



# **ADVANCE MITIGATION PROGRAM**

## **Lower Sacramento Basin Regional Advance Mitigation Needs Assessment**

### **Appendices**

Version 1.0

**Establishing Caltrans' Need for Advance Mitigation  
for Caltrans District 3 and Surroundings  
forecast fiscal years 2019/2020 to 2028/2029**

**California Department of Transportation – District 3**

January 2022

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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 Agency	Source Date	Download Date	Website
1	State Highway Network	Caltrans	8/1/2018	10/11/2018	<a href="http://www.dot.ca.gov/hq/tsip/gis/data/library/Metadata/NHS.html">http://www.dot.ca.gov/hq/tsip/gis/data/library/Metadata/NHS.html</a>
2	SHOPP	Caltrans	2019/2020 Q2	3/17/2021	Caltrans System Planning
3	[RESERVED]	Not applicable	Not applicable	Not applicable	Not applicable
4	Ecoregion Section (GAI)	USFS	1/26/2021	1/26/2021	<a href="https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap">https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap</a>
5	Ecological Subsections	USFS	5/1/2017	10/17/2018	<a href="https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap">https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap</a>
6	Calfish PAD (Passage Assessment Database)	Calfish	10/3/2019	12/15/2019	<a href="https://map.dfg.ca.gov/metadata/ds0069.html?5.84.18vo">https://map.dfg.ca.gov/metadata/ds0069.html?5.84.18vo</a>
7	ACE Climate Resilience – ACE [ds2738]	CDFW	2/22/2018	10/17/2018	<a href="https://map.dfg.ca.gov/metadata/ds2738.html?5.66.18">https://map.dfg.ca.gov/metadata/ds2738.html?5.66.18</a>
8	CEHC	CDFW	10/1/2017	10/17/2018	Layer is a merge of Essential Connectivity Areas and Landscape Blocks
9	Essential Connectivity Areas – CEHC	CDFW	1/1/2014	10/17/2018	<a href="https://map.dfg.ca.gov/metadata/ds0620.html?5.66.18">https://map.dfg.ca.gov/metadata/ds0620.html?5.66.18</a>
10	Natural Landscape Blocks – CEHC	CDFW	10/1/2017	10/17/2018	<a href="https://map.dfg.ca.gov/metadata/ds0621.html?5.66.18">https://map.dfg.ca.gov/metadata/ds0621.html?5.66.18</a>
11	Potential Riparian Connections – CEHC	CDFW	3/1/2010	10/17/2018	<a href="https://map.dfg.ca.gov/metadata/ds0622.html?5.66.18">https://map.dfg.ca.gov/metadata/ds0622.html?5.66.18</a>
12	SWAP Terrestrial Targets – 2015	CDFW	2/1/2018	10/29/2018	<a href="https://map.dfg.ca.gov/metadata/ds1966.html?5.66.18">https://map.dfg.ca.gov/metadata/ds1966.html?5.66.18</a>

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
13	CalWater Hydrologic Areas	California Department of Forestry and Fire Protection	11/1/2016	10/19/2018	<a href="https://frap.fire.ca.gov/mapping/gis-data/">https://frap.fire.ca.gov/mapping/gis-data/</a>
14	California Conservation Easements	California Protected Areas Database	12/1/2020	2/2/2021	<a href="http://www.calands.org/cced">http://www.calands.org/cced</a>
15	California Protected Areas Holdings	California Protected Areas Database	2/10/2021	2/10/2021	<a href="http://www.calands.org/data">http://www.calands.org/data</a>
16	Tribal Land Boundaries	Bureau of Indian Affairs	5/16/2017	10/11/2018	<a href="https://hub.arcgis.com/items/2e915ef3df48422283e5b2c7d89dfcba">https://hub.arcgis.com/items/2e915ef3df48422283e5b2c7d89dfcba</a>
17	U.S. Military Installations	U.S. Census Bureau	12/1/2017	10/11/2018	<a href="https://www.census.gov/cgi-bin/geo/shapefiles/index.php">https://www.census.gov/cgi-bin/geo/shapefiles/index.php</a>
18	County Boundaries	U.S. Census Bureau	7/8/2016	10/11/2018	<a href="https://data.ca.gov/dataset/ca-geographic-boundaries">https://data.ca.gov/dataset/ca-geographic-boundaries</a>
19	County Parcels (Shasta, Sacramento, Nevada, Placer, Alpine, Butte, Tehama, Yuba, Sierra, Solano, Colusa, Yolo, El Dorado, Plumas, Sutter, Amador, Glenn)	Listed Counties	4/30/2019	4/30/2019	Parcel data are distributed by the Department of Technology to internal Caltrans users through an FTP
20	USFWS Critical Habitat	FWS	10/1/2018	3/24/2021	<a href="https://ecos.fws.gov/ecp/report/table/critical-habitat.html">https://ecos.fws.gov/ecp/report/table/critical-habitat.html</a>
21	National Watershed Boundary Dataset	USGS	9/26/2014	10/19/2018	<a href="https://www.usgs.gov/core-science-systems/ngp/national-hydrography">https://www.usgs.gov/core-science-systems/ngp/national-hydrography</a>
22	Corps Regulatory In-Lieu Fee & Bank Information Tracking System	Mitigation Service Banks	Not available	1/28/2019	<a href="https://ribits.usace.army.mil/ribits_apex/f?p=107:2">https://ribits.usace.army.mil/ribits_apex/f?p=107:2</a>
23	CDFW Approved Mitigation Service Areas	Mitigation Service Banks	7/23/2018	1/28/2019	<a href="https://map.dfg.ca.gov/metadata/ds2782.html?5.76.22">https://map.dfg.ca.gov/metadata/ds2782.html?5.76.22</a>
24	Northern Sierra Nevada Foothills wildlife connectivity project	CDFW	6/20/2014	3/24/2021	<a href="https://map.dfg.ca.gov/metadata/ds1004.html?5.94.01">https://map.dfg.ca.gov/metadata/ds1004.html?5.94.01</a>
25	Conservation Plan Boundaries, HCP and NCCP	CDFW, FWS	12/12/2017	1/28/2019	<a href="https://map.dfg.ca.gov/metadata/ds0760.html?5.80.28">https://map.dfg.ca.gov/metadata/ds0760.html?5.80.28</a>

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
26	Vegetation D02/D03/D04/D10 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Second Quarter of FY 2019/2020	SAMNA	1/1/2017	3/24/2021	<a href="http://www.dot.ca.gov/env/advancemitigation/">http://www.dot.ca.gov/env/advancemitigation/</a>
27	Waters and Wetlands D02/D03/D04/D10 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Second Quarter of FY 2019/2020	SAMNA	1/1/2017	3/24/2021	<a href="http://www.dot.ca.gov/env/advancemitigation/">http://www.dot.ca.gov/env/advancemitigation/</a>
28	National Flood Hazard Layer	FEMA	6/29/2018	9/25/2019	<a href="https://www.fema.gov/national-flood-hazard-layer-nfhl">https://www.fema.gov/national-flood-hazard-layer-nfhl</a>
29	RCIS Draft Boundaries	CDFW	9/10/2019	9/25/2019	Requested on 9/25/19, source date is 9/10/2019
30	Terrestrial Connectivity – ACE [ds2734]	CDFW	8/28/2019	9/25/2019	<a href="https://map.dfg.ca.gov/metadata/ds2734.html?5.80.28l">https://map.dfg.ca.gov/metadata/ds2734.html?5.80.28l</a>
31	Terrestrial Biodiversity Summary – ACE [ds2739]	CDFW	2/24/2018	7/3/2019	<a href="https://map.dfg.ca.gov/metadata/ds2739.html?5.80.28l">https://map.dfg.ca.gov/metadata/ds2739.html?5.80.28l</a>
32	Aquatic Biodiversity Summary – ACE [ds2768]	CDFW	2/22/2018	7/3/2019	<a href="https://map.dfg.ca.gov/metadata/ds2768.html?5.80.28l">https://map.dfg.ca.gov/metadata/ds2768.html?5.80.28l</a>
33	National Hydrology Dataset Plus	EPA	3/13/2019	4/29/2021	<a href="https://www.epa.gov/waterdata/get-nhdplus-national-hydrography-dataset-plus-data">https://www.epa.gov/waterdata/get-nhdplus-national-hydrography-dataset-plus-data</a>
34	303(d) List of Impaired Waterbodies	SWRCB	2014–2016	4/7/2020	<a href="https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml">https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml</a>
35	Zipcodes	U.S. Postal Service	2/11/2020	3/11/2020	<a href="https://www.arcgis.com/home/item.html?id=8d2012a2016e484dafaac0451f9aea24">https://www.arcgis.com/home/item.html?id=8d2012a2016e484dafaac0451f9aea24</a>

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
36	Vernal Pools – ACE [ds2732]	CDFW	2/13/2020	1/29/2021	<a href="https://map.dfg.ca.gov/metadata/ds2732.html?5.94.01">https://map.dfg.ca.gov/metadata/ds2732.html?5.94.01</a>
37	National Wild and Scenic Rivers	National Wild and Scenic Rivers System	11/1/2016	10/15/2020	<a href="https://www.rivers.gov/rivers/big-sur.php">https://www.rivers.gov/rivers/big-sur.php</a>

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## APPENDIX B: 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, the USFS Classification and Assessment with LandSat of Visible Ecological Groupings, and the California Department of Forestry and Fire Protection vegetation layer (Caltrans 2021a, 2021b). Land cover types that occur in the GAI based on the SAMNA Reporting Tool are listed below (CDFW 2019), and complete descriptions can be found in Mayer and Laudenslayer (1988). Table B-1 indicates which ecoregion sections these habitat types occur in.

A key map is provided after Table B-1 that references mapbook pages including zoomed-in views of locations in the GAI and mapped land cover types (page B-8). These 66 maps correspond with the aquatic resources maps in Appendix F.

**Tree-dominated Habitats:** Tree-dominated habitats have at least 10 percent total tree canopy crown closure. In the GAI, tree-dominated habitats include aspen, blue oak woodland, blue oak-foothill pine, closed-cone pine-cypress, coastal oak woodland, Douglas fir, Eastside pine, eucalyptus, Jeffrey pine, juniper, Klamath mixed conifer, lodgepole pine, montane hardwood, montane hardwood-conifer, montane riparian, ponderosa pine, red fir, Sierran mixed conifer, subalpine conifer, valley foothill riparian, valley oak woodland, and white fir, which are found in all 7 ecoregion sections.

**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, chamise-redshank chaparral, coastal scrub, low sage, mixed chaparral, montane chaparral, and sagebrush, which are found in all 7 ecoregion sections.

**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, fresh emergent wetland, pasture, perennial grassland, saline emergent wetland, and wet meadow, which are found in all 7 ecoregion sections.

**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, which are found in all 7 ecoregion sections.

**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, deciduous orchard, evergreen orchard, irrigated row and field crops, rice, urban, and vineyard, which are found in all 7 ecoregion sections.

**Non-vegetated Habitats:** Non-vegetated habitats include barren areas, characterized by less than 2 percent cover by herbaceous species. Barren areas are found in all 7 ecoregion sections.

## References

- Caltrans (California Department of Transportation). 2021a. "Vegetation\_ D2/D3/D4/D10 in Caltrans District 3 Geospatial Data for the Advance Mitigation Needs Assessment for the Second Quarter of FY 2019/2020" (data file). Accessed March 24, 2021. <http://www.dot.ca.gov/env/advancemitigation/>.
- . 2021b. *Statewide Advance Mitigation Needs Assessment Report*. State Highway Operation and Protection Program Ten-Year Project Book Second Quarter 2019/2020 Fiscal Year. May. Sacramento, California.
- 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 August 16, 2021. <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.

**Table B-1. Land Cover Types in the Lower Sacramento Basin (HUC-6)**

Land Cover Type	Central California Coast Ecoregion	Great Valley Ecoregion	Northern California Coast Ranges Ecoregion	Northern California Interior Coast Ranges Ecoregion	Southern Cascades Ecoregion	Sierra Nevada Ecoregion	Sierra Nevada Foothills Ecoregion
<b>Tree-dominated Habitats</b>	See below	See below	See below	See below	See below	See below	See below
Aspen	Not mapped	Not mapped	Not mapped	P	P	P	P
Blue Oak Woodland	P	P	P	P	P	P	P
Blue Oak Woodland; Blue Oak-Foothill Pine	P	P	Not mapped	P	P	P	P
Blue Oak Woodland; Valley Foothill Riparian	P	P	Not mapped	P	Not mapped	P	Not mapped
Blue Oak-Foothill Pine	P	P	P	P	P	P	P
Closed-Cone Pine-Cypress	Not mapped	Not mapped	P	Not mapped	P	P	P
Coastal Oak Woodland	P	P	P	P	Not mapped	P	P
Douglas Fir	Not mapped	Not mapped	P	Not mapped	P	P	P
Eastside Pine	Not mapped	Not mapped	Not mapped	Not mapped	P	Not mapped	Not mapped
Eucalyptus	P	P	Not mapped	P	Not mapped	Not mapped	P
Jeffrey Pine	Not mapped	Not mapped	P	Not mapped	P	P	Not mapped

Land Cover Type	Central California Coast Ecoregion	Great Valley Ecoregion	Northern California Coast Ranges Ecoregion	Northern California Interior Coast Ranges Ecoregion	Southern Cascades Ecoregion	Sierra Nevada Ecoregion	Sierra Nevada Foothills Ecoregion
Juniper	Not mapped	Not mapped	Not mapped	P	Not mapped	P	P
Klamath Mixed Conifer	Not mapped	Not mapped	P	Not mapped	Not mapped	Not mapped	Not mapped
Lodgepole Pine	Not mapped	Not mapped	P	Not mapped	P	P	Not mapped
Montane Hardwood	P	P	P	P	P	P	P
Montane Hardwood-Conifer	Not mapped	Not mapped	P	P	P	P	P
Montane Riparian	P	P	P	P	P	P	P
Ponderosa Pine	Not mapped	Not mapped	P	Not mapped	P	P	P
Red Fir	Not mapped	Not mapped	P	Not mapped	P	P	Not mapped
Sierran Mixed Conifer	Not mapped	Not mapped	P	Not mapped	P	P	P
Subalpine Conifer	Not mapped	Not mapped	P	Not mapped	P	P	Not mapped
Valley Foothill Riparian	P	P	Not mapped	P	P	P	P
Valley Oak Woodland	P	P	P	P	P	P	P
White Fir	Not mapped	Not mapped	P	Not mapped	P	P	Not mapped

Land Cover Type	Central California Coast Ecoregion	Great Valley Ecoregion	Northern California Coast Ranges Ecoregion	Northern California Interior Coast Ranges Ecoregion	Southern Cascades Ecoregion	Sierra Nevada Ecoregion	Sierra Nevada Foothills Ecoregion
<b>Shrub-dominated Habitats</b>	See below	See below	See below	See below	See below	See below	See below
Alpine Dwarf-Shrub	Not mapped	Not mapped	P	P	Not mapped	P	Not mapped
Chamise - Redshank Chaparral	P	P	P	P	Not mapped	P	P
Coastal Scrub	Not mapped	P	P	P	Not mapped	Not mapped	P
Low Sage	Not mapped	Not mapped	Not mapped	Not mapped	Not mapped	P	Not mapped
Mixed Chaparral	P	P	P	P	P	P	P
Montane Chaparral	Not mapped	Not mapped	P	Not mapped	P	P	P
Sagebrush	Not mapped	Not mapped	Not mapped	Not mapped	P	Not mapped	P
<b>Herbaceous-dominated Habitats</b>	See below	See below	See below	See below	See below	See below	See below
Annual Grassland	P	P	P	P	P	P	P
Fresh Emergent Wetland	P	P	Not mapped	P	Not mapped	P	P
Pasture	Not mapped	P	Not mapped	P	P	P	P

Land Cover Type	Central California Coast Ecoregion	Great Valley Ecoregion	Northern California Coast Ranges Ecoregion	Northern California Interior Coast Ranges Ecoregion	Southern Cascades Ecoregion	Sierra Nevada Ecoregion	Sierra Nevada Foothills Ecoregion
Perennial Grassland	Not mapped	P	P	P	P	P	P
Saline Emergent Wetland	Not mapped	P	Not mapped	Not mapped	Not mapped	Not mapped	Not mapped
Wet Meadow	P	P	P	P	P	P	Not mapped
<b>Aquatic Habitats</b>	See below	See below	See below	See below	See below	See below	See below
Lacustrine	P	P	P	P	P	P	P
Riverine	P	P	P	P	P	P	P
Riverine; Lacustrine	Not mapped	P	Not mapped	Not mapped	Not mapped	Not mapped	P
<b>Developed Habitats</b>	See below	See below	See below	See below	See below	See below	See below
Cropland	P	P	Not mapped	P	P	P	P
Deciduous Orchard	P	P	P	P	Not mapped	P	Not mapped
Evergreen Orchard	Not mapped	Not mapped	Not mapped	Not mapped	P	P	P
Irrigated Row and Field Crops	Not mapped	P	Not mapped	P	Not mapped	Not mapped	Not mapped
Orchard/Vineyard	P	P	Not mapped	P	Not mapped	Not mapped	Not mapped

