lands
24k Quadrangles
Counties
Timber Harvest Boundaries (DFG R1)
PLSS (projected)
Calwater Watersheds
USDA Ecoregion Provinces
DFG Regions
Public and Conservation Lands
Mexico
Western States
Images
GDFG Viewer
Print
Export
Expand
Zoom
ZOOM
MASTEROWL
COUNTY
OWNER
FOREST
DIST
1 SD001 SD CA CPR PMT
2 SD002 SD USFS CLE PAL
3 SD003 SD PVT PAL
http://maps.dfg.ca.gov - Add Layer - Microsoft Internet Explorer
BIOS DATA CATALOG
HELP
Available Layers (4 of 53 Layers)
Checked Layers (0 of 53 Layers)
California Spotted Owls - Sierra Nevada
California Spotted Owls - Southern Calif
Northern Spotted Owl Database
Northern Spotted Owls - Marin Co.
Select All
Clear All
Add Checked Layers to Map
Filter Available Layers
Field
Search Term
-- Choose Field --
Add Filter
Layer Group Contains "California Spotted Owl Database"
LAYER DETAILS
Name: California Spotted Owls - Southern Calif — Spatial Metadata
Id: 13
Abstract: This data set contains 3,259 observations of 441 known California spotted owl sites along the south coast of California from Monterey to Mexico and east to the east end of the Tehachapi Mountains. Site summary information includes location and status history. Observation files include observer, observation date and location, and occupancy status.
Time Period: 1972 through 2001
Program: Biogeographic Information and Observation System
Internet
Done
Monday, April 11, 2005

Types of Data…

- CA Natural Diversity Database (CNDDB)
- T & E Species' Critical Habitats
- Individual Species Observations & Ranges
- Vegetation maps
- California Protected Areas Database (CPAD)
- Fish Passage Barriers
- Invasive Species

