



**ADVANCE MITIGATION PROGRAM
Lake Tahoe and Truckee Sub-basins
Regional Advance Mitigation
Needs Assessment**

Appendices

Version 1.0 – DRAFT

**Establishing Caltrans' Need for Advance Mitigation
for the Lake Tahoe and Truckee Sub-basins
forecast fiscal years 2023/24 to 2032/33**

California Department of Transportation – District 3

July 2026

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APPENDICES

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APPENDIX A: GIS SOURCES

This RAMNA relies on maps to convey information. At the bottom of each map figure is a citation that lists the GIS source identification numbers. These source identification numbers refer to Table A-1, where the metadata documentation is provided. When available, the source date and/or website address to access the data layer online are also provided.

Table A-1. District 3 RAMNA GIS Sources

ID	GIS Layer	Source	Source Date	Download Date	Website
1	State Highway Network	Caltrans	8/1/2018	10/11/2018	https://gisdata-caltrans.opendata.arcgis.com/datasets/77f2d7ba94e040a78bfbe36feb6279da_0/about
2	SHOPP	Caltrans	2023/2024 Q3	10/16/2024	Caltrans System Planning
3	STIP	California Transportation Commission	2023/2024 Q3	10/16/2024	Caltrans System Planning
4	Ecoregion Section	USFS	1/26/2021	1/26/2021	https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap
5	Watershed Boundary Section (GAI)	USGS	9/26/2014	10/19/2018	https://www.usgs.gov/core-science-systems/ngp/national-hydrography
6	County Boundaries	U.S. Census Bureau	10/26/2021	8/31/2023	https://gisdata-caltrans.opendata.arcgis.com/datasets/111030d0d67e49d789080c47d9e4e618_0/about
7	California Conservation Easements	California Protected Areas Database	6/30/2023	1/5/2024	https://www.calands.org/get-data/
8	California Protected Areas Holdings	California Protected Areas Database	6/30/2023	1/5/2024	https://www.calands.org/get-data/
9	Tribal Land Boundaries	Bureau of Indian Affairs	5/16/2017	10/11/2018	https://onemap-bia-geospatial.hub.arcgis.com/
10	U.S. Military Installations	U.S. Census Bureau	11/22/2023	1/12/2024	https://www2.census.gov/geo/tiger/TIGER2023/MIL/
11	Farmland Mapping and Monitoring Program	California Department of Conservation	9/22/2023	1/12/2024	https://gis.conservation.ca.gov/portal/home/group.html?id=b1494c705cb34d01acf78f4927a75b8f#overview
12	ACE Climate Resilience – ACE [ds2738]	CDFW	2/22/2018	10/17/2018	https://map.dfg.ca.gov/metadata/ds2738.html?5.66.18

ID	GIS Layer	Source	Source Date	Download Date	Website
13	Vegetation D03 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment	SAMNA	1/1/2017	10/16/2024	https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation
14	Waters and Wetlands D03 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment	SAMNA	1/1/2017	10/16/2024	https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation
15	FWS Critical Habitat	FWS	12/9/2022	1/5/2023	https://ecos.fws.gov/ecp/report/table/critical-habitat.html
16	Essential Connectivity Areas – CEHC	CDFW	1/1/2014	10/17/2018	https://map.dfg.ca.gov/metadata/ds0620.html
17	Natural Landscape Blocks – CEHC	CDFW	10/1/2017	10/17/2018	https://map.dfg.ca.gov/metadata/ds0621.html
18	Potential Riparian Connections – CEHC	CDFW	3/1/2010	10/17/2018	https://map.dfg.ca.gov/metadata/ds0622.html
19	National Flood Hazard Layer	Federal Emergency Management Agency	12/7/2021	12/7/2021	https://www.fema.gov/national-flood-hazard-layer-nfhl
20	CalWater Hydrologic Areas	California Department of Forestry and Fire Protection	11/1/2016	10/19/2018	https://frap.fire.ca.gov/mapping/gis-data/
21	Terrestrial Connectivity – ACE [ds2734]	CDFW	8/28/2019	9/25/2019	https://map.dfg.ca.gov/metadata/ds2734.html
22	SWAP Terrestrial Targets – 2015	CDFW	2/1/2018	10/29/2018	https://map.dfg.ca.gov/metadata/ds1966.html
23	Aquatic Biodiversity Summary – ACE [ds2768]	CDFW	2/22/2018	7/3/2019	https://map.dfg.ca.gov/metadata/ds2768.html
24	CalFish Passage Assessment Database	CDFW	10/3/2019	12/15/2019	https://map.dfg.ca.gov/metadata/ds0069.html

ID	GIS Layer	Source	Source Date	Download Date	Website
25	Terrestrial Biodiversity Summary – ACE [ds2739]	CDFW	2/24/2020	7/3/2019	https://map.dfg.ca.gov/metadata/ds2739.html
26	Corps Regulatory In-Lieu Fee and Bank Information Tracking System	Corps	Not available	1/28/2019	https://ribits.ops.usace.army.mil/ords/f?p=107:2
27	CDFW Approved Mitigation Service Areas	CDFW	7/3/2018	1/28/2019	https://map.dfg.ca.gov/metadata/ds2782.html
28	National Hydrography Dataset Plus	EPA	3/13/2019	4/29/2021	https://www.epa.gov/waterdata/get-nhdplus-national-hydrography-dataset-plus-data
29	Fire Hazard Severity Zones in State Responsibility Area	California Department of Forestry and Fire Protection	11/1/2007	6/1/2022	https://34c031f8-c9fd-4018-8c5a-4159cdf6b0d-cdn-endpoint.azureedge.net/-/media/osfm-website/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/documents-relied-upon.pdf?rev=d7dd8d66c25f48aba431a33006708d89&hash=184F05D9CA74A95A5E40AD2CFFEDD254
30	303(d) List of Impaired Waterbodies	SWRCB	6/9/2021	5/13/2022	https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html
31	ZIP Codes	U.S. Postal Service	2/11/2020	3/11/2020	https://www.arcgis.com/home/item.html?id=8d2012a2016e484dafaac0451f9aea24#overview
32	RipZET ^a	Caltrans	8/1/2024	8/5/2024	Not available

^a Data were used for tables, but not for figures, in this RAMNA.

APPENDIX B: TRANSPORTATION PROJECTS PLANNED FOR THE GAI DURING THE PLANNING PERIOD

To identify the list of SHOPP projects planned for the GAI, Caltrans consulted the SHOPP Ten-Year Book for fiscal years 2023/24 to 2032/33 (Caltrans 2024a). The intent of the SHOPP Ten-Year Book is to raise awareness of planned future transportation projects, and detailed transportation project information is not provided. The SHOPP Ten-Year Book includes 13 SHOPP transportation projects within the GAI that are currently in the planning and conceptual phases (Table B-1).

Each transportation project's potential impact was defined using a buffer from the edge of pavement. Different buffer widths were used depending on the transportation project's activity or activities, since many transportation projects consist of multiple activities. Most of the planned activities are pavement projects. See Table 1 of Caltrans (2024b) for the range of buffers relevant to the transportation projects listed in the SHOPP Ten-Year Book. Many transportation projects include multiple activities.

The subset of the Caltrans District 3 transportation projects that are planned in the GAI during the planning period covered by this RAMNA, as well as the HUC-8 and ecoregion section, advertised year, and planned activities for each planned transportation project, are listed in Table B-1.

References

- Caltrans (California Department of Transportation). 2024a. "State Highway Operation & Protection Program Ten-Year Project Book 2023/24–2032/33." Quarter 3, Fiscal Year 2023/24. April. Sacramento, California. Accessed October 25, 2024. <https://dot.ca.gov/-/media/dot-media/programs/asset-management/documents/2024-q2-project-book-combined-a11y.pdf>.
- . 2024b. "Statewide Advance Mitigation Needs Assessment Report." State Highway Operation and Protection Program. Ten-Year Project Book. Second Quarter 2023/2024 Fiscal Year. September. Sacramento, California. Accessed October 25, 2024. <https://dot.ca.gov/programs/environmental-analysis/biology/advancemitigation>.

Table B-1. SHOPP Transportation Projects Planned in the GAI and Planning Period

ID Number	HUC-8	Ecoregion Section	Advertised Year	Caltrans District	County	Route ^a	Begin Mile ^a	End Mile ^a	Activity
21145	Lake Tahoe	Sierra Nevada	2025/26	3	El Dorado	50	77.3	80.4	Pavement
22874	Lake Tahoe	Sierra Nevada	2030/31	3	El Dorado	89	0	8.6	Pavement
23689	Lake Tahoe	Sierra Nevada	2025/26	3	El Dorado	89	24.4	25.3	Sustainability/ climate change
20497	Lake Tahoe	Sierra Nevada	2026/27	3	Nevada	28	0	9.63	Pavement
19413	Truckee	Sierra Nevada	2026/27	3	Nevada	80	27.6	28.5	Bridge – health
21276	Truckee	Sierra Nevada	2028/29	3	Nevada	80	15.5	25.5	Pavement
21278	Truckee	Sierra Nevada	2032/33	3	Nevada	80	R2.7R	13.04	Pavement
23564	Truckee	Sierra Nevada	2026/27	3	Nevada	80	R5.3R	R5.8R	Roadside
21261	Truckee	Sierra Nevada	2026/27	3	Nevada	89	0	15.2	Pavement
21941	Truckee	Sierra Nevada	2024/25	3	Nevada	89	0	21.667	Pavement
24801	Truckee	Sierra Nevada	2032/33	3	Nevada	89	0	5.78	Bridge – health
20491	Lake Tahoe	Sierra Nevada	2023/24	3	Placer	28	0.085	11	Pavement
20497	Lake Tahoe	Sierra Nevada	2026/27	3	Placer	28	0	9.63	Pavement
20453	Lake Tahoe	Sierra Nevada	2028/29	3	Placer	89	0	13.1	Pavement
20497	Truckee	Sierra Nevada	2026/27	3	Placer	28	0	9.63	Pavement
20453	Truckee	Sierra Nevada	2028/29	3	Placer	89	0	13.1	Pavement
21941	Truckee	Sierra Nevada	2024/25	3	Placer	89	0	21.667	Pavement
21261	Truckee	Sierra Nevada	2026/27	3	Sierra	89	0	15.2	Pavement

Source: Caltrans 2024a

Notes: R = right

^a Routes and begin and end postmiles are representative of the project and are not necessarily associated with the county, ecoregion, or HUC-8 specified in the table row.

