Terrestrial Significant Habitats

DS2721

SUBSETS BY HABITAT TYPE

DS2722 – Rare Vegetation Types
DS2723 – Oak Woodlands
DS2724 – Riparian Habitat
DS2725 – Freshwater Wetlands
DS2726 – Saline Wetlands
DS2729 – Meadows and Emergent Wetlands
DS2730 – Ponds
DS2731 – Seeps and Springs
DS2732 – Vernal Pools

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INTENT AND PURPOSE

The **Terrestrial Significant Habitats** dataset is one of the four key components of the California Department of Fish and Wildlife's Areas of Conservation Emphasis (ACE) suite of terrestrial conservation information, along with Terrestrial Biodiversity, Connectivity, and Climate Change Resilience. This data set was developed to support conservation planning efforts by allowing users to spatially evaluate the distribution of terrestrial significant habitats across the landscape. Terrestrial Significant Habitats may include habitats or vegetation types that are the focus of state, national, or locally legislated conservation laws, as well as key habitat areas that are essential to the survival and reproduction of focal wildlife species. The Terrestrial Significant Habitats data set is expected to be

used along with other ACE datasets to provide a robust assessment of the presence and relative importance of elements important for biodiversity conservation.

The Terrestrial Significant Habitats dataset provides a variety of information on terrestrial habitats synthesized from vegetation and land cover maps. This includes Rare Vegetation Types [ds2722], Oak Woodland Habitat [ds2723], Riparian Habitat [ds2724], Saline Wetlands Habitat [ds2726], and several types of Freshwater Wetlands Habitats [ds2725]. The number of significant habitats in each hexagon is summarized in the **Significant Terrestrial Habitat Summary**, and a reference to the original vegetation or landcover datasets that map the significant habitat elements is provided for each hexagon.

BACKGROUND INFORMATION

Terrestrial Significant Habitats, formerly called Sensitive Habitats, has been a component of ACE since its release in 2009. The differences between this set of significant habitats data and the previous version of ACE (ACE-II) are:

1) Significant habitats data was formerly compiled into a single ACE-II Sensitive Habitats data category. The current version of ACE compiles the data into separate Terrestrial Significant Habitats and Aquatic Significant Habitats categories, although there is some overlap in the data included in both categories (e.g., habitat types that occur on the boundary between aquatic and terrestrial, such as freshwater wetlands and riparian). High value salmonid habitat was formerly included in the ACE-II Sensitive Habitats data category along with terrestrial data, but is now included in the Aquatic Significant Habitats data category.

2) ACE-II Sensitive Habitats was formerly included as a component of the Biodiversity (biological richness) summary layer. In this version, the Biodiversity summary layer includes only species biodiversity, and the Significant Habitats datasets have been summarized separately.

3) Oak Woodlands was added as a significant habitat type in 2017, based on its priority in conservation and acquisition planning for some counties, local jurisdictions, and the Wildlife Conservation Board (WCB). Previously, only oak woodland types mapped as Rare Natural Communities in the California Natural Diversity Database (CNDDB) had been included in ACE-II Sensitive Habitats.

4) Several sub-categories are included under Freshwater Wetlands in this version, to aid users in visualizing information about different types of freshwater wetlands across the state. Subcategories include freshwater emergent wetlands, ponds, seeps and springs, and vernal pools.

Further work developing the ACE Significant Habitats dataset will continue in 2018 (ACE 3, phase 2). This includes further compiling datasets for inclusion in existing significant habitats categories, further developing summary statistics and mapping approaches to best meet user needs, and compiling and adding focal-species significant habitat information.

The ACE Terrestrial Significant Habitats dataset provides a variety of information on terrestrial habitats synthesized from vegetation and land cover maps.