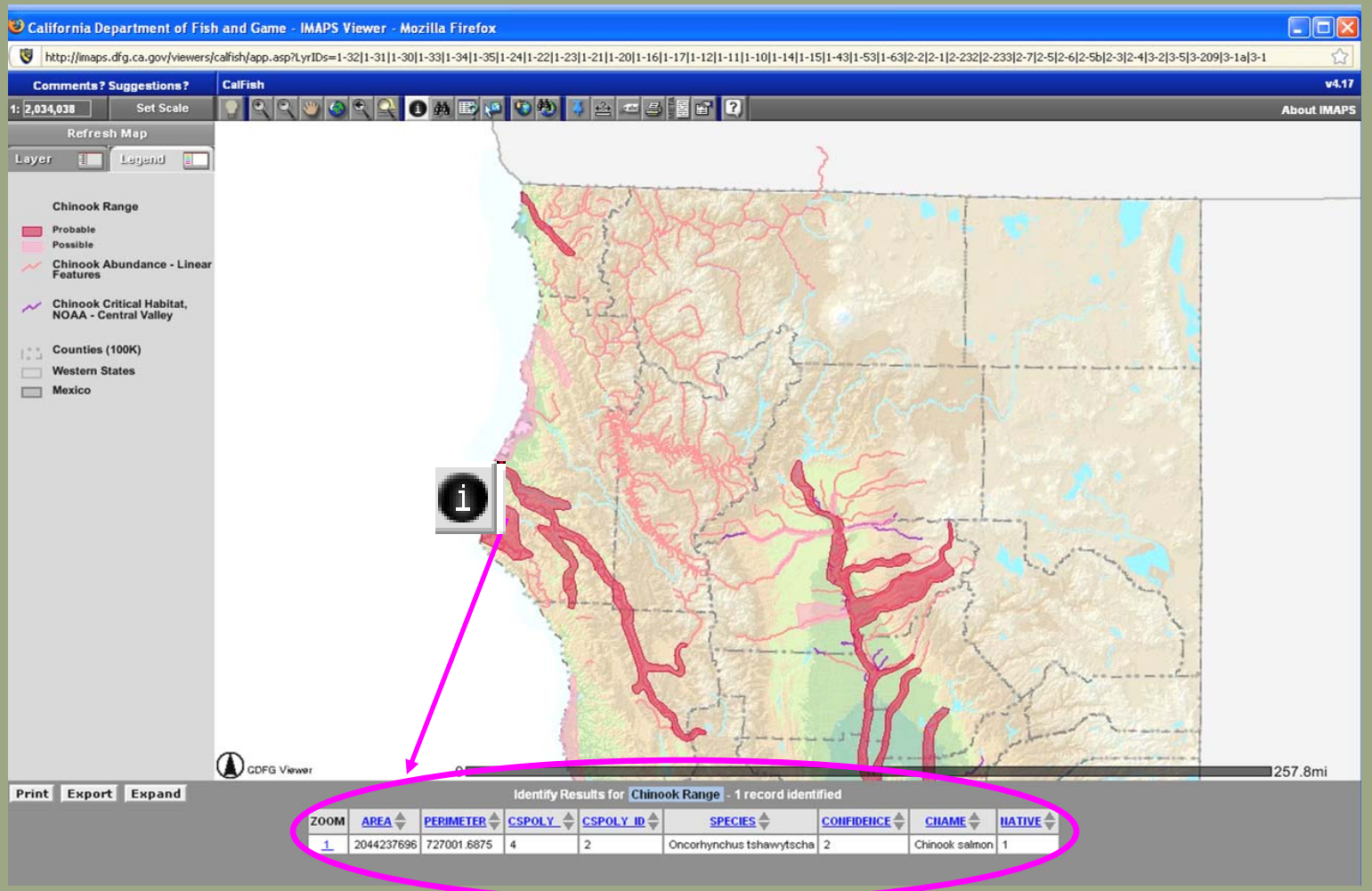
Thorough Metadata is Mandatory

- How did you do it
- Why did you do it
- When did you do it
- Outcomes
- Problems
- Scales
- Etc.