APPENDIX C: LAND COVER TYPES

Land cover types in the GAI were excerpted from the SAMNA Reporting Tool's vegetation layer, which was developed by merging CDFW's CWHR Vegetation Classification and Mapping Program GIS database (CDFW 2019), the USFS Classification and Assessment with LandSat of Visible Ecological Groupings, and the California Department of Forestry and Fire Protection vegetation layer (Caltrans 2024a, 2024b). A general description of each land cover type found in the GAI is provided below, and complete descriptions can be found in Mayer and Laudenslayer (1988). Table 2-2 in the RAMNA main text lists the acreages of the habitat types.

A key map, provided after the description of habitat types, references mapbook pages, including zoomed-in views of locations in the GAI and mapped land cover types (page C-3). These five maps correspond with the aquatic resources maps in Appendix E, *Aquatic Resource Locations*.

Tree-dominated Habitats: Tree-dominated habitats have at least 10 percent total tree canopy crown closure. In the GAI, tree-dominated habitats include aspen, Eastside pine, Jeffrey pine, juniper, lodgepole pine, montane hardwood, montane hardwood-conifer, montane riparian, ponderosa pine, red fir, Sierran mixed conifer, subalpine conifer, and white fir.

Shrub-dominated Habitats: Shrub-dominated habitats have at least 10 percent total cover by shrub species and less than 10 percent cover by tree species. In the GAI, shrub-dominated habitats include alpine dwarf-shrub, bitterbrush, low sage, mixed chaparral, montane chaparral, and sagebrush.

Herbaceous-dominated Habitats: Herbaceous-dominated habitats have at least 2 percent total cover by herbaceous species and less than 10 percent total cover by tree or shrub species. In the GAI, herbaceous-dominated habitats include annual grassland, perennial grassland, and wet meadow.

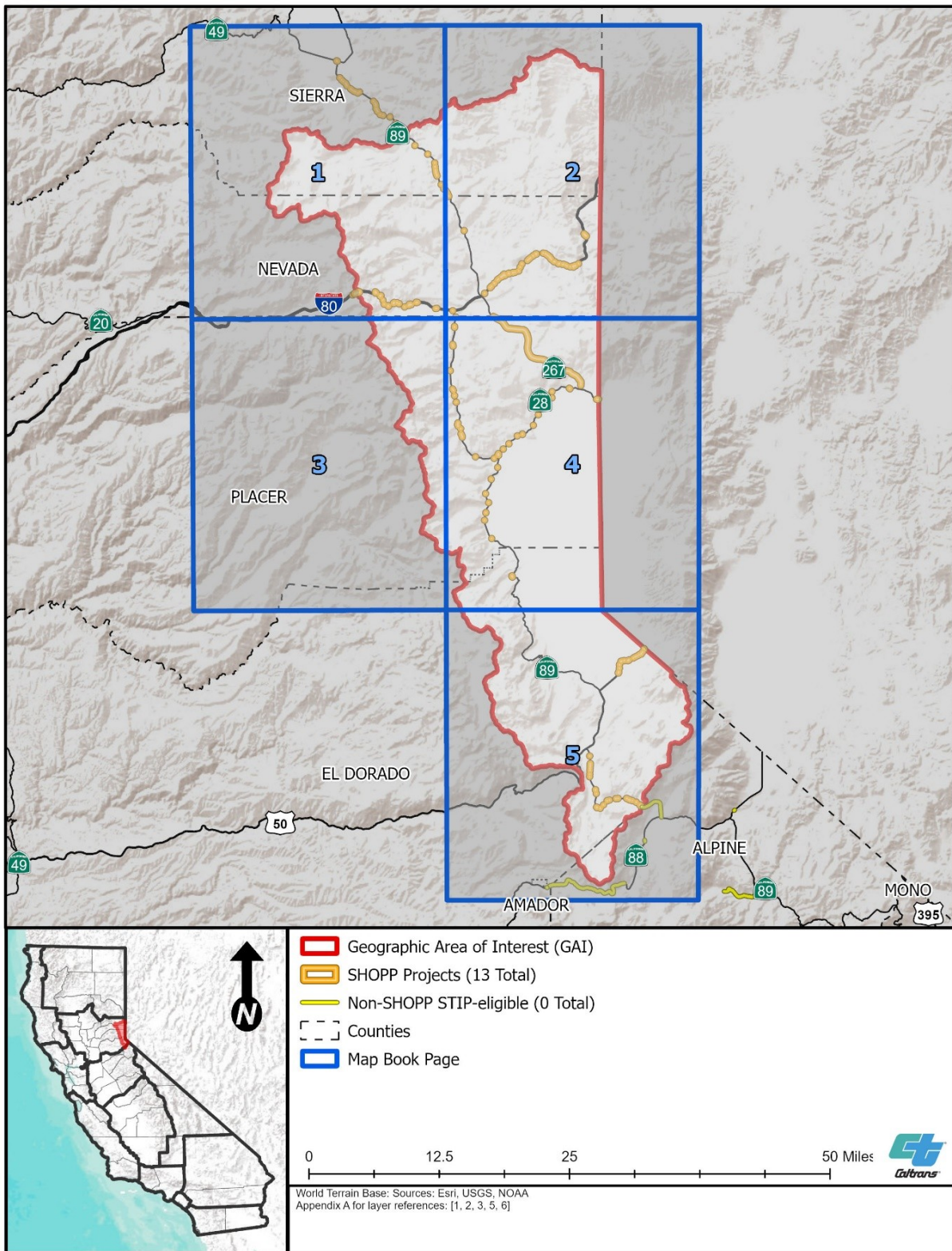
Aquatic Habitats: Aquatic habitats have at least 98 percent total cover by open water and no more than 2 percent total cover by vegetation in the continually exposed shore zone. In the GAI, aquatic habitats include lacustrine and riverine.

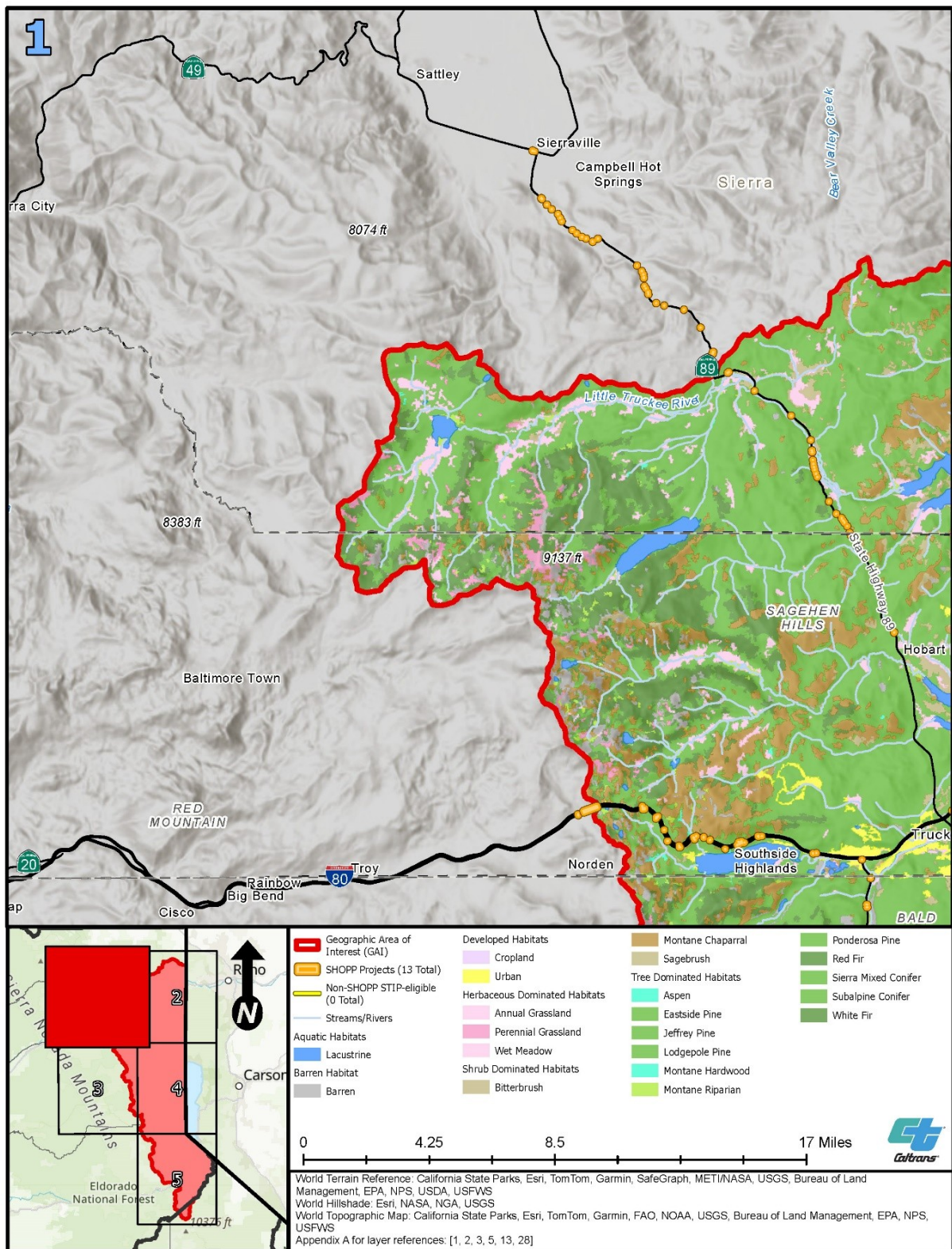
Developed Habitats: Developed habitats have at least 2 percent total cover by non-wildland vegetation grown for food, fiber, or landscaping and do not meet criteria for any wildland habitat. In the GAI, developed habitats include cropland and urban.

