AREAS OF CONSERVATION EMPHASIS

ACE VERSION 3.0

Biogeographic Data Branch
Conservation Lecture Series
April 12, 2018

Photos courtesy of USFWS National Image Library
ACE: TALK OVERVIEW

1. Introduction: Overview

2. Navigating ACE: Where to find the information

3. ACE Model: Datasets, data sources, attributes, caveats

4. Example scenarios: How the data and viewer can be used

5. Future updates
1. Introduction: Overview

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4. Example scenarios: How the data and viewer can be used

5. Future updates
ACE: GOALS AND PURPOSE

- Best-available, conservation-relevant spatial data
- Non-regulatory maps and viewer tool
- Coarse level view of information for conservation planning purposes

https://www.wildlife.ca.gov/Data/Analysis/ACE
ACE: ACKNOWLEDGEMENTS

- **Working Group Team:** Karen Miner, Biogeographic Data Branch, Habitat Conservation Planning Branch, Wildlife Conservation Board, Wildlife Branch, Fisheries Branch, Watershed Restoration Branch, Water Branch, SWAP, Climate Science, Ecosystem Services

- **Development team:** Melanie Gogol-Prokurat, Sandra Hill, Diane Mastalir, Kristi Cripe, Dan Applebee, Janet Brewster, Kristina White, Patrick McIntyre, Todd Keeler-Wolf, Lisa Ohara, Steve Goldman, Peter Ode, Whitney Albright, Ryan Hill, and Karen Miner

- **GIS Scripting:** Ryan Hill and Sandra Hill

- **Viewer Development:** Dean Chiang, Chet Egbert, Steve Goldman
ACE: HISTORY

• ACE-II developed in 2009
• Focused on biodiversity and significant habitats
• Updated ~ annually

• ACE-II Development Team: Melanie Gogol-Prokurat, Monica Parisi, Adrienne Truex, Eric Haney, Dan Applebee, Armand Gonzales, et al.
• 2017-2018 update
  – Separate terrestrial and aquatic
  – Revise and add new models
    • Connectivity
    • Climate resilience
    • Recreation
  – Add 2015 State Wildlife Action Plan (SWAP) priorities

ACE VERSION 3.0
ACE: ANALYSIS UNITS

Terrestrial
hexagon grid
standard size
2.5 miles$^2$ (1600 acres)

Aquatic
HUC 12 watersheds
variable size
4 - 425 miles$^2$ (mean 38 miles$^2$) (24,284 acres)
ACE: RANKING (TERRESTRIAL)

Terrestrial hexagon grid standard size 2.5 miles$^2$ (1600 acres)

USDA Ecoregions
ACE: RANKING (TERRESTRIAL)

Terrestrial hexagon grid standard size 2.5 miles² (1600 acres)

Data was ranked from 1-5 by quantile, where 20% of the map units are assigned to each rank.
To identify the range of values within each ecoregion, data was ranked high to low by ecoregion.
ACE: RANKING (AQUATIC)

Aquatic HUC 12 watersheds variable size 4–425 miles (mean 38 miles)

24,284 acres
ACE: TALK OVERVIEW

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HELP WILDLIFE WHEN YOU FILE YOUR STATE INCOME TAX RETURN.
Contribute to the Rare and Endangered Species Protection Program on Line 403 and/or the California Sea Otter Fund on line 410.
For details, click here. Thank you!
Conservation and Management of Wildlife and Habitat

Species Management
- Mammals
- Birds
- Reptiles

Species Data Systems
- BIOS: Biogeographic Information and Observation System
- CNODD: California Natural Diversity Database
- VégéCAMP
- Conservation Analysis: CWRH, ACE, etc.