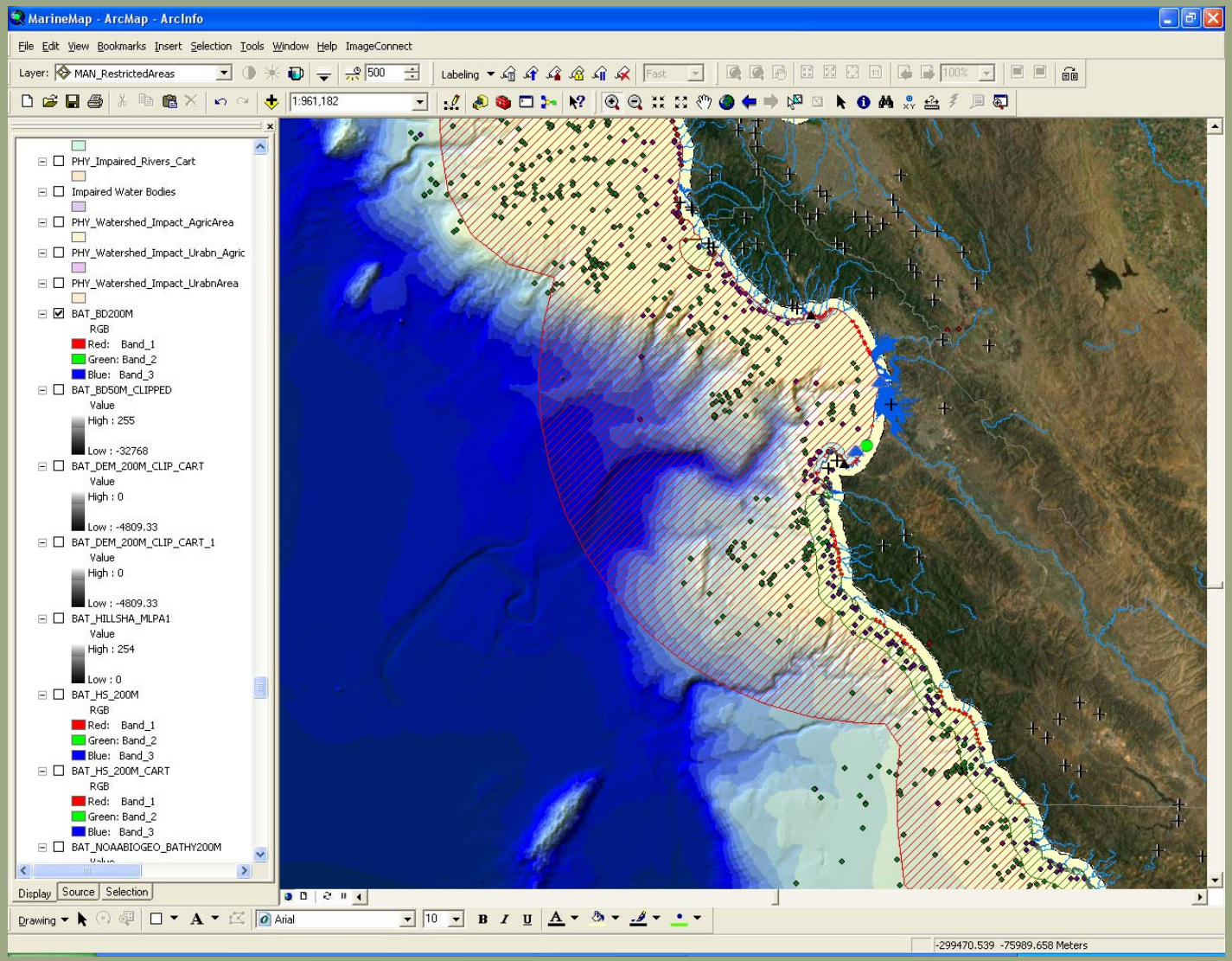
CalFish.org

Link to BIOS Viewer

Chinook Range Query



<Your map service/data here…>:



Data Gathering

- We are not looking to acquire information *per se*, only to help it get liberated.
- We are not managing people's information, only offering a way to share it.
- We are contacting Department units/regions and partners to see if biologists have data sets they might wish to share.