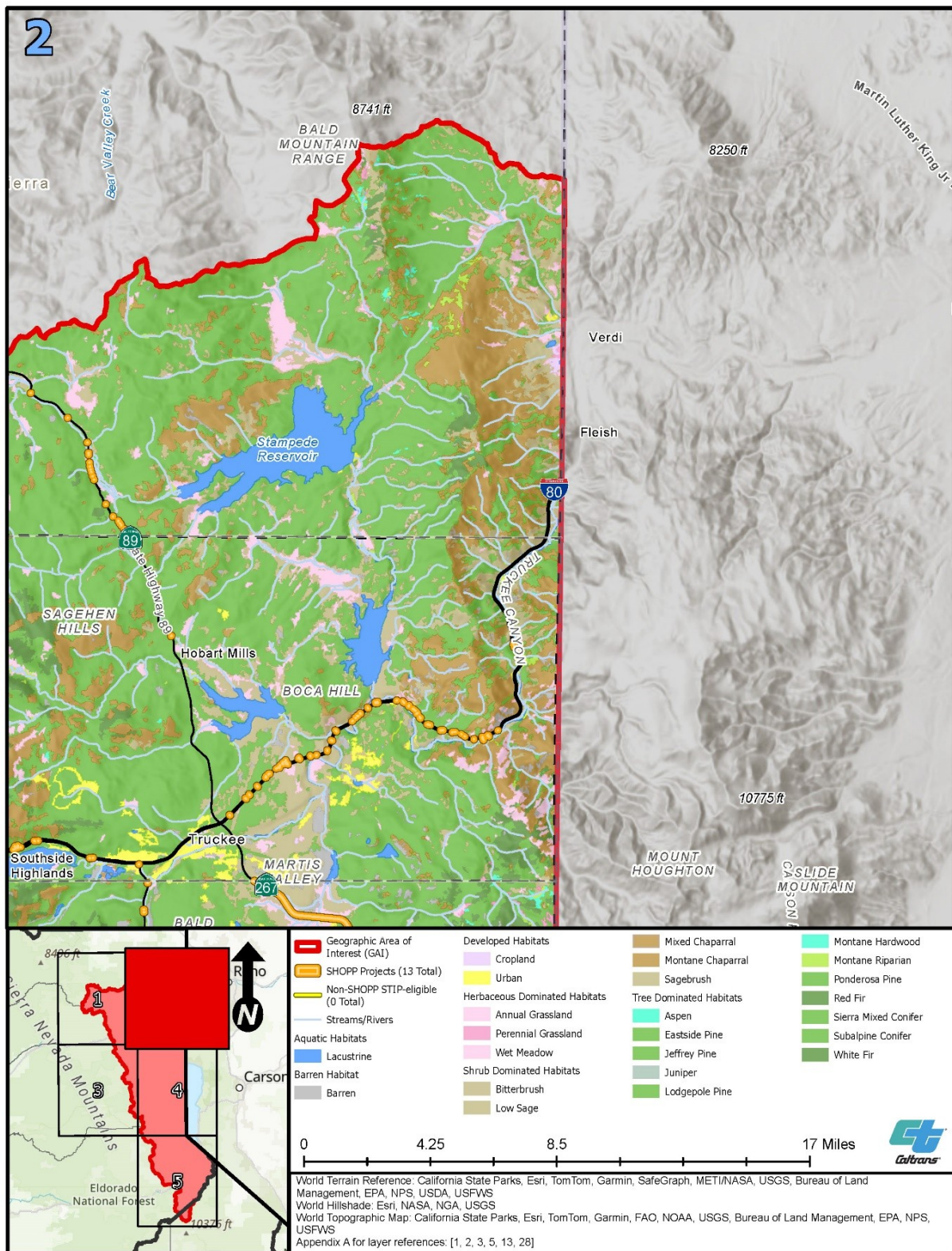
Non-vegetated Habitats: Non-vegetated habitats include barren areas, characterized by less than 2 percent cover by herbaceous species.

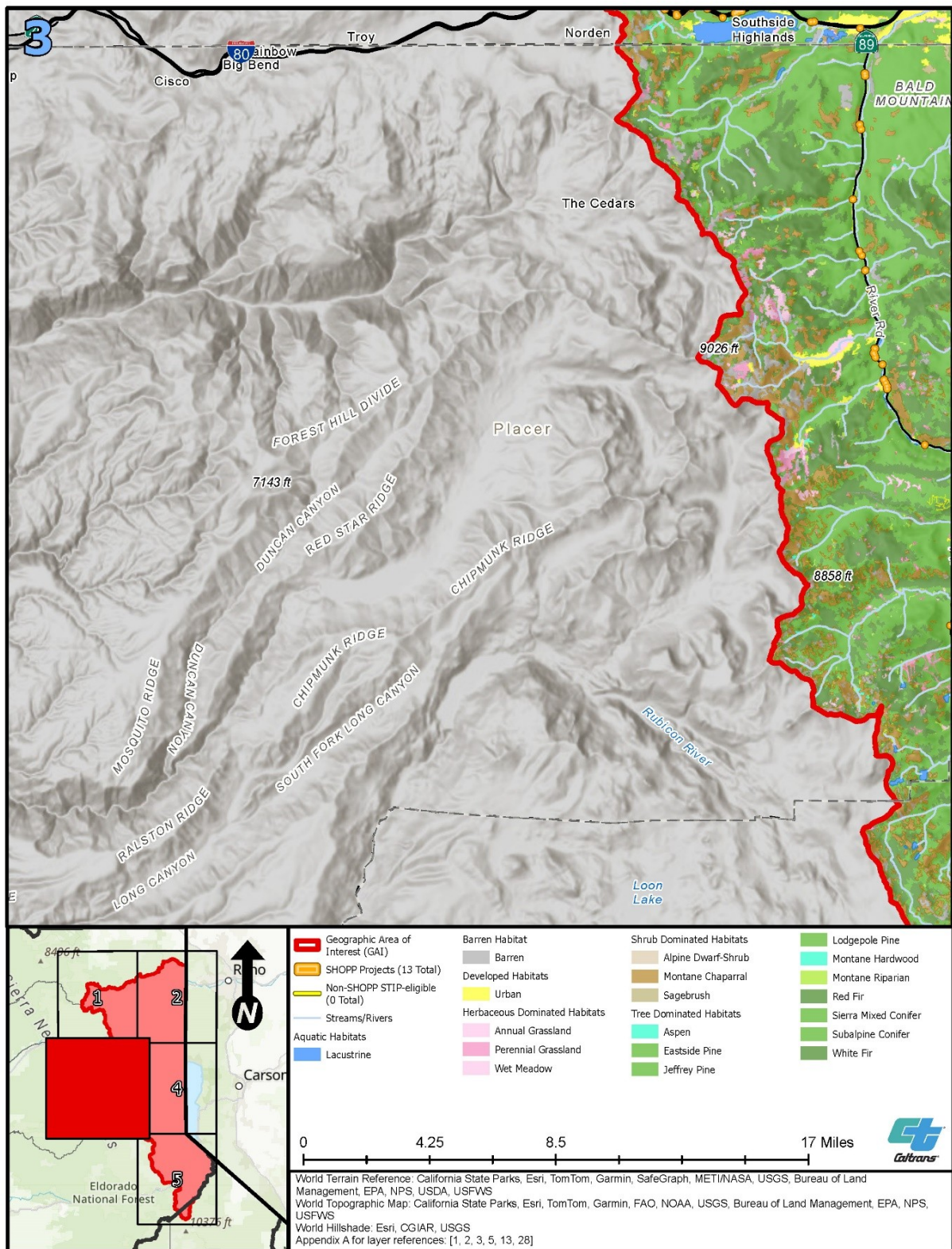
References

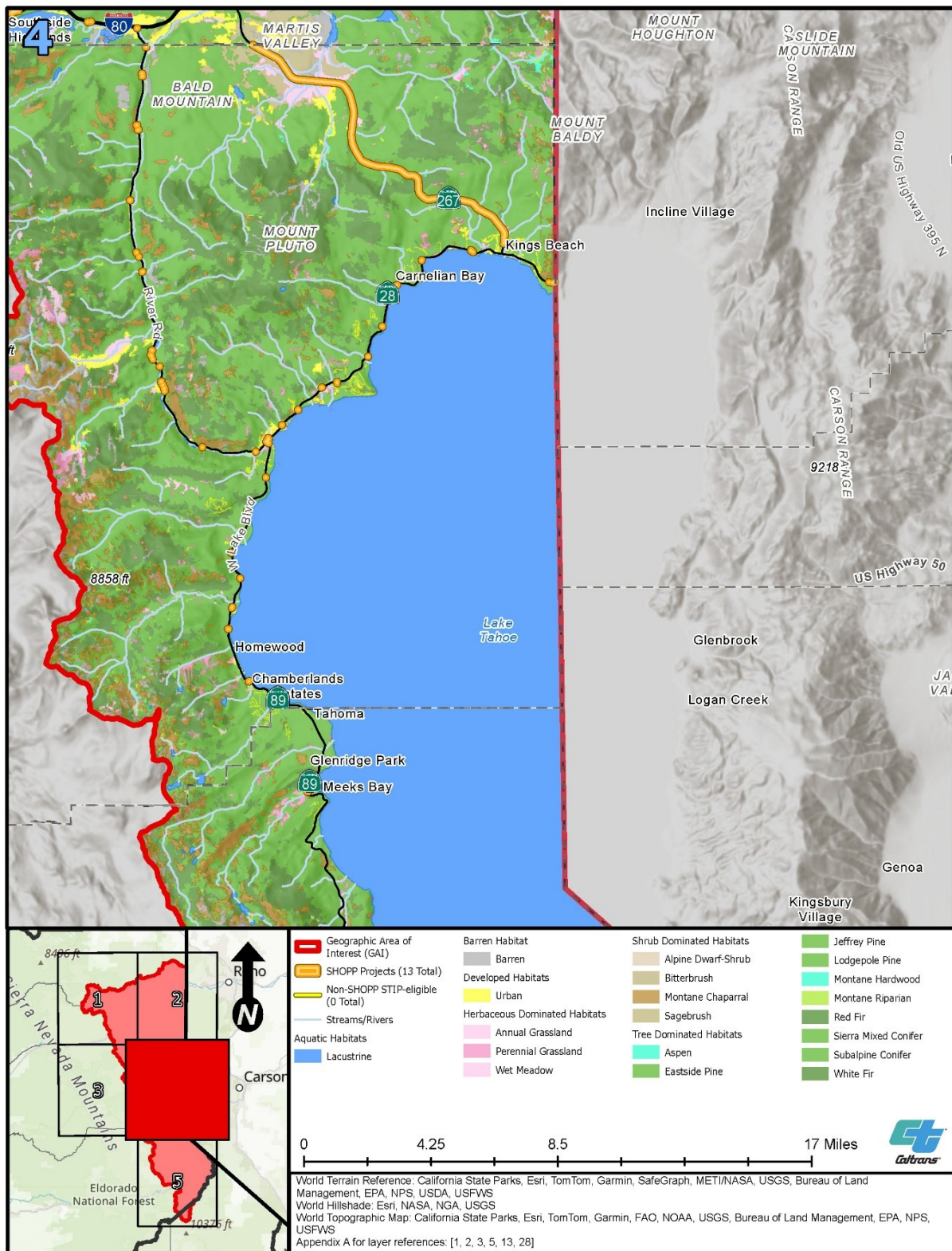
- Caltrans (California Department of Transportation). 2024a. "Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Third Quarter of FY 2023/2024" (data file). Accessed October 16, 2024. <http://www.dot.ca.gov/env/advancemitigation/>.
- . 2024b. "Vegetation_D03/D10 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Third Quarter of FY 2023/2024" (data file). Accessed October 16, 2024. <http://www.dot.ca.gov/env/advancemitigation/>.
- CDFW (California Department of Fish and Wildlife). 2019. *California Wildlife Habitat Relationships (CWHR) System*. Supported by the California Interagency Wildlife Task Group and maintained by the CDFW. Database Version 9.0.
- Mayer, Kenneth E. and William F. Laudenslayer, Jr., eds. 1988. "A Guide to Wildlife Habitats of California." State of California, Resources Agency, Department of Fish and Game. Sacramento, California. Including Revisions and Updates. Accessed December 17, 2024. <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.

