

An Updated Statewide Terrestrial Habitat Connectivity Map for California



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Habitat connectivity provides pathways for organisms to move across the landscape and is critical for maintaining viable populations of wildlife species, particularly in the context of rapid land use and environmental change. The California Department of Fish and Wildlife (CDFW) Areas of Conservation Emphasis (ACE Terrestrial Connectivity layer) is a synthesis of statewide and regional habitat connectivity data into one statewide connectivity map. Data are summarized using a grid of 2.5 mi² hexagons, which are classified as ACE Ranks 1-5 depending on their contribution to habitat connectivity throughout the state. First introduced to the suite of ACE products in 2017, additional regional studies and species-specific datasets have been integrated into the connectivity layer via several updates

Most recently, CDFW's Conservation Analysis Unit (CAU) has integrated additional datasets into the ACE connectivity layer, enhanced the functionality of the connectivity viewer within the Biogeographic Information and Observation System (BIOS), and has begun the process of flagging each ACE hexagon with focal species from local, regional, and statewide analyses where they intersect.

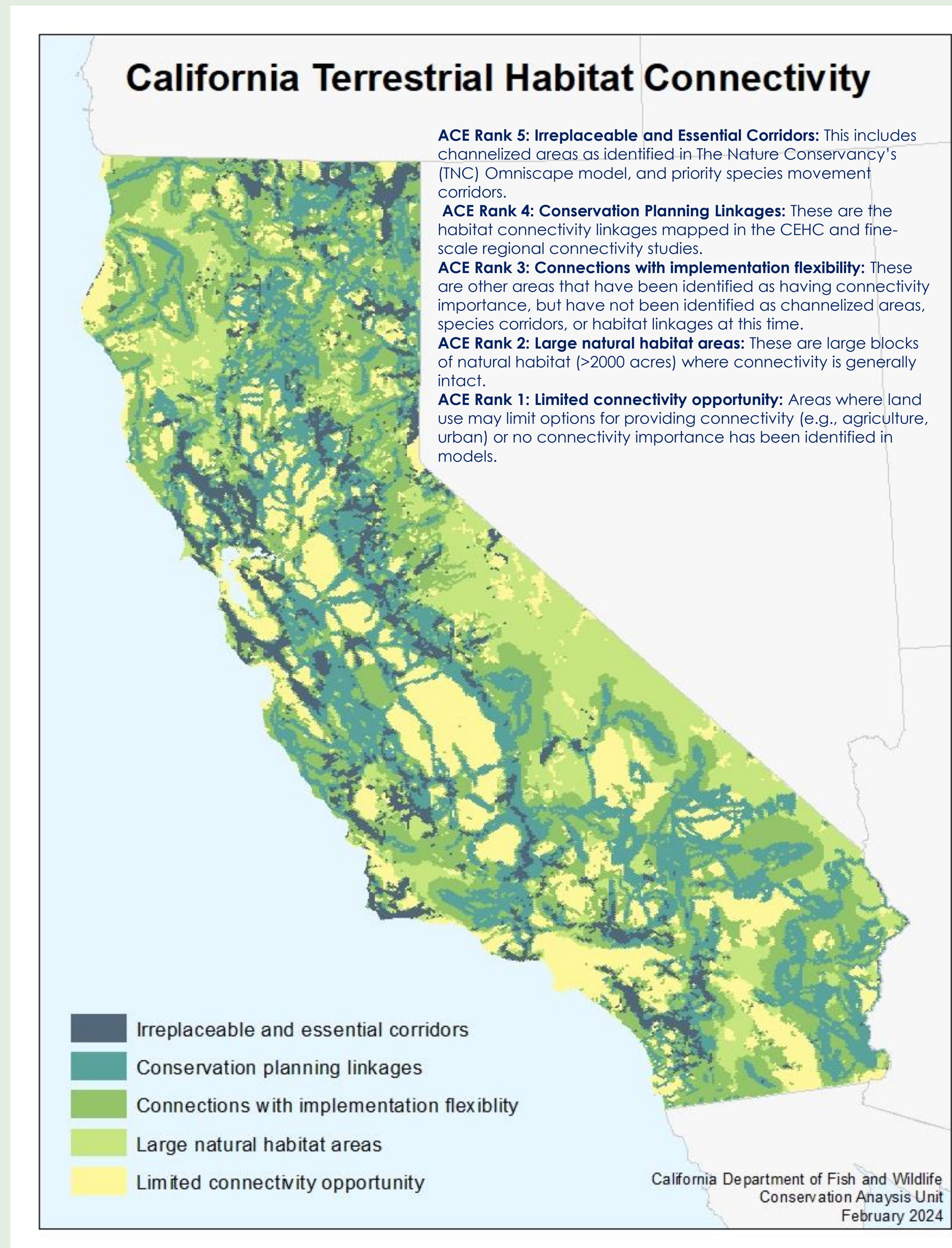
Uses of the ACE Terrestrial Connectivity Map:

- View a statewide map summarizing connectivity importance across the landscape based on multiple studies. Includes corridors based on structural connectivity, regional linkage studies, and species-specific corridors based on collar data.
- Identify statewide, regional, and species-specific connectivity data for a selected location.