Habitat Conservation
- Cannabis Program
- Climate and Energy
- Environmental Review
- CESA, Timber, Lake or Streambed Alteration
- Grant Opportunities
- CDFW Lands
- Wildlife, range and ecological reserves
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.
ACE: WEBSITE

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Biodiversity

Significant Habitats

Connectivity

Climate Resilience

Recreation

Related Information
- Biodiversity
- California Wildlife-Spatial Relationships
- CA Natural Diversity Database
- State Wildlife Action Plan

Conservation Data Analysis
- Black & Nevada Wildlife Connectivity Modeling Project
- Climate Change Vulnerability Assessment
- ACE
- CWD

Contact Information
ACE: WEBSITE

Areas of Conservation Emphasis (ACE)

- Overview
- Species Biodiversity
- Significant Habitats
- Connectivity
- Climate Resilience
- Recreation
Species Biodiversity Summaries combine the three measures of biodiversity developed for ACE into a single metric. These three measures include: 1) native species richness, which represents overall native diversity of all species in the state, both common and rare, as well as climate vulnerable species and important game and sport fish species; 2) rare species richness, which represents diversity of rare species; and, 3) irreplaceability, which is a weighted measure of endemism that highlights areas that support unique species of limited range. Terrestrial Datasets include native richness, rarity, and irreplaceability for each of five taxonomic groups: birds, amphibians, plants, mammals, and reptiles. While the Aquatic Datasets include native richness, rarity, and irreplaceability for each of four taxonomic groups: fish, aquatic invertebrates, aquatic amphibians, and aquatic reptiles. The data can be used to view the distribution of biological richness by individual taxonomic group and overall, within each USDA ecoregion (terrestrial) and across the state's watersheds (aquatic). Users can also view a list of species that contribute to the biodiversity measures for each hexagon (for terrestrial species) or watershed (for aquatic species) by selecting the layer called Terrestrial Species List and Aquatic Species List, respectively. Further information is available in the data set factsheets.

Dataset Factsheets:

- Biodiversity Summary [ds2769] (PDF)
- Terrestrial Biodiversity Summary [ds2739] (PDF)
- Aquatic Biodiversity Summary [ds2768] (PDF)
- Terrestrial Native Species Richness [ds2703] (PDF)
- Aquatic Native Species Richness [ds2743] (PDF)
- Terrestrial Rare Species [ds2709] (PDF)
- Aquatic Rare Species [ds2748] (PDF)
The Terrestrial Biodiversity Summary is a compilation of the best available information on terrestrial species biodiversity in California, including amphibians, birds, mammals, plants, and reptiles, for the California Department of Fish and Wildlife's (CDFW) Areas of Conservation Emphasis Project (ACE). It is one component, together with Aquatic Biodiversity, of overall species biodiversity in California. The terrestrial biodiversity summary combines the three measures of biodiversity developed for ACE into a single metric: 1) terrestrial native species richness, which represents overall native diversity of all species in the state, both common and rare; 2) terrestrial rare species richness, which represents diversity of rare species; and, 3) terrestrial irreplaceability, which is a weighted measure of endemism. The data can be used to view patterns of overall species diversity, and identify areas of highest biodiversity across the state and in each ecoregion, taking into account common, rare, and rare endemic species. Users can view a list of species that contribute to the biodiversity measures for each hexagon.

The terrestrial biodiversity summary displays relative biodiversity values for each ecoregion of the state, so that the areas of highest diversity within each ecoregion are highlighted. The data is available for download and use in conservation planning.
ACE DATASET FACT SHEET
Terrestrial Biodiversity

DATA SOURCES AND MODELS USED

The Terrestrial Biodiversity Summary is a combination of three ACE datasets that were developed to

Data Sources

Terrestrial vertebrate distribution data
Predicted Habitat Suitability models for vertebrates represent potential suitable habitat with
CWHR species habitat relationship tables
FVG3.1 (Calfire 2015). All native terrestrial
Suitability Model was available were included in the
species was mapped within a hexagon, the
Terrestrial vertebrate counts were based on
volumes because range maps were available.