Information Distribution

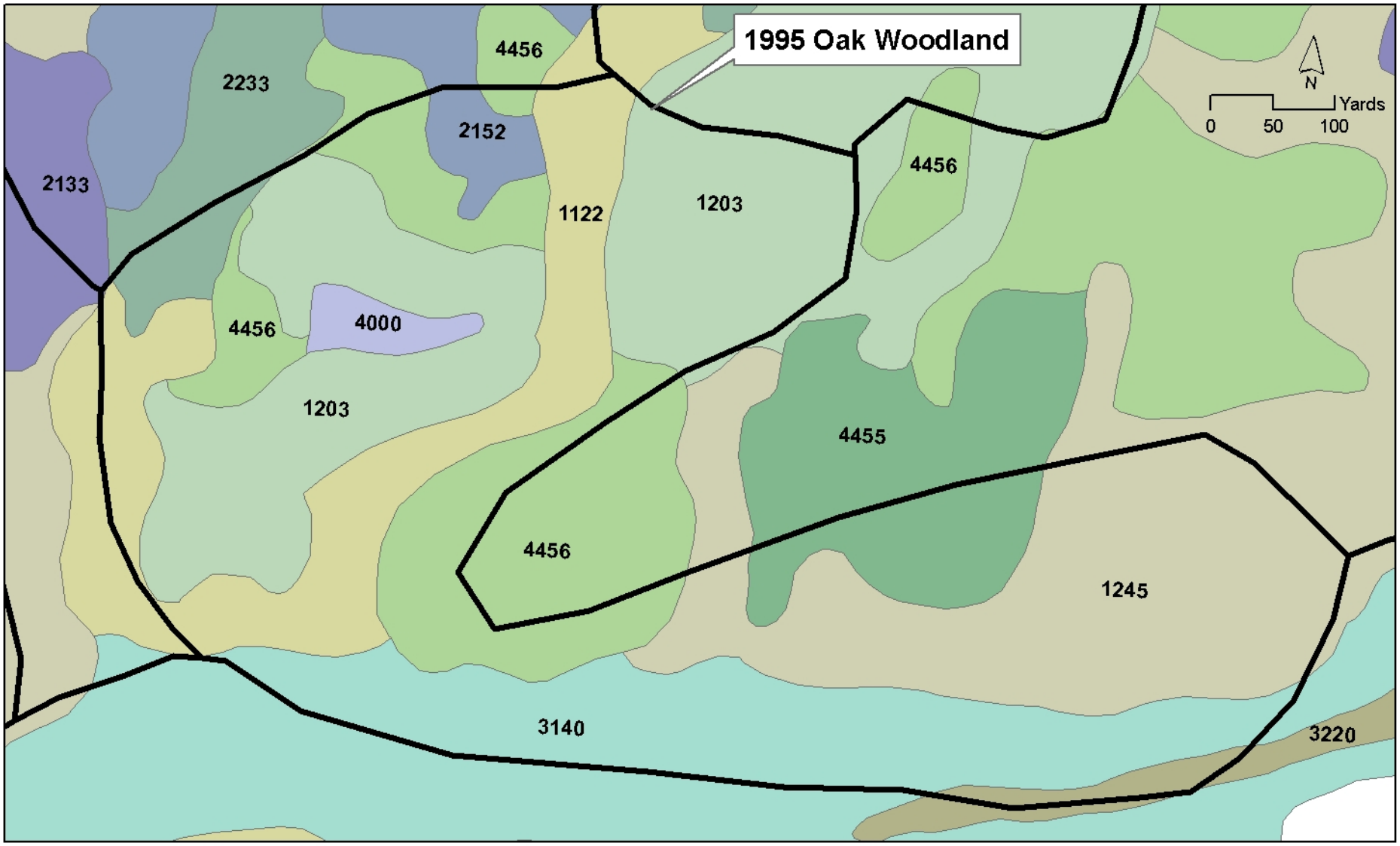
- BIOS provides a simple to use, interactive, free, web-based GIS viewer optimized for biogeographic data.
- Allows observation of data points on a number of map backgrounds.
- Provides metadata for each dataset, a view of the information of each record displayed on the active layer, an ability to print simple maps, and an ability to search each active data layer.

"Take Home" messages…

- BIOS is a mature "map" & database system and has been operational for several years,
- BIOS is a permanent program and a key to DFG's data management and science operations, and
- … it's used successfully as an **collaboration tool** right now.