Visit [Areas of Conservation Emphasis \(ACE\)](#) for additional biodiversity, sensitive habitat, and climate resilience data.



[ACE Terrestrial Connectivity Factsheet](#)



Recent updates to the Terrestrial Connectivity Layer:

Modoc Habitat Connectivity (CBI):

- Climate-wise, structural connectivity across the Modoc plateau (Gallo et al. 2019).
- Converted raster output into the top 10% of values from the least-cost corridor output and adjusted ACE rankings to incorporate these corridors.

Ungulate Migration Corridors (CDFW):

- 25 migration datasets: mule deer (18), elk (3), and pronghorn (4).
- Migration corridors, migration stopovers, and winter ranges modeled from GPS collar data were added to the ACE rankings.
- Additional collaring efforts are underway.

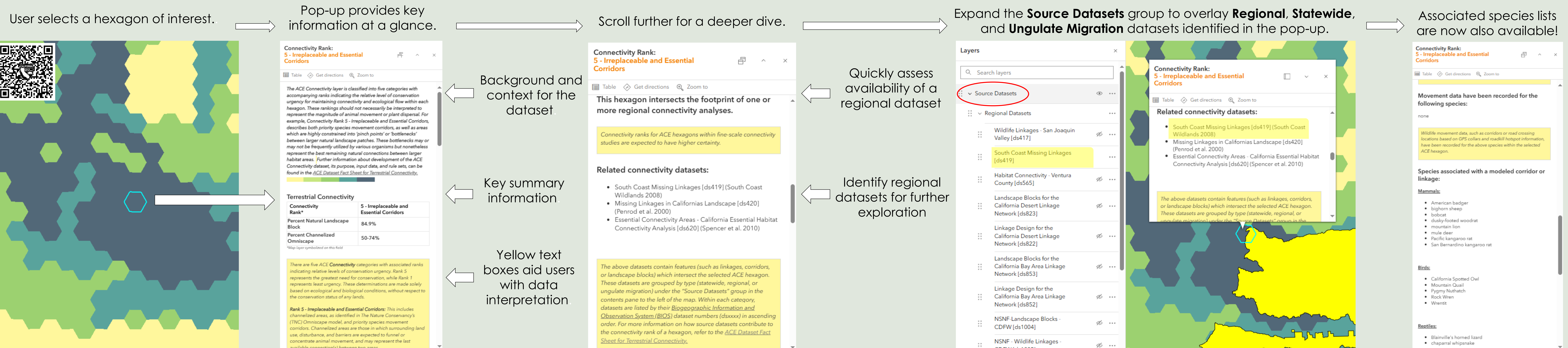
Focal Species Within Hexagons:

- All 25 ungulate migration datasets and 3 additional multispecies datasets have been included to date.
- ACE hexes are now tagged with the focal species associated with each regional linkage: 38 mammals, 30 birds, 10 reptiles, 6 amphibians, 6 fish, 1 invertebrate, and 4 plants.
- Users can now view focal species associated with linkages in any given ACE hexagon and query all ACE hexagons across the state to locate linkages associated with a given species.
- Integration of additional datasets is underway.
- Additional contributions are always welcome! Contact us at ConservationAnalysis@wildlife.ca.gov



<https://wildlife.ca.gov/Data/Analysis/Connectivity>

The updated [Connectivity Viewer](#) allows users to quickly and easily identify and explore connectivity datasets for an area of interest:



References: Gallo, JA, J. Strittholt, G. Joseph, H. Rustigian-Romsos, R. Degagne, J. Brice, and A. Prisbrey. 2019. Mapping Habitat Connectivity Priority Areas that are Climate-wise and Multi-scale, for Three Regions of California. Conservation Biology Institute. <https://doi.org/10.6084/m9.figshare.7477532>

Acknowledgements: We would like to thank the CDFW Connectivity Team and ACE 3 Connectivity Subgroup for review and input in the development of the map. Special thanks to all connectivity study authors for sharing their datasets.