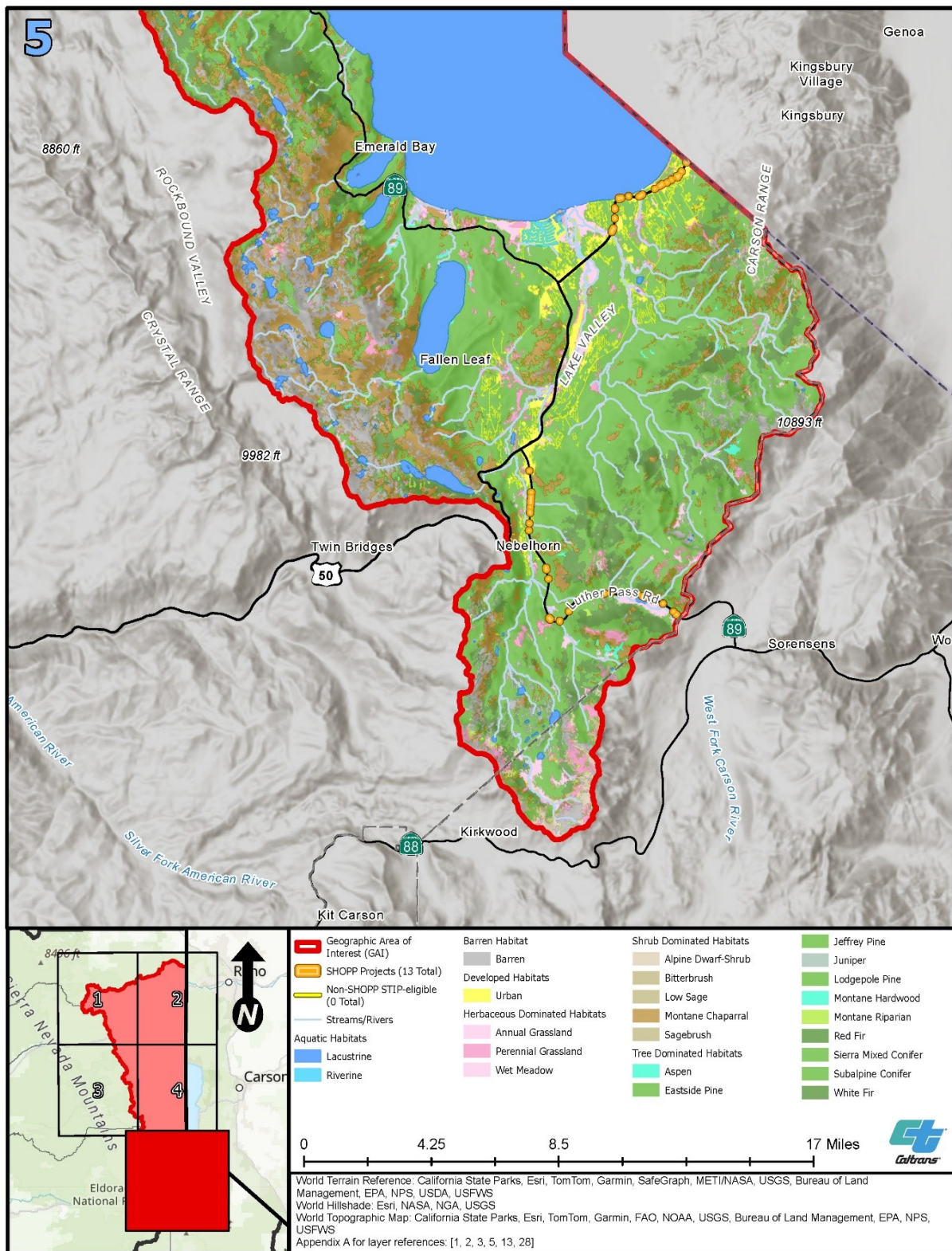












APPENDIX D: COMPLETE SAMNA SPECIES RESULTS

Complete terrestrial species SAMNA results for the GAI are provided in Table D-1, which includes SAMNA results for the portion of the Sierra Nevada Ecoregion Section (starts on page D-3) in the GAI. The table lists the species for which the SAMNA has enough and the right kind of information to forecast potential impacts from transportation projects conceptualized in long-range transportation plans (Caltrans 2024). SAMNA results are only as accurate as their foundational data and have not been ground truthed. Regarding these results:

- Species without CWHR system-supplied home ranges but identified by the California Natural Diversity Database as potentially present will be incorporated into the analysis of specific advance mitigation projects and future transportation projects.
- Subspecies may or may not have CWHR-supplied or other documented sources showing their home ranges. When a subspecies did not have home range information that could not be incorporated into the SAMNA model (that is, from a geographically based, available dataset), SAMNA results are provided at the species level, which may include both special-status and non-special-status species; therefore, the number of species with the potential to be affected may be overestimated.
- If impacts were estimated, additional information sources¹ were consulted to determine whether special-status subspecies are located in the GAI, and the SAMNA results are usable for this analysis. Footnotes have been added to the tables where data input limitations and modeling assumptions resulted in identification of potential impacts on species or subspecies that are not present in the GAI.
- When no impacts are estimated for a specific habitat, for any species, the habitat is excluded from this appendix.
- When no impacts for a species are estimated for any habitat, the species is included in this appendix. Based on available information, it is potentially present within the GAI, but not in the habitats forecast to be affected by transportation projects.

Total habitat impacts for each special-status species are indicated in the far-right column of Table D-1. Total habitat impacts in the bottom row of Table D-1 indicate the total anticipated impacts for each habitat type. These totals are not additive across all special-status species because each habitat type may provide suitable habitat for more than one special-status species or subspecies.

¹ For plants, this includes the California Native Plant Society and the California Consortium of Herbaria. For federally listed species, this includes recent 5-year reviews, FWS species profiles, recovery plans, and Environmental Conservation Online System range maps. For birds, this includes *California Species of Special Concern* (Shuford and Gardali 2008). For amphibians and reptiles, this includes California Herps online, HCPs/NCCPs, and NPS documents.

Habitats referenced in Table D-1 are mapped in Appendix C, *Land Cover Types*. While Sierra Nevada yellow-legged frog is the species of mitigation need identified for this GAI, several other special-status species share habitat with this species of mitigation need and may be affected by Caltrans' future transportation projects. Advance mitigation planning will consider the special-status species that co-occur in habitats that may also benefit from advance mitigation project planning and scoping to improve the conservation benefits of compensatory mitigation in the GAI. For example, advance mitigation established for Sierra Nevada yellow-legged frog impacts may also provide mitigation to compensate for impacts on other species. The types of habitats for the species of mitigation need with the potential to be affected in the GAI, and the other special-status species that may share these habitats, were excerpted from Table D-1 and are provided in tables in Chapter 5, *Modeled Estimated Impacts*, of the main RAMNA text.

References

- Caltrans (California Department of Transportation). 2024. "Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Third Quarter of FY 2023/2024" (data file). Accessed October 16, 2024.
<http://www.dot.ca.gov/env/advancemitigation/>.
- Shuford, W. D., and T. Gardali, editors. 2008. *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conversation Concern in California*.

