ACE DATASET FACT SHEET
SWAP 2015 Terrestrial Targets

DS1966

UPDATED 2/14/2018

INTENT AND PURPOSE

This data layer shows the distribution of terrestrial conservation targets, a set of terrestrial vegetation communities selected as the conservation priorities for the California State Wildlife Action Plan 2015 Update (SWAP 2015). The layer was prepared for anyone who would like to have a quick look at the distribution of these conservation targets. This dataset is provided alongside other conservation information, including Species Biodiversity, Terrestrial and Aquatic Significant Habitats, Connectivity, and Climate Change Resilience in the California Department of Fish and Wildlife's Areas of Conservation Emphasis (ACE) viewer, to support conservation planning efforts.

BACKGROUND INFORMATION

The California State Wildlife Action Plan 2015 Update (SWAP 2015) is a comprehensive conservation plan developed to address the highest conservation priorities of the state. The plan, in its implementation phase, provides a blueprint for actions necessary to sustain the integrity of diverse ecosystems found in California. As part of the prioritization process, first, "conservation targets" have been selected for each conservation unit (smaller geographic unit), and then for each selected target, a set of conservation strategies was developed, all based on science and expertise knowledge at the time of development.

A conservation target (or target), in general, is defined as an ecological entity chosen to be a focus of a conservation project. Under SWAP 2015, the conservation targets are defined in terms of natural community, such as vegetation, ecosystem or species assemblage. For most of the "terrestrial" conservation units, vegetation "macrogroup(s)" have been chosen as targets and surrogates to represent the associated ecosystems, including species and interactions among biotic and abiotic elements of the systems.

A macrogroup is a mid-level plant community in the hierarchy of U.S. National Vegetation Classification (USNVC, http://usnvc.org/). These plant communities could be considered a collection of species habitats

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

ACE
Areas of Conservation Emphasis

on which associated plants and animals depend as home and/or for food, cover, or reproduction at some stage of their life cycles. Additional consideration of habitat elements to which wildlife are thought to respond (e.g., presence/absence of snags, vegetation dominance and relative cover) allows for predicting wildlife use, based on species associations to the habitat elements. (For more details, check the "Selection of conservation targets" below.)

Appendix D in SWAP 2015 provides the complete list of macrogroups found in California, including their official names under USNVC, common names under SWAP 2015, ecological descriptions, and relationship (crosswalk) to habitat types defined under the California Wildlife Habitat Relationship (CWHR) classification system (Mayer and Laudenslayer 1988). The appendix also lists macrogroups found in each terrestrial conservation unit with highlights on the macrogroups selected as the conservation targets.

Selection of conservation targets for a terrestrial conservation unit is based on an analysis of native vertebrate dependency on those vegetation communities. CDFW used California Natural Diversity Database (CNDDB) and the CWHR ratings (that were cross-walked to macrogroup vegetation) to determine, within each conservation unit, which terrestrial vertebrate species rely on which vegetation types, for feeding, cover or reproduction. Based on this species-habitat association, macrogroups with higher levels of species richness, higher counts of endemic species, and higher counts of vulnerable species (including listed, rare, declining and/or at-risk species) were prioritized as the candidates for the terrestrial conservation targets of the unit.

The selection was narrowed by considering local expert knowledge and the conservation status of the candidate vegetations in the area. Final selection was made by further adding a few more macrogroups as targets in some conservation units for completeness purposes, so that every macrogroup occurring in the state has a set of strategies developed for it under SWAP 2015. (For details, please refer to Appendix D and Section 1.5.3). Terrestrial targets, therefore, could be viewed as biologically rich systems with higher risk of losing native species depending on them. Focusing conservation on such targets will have direct benefits to the Species of Greatest Conservation Need (SGCN), as defined in SWAP 2015, and other species that occur or depend on the habitat types.

For more details on SWAP 2015, please reference the document. Details on topics addressed in this section are found in the Section 1.5.