Data Processing Steps and Ranking Criteria

Data normalization by taxonomic group corrected for any bias caused by differences in the number of
taxa per taxonomic group. Due to large differences in total numbers of species between taxonomic

HOW TO USE THE DATA LAYER

The biodiversity summary maps can be used to view and explore how biodiversity is distributed ac-

Field | Definition
--- | ---
Climate Vulnerable Species Count | Count of climate vulnerable species (not including plants) with potential habitat in each hexagon.

potential habitat models that intersect the

DATA PRECISION AND LIMITATIONS

ACE provider data to help guide and inform conservation priorities in California. All ACE data layers are

DATA ACCESS

All datasets are available for viewing and download in BIOS.

ACKNOWLEDGEMENTS

Native Species Richness Index, Rare Species Richness Index, and Rarity-weighted Index model

SELECTED PUBLICATIONS

Areas of Conservation Emphasis (ACE)

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

Biodiversity

Significant Habitats

Connectivity

Climate Resilience
Areas of Conservation Emphasis (ACE)

Version 3, Phase 1

ACE provides data to help guide and inform conservation priorities in California.

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The ACE maps do not replace the need for site-specific evaluation of biological resources and should not be used for regulatory purposes.

For more detailed information see: www.wildlife.ca.gov/Data/Analysis/ACE

(Released 2018/02)

All ACE layers are public. Login option is for CNDDDB subscribers.
1. TABLE OF CONTENTS
2. ADD BIOS DATASETS
3. MAP TOOLS
4. OPACITY: transparency
5. HELP
TABLE OF CONTENTS

- Toggle between ACE datasets
- Only one ACE dataset can be turned on
- Active layer (selectable) highlighted pink
- Overlay Ecoregions or Watersheds
- Change basemap
- Add reference layers
ADD BIOS DATASETS
OPACITY: CHANGE TRANSPARENCY OF ACTIVE LAYER
MAP TOOLS

- Identify Features
- Point Info
- Measure
- Add Label
- Select...
- Swipe
- Layer Opacity

Map Tools: Pick a tool to interact with map or features
MAP TOOLS
MAP TOOLS

- Bookmarks
- GeoFind
- Layer Filter
- Query Builder
- Print
- Waypoints

Advanced Tools: Pick a tool to bring up additional form, menu, or dialog.
MAP TOOLS
CNDDB, RareFind and BIOS Tutorials and Training

Introduction Videos and Tutorials

**BIOS 5**

- **Getting Started in BIOS 5 (PDF)**: Just the basics to get you going.
- **BIOS 5 User Guide (PDF)**: A complete overview of every tool.
- **BIOS 5 Demo (video - 18 min)**: An introduction to the BIOS 5 web mapping application, and a demo to operate its basic functions.
- **Using CNDDB in BIOS 5 (PDF)**: A demonstration of using the CNDDB dataset in BIOS 5.
- **Using the Spotted Owl Report Generator in BIOS 5 (PDF)**: A demonstration of using the Spotted Owl Report Generator in BIOS 5 to generate reports.
- **CNDDB QuickView Tool User Guide (PDF)**: A user guide for using the CNDDB QuickView tool in BIOS 5.

Live Training Course
The ACE maps and data can be viewed in the ACE online map viewer, or downloaded for use in ArcGIS. For more detailed information see https://www.wildlife.ca.gov/Data/Analysis/ACE and https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=24326.

Contact Information

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<tr>
<th>Name:</th>
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</tr>
<tr>
<td>Organization:</td>
<td>California Department of Fish and Wildlife</td>
</tr>
<tr>
<td>Division:</td>
<td>Biogeographic Data Branch</td>
</tr>
<tr>
<td>Address:</td>
<td>None None</td>
</tr>
<tr>
<td>Phone:</td>
<td>(916) 324-9265</td>
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<tr>
<td>Email:</td>
<td><a href="mailto:Melanie.Gogol-Prokurat@wildlife.ca.gov">Melanie.Gogol-Prokurat@wildlife.ca.gov</a></td>
</tr>
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Complete metadata Download data
1. Introduction: Goals and Purpose

2. Navigating ACE: Where to find the information

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4. Example scenarios: How the data and viewer can be used