Source Data

Rare Vegetation Types [ds2722]

> Rare vegetation types included for the purposes of this project are vegetation types mapped and ranked as rare by the Vegetation Classification and Mapping Program (VegCAMP), as well as those designated as rare by Holland (1986) and mapped in CNDDB (1:24,000 polygons). The vegetation data mapped by VegCAMP, which covers about 50% of the state, is newer and more accurately mapped using National Vegetation Classification (NVC) / Survey of California Vegetation (SCV) standards implemented by VegCAMP (VegCAMP, 2018; https://www.wildlife.ca.gov/Data/VegCAMP). Both CNDDB and VegCAMP datasets use the same rarity ranking system and consider as "rare" only those types of vegetation rated G3S3 through G1S1 using the Natural Heritage system. The VegCAMP data supplants the older CNDDB rare natural community information occurrences where the two overlap. CNDDB occurrences are still the best data in parts of the state where more detailed recent mapping does not exist.

> Regardless of the source, the rare vegetation coverage is not comprehensive across the state. A simple test of this point can be conducted by activating the rare vegetation layer and noting how strongly correlated the density of rare vegetation hexes is with the occurrence of detailed vegetation information as depicted in the BIOS Vegetation (MCV / NVCS) Mapping Projects - California [ds515].

> The dataset includes a reference field giving the BIOS dataset number(s) of the original vegetation or landcover dataset(s) that map rare vegetation types in each hexagon.

Oak Woodlands [ds2723]

> Oak woodlands includes the CWHR habitat types Blue Oak Woodland, Blue Oak – Foothill Pine, Valley Oak Woodland, and Coastal Oak Woodland mapped in the 2015 version of fveg (FVEG15_1, CalFire-FRAP 2015), and oak woodland vegetation types mapped by VegCAMP. Fveg is considered the "best available" compilation of vegetation data for the state. The vegetation data in fveg is from multiple sources (USFS, USGS Gap or Landfire, and CDFW VegCAMP). These sources use different classification systems, and different mapping techniques. To make a uniform map, all information was translated to the lowest common denominator. The CWHR habitat system is the common denominator providing a "crosswalk" between them. Some areas lack detail for different types of oak woodland. Fveg contains oak woodland information from most VegCAMP vegetation maps published prior to 2015, and for the purposes of ACE, we added oak woodland information from VegCAMP vegetation maps that are not reflected in fveg. Because the oak woodland data is presented as present or absent

in 2.5 mile hexagons, this dataset will provide a general distribution and categorical depiction of most of California's oak woodlands.

The dataset includes a reference field giving the BIOS dataset number(s) of the original vegetation or landcover dataset(s) that map oak woodland vegetation types in each hexagon.

Riparian [ds2724]

Riparian includes vegetation types encompassed by the general CWHR habitat types Valley Foothill Riparian, Montane Riparian, Desert Riparian, Palm Oasis, and Aspen. This riparian data set is derived from the fine scale NVC/SCV VegCAMP vegetation maps, National Wetlands Inventory riparian mapping for California (https://www.fws.gov/wetlands/Data/Mapper.html), fveg best available data (FVEG15_1, CalFire-FRAP 2015), and several BIOS datasets that contain information on CDFW riparian habitat survey and monitoring data. The dataset includes a reference field giving the BIOS dataset number(s) of the original vegetation or landcover dataset(s) that map riparian vegetation types in each hexagon.

Freshwater Wetlands [ds2725]

The freshwater wetlands data set is a compilation of meadows and freshwater emergent wetlands, ponds, seeps and springs, and vernal pools. Where possible, mapped wetlands are separated into those four categories of freshwater wetland. However, there is some overlap between categories because not all source datasets group their wetland types into these four categories. For example, vernal pools, seeps, and springs may sometimes be mapped as emergent wetlands; springs may sometimes be mapped as ponds or meadows. Freshwater wetlands data are derived from a variety of sources including fine scale NVC/SCV VegCAMP vegetation maps, National Wetlands Inventory mapping (USFWS 2017; https://www.fws.gov/wetlands/Data/Mapper.html), fveg15_1 (CalFire 2015), as well as additional BIOS datasets specifically mapping vernal pools, meadows, seeps and springs.

The dataset includes a reference field giving the BIOS dataset number(s) of the original vegetation or landcover dataset(s) that map freshwater wetland types in each hexagon. Users should refer to the source datasets and reports (https://www.wildlife.ca.gov/Data/VegCAMP/Reports-and-Maps) for a full description of map classes and associated wetland definitions.