Table D-1. Complete SAMNA Results for the Sierra Nevada Ecoregion Section in the GAI, by Land Cover (acres)

Common Name	Scientific Name	Status	Annual Grassland	Barren	Bitterbrush	Eastside Pine	Jeffrey Pine	Lacustrine	Lodgepole Pine	Montane Chaparral	Montane Hardwood-Conifer	Montane Riparian	Perennial Grassland	Red Fir	Sagebrush	Sierran Mixed Conifer	Wet Meadow	White Fir	Total
Plants	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Tahoe yellow cress	<i>Rorippa subumbellata</i>	FS, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.13
Amphibians	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
Long-toed salamander ^a	<i>Ambystoma macrodactylum</i>	FE, SE, SFP, SSC	0.00	0.00	0.00	0.00	0.23	0.02	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.04	0.00	1.10
Mount Lyell salamander	<i>Hydromantes platycephalus</i>	None	0.00	0.10	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.04	0.00	0.96
Northern leopard frog	<i>Lithobates pipiens</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.42	0.04	0.00	0.49
Sierra Nevada yellow-legged frog	<i>Rana sierrae</i>	FE, FS, ST	0.00	0.00	0.00	0.00	3.30	0.16	0.34	0.00	0.14	0.36	0.00	0.33	0.00	15.28	0.13	1.88	21.92
Yosemite toad	<i>Anaxyrus canorus</i>	FT, FS, SSC	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.04	0.00	0.47
Reptiles	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
California mountain kingsnake	<i>Lampropeltis zonata</i>	None	3.72	0.00	0.00	0.00	2.86	0.00	0.00	1.41	0.14	0.34	0.00	0.00	0.00	14.86	0.09	1.88	25.31
Common gartersnake ^b	<i>Thamnophis sirtalis</i>	SSC	3.72	0.00	0.00	4.60	3.28	0.18	0.00	1.52	0.14	0.36	0.25	0.00	7.54	14.89	0.09	1.88	38.45
Common sagebrush lizard	<i>Sceloporus graciosus</i>	FS	0.00	0.00	4.68	4.60	3.30	0.00	0.34	1.41	0.14	0.00	0.00	0.00	7.54	15.28	0.00	1.88	39.17
Gophersnake	<i>Pituophis catenifer</i>	None	3.72	0.00	4.68	4.60	3.28	0.00	0.00	1.41	0.14	0.36	0.25	0.00	7.54	15.14	0.09	1.88	43.10
Northern rubber boa	<i>Charina bottae</i>	None	0.00	0.00	0.00	0.00	3.30	0.00	0.34	1.41	0.14	0.36	0.00	0.33	0.00	15.28	0.13	1.88	23.17
Western skink ^c	<i>Plestiodon skiltonianus</i>	FS	3.72	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.14	0.36	0.25	0.00	0.00	14.97	0.00	1.88	22.73
Birds	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
American white pelican	<i>Pelecanus erythrorhynchos</i>	SSC	0.00	4.61	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.79
Bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE, SFP, SFS	3.72	4.72	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.99
Bewick's wren ^d	<i>Thryomanes bewickii</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.24

Common Name	Scientific Name	Status	Annual Grassland	Barren	Bitterbrush	Eastside Pine	Jeffrey Pine	Lacustrine	Lodgepole Pine	Montane Chaparral	Montane Hardwood-Conifer	Montane Riparian	Perennial Grassland	Red Fir	Sagebrush	Sierran Mixed Conifer	Wet Meadow	White Fir	Total
Black swift	<i>Cypseloides niger</i>	SSC	0.00	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.14	0.04	0.00	0.23
Black tern	<i>Chlidonias niger</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.07
Burrowing owl	<i>Athene cunicularia</i>	FS, SSC	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0.00	0.00	0.00	3.30	0.28	0.00	0.34	0.00	0.00	0.22	0.00	0.33	0.00	13.86	0.00	1.82	20.13
Common loon	<i>Gavia immer</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Common yellowthroat ^e	<i>Geothlypis trichas</i>	SSC	3.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.01	0.00	0.00	0.00	0.00	0.00	3.91
Golden eagle	<i>Aquila chrysaetos</i>	FS, SFS, SFP	3.72	4.72	4.68	4.60	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.81
Great blue heron	<i>Ardea herodias</i>	SFS	3.72	0.00	0.00	4.60	0.00	0.18	0.00	0.00	0.14	0.36	0.28	0.00	0.00	15.28	0.13	1.88	26.57
Great gray owl	<i>Strix nebulosa</i>	FS, SE, SFS	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.33	0.00	14.97	0.09	1.88	17.62
Loggerhead shrike	<i>Lanius ludovicianus</i>	SE, SSC	0.00	0.01	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.45
Long-eared owl	<i>Asio otus</i>	SSC	3.72	0.00	4.68	4.60	0.00	0.00	0.00	1.41	0.14	0.36	0.28	0.00	7.54	15.28	0.13	1.88	40.01
Marsh wren ^f	<i>Cistothorus palustris</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Northern goshawk ^g	<i>Accipiter gentilis</i>	FS, SSC, SFS	0.00	0.00	4.68	4.60	3.30	0.00	0.34	1.52	0.14	0.36	0.00	0.33	7.54	15.28	0.00	1.88	39.97
Northern harrier	<i>Circus cyaneus</i>	SSC	0.00	0.01	0.00	0.00	0.41	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.11	0.00	0.00	0.58
Olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0.00	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.00	0.33	0.00	15.28	0.00	1.88	26.23
Osprey	<i>Pandion haliaetus</i>	FS	3.72	4.72	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.99
Peregrine falcon	<i>Falco peregrinus</i>	SFS, SFP	3.72	4.72	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.99
Redhead	<i>Aythya americana</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Red-winged blackbird ^h	<i>Agelaius phoeniceus</i>	SSC	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.28	0.00	0.00	0.00	0.13	0.00	4.48
Sandhill crane ⁱ	<i>Grus canadensis</i>	FS, ST, SSC, SFP	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.16
Savannah sparrow ^j	<i>Passerculus sandwichensis</i>	SE, SSC	3.72	0.00	4.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	7.54	0.00	0.13	0.00	16.34
Song sparrow ^k	<i>Melospiza melodia</i>	SSC	3.72	0.00	0.00	4.60	3.30	0.18	0.00	0.00	0.14	0.36	0.28	0.00	0.00	15.28	0.13	1.88	29.86
Sooty grouse ^l	<i>Dendragapus fuliginosus</i>	SSC	3.72	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.28	0.33	7.54	15.28	0.00	1.88	37.76
Spotted owl	<i>Strix occidentalis</i>	FT, FS, ST, SFS, SSC	0.00	0.00	0.00	3.30	0.64	0.00	0.34	0.00	0.00	0.23	0.00	0.33	0.00	13.88	0.00	1.82	20.54

Common Name	Scientific Name	Status	Annual Grassland	Barren	Bitterbrush	Eastside Pine	Jeffrey Pine	Lacustrine	Lodgepole Pine	Montane Chaparral	Montane Hardwood-Conifer	Montane Riparian	Perennial Grassland	Red Fir	Sagebrush	Sierran Mixed Conifer	Wet Meadow	White Fir	Total
Spotted towhee ^m	<i>Pipilo maculatus</i>	SSC	0.00	0.00	4.68	4.60	3.25	0.00	0.00	1.22	0.14	0.36	0.00	0.00	7.54	14.77	0.00	1.88	38.44
Vaux's swift	<i>Chaetura vauxi</i>	SSC	0.00	0.00	0.00	0.00	0.05	0.02	0.00	0.19	0.00	0.00	0.24	0.00	0.00	0.58	0.00	0.00	1.08
Vesper sparrow ⁿ	<i>Poocetes gramineus</i>	SSC	0.03	0.00	2.07	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	1.03	0.00	0.00	0.00	3.53
Willow flycatcher	<i>Empidonax traillii</i>	FS, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06
Yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	0.00	0.00	4.60	3.23	0.00	0.23	1.33	0.14	0.36	0.00	0.33	0.00	14.46	0.00	1.88	26.55
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	3.72	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.09	0.00	4.00
Mammals	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
American badger	<i>Taxidea taxus</i>	SSC	3.72	4.72	4.68	4.60	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.81
Black-tailed jackrabbit ^o	<i>Lepus californicus</i>	None	3.02	0.00	4.68	2.60	0.00	0.00	0.00	0.40	0.14	0.09	0.00	0.00	7.40	0.50	0.02	0.00	18.86
Broad-footed mole ^p	<i>Scapanus latimanus</i>	SSC	3.72	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.28	0.33	0.00	15.28	0.13	1.88	30.35
Deer mouse ^q	<i>Peromyscus maniculatus</i>	SSC	3.72	4.72	4.68	4.60	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.81
Fisher	<i>Pekania pennanti</i>	FS, SSC	0.00	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.00	0.33	0.00	15.28	0.00	1.88	26.23
Fringed myotis	<i>Myotis thysanodes</i>	FS	3.72	4.72	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.00	1.88	48.86
Lodgepole chipmunk ^r	<i>Tamias speciosus</i>	None	0.00	0.00	0.00	0.00	3.30	0.00	0.34	1.01	0.00	0.00	0.00	0.33	0.00	15.28	0.00	1.88	22.14
Long-eared myotis	<i>Myotis evotis</i>	FS	0.00	4.72	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	45.27
Marten	<i>Martes caurina</i>	FS	0.00	4.72	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.28	0.33	0.00	15.28	0.13	1.88	31.35
Mountain beaver ^s	<i>Aplodontia rufa</i>	FE, SSC	0.00	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.28	0.33	0.00	15.28	0.13	1.88	26.64
Mountain lion ^t	<i>Puma concolor</i>	SSC	3.72	0.00	4.68	4.60	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	44.09
Northern flying squirrel ^u	<i>Glaucomys sabrinus</i>	None	0.00	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.14	0.36	0.00	0.33	0.00	15.28	0.00	1.88	26.23
Northern river otter ^v	<i>Lontra canadensis</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.04	0.00	0.54
Pallid bat	<i>Antrozous pallidus</i>	FS, SSC	3.72	4.72	4.68	4.60	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.81
Ringtail	<i>Bassariscus astutus</i>	SFP	3.72	4.72	4.68	4.60	3.30	0.00	0.00	1.52	0.14	0.36	0.28	0.00	7.54	15.28	0.13	1.88	48.14
Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	FS, FE, ST	3.08	1.14	0.00	1.35	0.73	0.00	0.34	0.30	0.00	0.05	0.28	0.00	0.00	1.61	0.13	0.00	9.01

