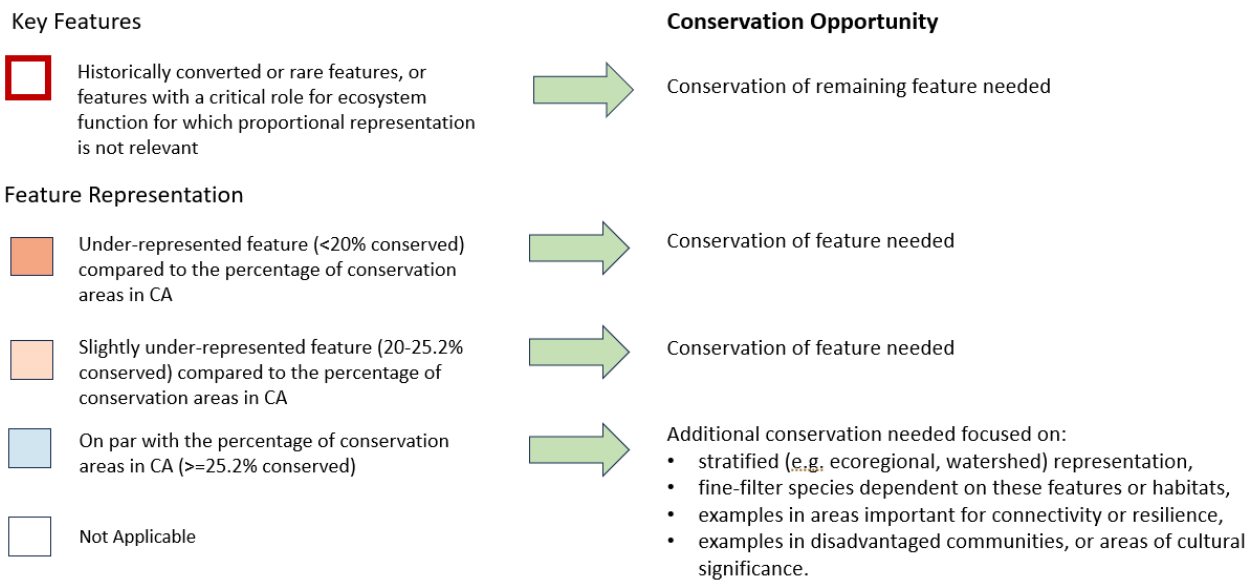

Figure S1. Feature representation and conservation opportunity framework.

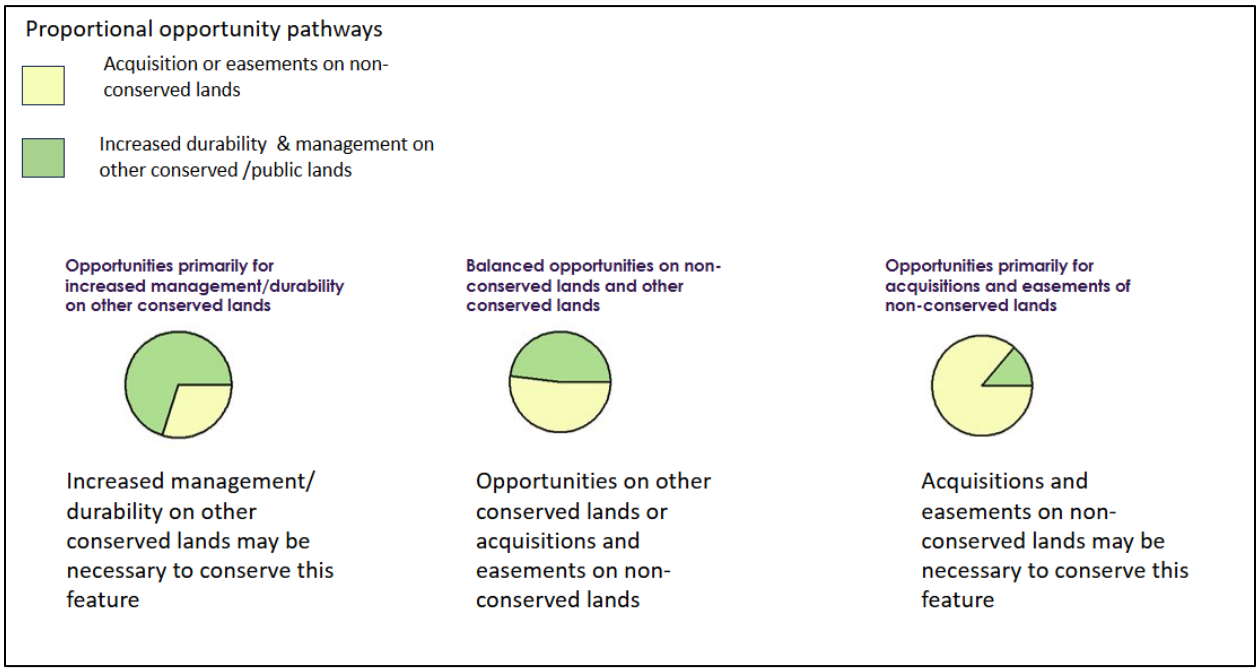

Figure S2. Proportional opportunity pathways framework.