- Meadows and Emergent Wetlands – ds2729
  This includes freshwater emergent vegetation types mapped in 1) fine scale NVC/SCV VegCAMP vegetation maps; 2) Fveg15_1 (FEW); and, 3) NWI. In addition it includes mapped Sierra Nevada mountain meadows compiled by UC Davis (Fryjoff-Hung & Viers, 2012; https://meadows.ucdavis.edu/) .
- Ponds – ds2730
  This includes ponds mapped by NWI, excluding man-made or anthropogenically-modified ponds.
- Seeps and Springs – ds2731

This includes rare seep and spring natural communities mapped by CNDDB, desert springs mapped in support of the Desert Renewable Energy Conservation Plan [ds820], and the Mojave Desert Spring Survey (Zdon 2016).

- o Vernal Pools – ds2732
  This includes vegetation polygons mapped as vernal pool grassland in NVC/SCV VegCAMP vegetation maps; vernal pools and vernal pool fairy shrimp occurrences mapped by CNDDB (when not more specifically mapped by another data source); vernal pool mapping projects of San Diego [ds188], the South Coast Ranges [ds948], Modoc National Forest [ds949], and the Great Valley [ds1070]; and vernal pools mapped in the California Aquatic Resource Inventory (CARI; SFEI 2017)

Saline Wetlands [ds2726]

Saline wetlands includes areas mapped as estuarine emergent wetlands by NWI, or vegetation types that crosswalk to CWHR type "Saline Emergent Wetlands"(SEW) in NVC/SCV VegCAMP vegetation maps.

Data Processing Steps and Ranking Criteria

The ACE Significant Habitat ranks provide a broad overview of important habitat areas across the state.

To enable standardized evaluation of habitat with other ACE datasets, all data compiled in this module are presented in presence/absence from within 2.5-mile hexes. Significant habitat ranks are based on the number of significant habitat categories present within the hexagon. Note that some hexagons contain more than one rare vegetation type, but in this version are given a score of 1 for rare vegetation regardless of the number of different types present. This helps to prevent inflation of scores in areas with more detailed fine-scale vegetation mapping. When fine-scale vegetation maps are available statewide in the future, the analysis could incorporate the number of rare vegetation types, and/or the area of rare vegetation, to further refine the scoring. Significant habitat areas are not ranked by size or importance, because current resolution and quality of vegetation maps does not support analysis at this level on a statewide basis. Further work to refine ranking criteria will continue during ACE 3, Phase 2 in 2018.

List of data sources

All fine-scale vegetation data sources may be viewed by looking at BIOS ds515, the "map of maps" that shows the location and status of all the fine scale vegetation maps (https://map.dfg.ca.gov/bios/?bookmark=940).

California Aquatic Resource Inventory (CARI; SFEI 2017)
Vegetation - Anza-Borrego Desert State Park [ds165]
Vegetation - Point Reyes [ds169]
Vegetation - San Felipe Valley [ds172]