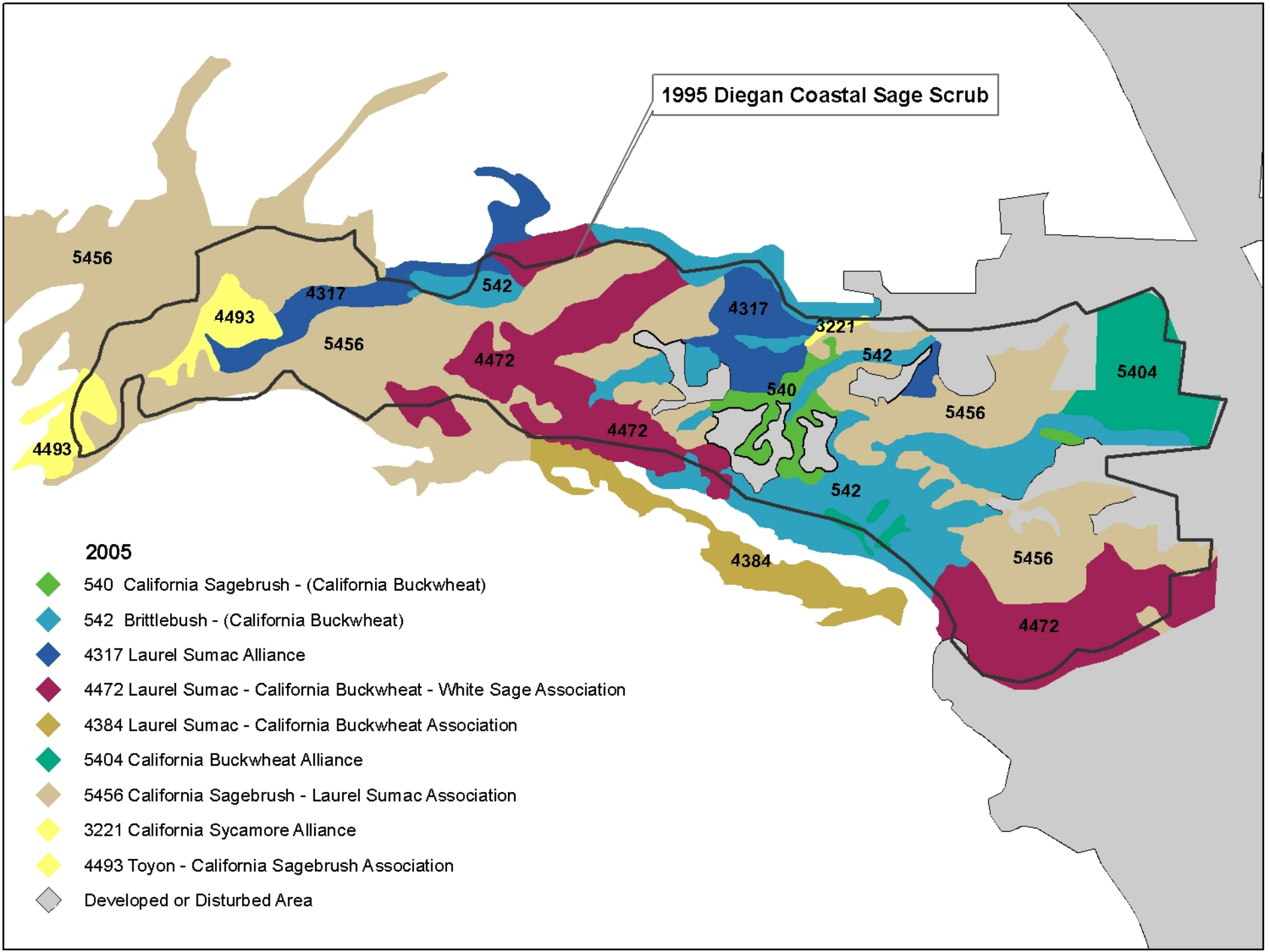
Problems with current vegetation mapping and information

- Current vegetation mapping is limited to agencies' jurisdictions
- Each is done to address agency-specific business needs
- Our business needs are not being met by the most widespread mapping practices
- "Frankenmap" (California multi-source land cover map, 2002) uses all the best available data and stitches it together -- a patchwork quilt of many products, many scales, many dates