5. Future updates
Components of Biodiversity

1. Native Richness: common and rare

2. Rarity: Species of Greatest Conservation Need (SGCN)

3. Irreplaceability: Endemic species
ACE Biodiversity maps

- Native Species Richness
- Rare Species Richness
- Irreplaceability

- Summaries
- By taxonomic group
ACE Biodiversity maps

- Native Species Richness
- Rare Species Richness
- Irreplaceability
  - Summaries
  - By taxonomic group
  - Terrestrial
  - Aquatic
ACE Biodiversity maps

- Native Species Richness
- Rare Species Richness
- Irreplaceability

- Climate Vulnerable Species
- Game Species
ACE Biodiversity maps

- Native Species Richness
- Rare Species Richness
- Irreplaceability
- Climate Vulnerable Species
- Game Species
- Species lists
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Native Species Richness: Species and habitat mapping

Vegetation Classification and Mapping

Chaparral: Black-chinned sparrow, wrentits, Merriam’s chipmunk

Coastal oak woodland: deer bedding, owl nesting sites, high woodrat density

Sage scrub: CA gnatcatcher, orange-throated whiptail, San Diego horned lizard

Oak savanna-annual grassland: Stephen’s kangaroo rat, California ground squirrel, western meadowlark

Common and rare full species

California Wildlife Habitat Relationship System
### CALIFORNIA TIGER SALAMANDER

#### CWHR Species-Habitat Relationships Table

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**Note:**
- CWHR range map A001
- FVEG2015: “best veg”
CALIFORNIA TIGER SALAMANDER

CWHR Predicted Habitat Suitability
CALIFORNIA TIGER SALAMANDER

Terrestrial
59 Amphibians
360 Birds
167 Mammals
78 Reptiles

Aquatic
36 Aquatic amphibians
12 Aquatic reptiles

Ranges
127 Fish

Aquatic macroinvertebs (183 Families)
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<th>Native Count</th>
<th>Native Amphibian Count</th>
<th>Native Reptile Count</th>
<th>Native Bird Count</th>
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Rare Species Richness: Documented Occurrences

California Natural Diversity Database

2273 BIOS datasets
Rare Species Richness: Documented Occurrences

Species or Subspecies

- 34 Amphibians
- 100 Birds
- 94 Mammals
- 36 Reptiles
- 1672 Plants
- 90 Fish

Aquatic macroinvertebrates not included

Species of Greatest Conservation Need (SGCN)

- Listed
- Species of Special Concern
- Fully-protected
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Irreplaceability:
Documented Occurrences

California Natural Diversity Database

2273 BIOS datasets
Irreplaceability:
Documented Occurrences

California rare endemic and
near-endemic species or
subspecies

Rarity-weighted index (RWI)

$$\text{RWI} = \sum \frac{1}{h}$$

where $h = \# \text{ occupied hexagons or watersheds per taxon}$
### Terrestrial Irreplaceability Summary

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**Terrestrial Biodiversity**

- Amphibians
- Birds
- Mammals
- Plants
- Reptiles

**Aquatic Biodiversity**

- Fish
- Inverts
- Amphibians
- Reptiles

**Roadmap**

1. Native richness
2. Rarity
3. Irreplaceability
### Ecoregion Biodiversity Summary

<table>
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### Native Count

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</tbody>
</table>

### Rare Count

<table>
<thead>
<tr>
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<th>Rare Mammal Count</th>
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<tbody>
<tr>
<td>5</td>
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### All Taxa Endem

<table>
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<tbody>
<tr>
<td>4</td>
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<td>0</td>
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</table>
Terrestrial Biodiversity

Aquatic Biodiversity

Native richness
Rarity
Irreplaceability
<table>
<thead>
<tr>
<th>Aquatic Biodiversity Rank</th>
<th>Aquatic Biodiversity Weight</th>
<th>Native Aquatic Species Rank</th>
<th>Native Aquatic Species Weight</th>
<th>Rare Aquatic Species Rank</th>
<th>Rare Aquatic Species Weight</th>
<th>Aquatic Irreplaceability Rank</th>
<th>Aquatic Irreplaceability</th>
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<tbody>
<tr>
<td>5</td>
<td>0.525644</td>
<td>5</td>
<td>0.785969</td>
<td>5</td>
<td>0.433962</td>
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</table>