Vernal Pool Amphibians, Shrimp, Plants - San Diego [ds188] (Beauchamp and Bauder 2002)
Vegetation - Napa County and Blue Ridge Berryessa [ds201]
Vegetation - Pine Creek, WA and Fitzhugh Creek, WA [ds484]
Vegetation - Lassen Foothills [ds564]
Vegetation - Northern Sierra Nevada Foothills [ds566]
Vegetation - Gabilan Ranch, 2006 [ds614]
Vegetation - San Benito River, 2007 [ds616]
Vegetation - McKenzie Preserve [ds703]
Vegetation - Oak Grove, San Diego County, 2011 [ds712]
Vegetation - Garcia River, Mendocino County, 2005 [ds722]
Vegetation - Joshua Tree National Park, 2012 [ds730]
Vegetation - Mojave Desert for DRECP - Final [ds735]
Vegetation - Canada de San Vicente - San Diego County [ds770]
Unique and Important Vegetation Observations for the DRECP, 2013 [ds820]
Vegetation - Liberty Island, 2012 [ds821]
Vegetation - Santa Monica Mountains NRA [ds935]
Vegetation - Palos Verdes NCCP Preserve [ds939]
Vegetation - Pinnacles National Monument [ds947]
Vernal Pools, South Coast Ranges [ds948] (Holland 2003)
Vernal Pool Complexes, Modoc National Forest [ds949] (Holland 2001)
Vegetation - Marin County Open Space District [ds957]
Vegetation - John Muir National Historic Site [ds958]
Vegetation - Lower Santa Clara River [ds983]
Vegetation - Sequoia and Kings Canyon National Parks Vegetation Mapping Project [ds984]
Vegetation - Fish Slough [ds985]
Vegetation - Whiskeytown National Recreation Area Vegetation Mapping Project [ds986]
Vegetation - Marin Municipal Water District (MMWD) [ds996]
Vegetation - Mid Peninsula Open Space [ds997]
Vegetation Map - Johnson Valley - CDFW [ds1019]
Vegetation - Suisun Marsh - 2012 [ds1029]
Vegetation - Western Madera County [ds1057]
Vernal Pool Distribution - California's Great Valley - 2012 [ds1070] (Witham et al. 2014)
Vegetation - Carrizo Plain National Monument, Ecological Reserve and Adjacent Elk Range [ds1094]
Vegetation - Western Riverside County Update - 2012 [ds1196]
Vegetation (fveg) - CALFIRE FRAP [ds1327] (CALFIRE 2015)
Vegetation - Proposed Tehachapi Pass High Speed Rail Corridor [ds1328]
Vegetation - Orange County - 2012 [ds1336]
Vegetation - Cow Creek - 2013 [ds1345]
Vegetation - Mill Creek - 2013 [ds1346]
Vegetation - Point Mugu [ds1500]
National Wetlands Inventory - California - USFWS [ds2630] (USFWS 2017)
Vegetation - Great Valley Ecoregion [ds2632]

Mountain Meadows - Sierra Nevada - UC Davis [ds2671] (Fryjoff-Hung & Viers 2012)
Vegetation - Suisun Marsh - 2015 [ds2676] (i.e., Suisun_2015)
Vegetation - Sonoma County [ds2691] (i.e., Sonoma)

HOW TO USE THE DATA LAYER

The ACE Significant Habitats dataset provides a single snapshot of significant habitat information across the state. The scoring indicates how many significant habitats are mapped within a hexagon, and the data attributes point users to the original source datasets that have mapped significant habitats within the hexagon.

Common uses of the dataset include:

1. Select a hexagon and view the attribute table to determine whether there is a mapped significant habitat within the hexagon, and what type(s) of significant habitats have been mapped in the area. The BIOS dataset number of any dataset with significant habitat in the hexagon is given in the ACE attribute table. The user can then use that information to overlay the BIOS source dataset to see exactly where the significant habitats are mapped.
2. Select a hexagon to view its overall significant habitat rank (1-5) and the significant habitats that comprise that rank, and how it compares with neighboring or other hexagons.

Example

Let's say you are interested in evaluating a specific section of land in coastal Mendocino County for inclusion in a conservation planning process. Part of that process involves evaluating it for any state sensitive rare vegetation/natural communities, specific areas of saline wetlands, riparian, freshwater wetlands, and rare natural communities.

Trial 1:

1. Locate the parcel of interest by noting the approximate coordinates of the corners of the property, or you can select a CPAD parcel or other parcel covered in the Ownership data layers in the Legend.
2. Add those coordinates to the coordinates window of the ACE v 3.0 GeoFind tool on the advanced tools menu. Click the Find button on the tool to navigate the map to your chosen location.
3. Begin your evaluation by selecting Saline Wetlands, the most important data for your assessment.
4. Determine whether there is mapped saline wetlands within the hexagon(s) intersecting your property of interest. View the attribute table to see which source datatset(s) map saline wetlands here. Add the BIOS source dataset(s) for a finer-scale view of the mapped locations of significant habitats in the hexagon.
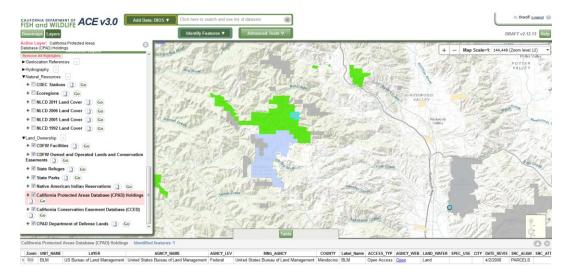5. Repeat for other significant habitat types.