DATA SOURCES AND MODELS USED

Data Sources

- **FVEG15_1:** The baseline vegetation layer used to create the SWAP 2015 terrestrial target layer. Developed and managed by CALFIRE Fire Resources & Assessment Program (FRAP).
- **U.S. National Vegetation Classification (USNVC):** The standardized vegetation classification system adapted as a terrestrial ecosystem classification system under SWAP2015.
- **California Wildlife Habitat Relationships (CWHR):** The species-habitat relationship incorporated into ranking vegetations to select conservation targets under SWAP 2015. (Also

used as the standardized vegetation classification system to create FVEG15_1 vegetation layer.) Developed and managed by CDFW.

- **Crosswalk:** The crosswalk between "habitat types" under CWHR and "macrogroups" under USNVC that was used to transfer the CWHR species-habitat relationship onto macrogroups and to identify species-macrogroup relationship. Developed by CDFW Vegetation Classification and Mapping Program (VegCAMP) in 2015.
- **California Natural Diversity Database (CNDDB):** The database that provide species occurrence data that were used to identify the species habitat relationship under CWHR. Developed and managed by CDFW.
- **US Ecoregions (USDA)**: The ecoregional classification system adapted to define the terrestrial conservation units under SWAP 2015. Developed and managed by USDA.
- **The California State Wildlife Action Plan 2015 Update (SWAP 2015):** The conservation plan in its implementation stage that defines and selects the terrestrial conservation targets, for which this layer is created. Conservation actions to sustain these conservation targets are also recommended in the document. Developed by CDFW.

FVEG15_1 maps the spatial distribution of habitat types (vegetations) occurring in the state. The dataset was developed by the Fire and Resource Assessment Program (FRAP) at the California Department of Forestry and Fire Protection (CALFIRE) in cooperation with the Vegetation Classification and Mapping Program (VegCamp) at CDFW. The dataset is multiple-sourced and created by compiling the "best available" land cover data. The used data span a period from approximately 1990 to 2014.

To create FVEG, the most current, detailed and reliable vegetation data were collected throughout the state. Rules were defined and applied to prioritize data where the information overlapped. Crosswalks were then used to classify the assorted data into a habitat-type/vegetation classification scheme called the California Wildlife Habitat Relationships (CWHR) system.

To map the distribution of terrestrial conservation targets identified in SWAP 2015, first, macrogroups found in California were mapped based on FVEG15_1 via a crosswalk between CWHR habitat types and the USNVC macrogroups (CDFW VegCamp). The SWAP 2015 terrestrial targets are a subset of macrogroups selected for terrestrial conservation units, or the USDA sections within California. This data layer was created by assigning "presence" to all the macrogroups selected as targets in one of the terrestrial conservation units on the original macrogroup map.

It should be noted that the crosswalk used between CWHR and USNVC is not one-to-one; a macrogroup assigned to a given CWHR habitat type depends on the USDA section where the data point is in. For example, the CWHR habitat type "Annual Grassland" was mapped to the "Western Upland Grassland" in the "North Coast and Klamath" Ecoregion, but to "California Grasslands and Flowerfields" in the "South Coast" Ecoregion. The decisions were made based on expertise of the VegCamp scientists who lead USNVC development in California.

For details on the selection of conservation targets under SWAP 2015, refer to the "BACKGROUND INFORMATION" section above.

HOW TO USE THE DATA LAYER

The first step to use this data layer is to find out whether or not an area of your interest contains the terrestrial targets, the conservation focuses of the terrestrial ecosystems under SWAP 2015. If it does, you will find more information on the targeted ecosystems in the document, including the status analyses and the conservation strategies/actions recommended for the targets. Go to the relevant sections in the document following the instructions below:

For general Instructions for using BIOS to view these data, visit http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=150442 . Further instructions on BIOS usage are found on the BIOS page or within the application help menu.

For instructions for locating your site and finding information on the SWAP 2015 targets for the location, visit https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=149561 .

A data layer for aquatic targets has been developed separately. The link for aquatic data is at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=149562.

More references are found at the "Data Access" section. Limitations in accuracy and use of the layer are described in the "Data Precision and Limitations" section.