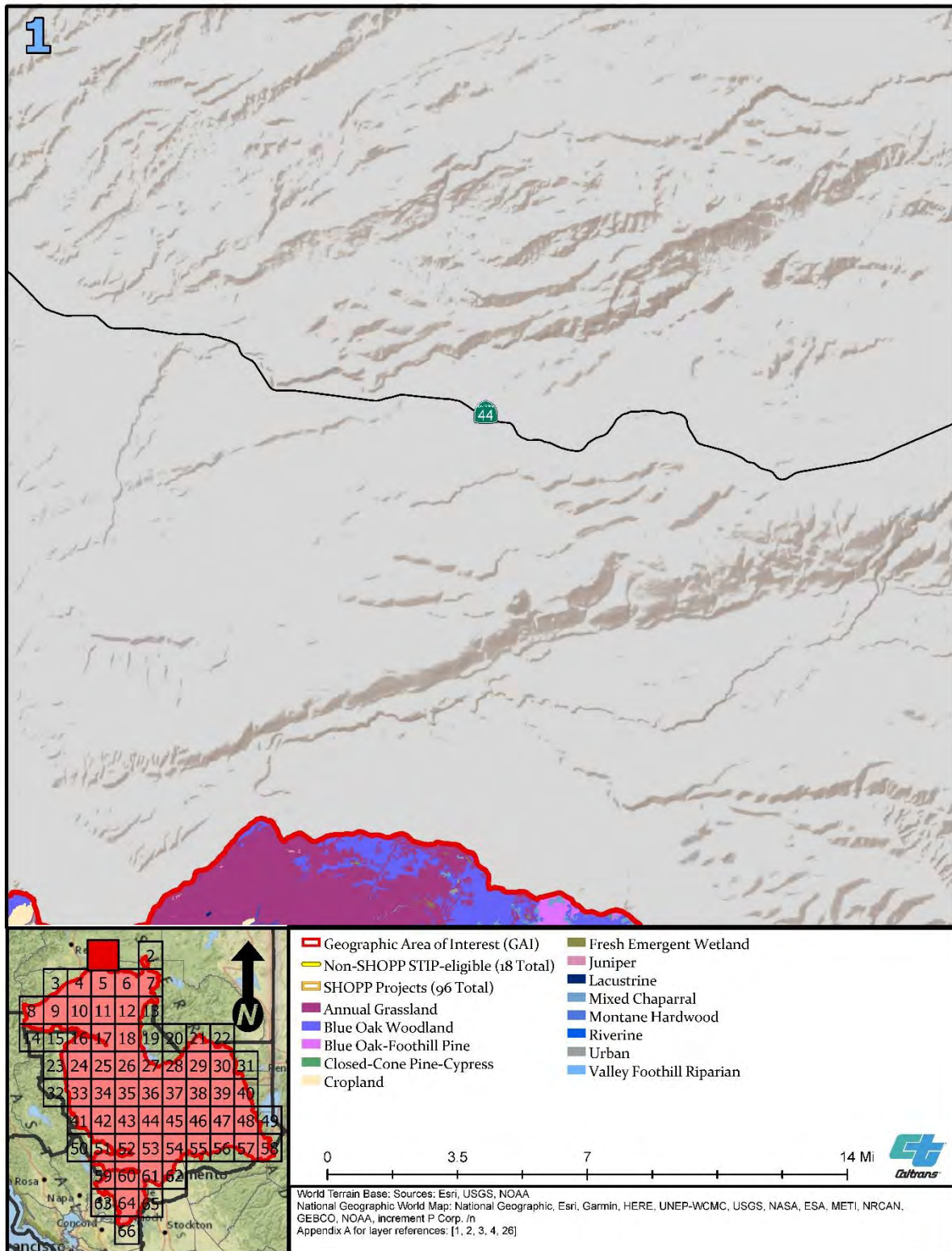
Land Cover Type	Central California Coast Ecoregion	Great Valley Ecoregion	Northern California Coast Ranges Ecoregion	Northern California Interior Coast Ranges Ecoregion	Southern Cascades Ecoregion	Sierra Nevada Ecoregion	Sierra Nevada Foothills Ecoregion
Rice	Not mapped	P	Not mapped	P	Not mapped	Not mapped	Not mapped
Urban	P	P	P	P	P	P	P
Vineyard	Not mapped	P	Not mapped	P	Not mapped	P	Not mapped
<b>Non-vegetated Habitats</b>	See below	See below	See below	See below	See below	See below	See below
Barren	P	P	P	P	P	P	P