6. Note that the ACE Significant Habitats data layers summarize existing information, but existing habitat mapping is not comprehensive across the state. Assessing the ACE Significant Habitat information does not replace the need for site-specific surveys when making parcel-level decisions.
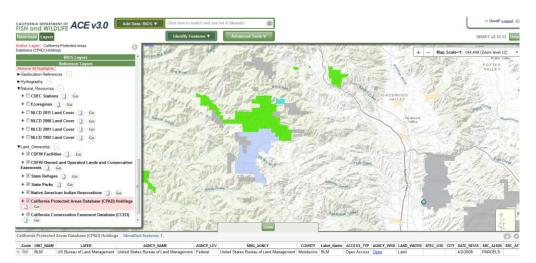
Trial 2:

You are asked to evaluate three units currently managed by the BLM for selection within a potential wildlife corridor. You want to know which one of these has the highest overall terrestrial habitat rank. **Please note** that ACE is not intended for evaluation of individual parcels, which are generally smaller than the ACE hexagon analysis unit. However, ACE can provide landscape context, and information on data sources that map elements of interest at the parcel scale.
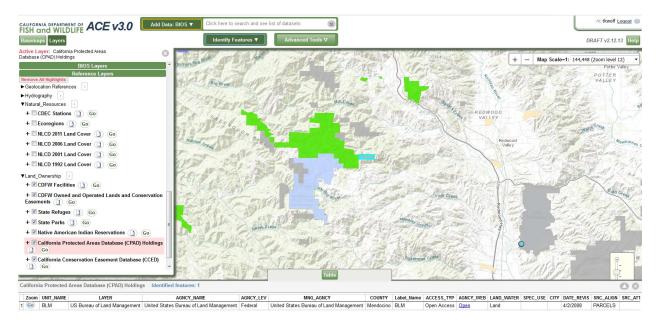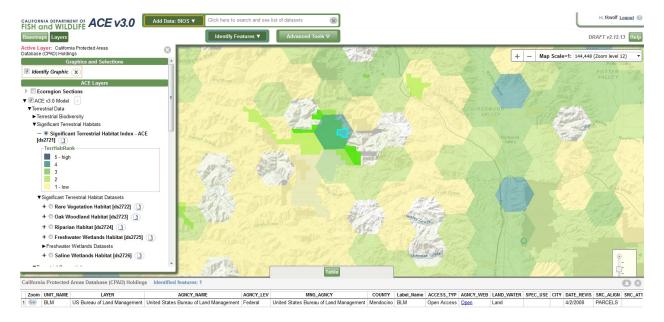
Selection 1

Selection 2:

Selection 3:

You then activate the Terrestrial Significant Habitat Summary showing color-coded hexagons in your area of interest. In the figure below, Selection 1 falls in a hexagon showing multiple significant habitat types. Note that you would need to overlay the source data to determine if these habitat types fall within the unit of interest, or if they occur nearby.

Field Definitions

Using the *Identify Features* or *Select* tool in the ACE viewer, users can obtain a table of information (i.e., attribute table) for a hexagon or area of interest. The ACE viewer allows the user to print the table or save as a spreadsheet (.csv) file. The definitions below describe the attribute table fields for this dataset.