Many conservation programs in CDFW now expect their project contributions to SWAP 2015 implementation in addition to meeting the core intents of the programs. Such programs include; the Proposition 1 Restoration Grant Program, the Fishery Restoration Grant Program, the Wetlands Restoration for Greenhouse Gas Emission Reduction Program, the State Wildlife Grant Program (in California), and the Regional Conservation Investment Strategies Program.

Information on conservation targets found through the above search would become handy, for example, when preparing a project proposal for these collaborative programs. If the findings are incorporated well into the project description, the proposal would likely to become more robust due to strengthening the project tie to SWAP 2015, which is a criterion for selection or approval under the programs.

DATA PRECISION AND LIMITATIONS

The pixel size of this dataset is set at 30m, as FVEG15_1, from which this data was derived.

The data in FVEG15_1 originate from diverse sources with different minimum mapping units that were cross-walked to CWHR classification and into 30m pixel. To create this data layer based on another vegetation classification system (USNVC), the data was further converted through another crosswalk that is not 1-to-1. The source resolutions, accuracies, and precisions therefore vary depending on the data point.

For example, an area dominated by a mixed conifer vegetation that also contains other communities, may be mapped entirely as mixed conifer after being mapped into a 30m pixel, even if some data points in the polygon would better being assigned to other vegetation types. In general, information on less dominant communities with smaller footprints tends to get lost through collecting and processing the data. The actual composition and distribution of vegetation do change overtime, too, some slowly, some dynamically constantly in flux, and some drastically triggered by major events; therefore, the data used to create this layer might be outdated not reflecting the current vegetation patterns in some area. See the Terrestrial Significant Habitats fact sheet for more information on the data precision and limitations of vegetation datasets.

In conclusion, the data at a given point should not be used exclusively to determine whether or not a particular area contains a conservation target. The data users are responsible for confirming the vegetation occurrence in the area of interest, including identifying any unmapped communities in this layer that are actually occurring in the area.

DATA ACCESS

The data are viewable through the ACE 3 viewer or BIOS (https://www.wildlife.ca.gov/data/BIOS). No login is required to use the data.

For instructions on how to download and/or otherwise use the data, check the document "How to Use BIOS to Acquire Data and Assess SWAP Target Status" at "http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=150442".

For instructions on how to locate site and find information on the SWAP 2015 targets at the site, visit https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=149561 .

For data specific questions for this layer, contact Diane Mastalir at Diane.Mastalir@wildlife.ca.gov.

For general BIOS questions, see the contact section at https://www.wildlife.ca.gov/data/BIOS.

A data layer for aquatic targets has been developed separately. The link for aquatic data is at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=149562.

For inquires on SWAP 2015, see the contact section at https://www.wildlife.ca.gov/SWAP.

ACKNOWLEDGEMENTS

Factsheet: Armand Gonzales, Junko Hoshi, Diane Mastalir

SELECTED PUBLICATIONS

California Department of Fish and Wildlife (CDFW). 2014. California Habitat Relationships Program (CWHR) version 9.0., personal computer program. California Department of Fish and Wildlife and California Interagency Wildlife Task Group, Sacramento, CA. https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats

California Department of Fish and Wildlife. 2015. California State Wildlife Action Plan, 2015 Update: A Conservation Legacy for Californians. Armand G. Gonzales and Junko Hoshi (editors). Prepared with assistance from Ascent Environmental, Inc., Sacramento, CA.

California Department of Fish and Wildlife (CDFW). 2017. California Natural Diversity Database (CNDDB). Accessed Sept 5, 2017. https://www.wildlife.ca.gov/Data/CNDDB

California Department of Forestry and Fire Protection (CALFIRE). 2015. FRAP Vegetation (FVEG15_1). http://frap.fire.ca.gov/data/frapgisdata-sw-fveg_download

Grossman, G. D., P. B. Moyle, and J. R. Whitaker, Jr. 1982. Stochasticity in structural and functional characteristics of an Indiana stream fish assemblage: a test of community theory. American Naturalist 120:423–454.

Mayer K.E. and W.F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. State of California, Resources Agency, Sacramento, CA.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation – Second Edition. California Native Plant Society Press, Sacramento, CA.

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