**Native Fish Count**: 9

**Native Invertebrate Count**: 72

**Native Amphibian Count**: 7

**Native Reptile Count**: 4

**Rare Fish Count**: 1

**Rare Amphibian Count**: 3

**Rare Reptile Count**: 1

<table>
<thead>
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<th>Rare Fish Count</th>
<th>Rare Aquatic Amphibian Count</th>
<th>Rare Aquatic Reptile Count</th>
<th>Fish Irreplaceability</th>
<th>Aquatic Amphibian Irreplaceability</th>
<th>Aquatic Reptile Irreplaceability</th>
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<td>1</td>
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<td>0.161756</td>
<td>0.0165</td>
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<td>Hex_ID</td>
<td>HUC12</td>
<td>Name</td>
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<td></td>
<td></td>
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<tr>
<td>18972</td>
<td>180101100302</td>
<td>Alder Creek-Big Sulphur Creek</td>
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<table>
<thead>
<tr>
<th>Ecoreg Biodiversity Rank</th>
<th>Ecoreg Biodiversity Weight</th>
<th>State Biodiversity Rank</th>
<th>Ecoreg Terr Biodiversity Rank</th>
<th>State Terr Biodiversity Rank</th>
<th>State Aqua Biodiversity Rank</th>
<th>Ecoreg Native Sp Rank</th>
<th>State Native Sp Rank</th>
<th>Ecoreg Terr Native Sp Rank</th>
<th>State Terr Native Sp Rank</th>
<th>State Aqua Native Sp Rank</th>
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<table>
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<th>State Terr Rarity Rank</th>
<th>State Aqua Rarity Rank</th>
<th>Ecoreg Irreplaceability Rank</th>
<th>State Irreplaceability Rank</th>
<th>Ecoreg Terr Irreplaceability Rank</th>
<th>State Terr Irreplaceability Rank</th>
<th>State Aqua Irreplaceability Rank</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
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<td>2</td>
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</table>

<table>
<thead>
<tr>
<th>Terr Connectivity Rank SUPP</th>
<th>Terr Climate Resilience Rank SUPP</th>
<th>Terr Significant Habitat Rank SUPP</th>
<th>Aqua Significant Habitat Rank SUPP</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
ACE: DATA STRUCTURE

Biodiversity

Significant Habitats

Connectivity

Climate Resilience

Recreation

ACE: Areas of Conservation Emphasis

SWAP ● Stressors ● Land conservation status
Significant Habitats

- Rare vegetation types
- Oak Woodlands
- Riparian
- Freshwater wetlands
  - Meadows and Emergent Wetlands
  - Ponds
  - Vernal Pools
  - Seeps and Springs
- Saline Wetlands
- Lakes
- Significant Habitat Areas for focal species
  - Anadromous fish
  - *additional species in Phase 2*
Active Layer: Terrestrial Significant Habitats

Summary [ds2721]

- ACE v3.0 Model
- Species Biodiversity
- Significant Habitats

** Significant Terrestrial Habitats

- Terrestrial Significant Habitats Summary [ds2721]

Significant Terrestrial Habitat Rank

- 5 - high
- 4
- 3
- 2
- 1 - low

** Terrestrial Significant Habitat Datasets

- Rare Vegetation Types [ds2722]
- Oak Woodlands [ds2723]
- Riparian [ds2724]
- Freshwater Wetlands [ds2725]
- Saline Wetlands [ds2726]

** Significant Aquatic Habitats

- Connectivity
- Climate Resilience
- SWAP
- Stressors
Vegetation - Great Valley Ecoregion [ds2632]

Summary

This dataset was produced to facilitate regional planning, conservation, and enhancement of biological resources by state agencies, project partners and regional stakeholders.