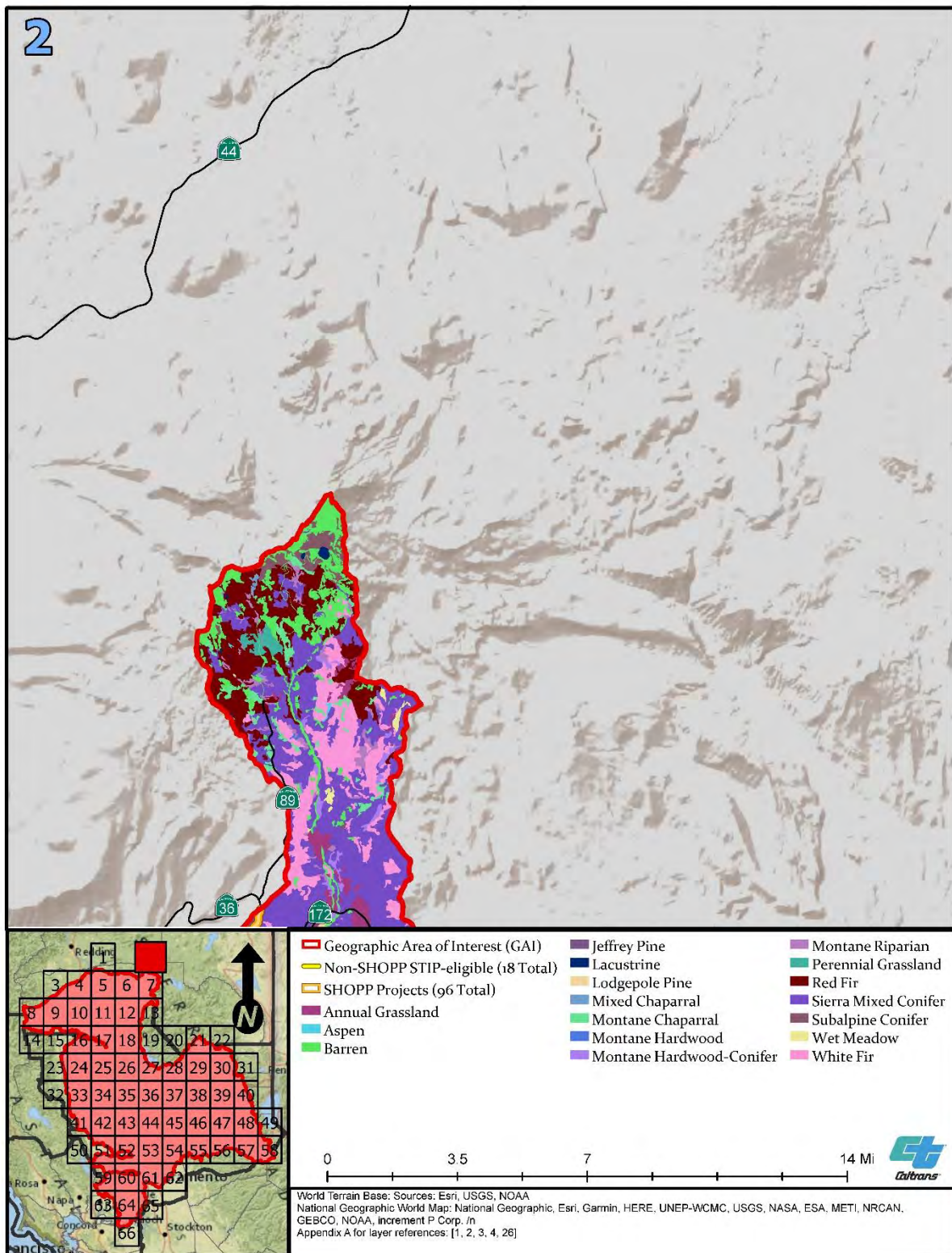
Sources: Caltrans 2021a, 2021b

Notes: Not mapped = Not present; P = Present

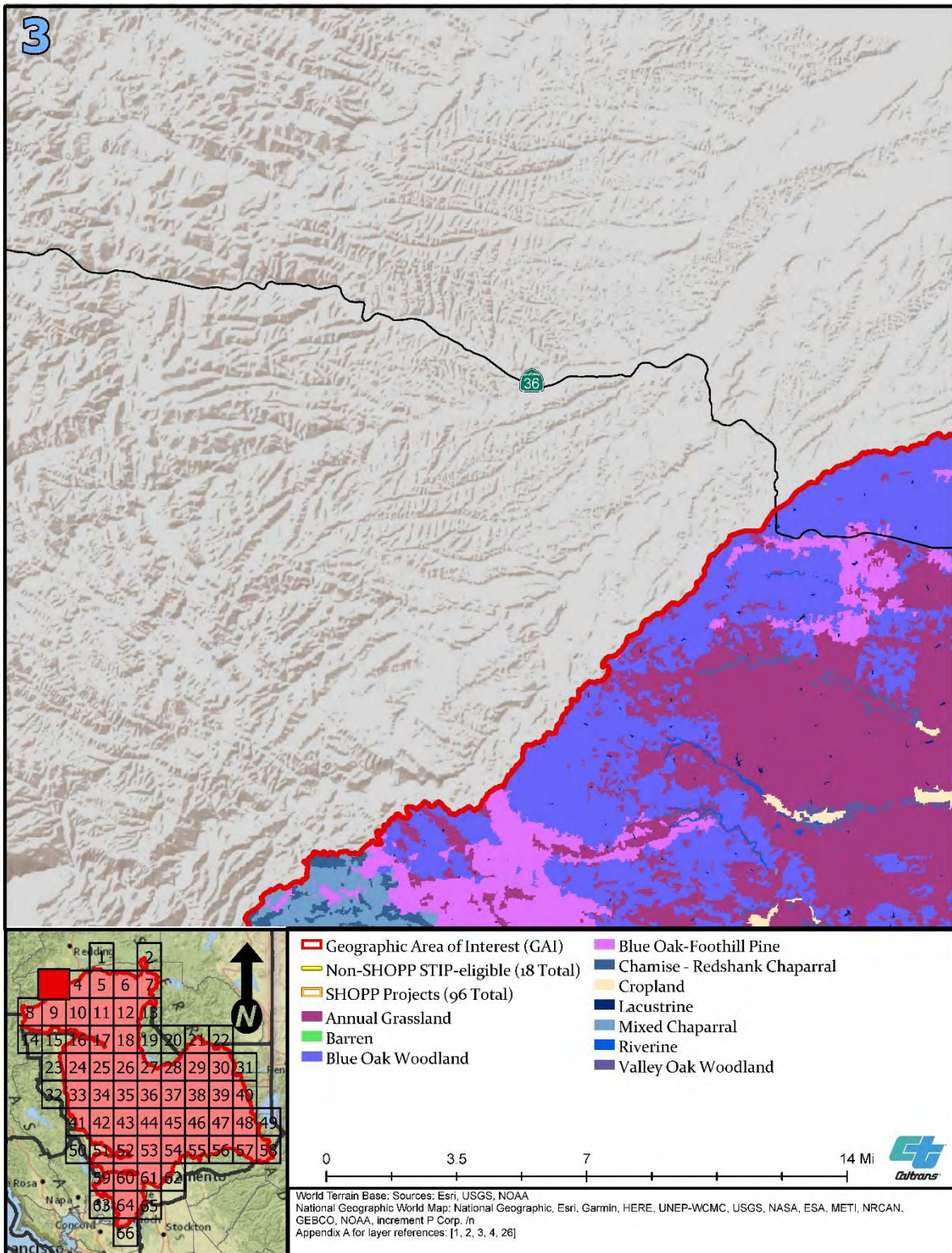




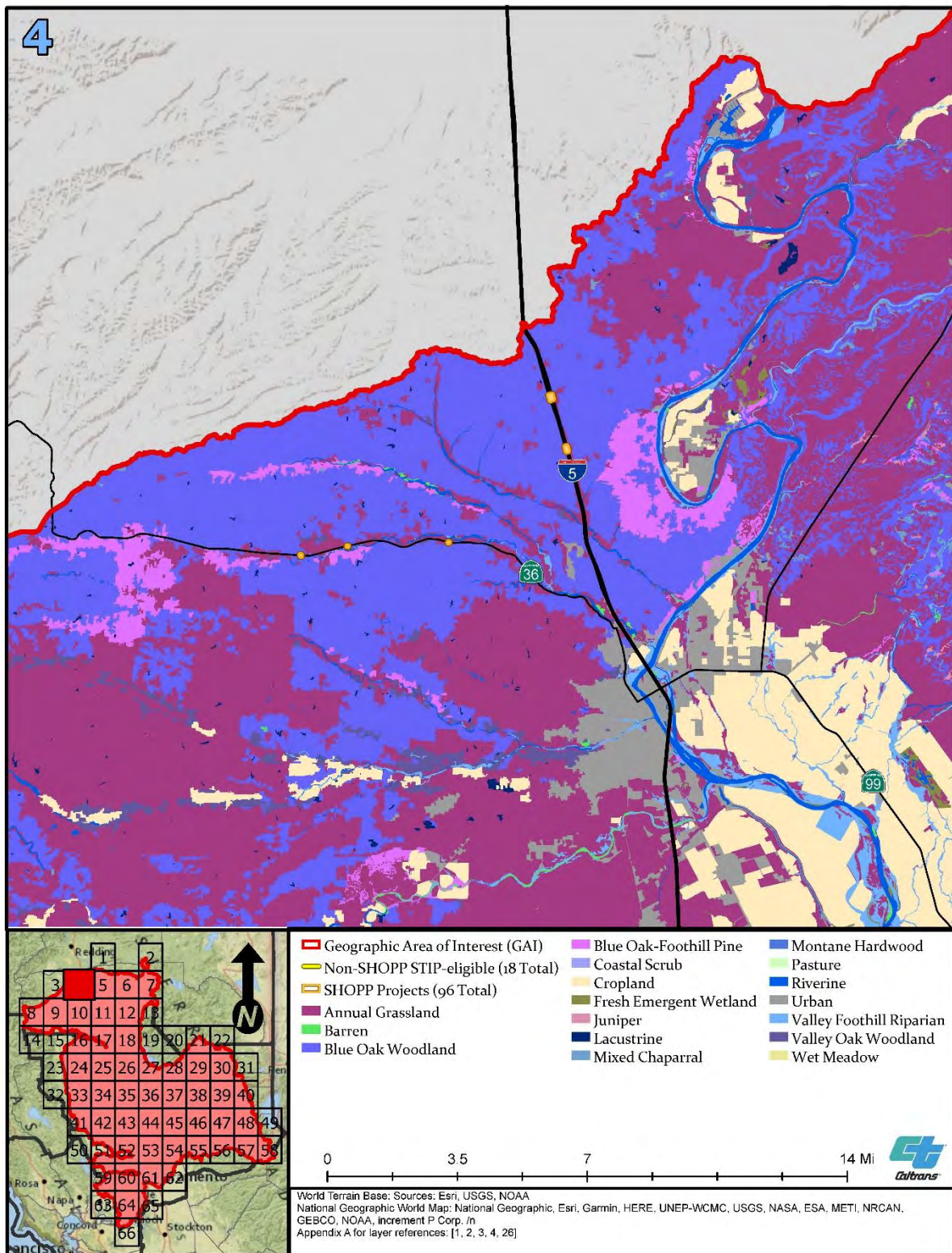




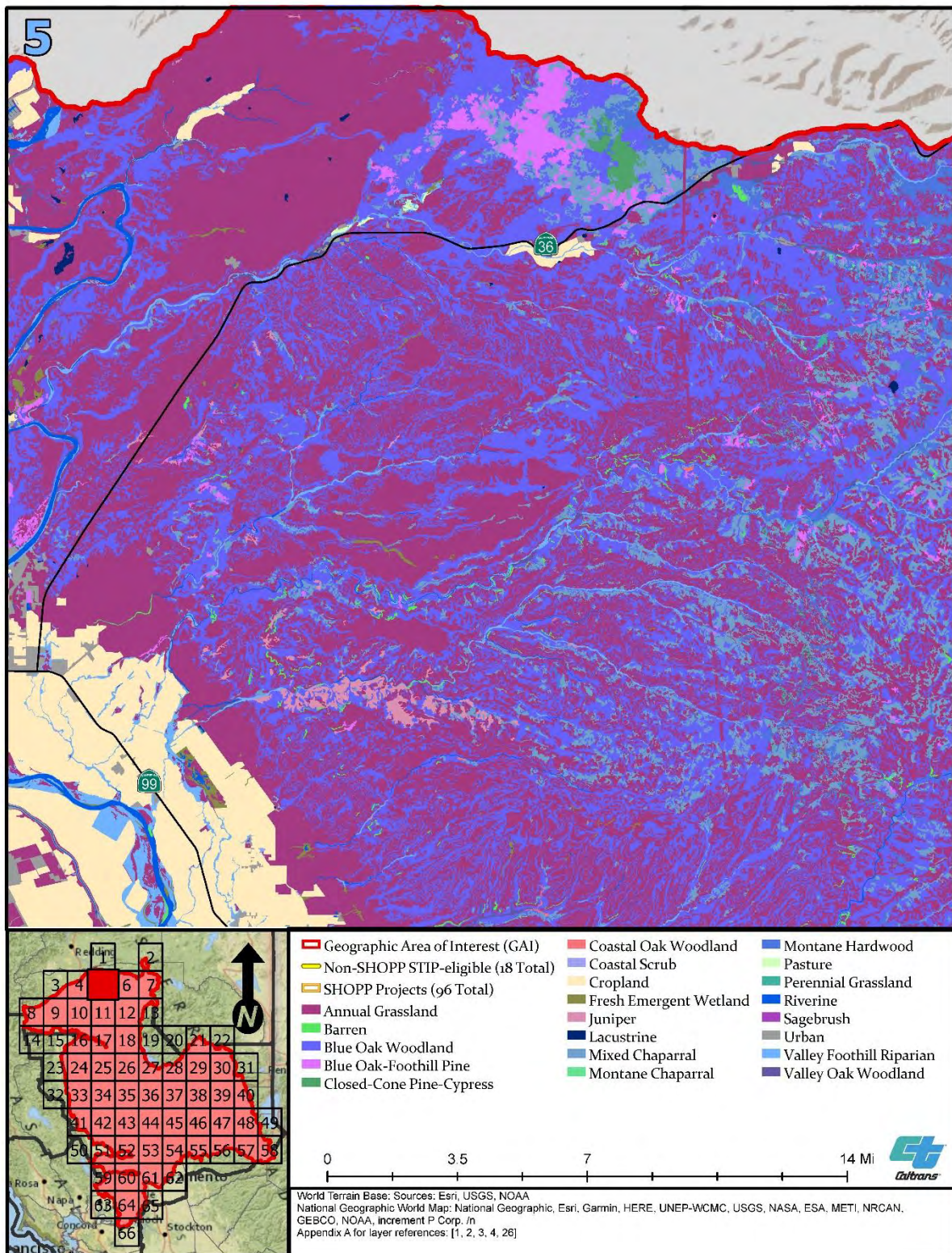