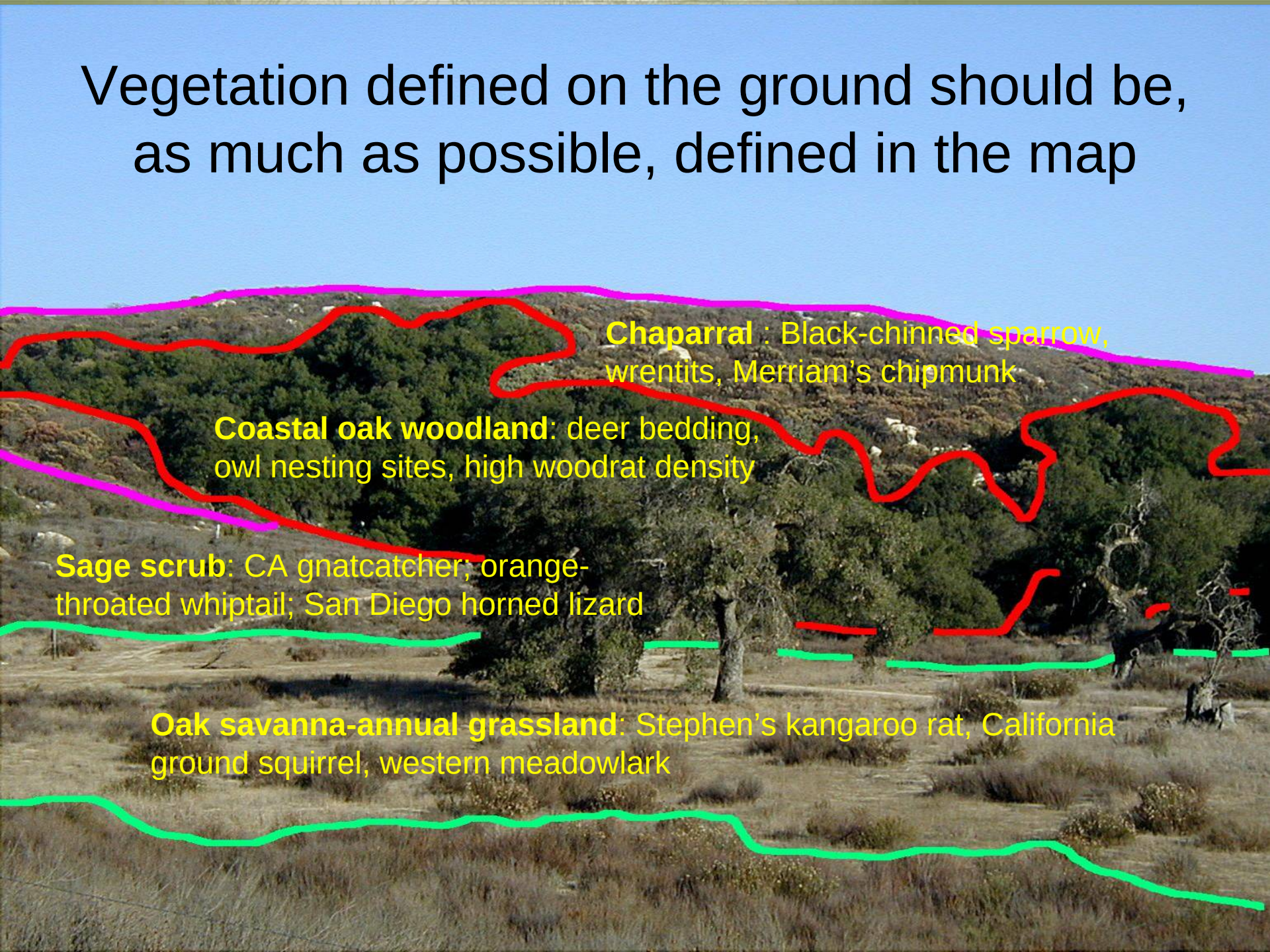


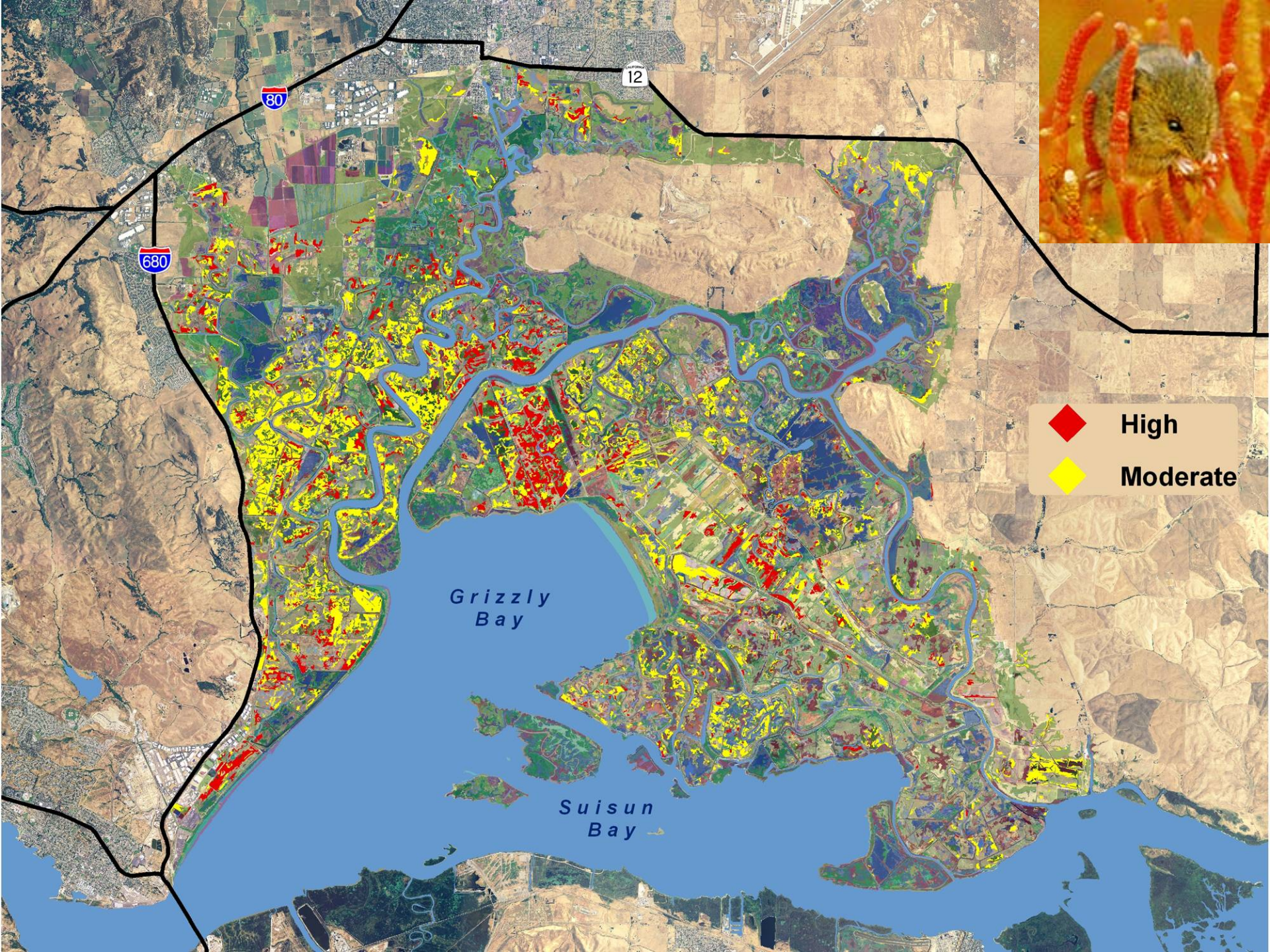