Description

Geodatabase feature class containing a map of vegetation within the Great Valley Ecoregion produced by the Geographical Information Center (GIC) at CSU Chico. The dataset combines both new mapping and the previously completed Central Valley Riparian and Sacramento Valley and the Southern San Joaquin Valley vegetation maps. Vegetation polygons were manually digitized as interpreted using the National Agricultural Inventory Program’s (NAIP) 2009 (Central Valley Riparian and Sacramento Valley map), 2012 (Southern San Joaquin Valley map) and 2014 (balance of San Joaquin Valley) aerial imagery at a scale of 1:2000. The minimum mapping unit (mmu) for natural vegetation is 1.0 acre, with a minimum average width of 10 meters. The mmu for agricultural and urban polygons is 10 acres. Vegetation is attributed to the Group and Alliance level of the state and national vegetation hierarchy. In some cases, polygons were attributed only to Group or Macrogroup level when the Alliance could not be determined from photointerpretation. The map classification is based on the key to vegetation...
ACE: DATA STRUCTURE

SWAP  ●  Stressors  ●  Land conservation status
California Essential Habitat Connectivity

Regional Connectivity Analyses (11)
California Essential Habitat Connectivity

Regional Connectivity Analyses (11)

[Image of a map showing connectivity analysis and a table with columns for Rank, Linkage, Linkage datasets, Natural Landscape Block, and Block Percent]
California Habitat Connectivity Projects

Data from the California Essential Habitat Connectivity project (download the GIS Data (ESRI .zip)):

- **BIOS Habitat Connectivity Viewer**
  - Open to the public - all connectivity layers are included

Data from the Northern Sierra Nevada Foothills (NSNF) Habitat Connectivity project:

- **NSNF Habitat Connectivity Viewer**
  - Open to the public - all available NSNF connectivity layers are included

Desert Renewable Energy Conservation Plan

- **BIOS Renewable Energy Viewer**
  - Open to the public

- **BIOS Renewable Energy Viewer**
  - Password required - additional secured layers are included

[www.wildlife.ca.gov/data/BIOS](http://www.wildlife.ca.gov/data/BIOS)
<table>
<thead>
<tr>
<th>Ref</th>
<th>Hex_ID</th>
<th>Climate Resilience Rank</th>
<th>Veg Refugia Score</th>
<th>Percent of Hex Assessed</th>
<th>Eco_Sect</th>
<th>Eco_Name</th>
<th>County</th>
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</thead>
<tbody>
<tr>
<td>Go</td>
<td>18413</td>
<td>4</td>
<td>0.633013</td>
<td>0.876404</td>
<td>M261B</td>
<td>Northern California Coast Ranges</td>
<td>LAKE</td>
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</table>
ACE: DATA STRUCTURE

BIODIVERSITY

SIGNIFICANT HABITATS

CONNECTION

CLIMATE RESILIENCE

RECREATION

Areas of Conservation Emphasis

SWAP  ●  Stressors  ●  Land conservation status
CDFW’s mission includes providing Californians with high quality recreational opportunities that involve fish and wildlife. The goal of this component is to provide fish and wildlife recreational use and need information to support the Wildlife Conservation Board and other public access programs. At present, the currently available recreation-related information in BIOS is “bookmarked” for such use. Future work will focus on developing additional relevant datasets based on specific needs for incorporation into ACE.

Disadvantaged communities in California are specifically targeted for investments aimed at improving public health, quality of life and economic opportunity in California’s most burdened communities. Several mapping tools are already available online. One such tool is the DAC Mapping Tool, developed by the Department of Water Resources to assist local agencies and other interested parties in evaluating disadvantaged community status throughout the State, using the definition provided by Proposition 84 IRWM Guidelines (2015).
Disadvantaged communities in California are specifically targeted for investments aimed at improving public health, quality of life and economic opportunity in California’s most burdened communities. Several mapping tools are already available online. One such tool is the [DAC Mapping Tool](https://www.wildlife.ca.gov/Data/Analysis/Ace#523731774-recreation), developed by the Department of Water Resources to assist local agencies and other interested parties in evaluating disadvantaged community status throughout the State, using the definition provided by Proposition 84 IRWM Guidelines (2015).
ACE: DATA STRUCTURE