Field	Definition
Significant Terrestrial Habitat Rank [ds2721]	ACE ranks of 1-5 assigned to the statewide normalized significant habitat values, with all zero values removed and remaining values broken into 5 quantiles (each rank containing approximately the same number of hexagons).
Significant Terrestrial Habitat Weight [ds2721]	Statewide normalized sum of terrestrial significant habitats in the hexagon.
Number of Significant Terrestrial Habitats [ds2721]	Sum of Rare Vegetation, Oak Woodland, Riparian, Freshwater Wetlands, and Saline Wetlands fields.
Rare Vegetation [ds2721, ds2722]	Presence of rare vegetation types mapped in CNDDB and VegCAMP fine-scale vegetation maps. Includes types denoted as "Rare" within maps, or as S1, S2 or S3. Indicated as "Y" if a rare vegetation type is mapped in the hexagon, and "N" if it is not mapped in the hexagon.
RareVeg_datasets [ds2722]	List of datasets with rare vegetation mapped in the hexagon.
Oak Woodland [ds2721, ds2723]	Presence or absence of California oak woodlands including blue oak woodland, blue oak/foothill pine, coastal oak woodland and valley oak woodland (both upland and riparian valley oak woodlands are included here). Indicated as "Y" if oak woodland is mapped in the hexagon, and "N" if it is not mapped in the hexagon.
OakWoodld_datasets [ds2723]	List of datasets with oak woodland mapped in the hexagon.
Riparian [ds2721, ds2724]	Presence of vegetation types that crosswalk to CWHR types "Desert Riparian"(DRI), "Montane Riparian"(MRI), "Valley Foothill Riparian"(VRI), "Palm Oasis"(POS), and "Aspen"(ASP). Indicated as "Y" if riparian is mapped in the hexagon, and "N" if it is not mapped in the hexagon.
Riparian_datasets [ds2724]	List of datasets with riparian mapped in the hexagon.
Freshwater Wetlands [ds2721, ds2725]	Count of Freshwater Wetland types (Meadow and Emergent Wetlands, Ponds, Seeps and Springs, Vernal Pools) in the hexagon.
Meadow and Emergent Wetlands [ds2721, ds2725, ds2729]	Presence of mountain meadows, freshwater emergent wetlands mapped by the National Wetlands Inventory (NWI) and vegetation types that crosswalk to CWHR types "Freshwater Emergent Wetland"(FEW), and "Wet Meadow"(WTM). Indicated as "Y" if mapped in the hexagon, and "N" if it is not mapped in the hexagon.
MeadowFEW_datasets [ds2725, ds2729]	List of datasets with meadows or freshwater emergent wetlands mapped in the hexagon.

Field	Definition
Ponds [ds2721, ds2725, ds2730]	Presence of natural ponds as mapped by NWI. Stock ponds or other anthropogenically modified ponds not included. Indicated as "Y" if natural pond mapped in hexagon, "N" if not mapped in the hexagon.
Ponds [ds2725, ds2730]	List of datasets with ponds mapped in the hexagon.
Seeps and Springs [ds2721, ds2725, ds2731]	Presence of areas mapped as seeps or springs. Indicated as "Y" if seep or spring mapped in the hexagon, "N" if not mapped in the hexagon. Note that this dataset includes features specifically mapped as seeps or springs; however, additional seep and spring locations may be included in other freshwater wetland categories.
SeepsSpring_datasets [ds2725, ds2731]	List of datasets with seeps or springs mapped in the hexagon.
Vernal Pools [ds2721, ds2725, ds2732]	Presence of areas mapped as vernal pools or vernal pool complexes. Indicated as "Y" if vernal pool mapped in the hexagon, "N" if not mapped in the hexagon.
VernalPool_datasets [ds2725, ds2732]	List of datasets with vernal pools mapped in the hexagon.
Saline Wetlands [ds2721, ds2726]	Presence of areas mapped as estuarine emergent wetlands by NWI, or vegetation types that crosswalk to CWHR type "Saline Emergent Wetlands"(SEW). Indicated as "Y" if saline wetland mapped in the hexagon, "N" if not mapped in the hexagon.
SaltWetld_datasets [ds2726]	List of datasets with saline wetlands mapped in the hexagon.

DATA PRECISION AND LIMITATIONS

ACE provides data to help guide and inform conservation priorities in California. All ACE data layers are limited by the accuracy, scale, extent of coverage, and completeness of the input data at the time they are run. We highly recommend reviewing available metadata and ACE Factsheets prior to interpreting these data. The ACE maps do not replace the need for site-specific evaluation of biological resources and should not be used for regulatory purposes.

The ACE habitat data was selected to represent a useful array of different habitat features that reflect state and local mandates currently used to support landscape conservation in California. For example, rare natural communities are inventoried and ranked by rarity and threat by CDFW to address part of California Environmental Quality Act (CEQA) project requirements; riparian is addressed through Sect 1600 and Sect 404 permitting; and wetlands of different types are addressed through other federal and state legislation (e.g., Clean Water Act, State Groundwater Management Act). Wetlands, riparian, and rare communities are also used by CDFW's Wildlife Conservation Board as key criteria for conservation planning.