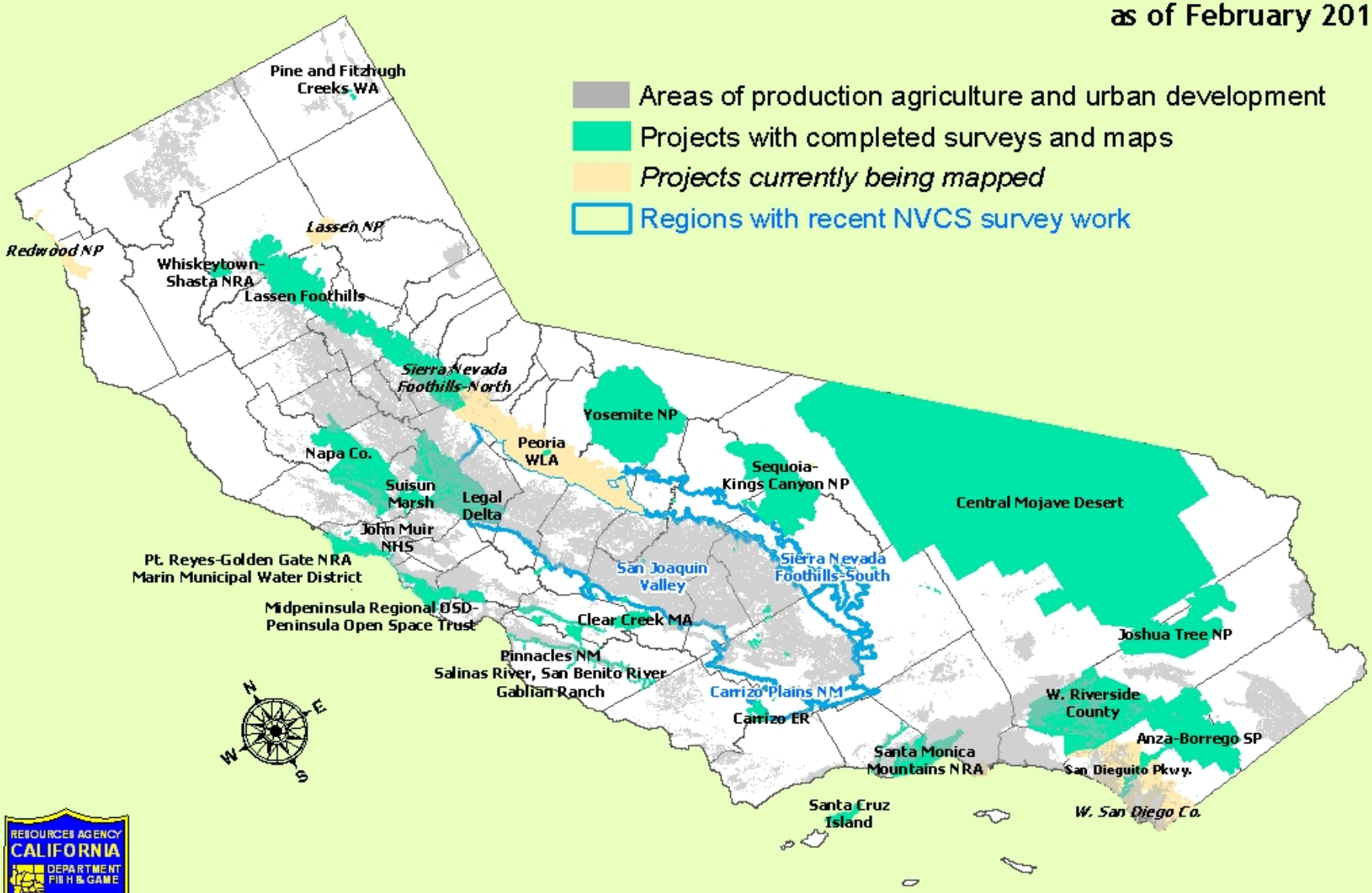
2005 Mapping Codes and Types