Biodiversity

Significant Habitats

Connectivity

Climate Resilience

Recreation

Areas of Conservation Emphasis

SWAP ● Stressors ● Land conservation status
## SWAP Terrestrial Targets - 2015

<table>
<thead>
<tr>
<th>SWAPProvince</th>
<th>ConservationUnit</th>
<th>ProvinceChapter</th>
<th>ConservationUnitDescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay Delta and Central Coast</td>
<td>Central California Coast</td>
<td>5.3</td>
<td>12</td>
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<table>
<thead>
<tr>
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<th>Habitat_Type_Group</th>
<th>Conservation_Target_1</th>
<th>Target_1_NVCS_Code</th>
<th>Target_1_Summary_Page</th>
<th>Target_1_Strategy_Page</th>
<th>Target_1_Climate_Page</th>
</tr>
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<tbody>
<tr>
<td>Coastal Scrub</td>
<td>Shrub</td>
<td>Coastal Sage Scrub</td>
<td>M044</td>
<td>5.3-12</td>
<td>5.3-40</td>
<td>G-3</td>
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</table>

<table>
<thead>
<tr>
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<th>Target_2_Summary_Page</th>
<th>Target_2_Strategy_Page</th>
<th>Target_2_Climate_Page</th>
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</thead>
<tbody>
<tr>
<td>Coastal Dune and Bluff Scrub</td>
<td>M058</td>
<td>5.3-12</td>
<td>5.3-40</td>
<td>G-3</td>
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<table>
<thead>
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<th>Target_3_Summary_Page</th>
<th>Target_3_Strategy_Page</th>
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<tbody>
<tr>
<td>North Coast Deciduous Scrub and Terrace Prairie</td>
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<td>5.3-12</td>
<td>5.3-40</td>
<td>G-3</td>
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</tbody>
</table>

---

### All Possible Targets

- M050 (5.3-12, 5.3-37, G-2), Coastal Dune and Bluff Scrub (M058, 5.3-12, 5.3-40, G-3), Coastal Sage Scrub (M044, 5.3-12, 5.3-40, G-3)
ACE: DATA STRUCTURE

SWAP • Stressors • Land conservation status
- Terrestrial Biodiversity
- Aquatic Biodiversity
- Significant Habitats
- Connectivity
- Climate Resilience

- SWAP
  - SWAP Terrestrial Targets - 2015 [ds1966]
  - SWAP Aquatic Targets - 2015 [ds2733]

- Stressors
  - Sea Level Rise
    - Sea Level Rise Inundation Model - Sacramento
      San Joaquin Delta - UC Berkeley [ds2684]
    - Sea Level Rise Inundation Model - San Francisco
      Bay - UC Berkeley [ds2695]
    - Sea Level Rise Inundation Model - California
      Coast - UC Berkeley [ds2696]
  - Urbanization
    - Land Use Change Probability - 2100 - USGS
      [ds2669]
ACE: TALK OVERVIEW

1. Introduction: Goals and Purpose

2. Navigating ACE: Where to find the information

3. ACE Model: Datasets, data sources, attributes, caveats

4. Example scenarios: How the data and viewer can be used

5. Future updates
ACE: 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.
BIODIVERSITY
### Terrestrial Biodiversity Summary

<table>
<thead>
<tr>
<th>Native Count</th>
<th>Native Amphibian Count</th>
<th>Native Reptile Count</th>
<th>Native Bird Count</th>
<th>Native Mammal Count</th>
<th>Native Plant Count</th>
<th>Game Species Count</th>
<th>Climate Vulnerable Species Count</th>
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<td>217</td>
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<th>Rare Bird Count</th>
<th>Rare Mammal Count</th>
<th>Rare Plant Count</th>
<th>All Taxa Endem</th>
<th>Endemic Amphibian Count</th>
<th>Endemic Reptile Count</th>
<th>Endemic Bird Count</th>
<th>Endemic Mammal Count</th>
<th>Endemic Plant Count</th>
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<tr>
<td>7</td>
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<td>1</td>
<td>1</td>
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# Aquatic Species List