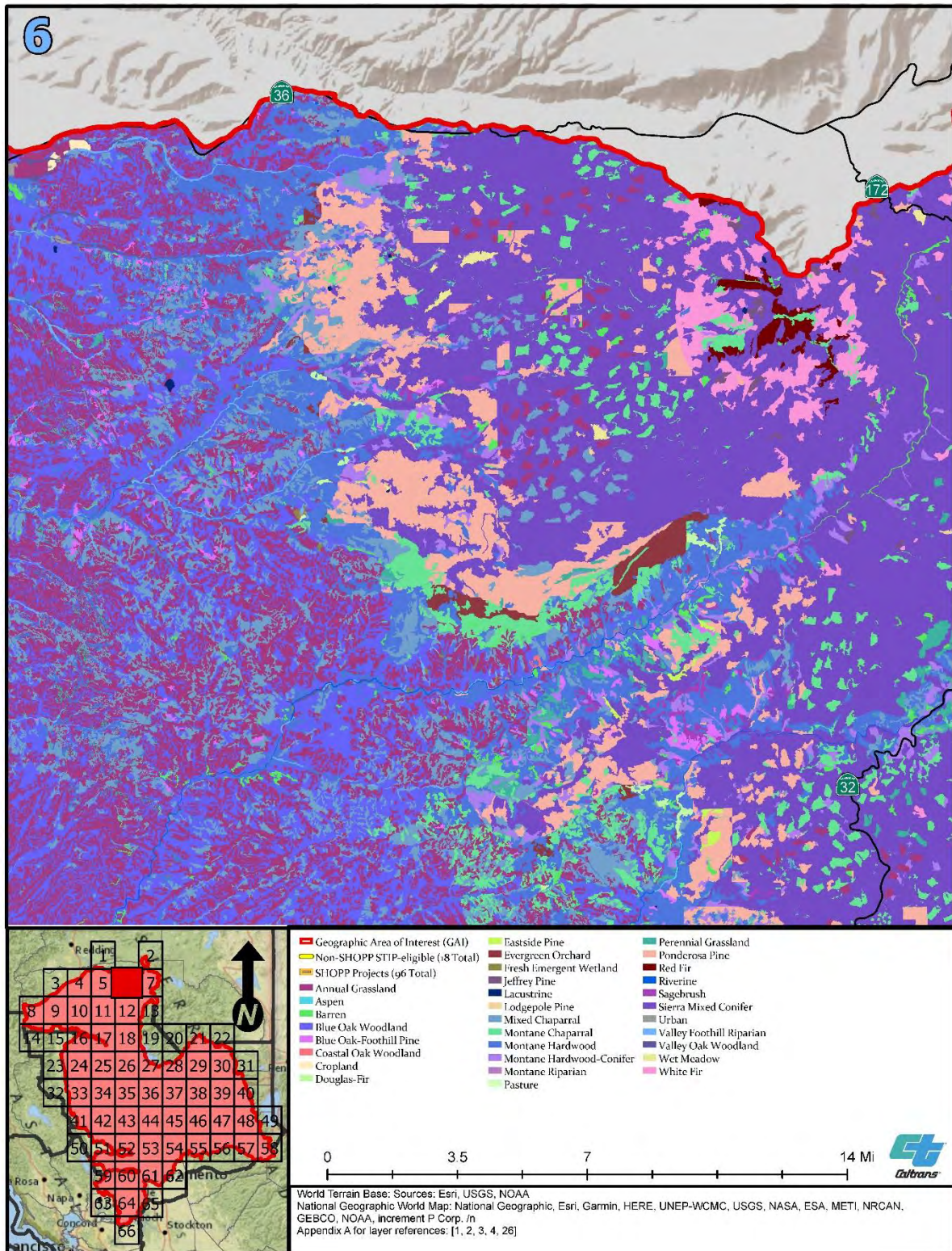




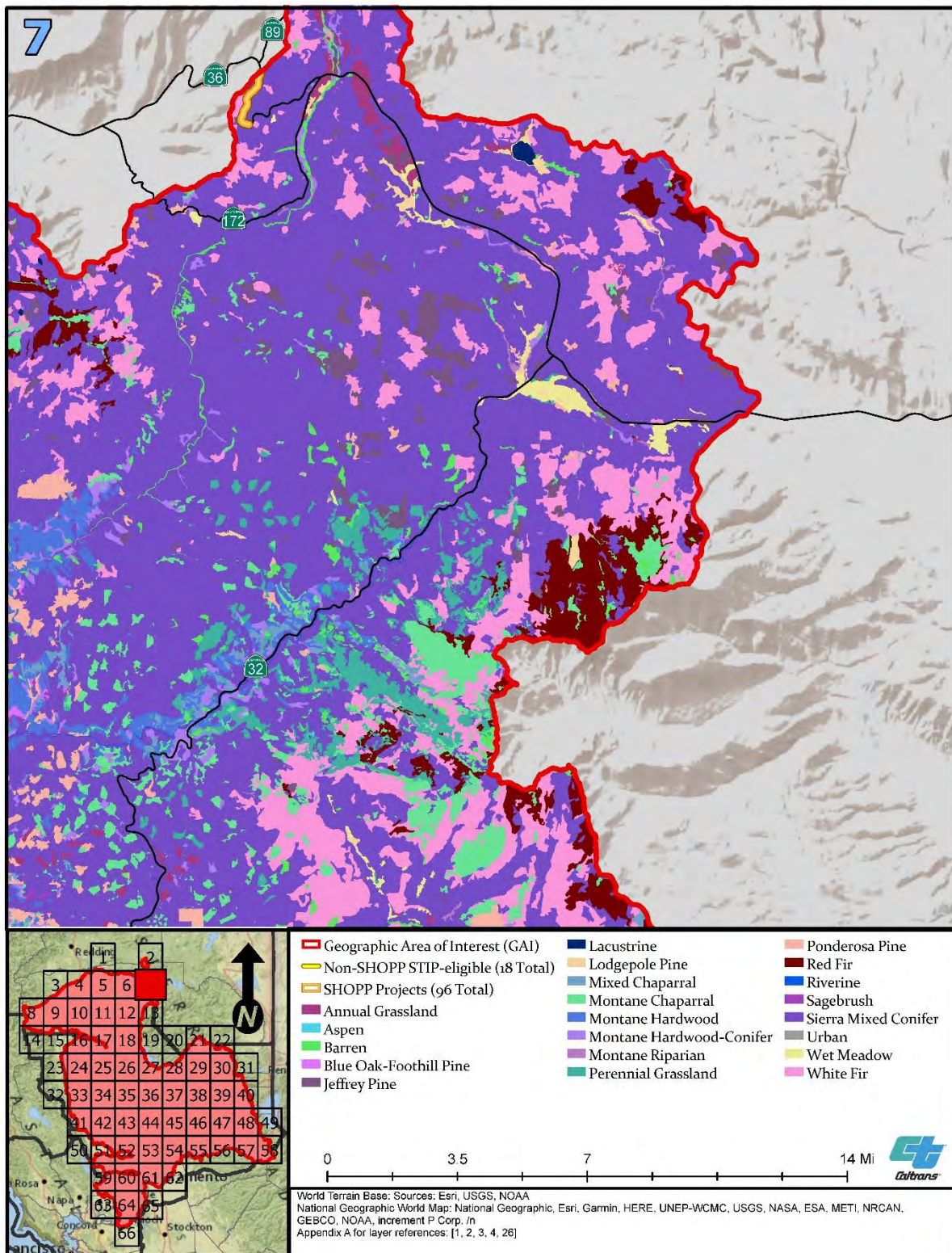




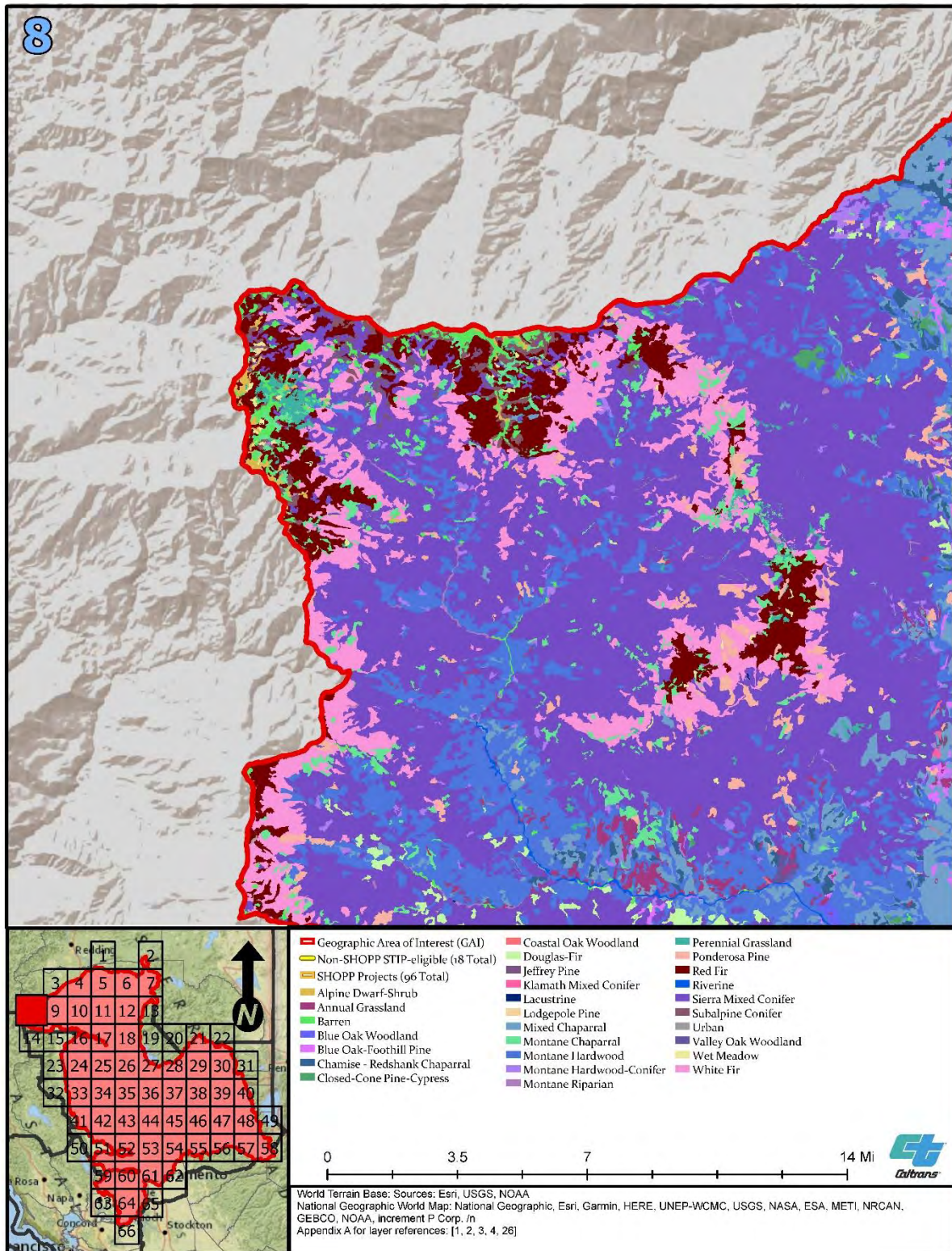




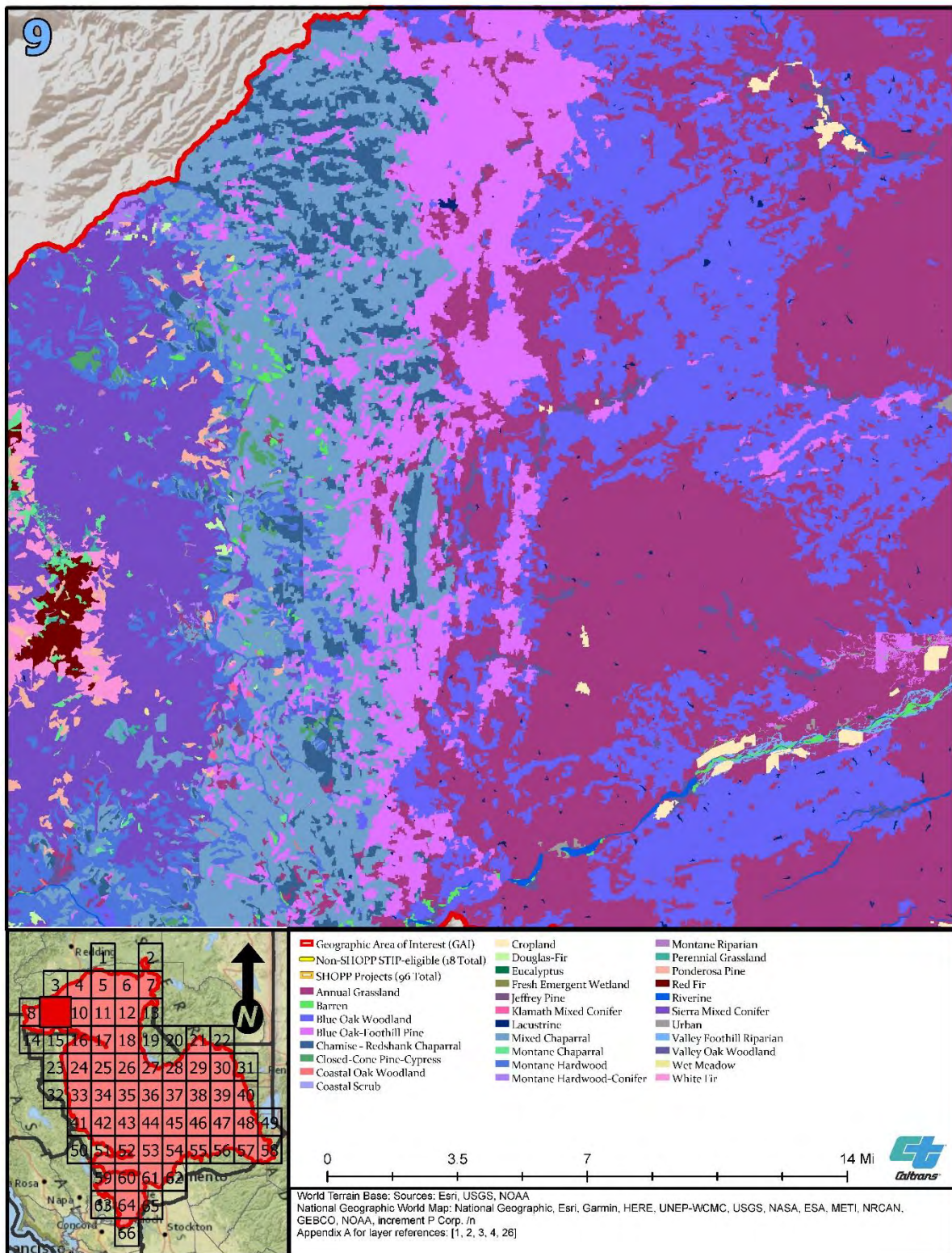




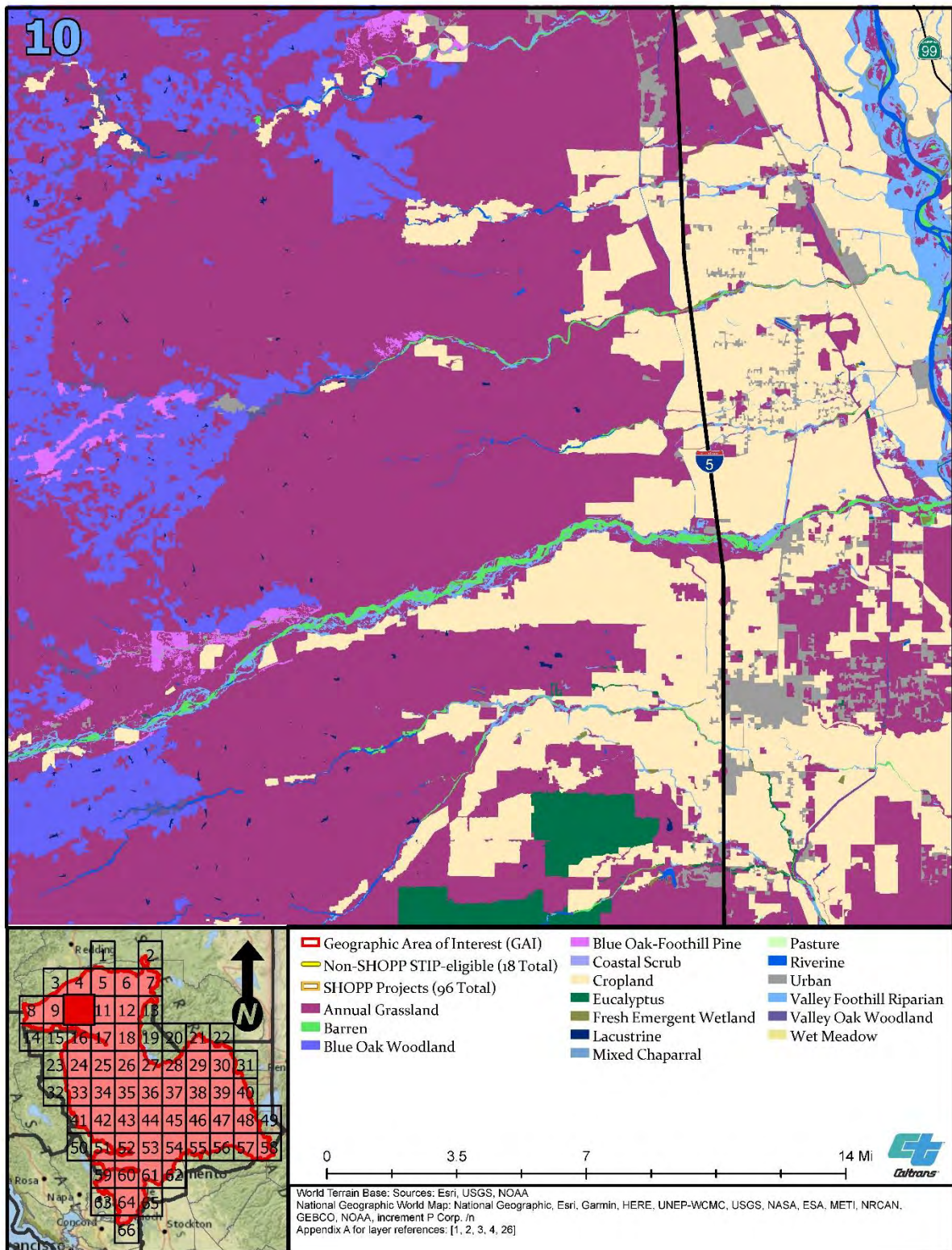




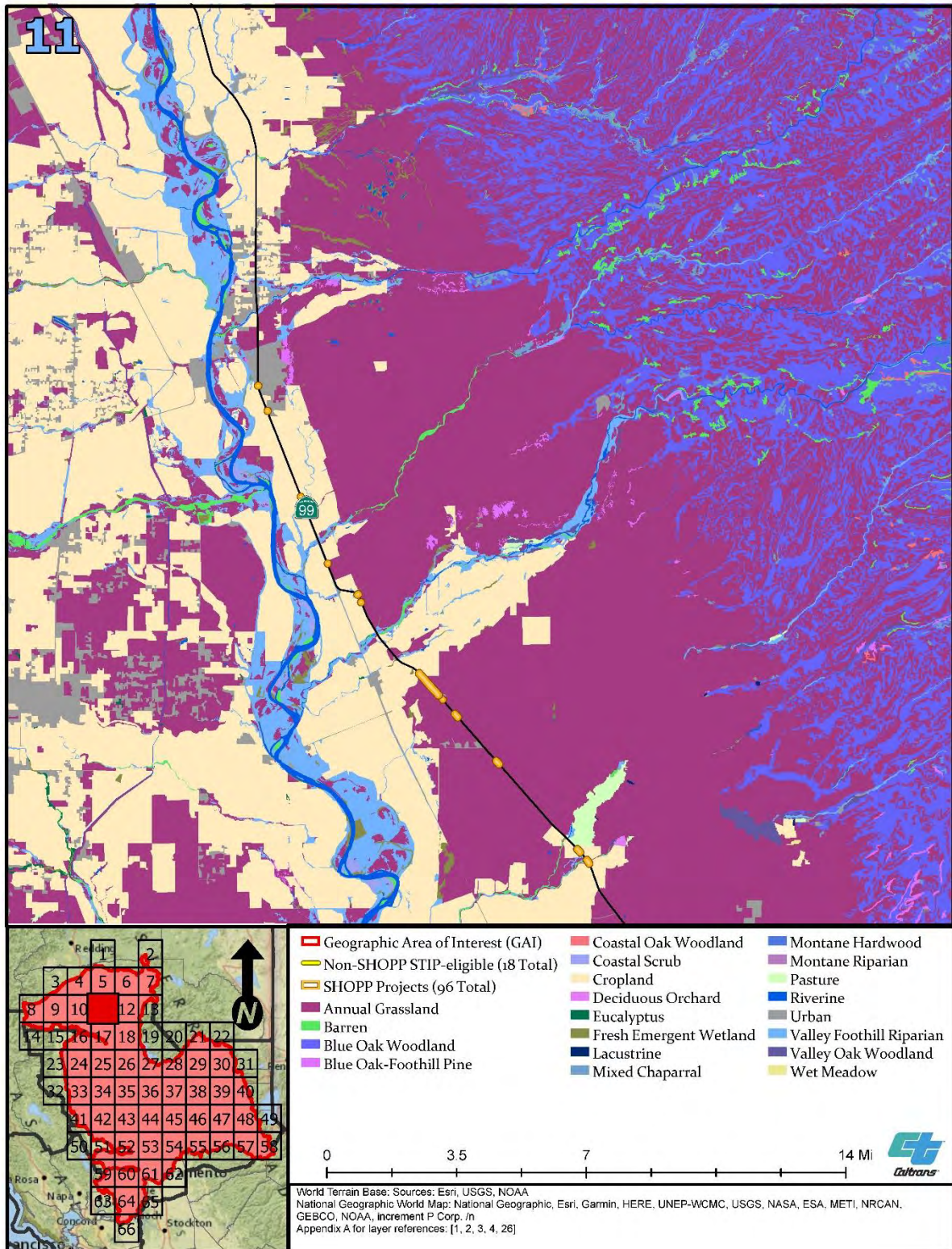