Common Name	Scientific Name	Status	Annual Grassland	Barren	Bitterbrush	Eastside Pine	Jeffrey Pine	Lacustrine	Lodgepole Pine	Montane Chaparral	Montane Hardwood-Conifer	Montane Riparian	Perennial Grassland	Red Fir	Sagebrush	Sierran Mixed Conifer	Wet Meadow	White Fir	Total
Small-footed myotis	<i>Myotis ciliolabrum</i>	FS	0.08	0.00	1.79	0.33	0.00	0.08	0.00	0.00	0.14	0.13	0.00	0.00	0.04	0.00	0.07	0.00	2.67
Snowshoe hare ^w	<i>Lepus americanus</i>	SSC	0.00	0.00	0.00	0.00	3.30	0.00	0.34	0.00	0.00	0.23	0.00	0.33	0.00	15.03	0.00	1.88	21.11
Spotted bat	<i>Euderma maculatum</i>	FS, SSC	3.72	0.00	4.68	4.60	3.30	0.00	0.00	1.52	0.14	0.36	0.28	0.00	7.54	15.28	0.13	1.88	43.42
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	3.72	4.70	4.68	4.60	3.16	0.00	0.34	1.52	0.14	0.36	0.25	0.33	7.54	14.86	0.09	1.88	48.18
Vagrant shrew ^x	<i>Sorex vagrans</i>	SSC	3.72	0.00	0.00	0.00	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	0.00	15.28	0.13	1.88	27.27
Western spotted skunk ^y	<i>Spilogale gracilis</i>	SSC	3.72	0.00	4.68	4.60	3.23	0.00	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	44.02
White-tailed jackrabbit	<i>Lepus townsendii</i>	SSC	0.00	0.00	0.00	4.60	3.30	0.00	0.34	0.00	0.00	0.00	0.28	0.33	7.54	0.00	0.13	0.00	16.52
Wolverine	<i>Gulo gulo</i>	FCT, FS, ST, SFP	0.00	4.72	0.00	0.00	3.30	0.00	0.34	1.52	0.14	0.36	0.28	0.33	0.00	15.28	0.13	1.88	28.27
Yuma myotis	<i>Myotis yumanensis</i>	FS	3.72	0.00	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	44.27
Not applicable	Not applicable	Total	3.72	4.72	4.68	4.60	3.30	0.18	0.34	1.52	0.14	0.36	0.28	0.33	7.54	15.28	0.13	1.88	48.99

Notes: FCT = federal candidate threatened; FE = federally endangered, FS = federal sensitive (USFS and/or BLM sensitive), FT = federally threatened, SE = state endangered, SFP = state fully protected, SFS = state fire sensitive, SSC = species of special concern (CDFW), ST = state threatened

^a Long-toed salamander. Only the southern long-toed salamander (*Ambystoma macrodactylum sigillatum*) occurs within the GAI. This subspecies is a SSC.

^b Common gartersnake. Only the south coast and San Francisco subspecies are special status, and they do not occur within the GAI (south coast subspecies ranges from Ventura County south; San Francisco subspecies is nearly endemic to San Mateo County).

^c Western skink. Only the Coronado subspecies is special status, and it does not occur within the GAI (does not range north of San Diego County).

^d Bewick's wren. Only the San Clemente subspecies is special status, and it does not occur within the GAI (was endemic to San Clemente Island and is now extinct).

^e Common yellowthroat. Only the saltmarsh subspecies is considered special status, and it does not occur within the GAI.

^f Marsh wren. Only the Clark's subspecies is considered special status, and it does not occur within the GAI.

^g Northern goshawk. Only the American goshawk (*Accipiter atricapillus*) occurs within the GAI.

^h Red-winged blackbird. Only the Kern subspecies is special status, and it does not occur within the GAI (restricted to Kern County).

ⁱ Sandhill crane. Only the greater sandhill crane (*Antigone canadensis tabida*) occurs within the GAI.

^j Savannah sparrow. Only the Belding's, Bryant's, and large-billed subspecies are special status, and they do not occur within the GAI (Bryant's subspecies occurs in Solano County but is not found east of Vallejo; Belding's and large-billed subspecies do not range north of San Luis Obispo County).

^k Song sparrow. Only the Channel Island, Suisun, Alameda, and San Pablo subspecies and the Modesto population are considered special status, and none of them occur within the GAI.

^l Sooty grouse. Only the Mount Pinos subspecies is considered special status, and it does not occur within the GAI.

^m Spotted towhee. Only the San Clemente subspecies is special status, and it does not occur within the GAI (restricted to the Channel Islands).

ⁿ Vesper sparrow. Only the Oregon subspecies is considered special status, and it does not occur within the GAI.

^o Black-tailed jackrabbit. Only the San Diego subspecies is special status, and it does not occur within the GAI (does not range north of Santa Barbara County).

^p Broad-footed mole. Only the Alameda Island subspecies is special status, and it does not occur within the GAI (endemic to Alameda Island).

^q Deer mouse. Only the Channel Islands subspecies is special status, and it does not occur within the GAI (restricted to the Channel Islands).

^r Lodgepole chipmunk. Only the Mount Pinos subspecies is considered special status, and it does not occur within the GAI.

^s Mountain Beaver. Only the Sierra Nevada mountain beaver (*Aplodontia rufa californica*) occurs within the GAI, which is listed as a SSC.

^t Mountain lion. Only the Yuma subspecies is considered special status, and it does not occur within the GAI.

^u Northern flying squirrel. Only the San Bernardino subspecies is considered special status, and it does not occur within the GAI.

^v Northern river otter. Only the southwestern subspecies is considered special status, and it does not occur within the GAI.

^w Snowshoe hare. Only the Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*) occurs within the GAI.

^x Vagrant shrew. Only the salt-marsh wandering subspecies is considered special status, and it does not occur within the GAI.

^y Western spotted skunk. Only the Channel Islands subspecies is special status, and it does not occur within the GAI (restricted to the Channel Islands).