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<th>Observation</th>
<th>Rare</th>
<th>ELMCODE</th>
<th>CWHR_code</th>
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<td>Y</td>
<td>Y</td>
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<td>R004</td>
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<td>180500040601</td>
<td>1</td>
<td>Ambystoma californiense</td>
<td>california tiger salamander</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>AAAA01180</td>
<td>A001</td>
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<tr>
<td>180500040601</td>
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<td>Ameletidae</td>
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<td></td>
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<td>Anaxyrus boreas</td>
<td>western toad</td>
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<td>N</td>
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<td>N</td>
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</tbody>
</table>
SIGNIFICANT HABITATS
Vegetation (fveg) - CALFIRE FRAP
[ds1327]

Summary
 Initially, CALFIRE-FRAP compiled the "best available" land cover data into a single data layer, to support the various analyses required for the Forest and Rangeland Assessment, a legislatively mandated function. These data are being updated to support on-going analyses and to prepare for the next FRAP assessment in 2015.

Description
 An accurate depiction of the spatial distribution of habitat types within California is required for a variety of legislatively mandated government functions. The California Department of Forestry and Fire Protection's CALFIRE Fire and Resource Assessment Program (FRAP), in cooperation with California Department of Fish and Wildlife VegCamp program and extensive use of USDA Forest Service Region 5 Remote Sensing Laboratory (RSU) data, has compiled the "best available" land cover data available for California into a single comprehensive statewide data set. The data span a period from approximately 1990 to 2014. Typically the most current, detailed and consistent data were collected for various regions of the state. Decision rules were developed that controlled which layers were given priority in areas of overlap. Crosswalks were used to compile the various sources into the common classification scheme, the California Wildlife Habitat Relationships (CWHR) system.
<table>
<thead>
<tr>
<th>Connectivity Rank</th>
<th>Linkage Rank</th>
<th>Linkage datasets</th>
<th>Natural Landscape Block Rank</th>
<th>Natural Landscape Block Percent</th>
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<td>3</td>
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</table>
CONNECTIVITY
CLIMATE RESILIENCE

Terrestrial Climate Change Resilience [ds2738]

Climate Resilience Rank
- 5 - high
- 4
- 3
- 2
- 1 - low
- No Data

Terrestrial Connectivity [ds2734]
SWAP TARGETS

<table>
<thead>
<tr>
<th>SWAP_Province</th>
<th>Conservation_Unit</th>
<th>Province_Chapter</th>
<th>Conservation_Unit_Description</th>
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</thead>
<tbody>
<tr>
<td>Bay Delta and Central Coast</td>
<td>Central Valley Coast Ranges</td>
<td>5.3</td>
<td>13</td>
</tr>
</tbody>
</table>

**All Possible Targets**

American Southwest Riparian Forest and Woodland (M036, 5.3-12, 5.3-33, G-8), California Grassland and Flowerfields (M045, 5.3-12, 5.3-37,
ACE: 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.
CONSERVED LANDS
- Identify conservation elements present at a site
- Compare relative value between sites
- Evaluate location and relative juxtaposition of conservation elements, land ownership, stressors, etc.
ACE: TALK OVERVIEW

1. Introduction: Goals and Purpose
2. Navigating ACE: Where to find the information
3. ACE Model: Datasets, data sources, attributes, caveats
4. Example scenarios: How the data and viewer can be used
5. Future updates
ACE: FUTURE UPDATES

• Version 3, Phase 2
  • Connectivity
  • Climate resilience
  • Recreation
  • Aquatic Data
• Regular updates (annual)
ACE: HOW TO SUBMIT YOUR DATA

• Submit datasets to BIOS
https://www.wildlife.ca.gov/Data/BIOS/Submitting-Data

• CNDDDB field survey forms
https://www.wildlife.ca.gov/data/CNDDDB/submitting-data

Contact us
For more information, contact:
Karen Miner, Karen.Minер@wildlife.ca.gov or
Melanie Gogol-Prokurat, Melanie.Gogol-Prokurat@wildlife.ca.gov