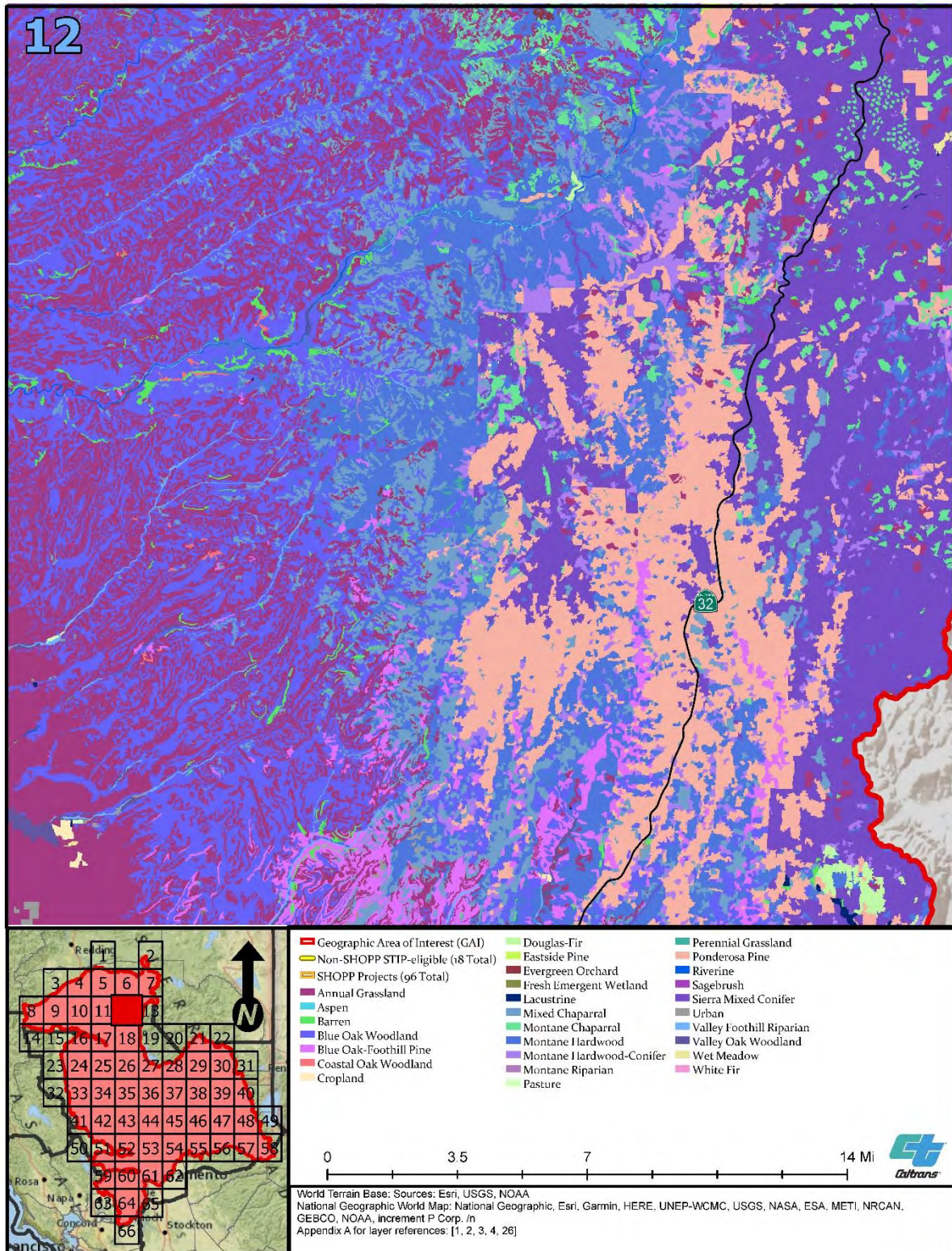




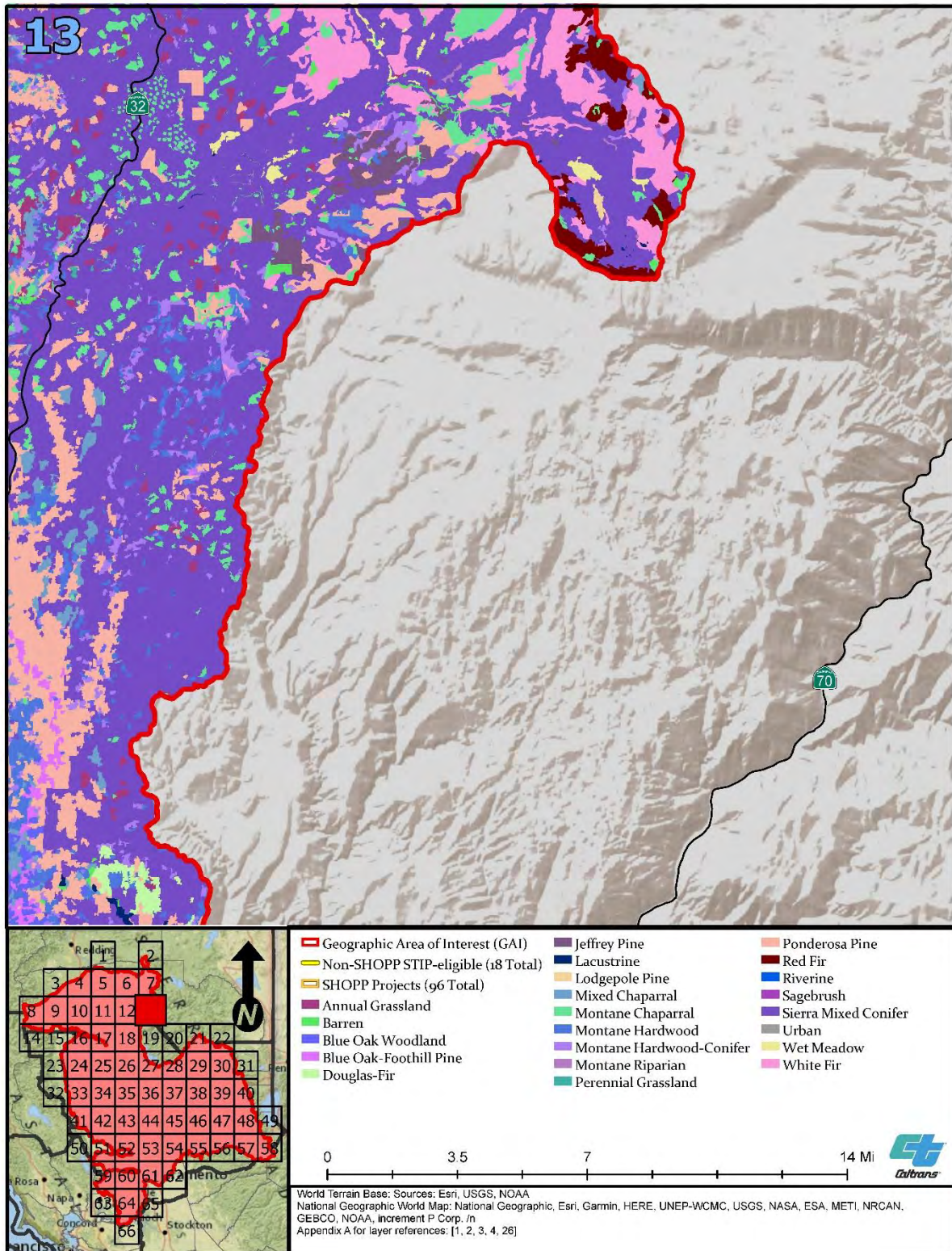




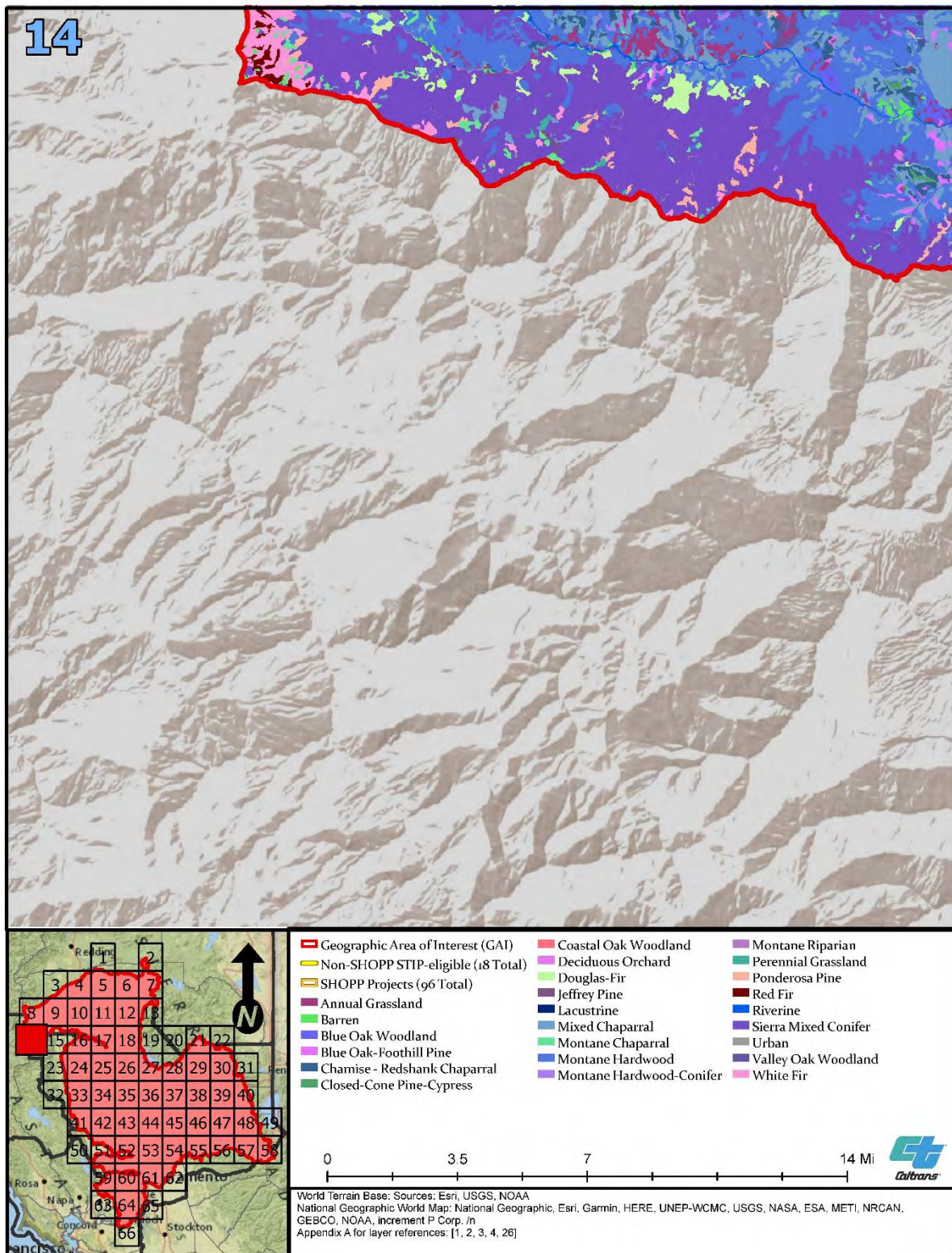




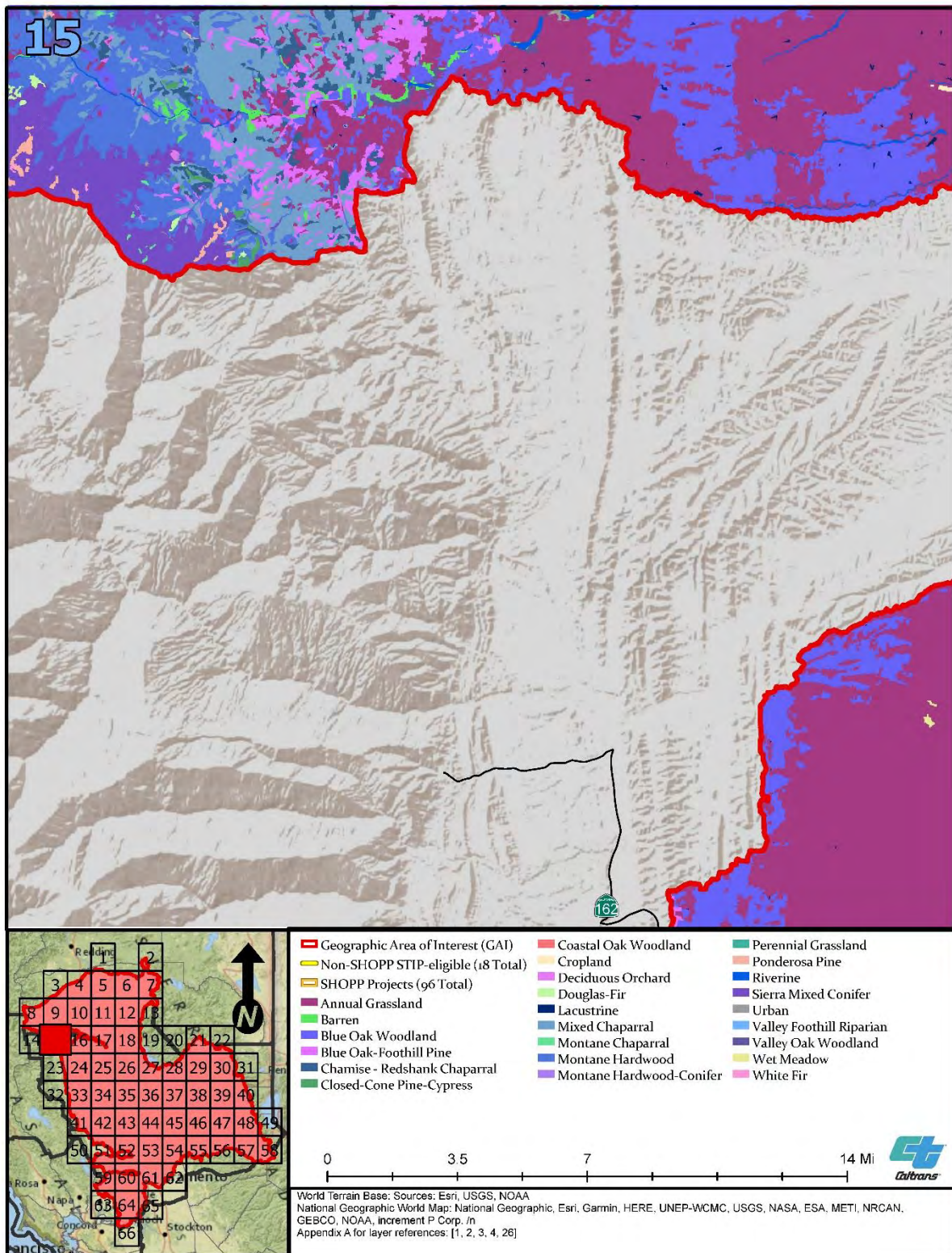




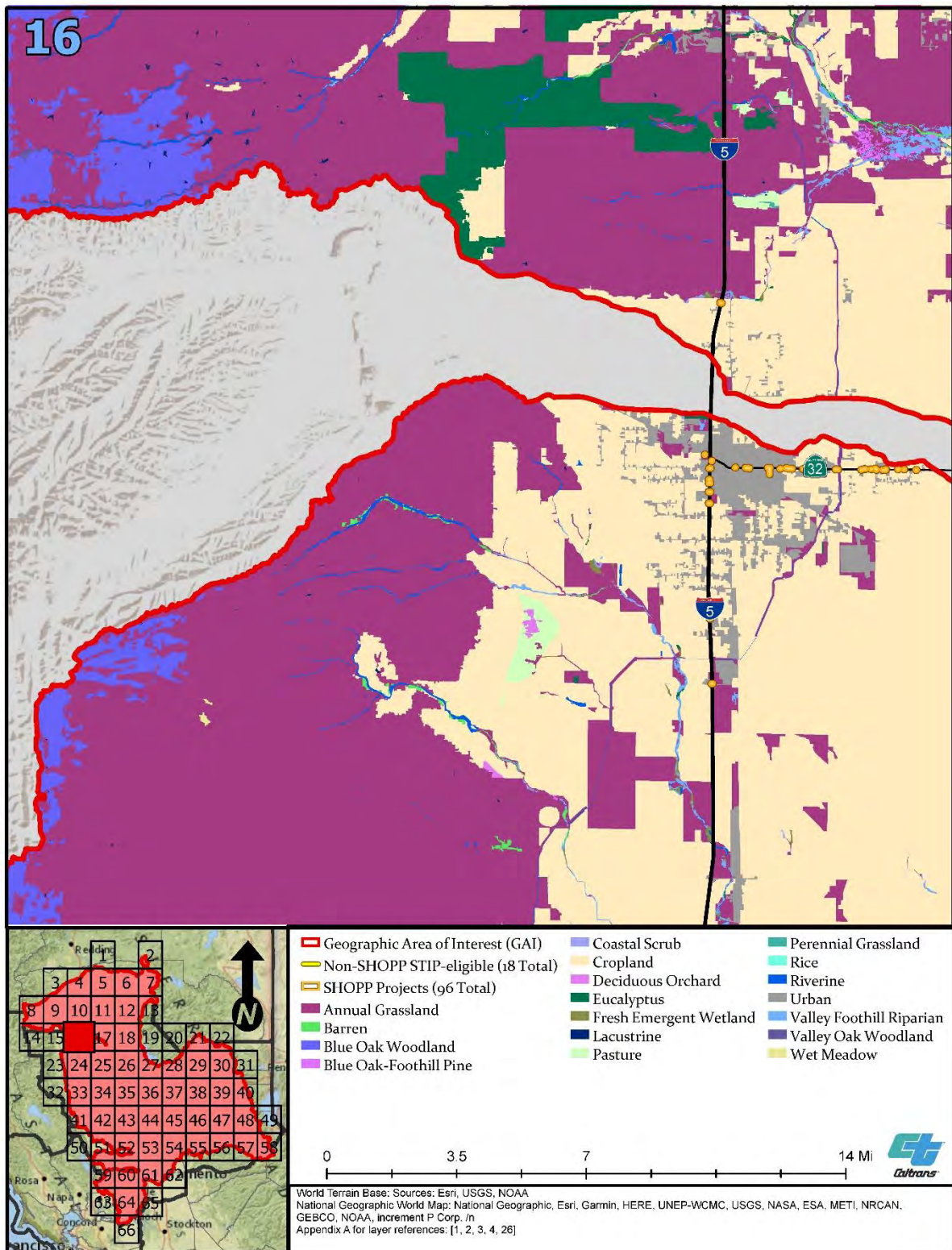