The most important considerations used for inclusion beyond those mentioned, are that:

1. The data can be compiled to provide uniform statewide coverage (e.g., no major information gaps in the state). However, note that the age, accuracy, and precision of the best-available vegetation data does vary across the state.

2. Each dataset supplies useful information for specific purposes and does not conceptually overlap another. For example, wetlands data have, to the extent possible, been broken down into non-overlapping components (see list above). However, as described above, there is some overlap between freshwater wetlands categories.

Although some rare natural communities are also considered wetlands, not all wetlands are rare. The same is true for riparian. Therefore one can regard the scoring for such a situation as counting once for any wetland or riparian component present within the hex, and counting again for any additional riparian or wetland that is also considered a rare natural community. Rare natural communities, if present, are given a single one-time score, no matter if there is just one, or multiple kinds present in the hexagon.

Two levels of precision should be considered when using the ACE data. The first is the level of spatial resolution imparted by the standardized hexagonal grid. All ACE data, no matter the precision and accuracy of its source, is applied at the same 2.5-mile hexagon resolution. At this time all of the habitat information presented in this Terrestrial Habitat module is coded as either "present" (indicated by a "Y") or "absent" (indicated by a "N"). This allows for a simple synthetic scoring which totals up the number of different entities present in a particular hex ranging from 0-8 (since 8 habitat data categories are presented).

The second is the source information's original precision and accuracy. In the case of habitat data, this relates to the source mapping. Vegetation data that feeds the information on wetlands, riparian, and rare natural communities from relatively precise VegCAMP data is mapped at the vegetation alliance level and usually has a minimum map unit size of between 1 and 2 acres. The National Wetland Inventory also has a similar fine spatial scale (down to ¼ acre) that generally depicts individual isolated wetlands at a minimal scale of 1:24,000. CNDDB rare natural community data comes in different shapes and sizes depending upon the accuracy of the source. Much of the more accurate spatial data is similar in resolution and precision to the VegCAMP and NWI data. However, the CNDDB rare natural community data it is older and is considered to be less precise than more recent mapping.

Fveg15_1 is based on VegCAMP information where it exists, but it is currently available for about half the state (original data source and year for each pixel is available in the fveg15_1 attribute table). The remainder of the state is mapped in fveg using less precise and accurate data. Most of these data are based on US Forest Service mapping methods, which use LandSat 30 m pixel imagery to form polygons mapped to the CalVeg classification system. Vegetation including many rare types, wetlands, or riparian habitat tend to occur as small and/or narrow strips that cannot often be depicted using 30 m pixel-based imagery. The CalVeg classification system also tends to emphasize marketable timber and

other woody vegetation and tends to generalize categories of wetlands, riparian, and other non-economically important vegetation, thus obviating its use to detect some rare natural communities.

The development team for ACE have already made certain decisions that relate to scale-dependent issues. For example, wetland and riparian data was primarily sourced from datasets other than CalVeg or other 30 m pixel data. However, for rare natural communities the CNDDB is incomplete on many federal lands. Thus, currently there is no good synoptic source for fine scale spatial and thematic information on rare natural communities for much of the forested regions of the state. This shows up clearly if you apply the rare natural communities layer and compare the density of hexes with rare community data for a place like Sonoma County with adjacent Mendocino or Lake County, where no fine resolution vegetation mapping has yet occurred.

Users should be aware of the limitations of the source data based on its thematic and spatial resolution.

DATA ACCESS

All datasets are available for viewing and download in BIOS.

For assistance with interpretation of vegetation data, contact VegCAMP.

For assistance with interpretation of ACE datasets contact Melanie Gogol-Prokurat.

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GIS Scripting: Ryan Hill and Sandra Hill

Factsheet: Todd Keeler-Wolf and Melanie Gogol-Prokurat

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For additional information and a full list of ACE 3 Factsheets, see the ACE3 Technical Report.

Areas of Conservation Emphasis, CA Dept. of Fish and Wildlife, www.wildlife.ca.gov/Data/Analysis/Ace