Table S1. Feature and habitat data and sources.

Topic	Feature	Source
Ecoregion	30x30 Ecoregions	CNRA - 30x30 ecoregions (2024)
Habitat	13 class major habitat types (CWHR13)	CAL FIRE (2024)
	60+ class habitat types (CWHR)	CAL FIRE (2024)
ACE Biodiversity	ACE Biodiversity (Rank 5; top 20% native richness, rare richness, and endemic richness by taxa	CDFW (2018)
Biodiversity: unique communities, species, abudnance, and richness	Plant richness (top 20%)	Kling et al. (2019)
	Rarity-weighted endemic plant richness (top 20%)	Kling et al. (2019)
Connectivity	Present-day Connectivity (all categories)	Cameron et al. (2022)
	Climate Migration Routes	Schloss et al. (2022)
	Regional connectivity linkages	Beier et al. (2006)
Freshwater Resources	Freshwater species richness	Howard et al. (2015)
	Wetlands (freshwater emergent wetland, freshwater forested/shrub wetland, or estuarine and marine wetland)	National Wetland Inventory, US Fish and Wildlife Service (2019)
	Groundwater dependent ecosystems	Klausmeyer et al. (2018)
	Streams by order	USGS NHD (2020)
Climate-related risks and/or disturbance	Historic Fire Perimeters	CAL FIRE (2023)
	Flood hazard zones	First Street Foundation (2020)
	Sea-level rise	NOAA (n.d.)
	Mid-century habitat climate exposure	Thorne et al. (2016)

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Table S2. Representation levels and the conservation need, pathways, and opportunities to advance conservation of underrepresented fine-resolution habitat associations. Dark orange indicates under-represented habitats (i.e. less than 20% within 30x30 Conservation Areas) and light orange indicates slightly under-represented habitats (i.e. 20-25.2% with 30x30 Conservation Areas).

Feature	% of feature in 30x30 Conservation Areas	Proportional Pathway Opportunity
Eastside Pine	4 %	
Ponderosa Pine	8 %	
Blue Oak-Foothill Pine	9 %	
Valley Oak Woodland	9 %	
Blue Oak Woodland	9 %	
Eucalyptus	10 %	
Bitterbrush	12 %	
Low Sage	14 %	
Annual Grassland	14 %	
Montane Hardwood-Conifer	15 %	
Douglas Fir	16 %	
Klamath Mixed Conifer	17 %	
Juniper	17 %	
Desert Riparian	18 %	
Riverine	18 %	
Alkali Desert Scrub	20 %	
Sierran Mixed Conifer	20 %	
Montane Hardwood	20 %	
Valley Foothill Riparian	20 %	
Coastal Oak Woodland	21 %	
White Fir	22 %	
Sagebrush	22 %	
Lacustrine	23 %	
Redwood	24 %	

Table S3. Representation levels and proportional opportunity pathways of the top ranked biodiversity priorities and plant diversity. For these prioritized or threshold derived features, comparison to California levels of conservation is not applicable, and conservation should target of all of the highest priority or most species rich areas.

Feature	% of feature in 30x30 Conservation Areas	Proportional Pathway Opportunity
Top Ranked Biodversity Statewide	21 %	
Top Ranked Biodversity per Ecoregion	22 %	
Top Ranked Rare Biodversity Statewide	23 %	
Top Ranked Rare Biodversity per Ecoregion	24 %	
Plant Richness	40 %	
Endemic Plant Rarity Weighted Richness	33 %	

Table S4. Representation levels and proportional opportunity pathways opportunities to advance conservation of the most species rich areas for vertebrate taxa and rare and endemic subsets of each taxa. For these prioritized or threshold derived features, comparison to California levels of conservation is not applicable, and conservation should target all of the highest priority or most species rich areas.

Feature	% of feature in 30x30 Conservation Areas	Proportional Pathway Opportunity
Reptile Richness	39 %	
Amphibian Richness	19 %	
Mammal Richness	21 %	
Bird Richness	12 %	
Rare Reptile Richness	22 %	
Rare Amphibian Richness	26 %	
Rare Mammal Richness	23 %	
Rare Bird Richness	16 %	
Endemic Reptile Richness	19 %	
Endemic Amphibian Richness	27 %	
Endemic Mammal Richness	20 %	
Endemic Bird Richness	25 %