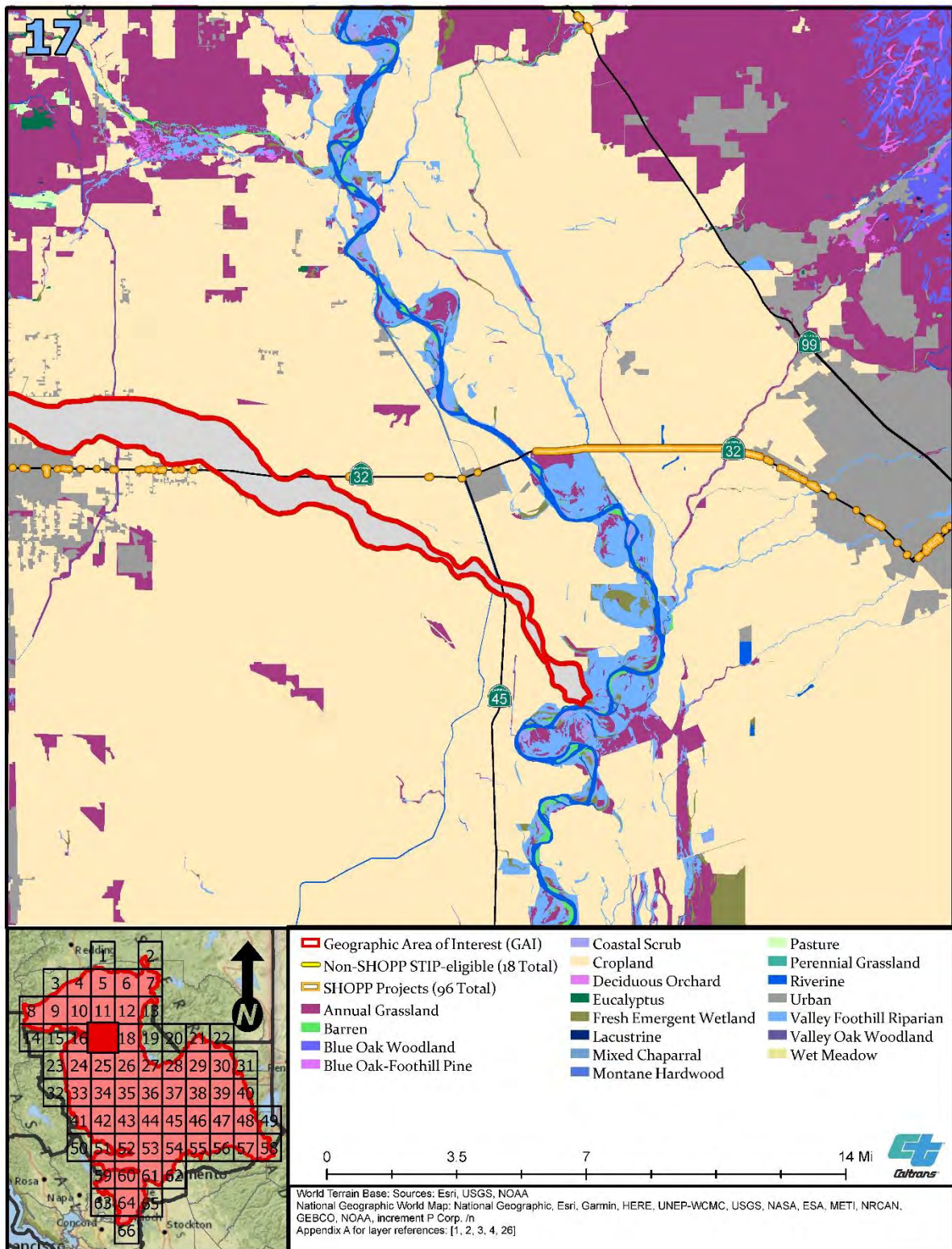




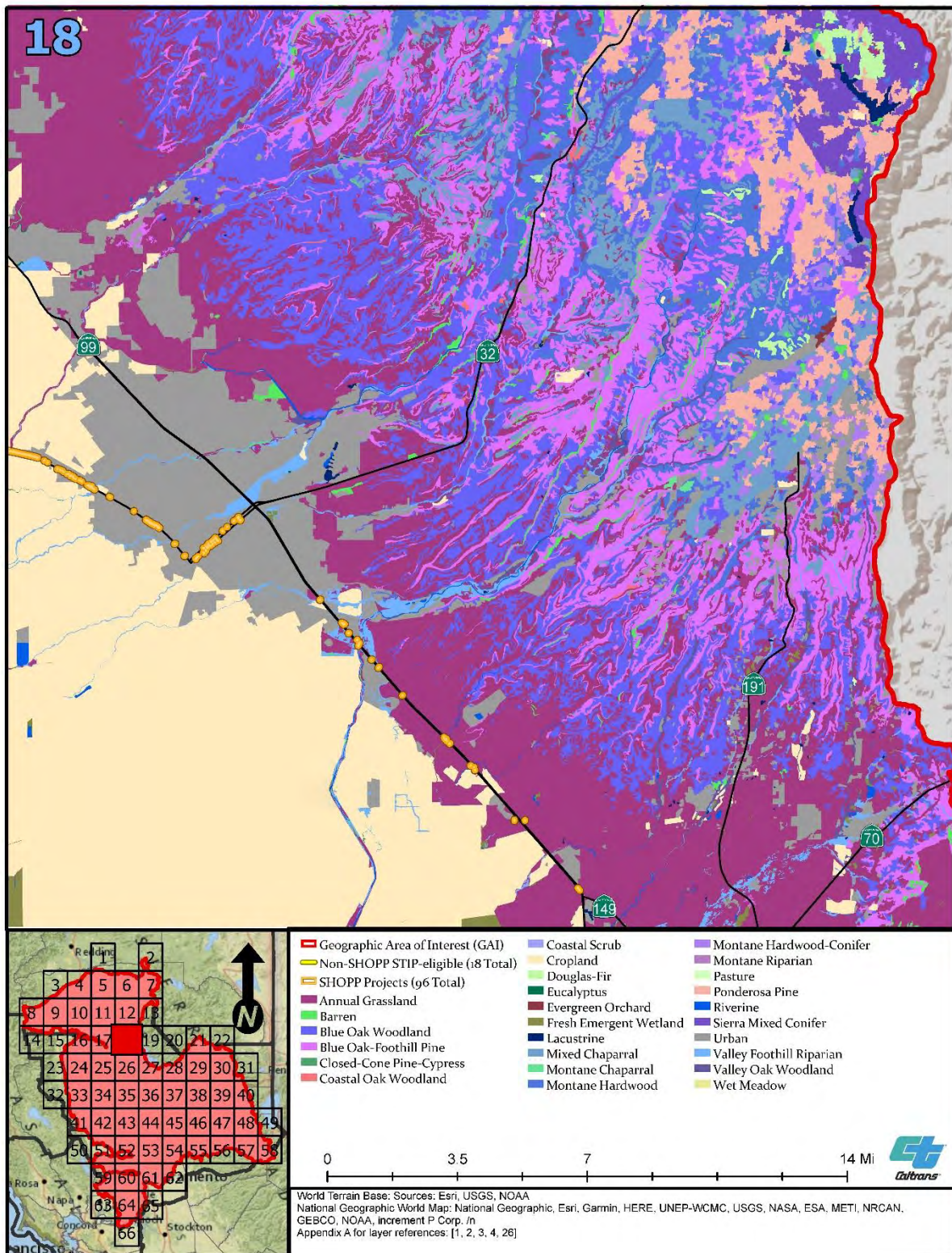




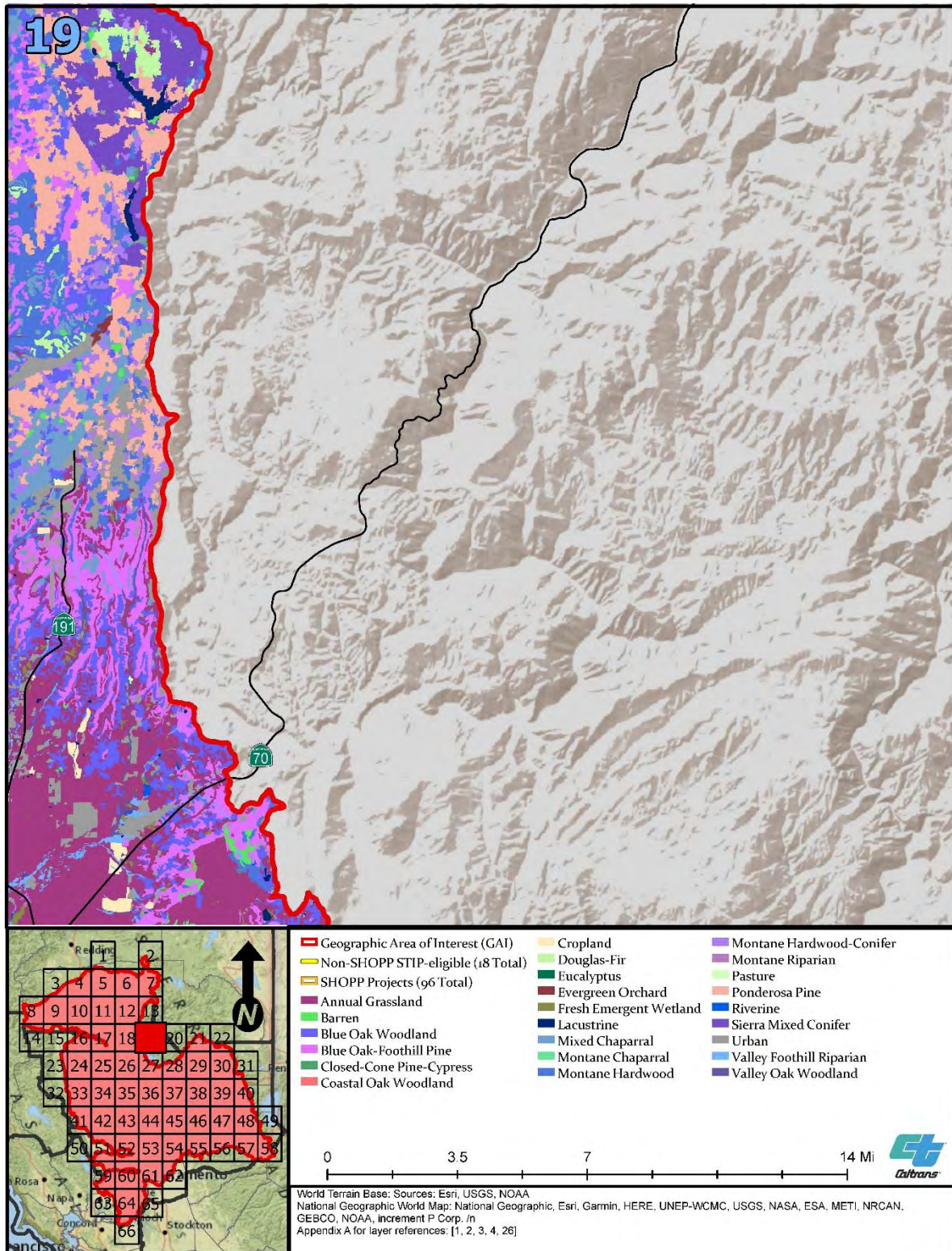




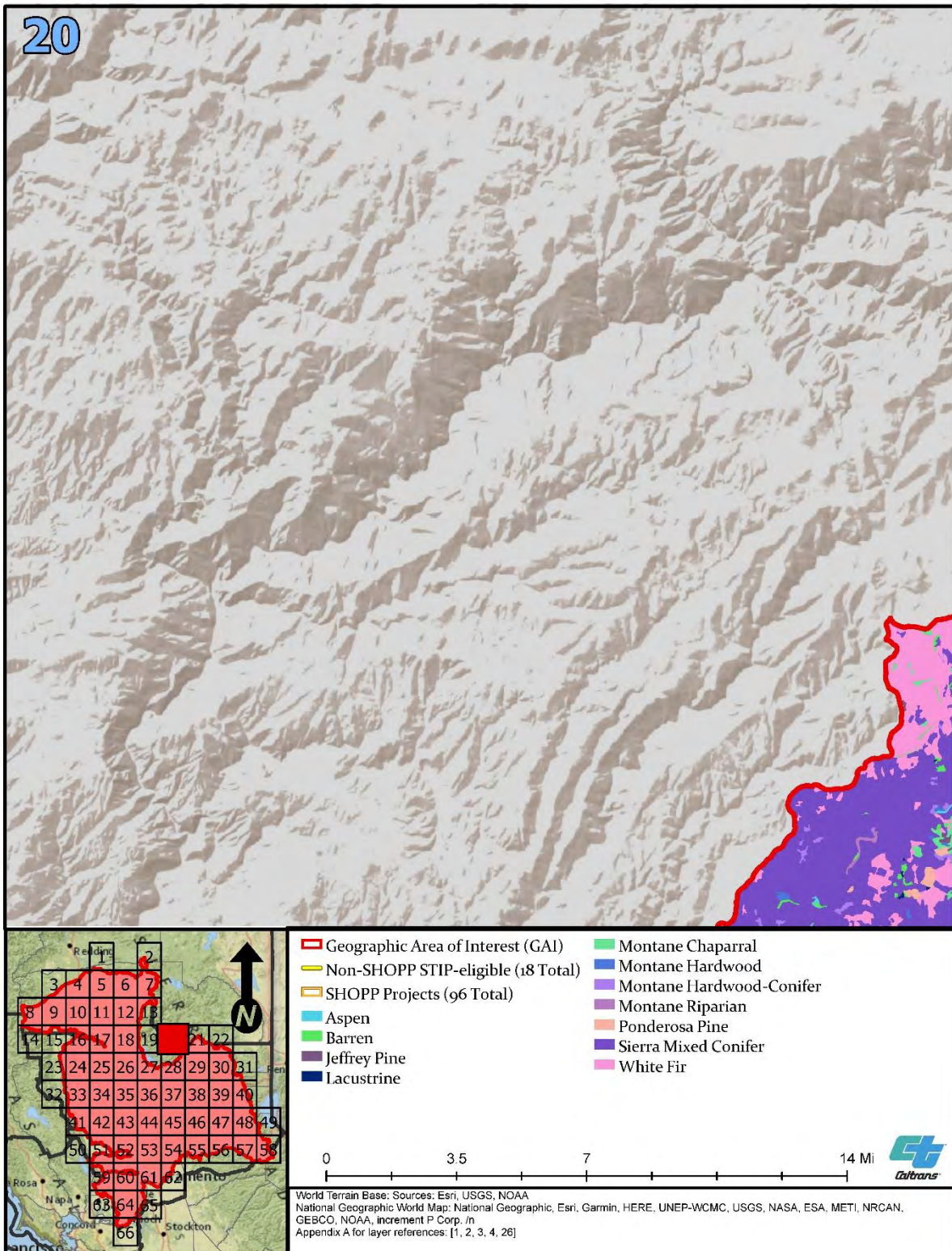




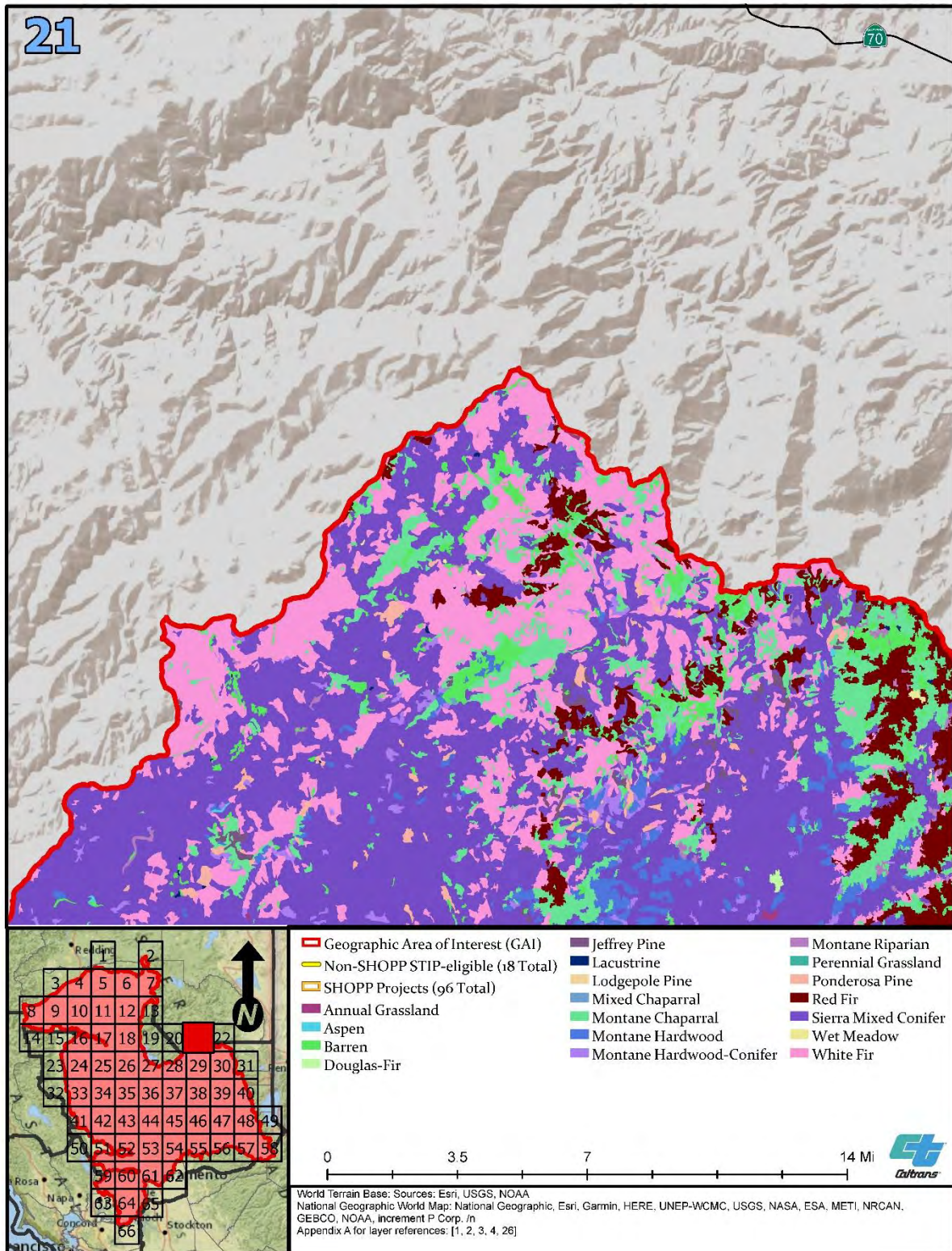




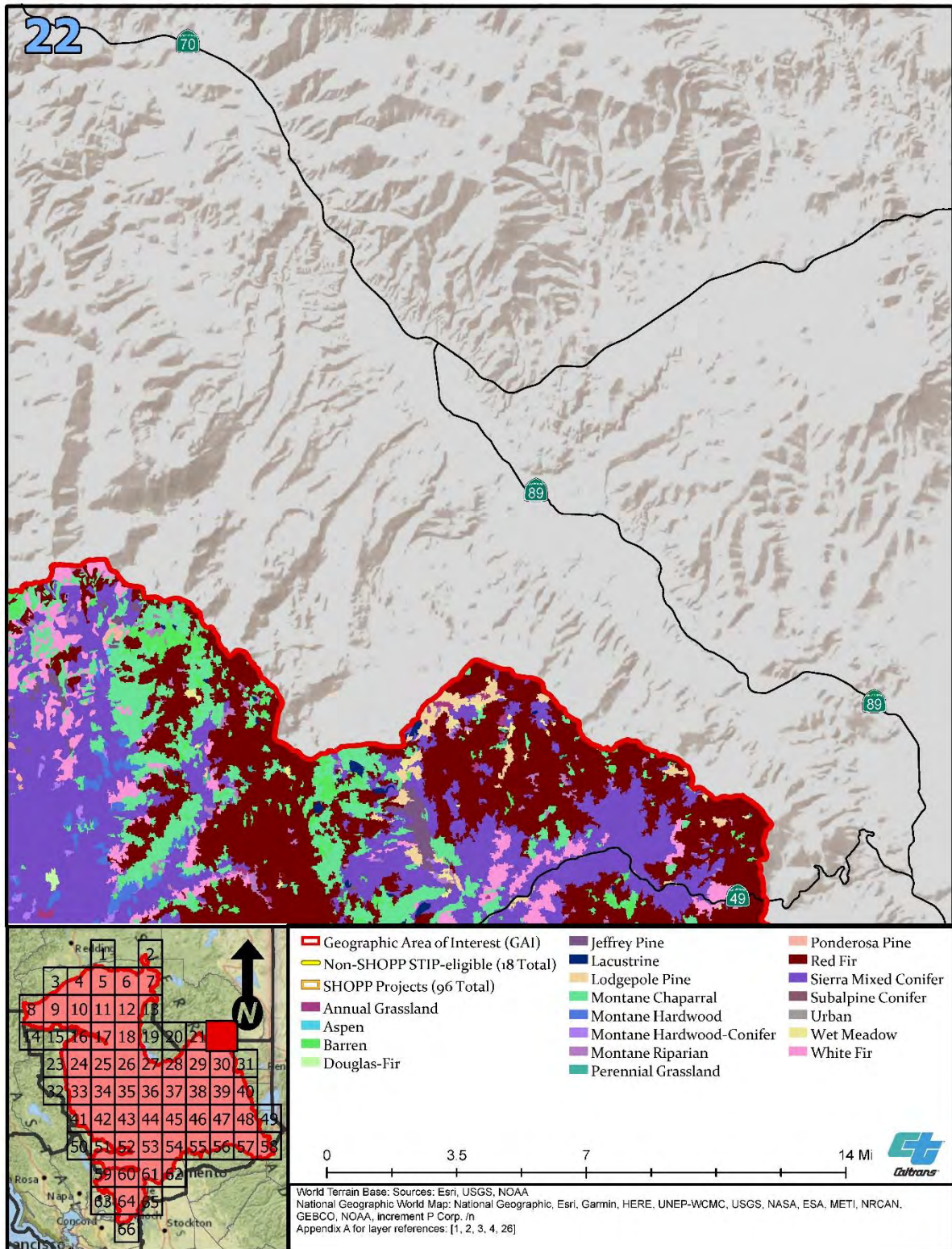