- 1122 Canyon Live Oak Allianceÿ
- 1203 Interior Live Oak - Canyon Live Oak Alliance
- 1245 Interior Live Oak - Canyon Live Oak - Coulter Pine Association
- 2133 Coulter Pine / Eastwood Manzanita Alliance
- 2152 Coulter pine - Canyon live oak / Pink-bracted Manzanita Association
- 2233 White Fir - Sugar Pine - Incense Cedar - Canyon Live Oak Association
- 3140 Black Oak - Incense Cedar Association
- 3220 White Alder Alliance
- 4000 Evergreen Shrubland Formation
- 4455 Eastwood Manzanita - Interior Live Oak Association
- 4456 Eastwood Manzanita - Pink-bracted Manzanita Association


1995 Diegan Coastal Sage Scrub
5456
4317
4493
542
5456
4472
4317
3221
542
540
5404
5456
4472
4493
542
4384
5456
4472
2005
540 California Sagebrush - (California Buckwheat)
542 Brittlebush - (California Buckwheat)
4317 Laurel Sumac Alliance
4472 Laurel Sumac - California Buckwheat - White Sage Association
4384 Laurel Sumac - California Buckwheat Association
5404 California Buckwheat Alliance
5456 California Sagebrush - Laurel Sumac Association
3221 California Sycamore Alliance
4493 Toyon - California Sagebrush Association
Developed or Disturbed Area

Vegetation defined on the ground should be, as much as possible, defined in the map




80
680
12
Grizzly Bay
Suisun Bay
High
Moderate

California Vegetation Mapping Projects
Based on the National Vegetation Classification System
as of February 2010