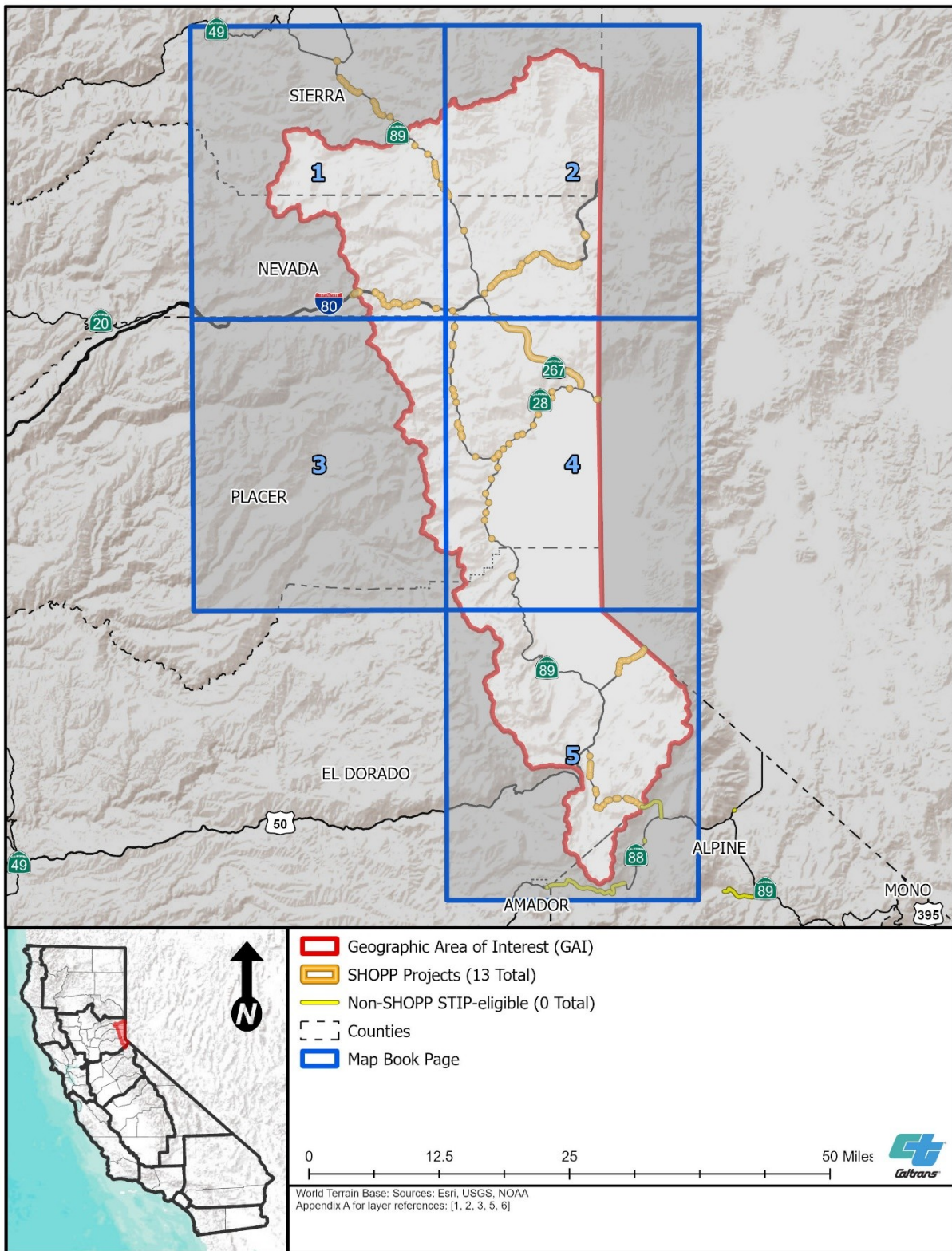
APPENDIX E: AQUATIC RESOURCE LOCATIONS

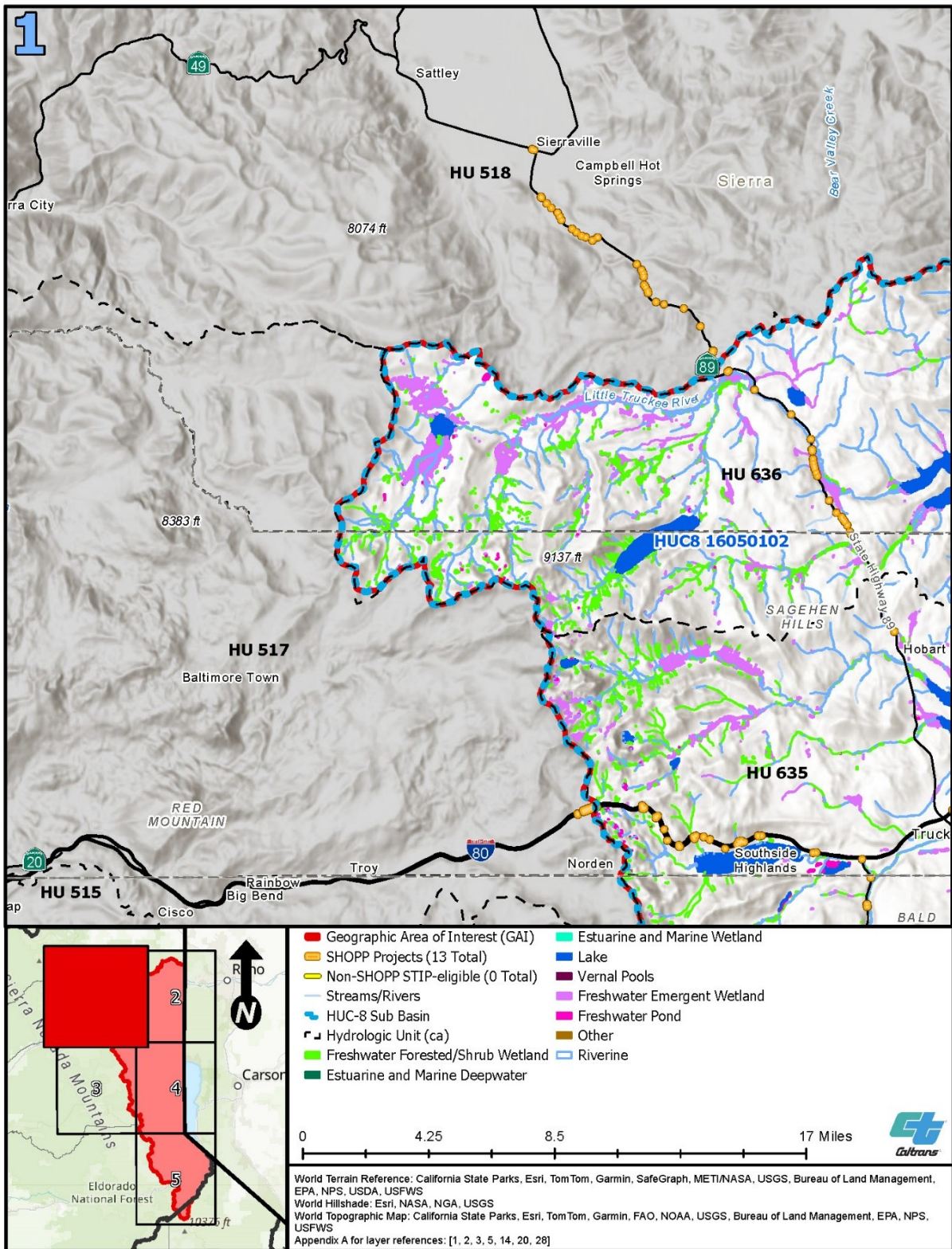
Aquatic resource locations are shown by HUC-8 sub-basin and HU in the following maps, which also include major landmarks for perspective. These locations were excerpted from the SAMNA Reporting Tool's water and wetland layers (Caltrans 2024a, 2024b). HUs are described in Section 2.11 of the RAMNA main text, which includes a crosswalk table of HUC-8 sub-basins and HUs. These five maps correspond with the land cover maps in Appendix C, *Land Cover Types*.

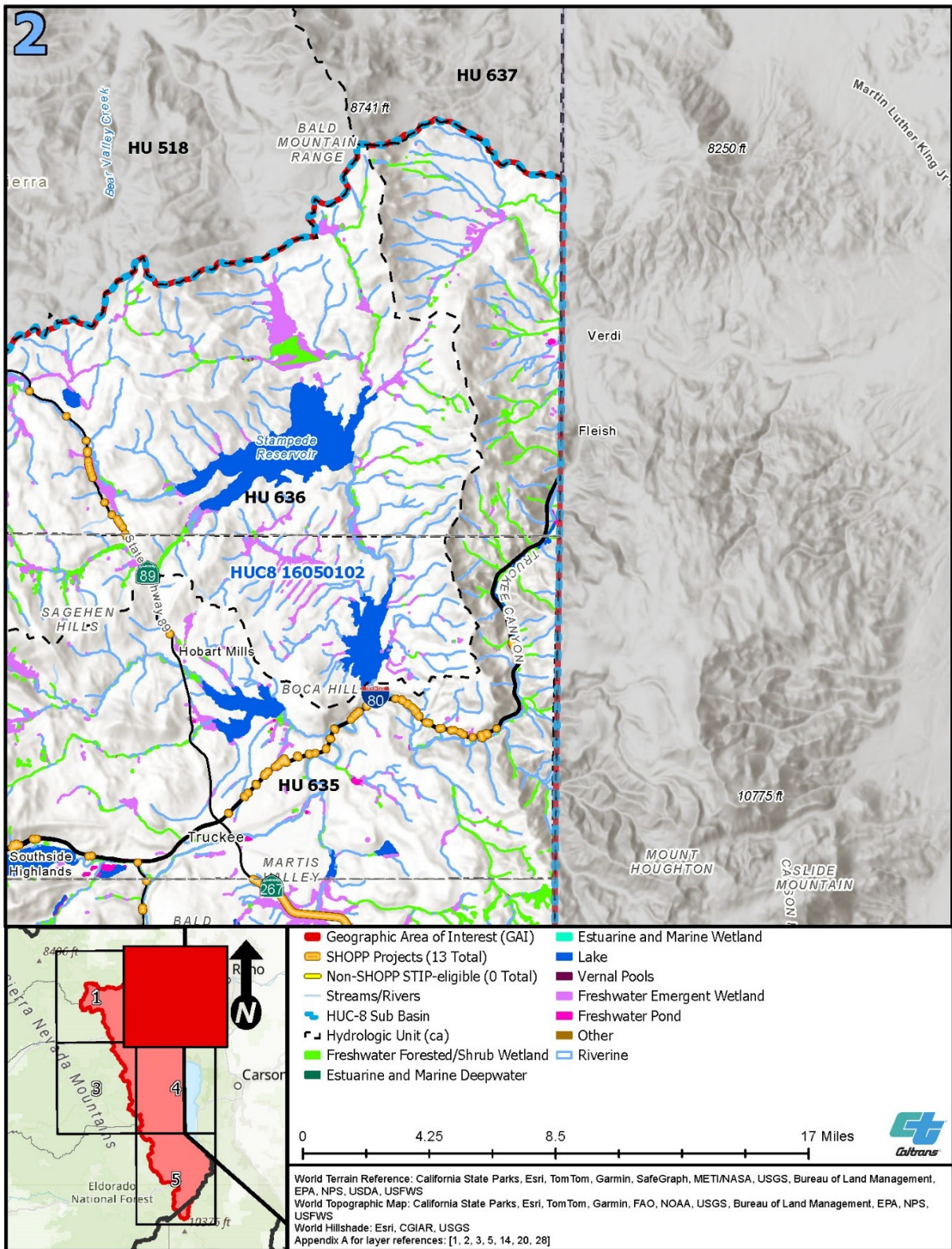
Few sources of information are known to be available that can be used to describe existing and relevant wetland, riparian, and littoral resources. The FWS (2024) National Wetlands Inventory and SFEI's (2024) California Aquatic Resource Inventory are the only known datasets that include the distribution, extent, and types of aquatic resources in the GAI, and the SAMNA Reporting Tool relies on them (Caltrans 2024a, 2024b). Note that Chapter 5, *Modeled Estimated Impacts*, discusses SHOPP project impacts on areas of potential riparian habitat that were estimated using the statewide riparian landcover dataset; however, those data were not used in maps for this RAMNA.