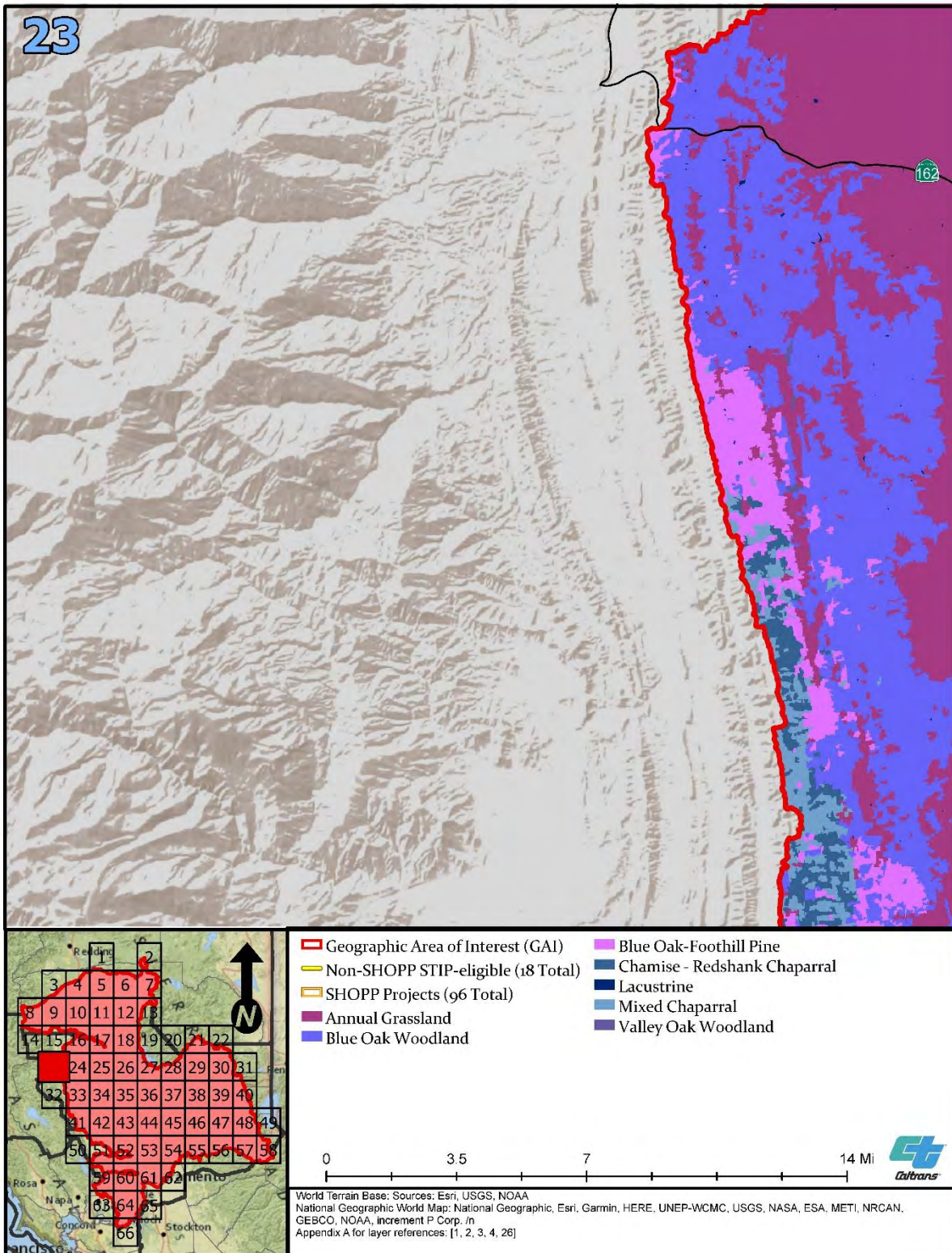


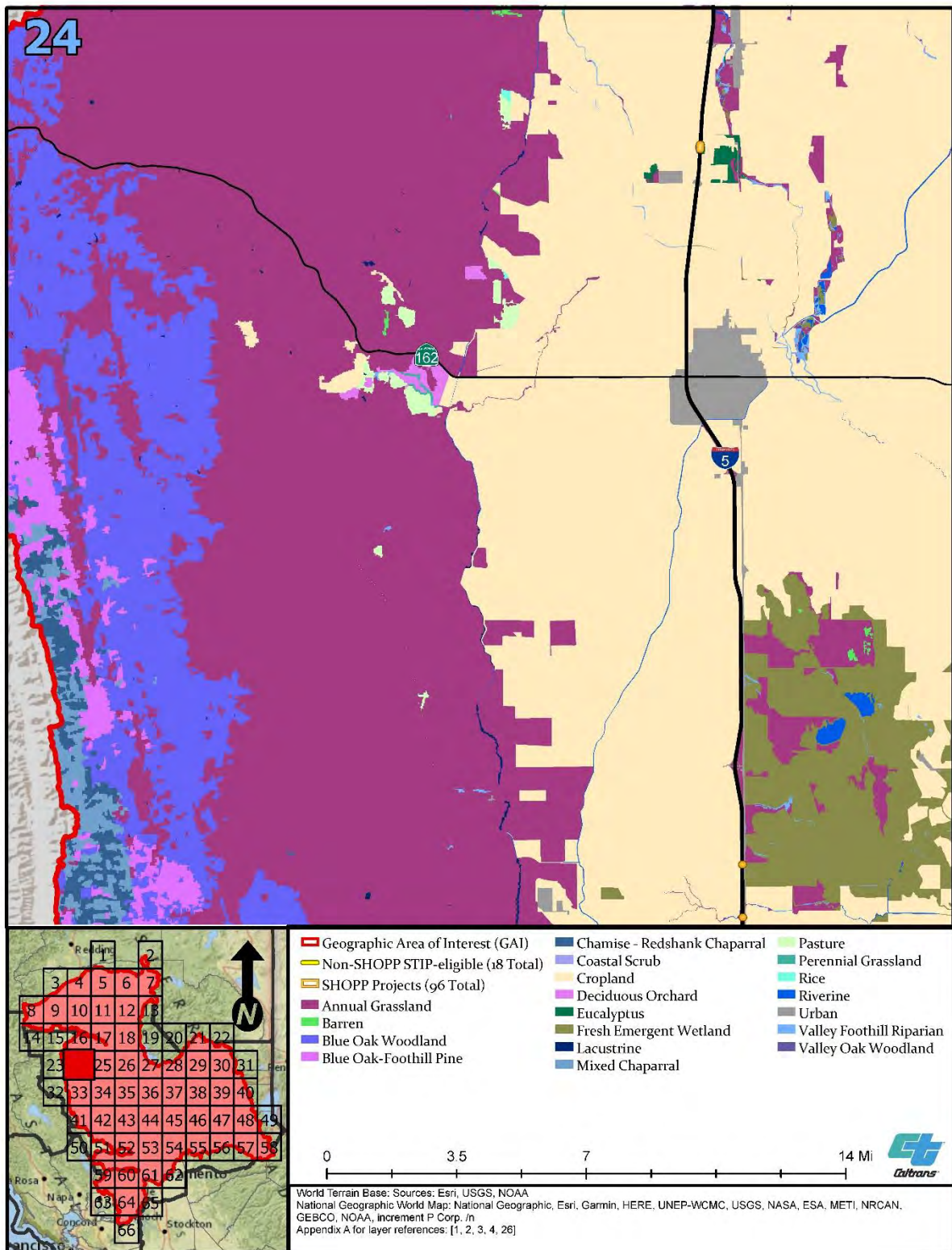




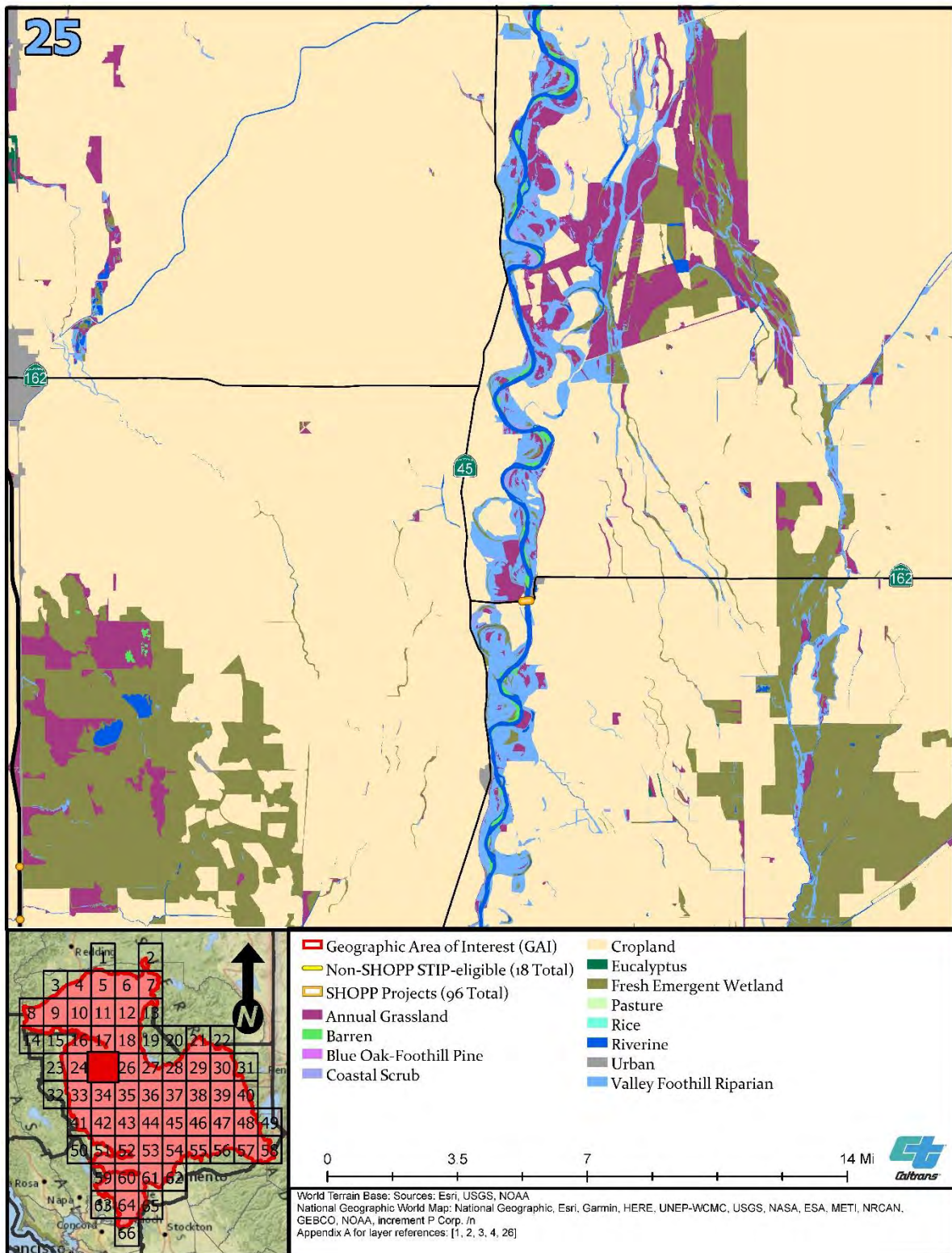


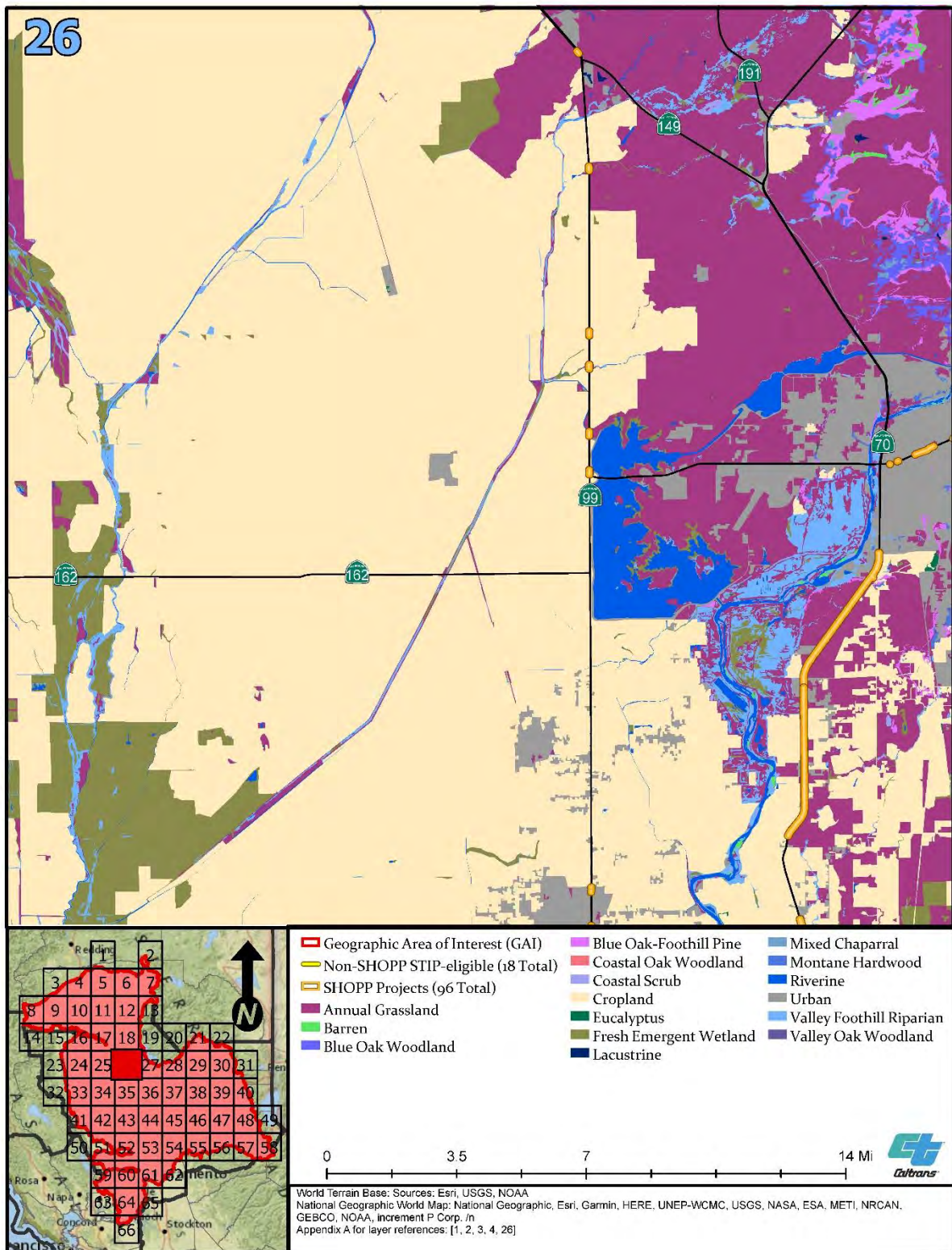




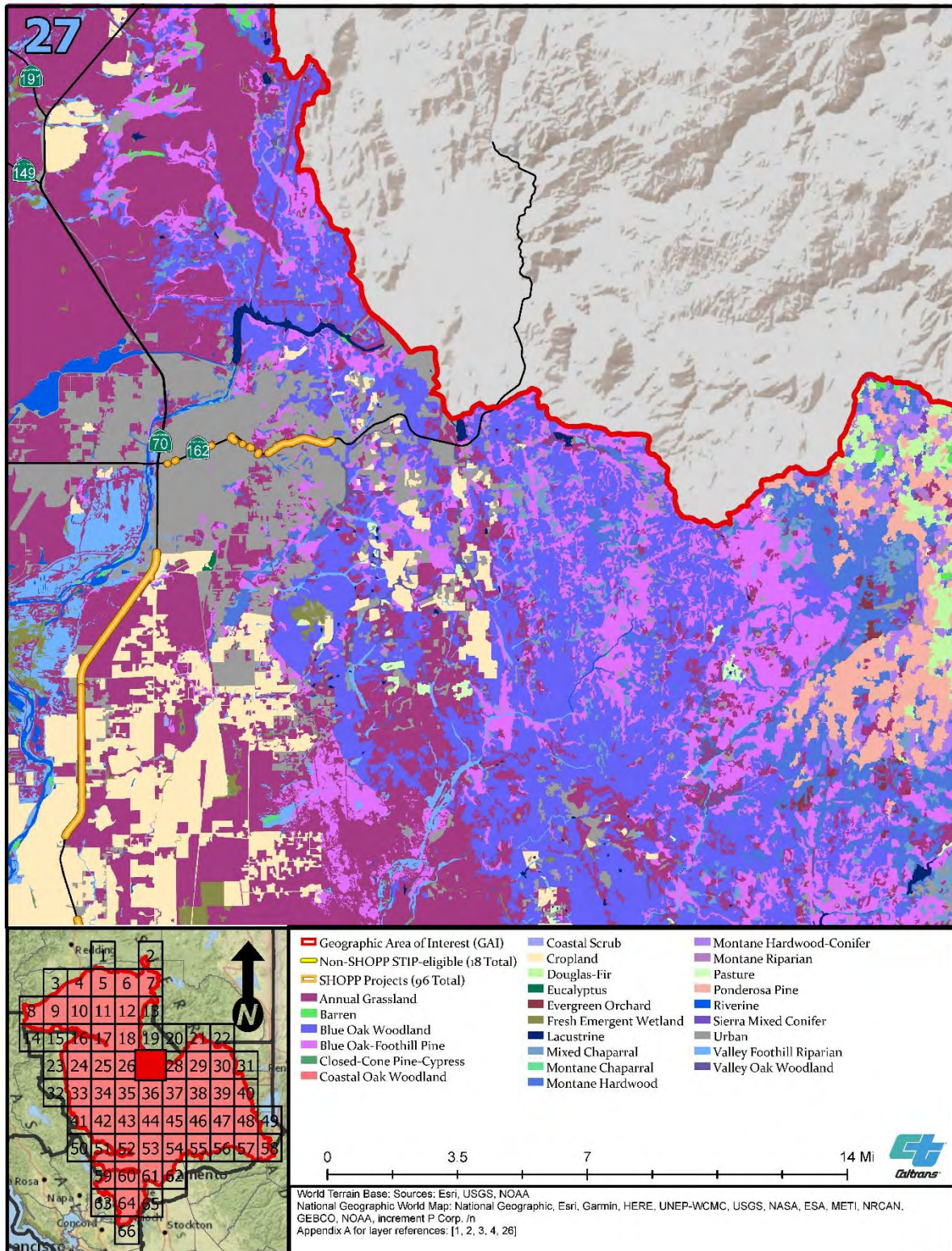