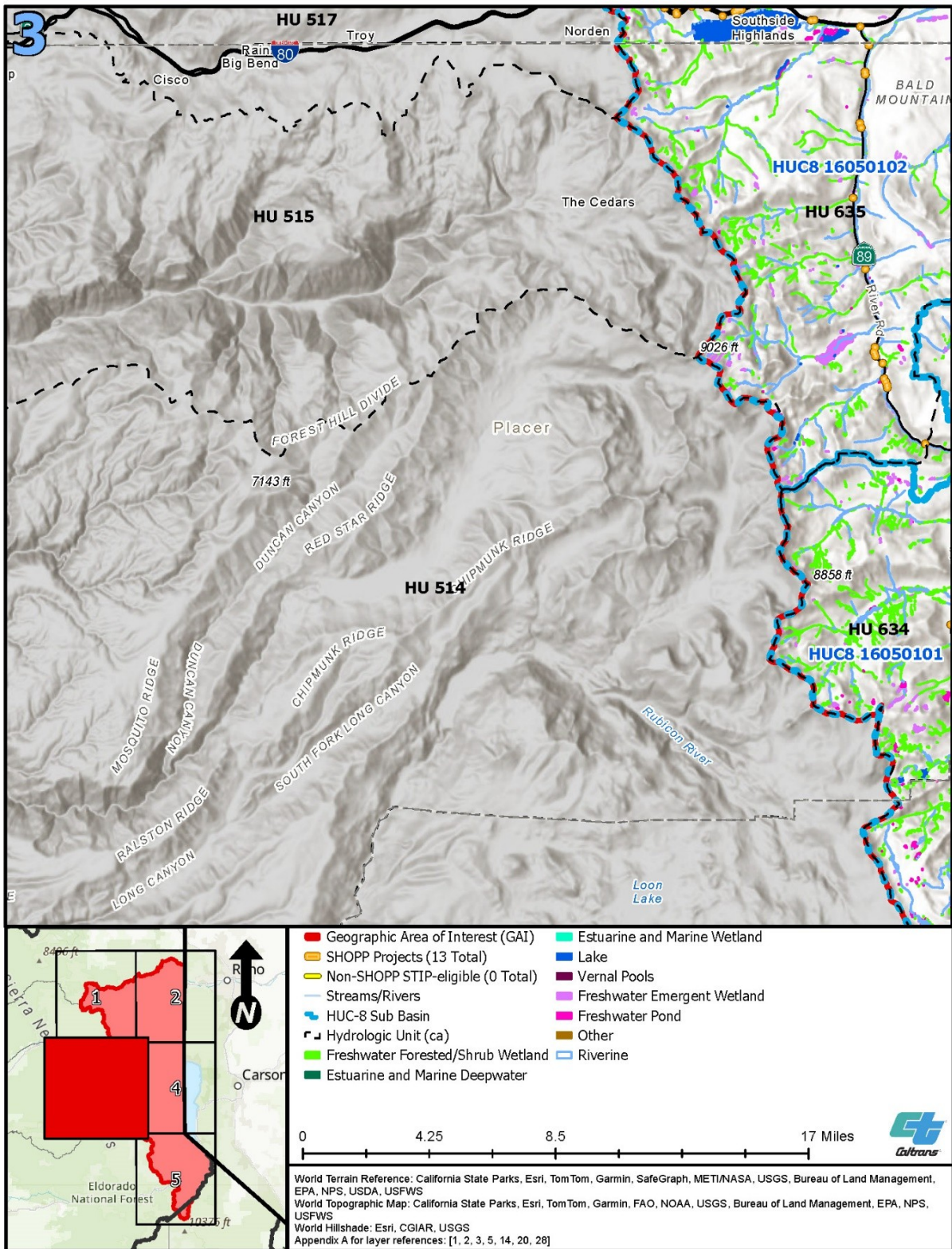
References

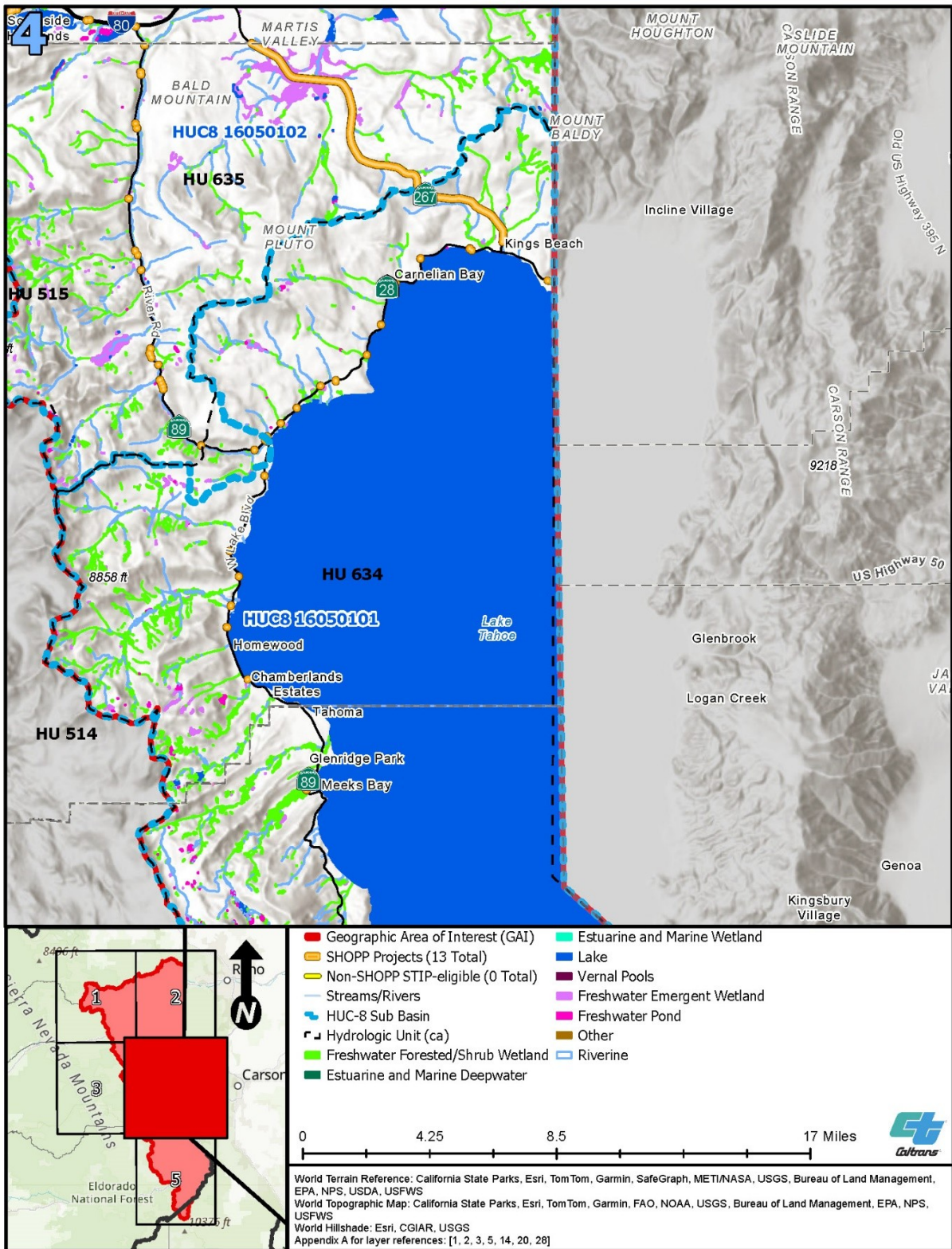
- Caltrans (California Department of Transportation). 2024a. "Waters_D03/D10 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Third Quarter of FY 2023/2024" (data file). Accessed October 16, 2024. <http://www.dot.ca.gov/env/advancemitigation/>.
- . 2024b. "Wetlands_D03/D10 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Third Quarter of FY 2023/2024" (data file). Accessed October 16, 2024. <http://www.dot.ca.gov/env/advancemitigation/>.
- FWS (U.S. Fish and Wildlife Service). 2024. "National Wetlands Inventory. Wetlands Mapper." Accessed November 21, 2024. <https://www.fws.gov/wetlands/data/mapper.html>.
- SFEI (San Francisco Estuary Institute). 2024. "California Aquatic Resource Inventory (CARI)." Accessed November 21, 2024. <https://www.sfei.org/cari#sthash.SnPvzyAU.dpbs>.

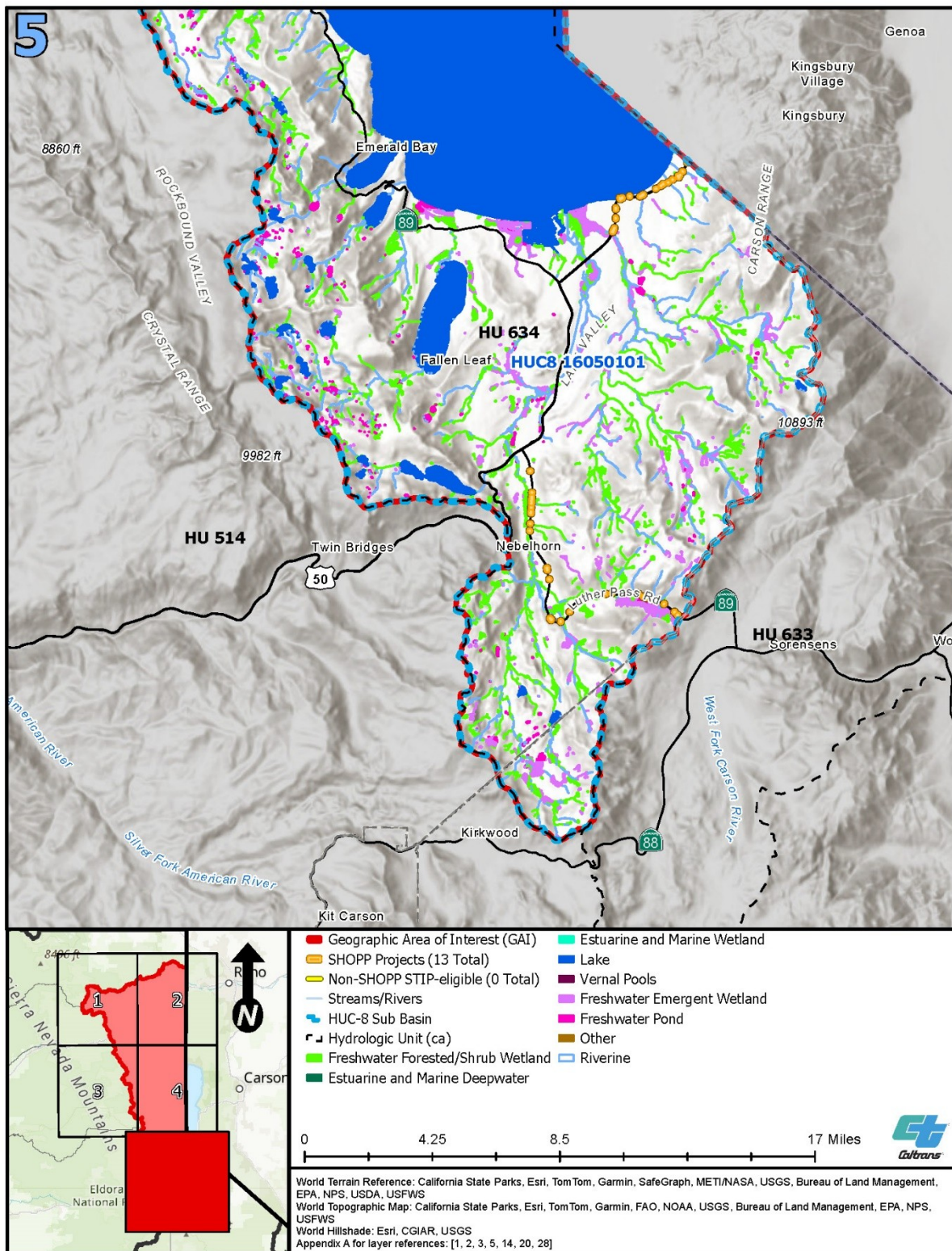












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