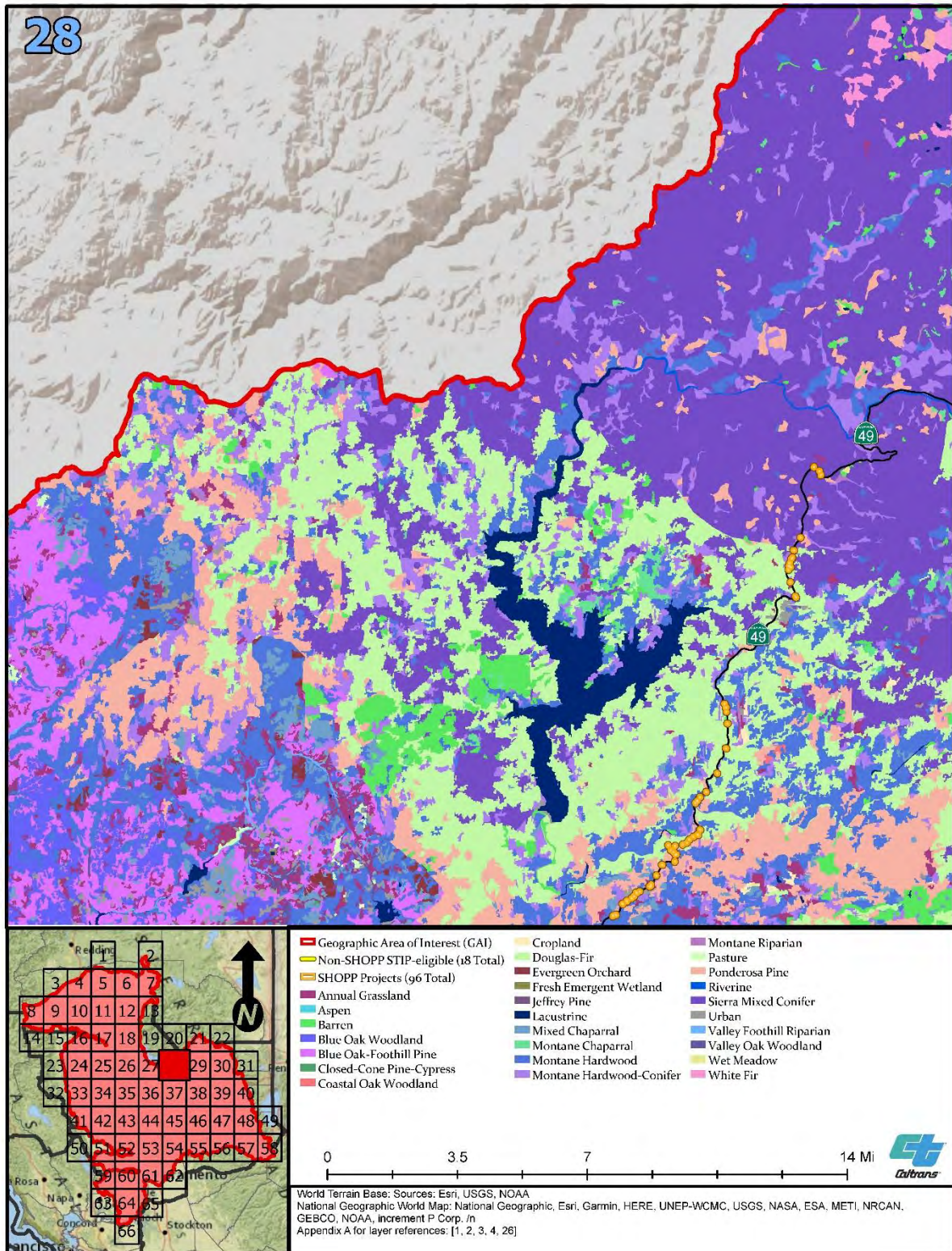




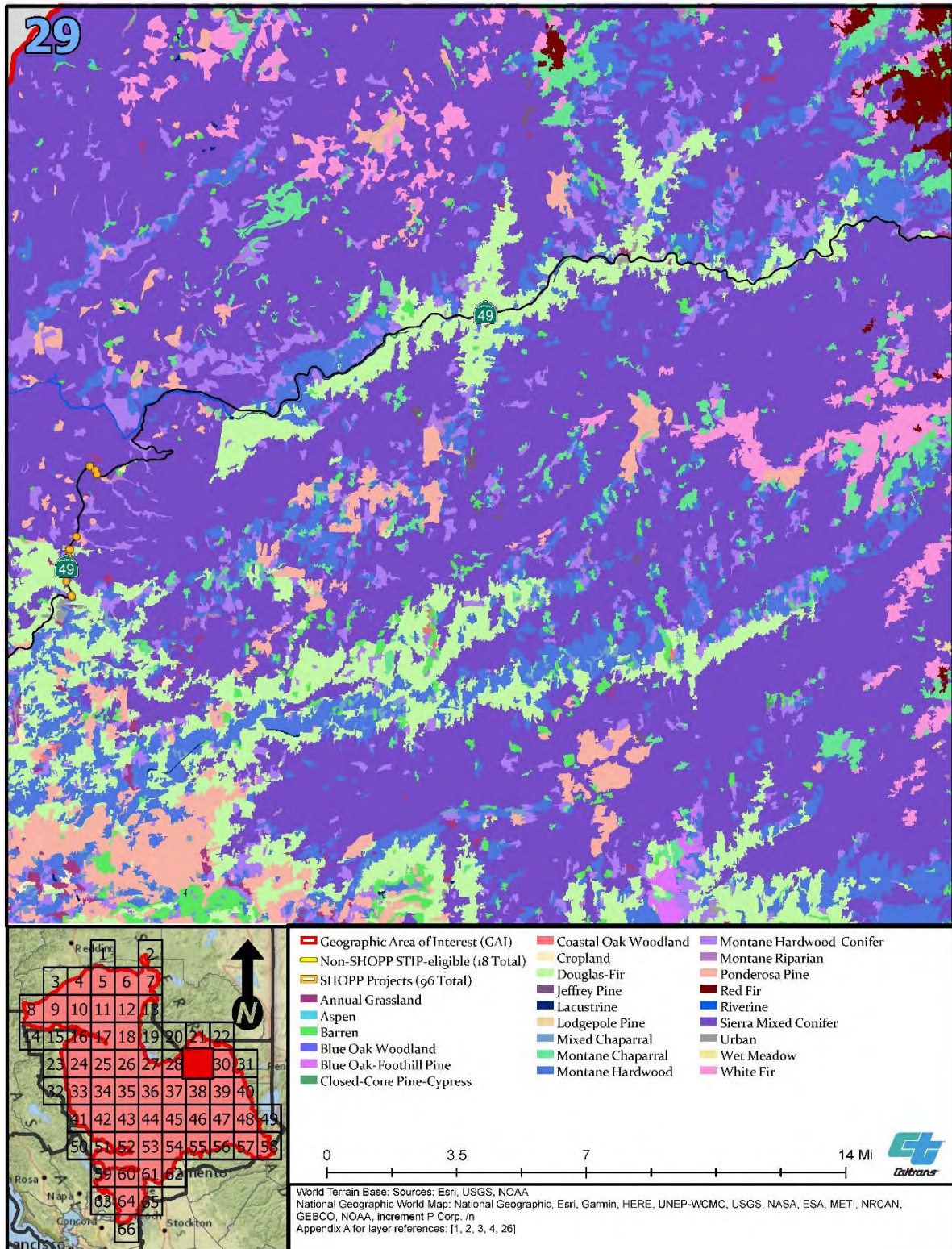




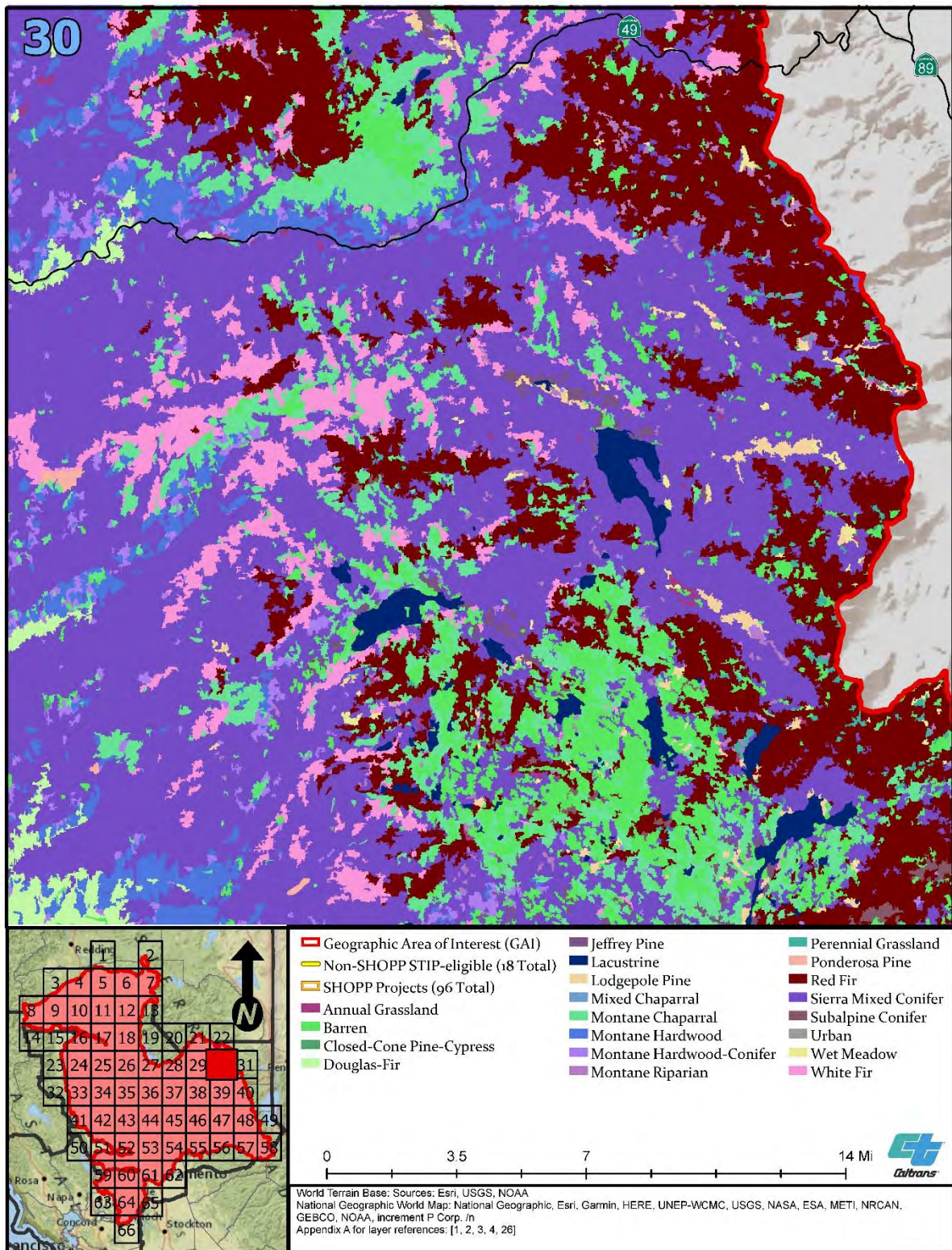




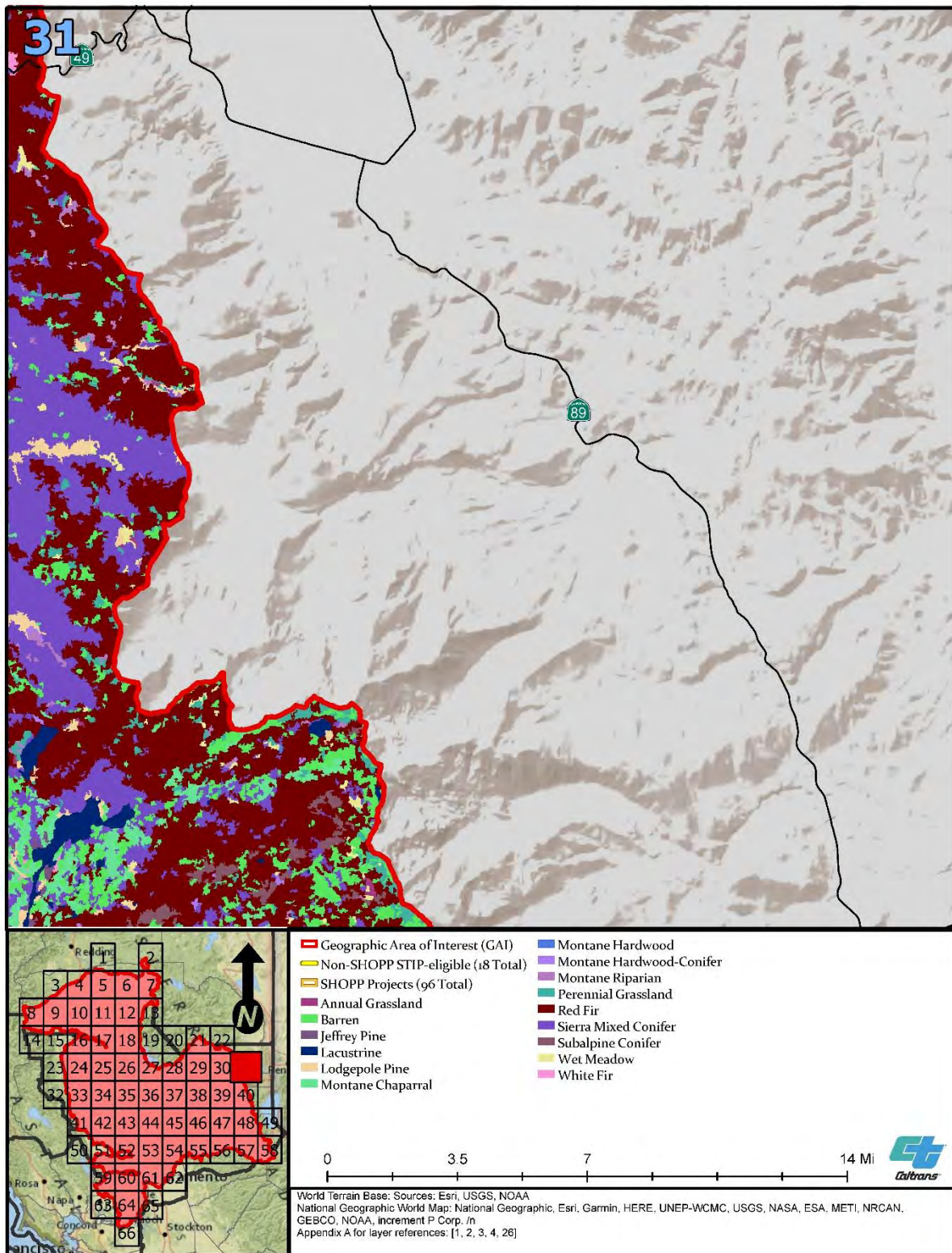




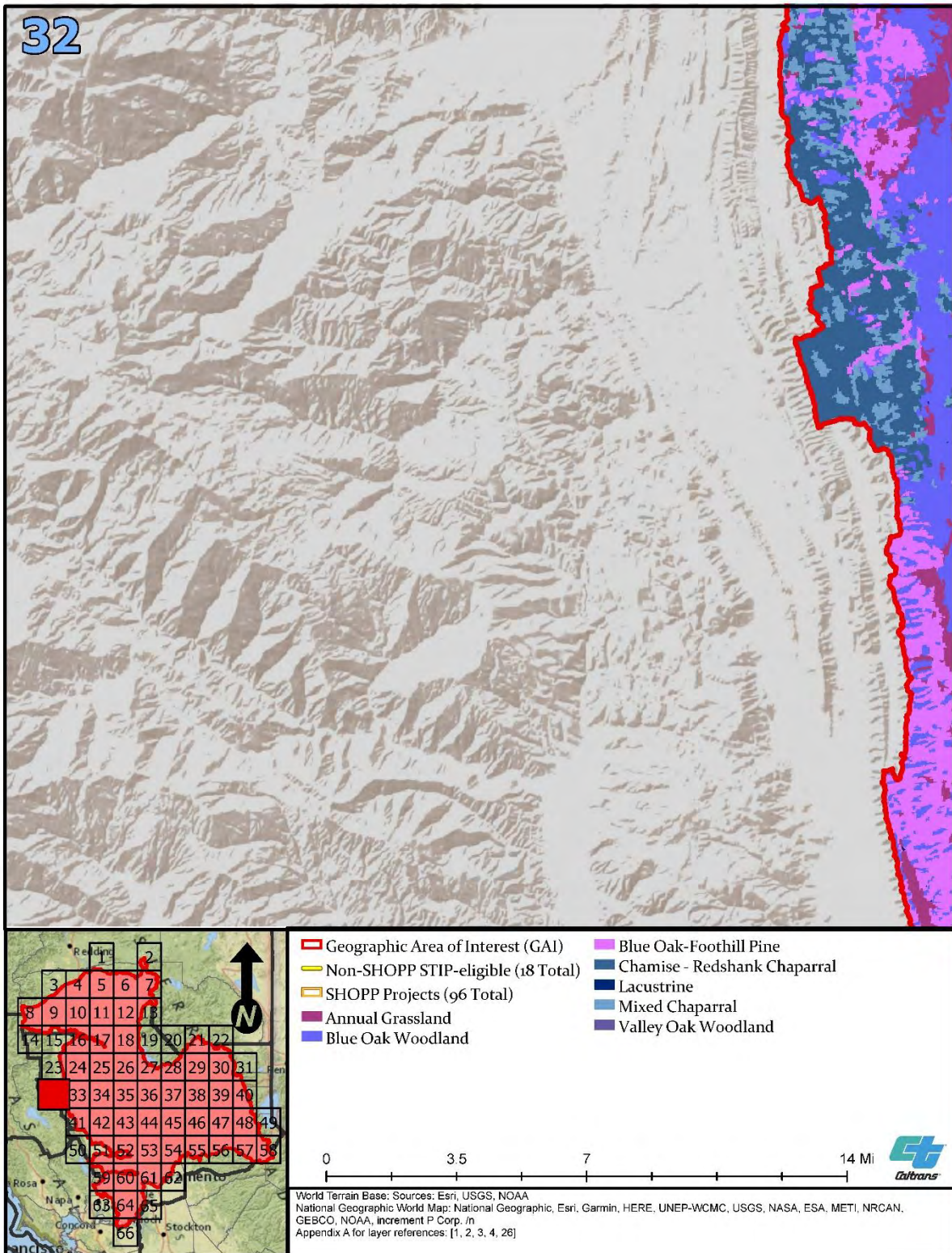




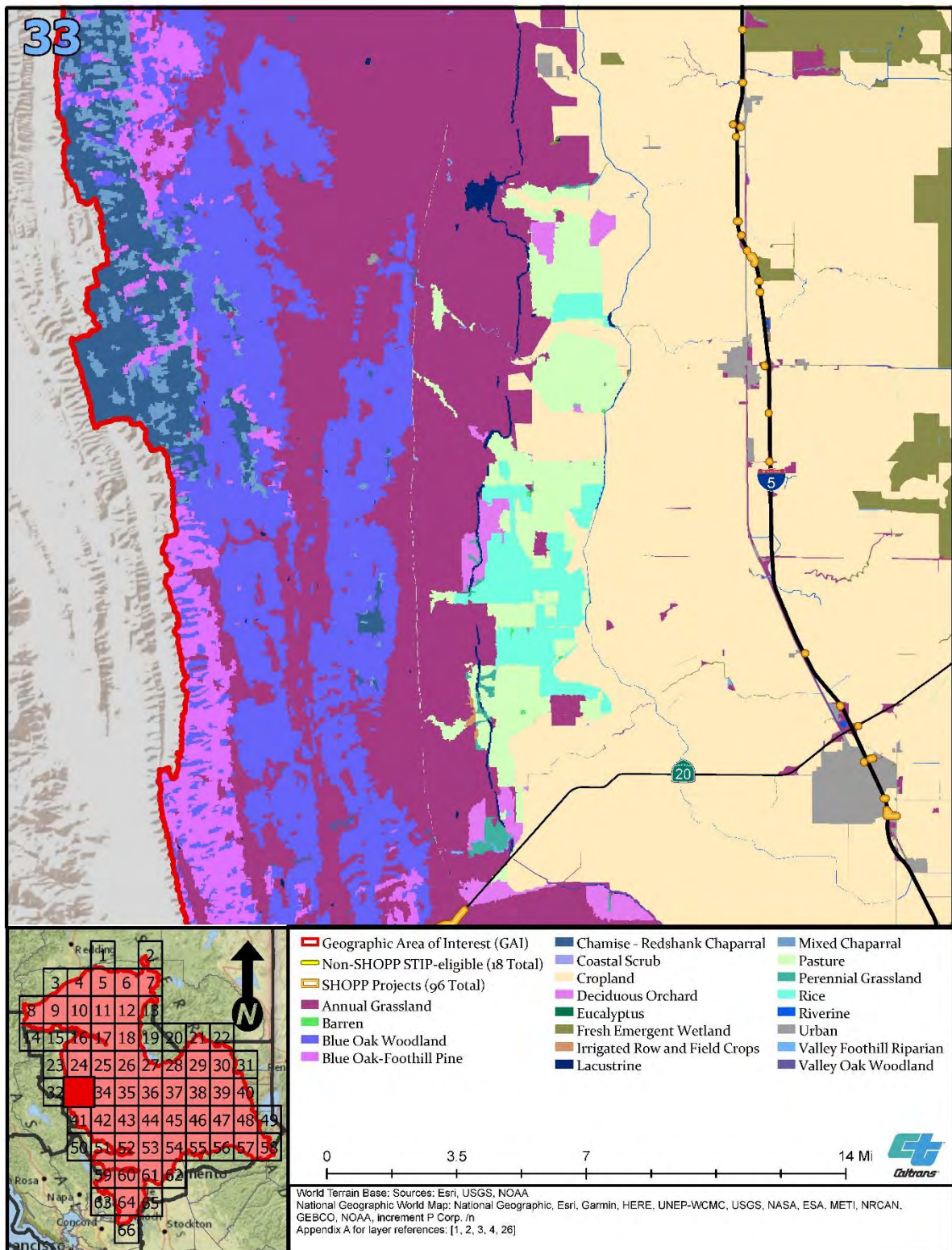


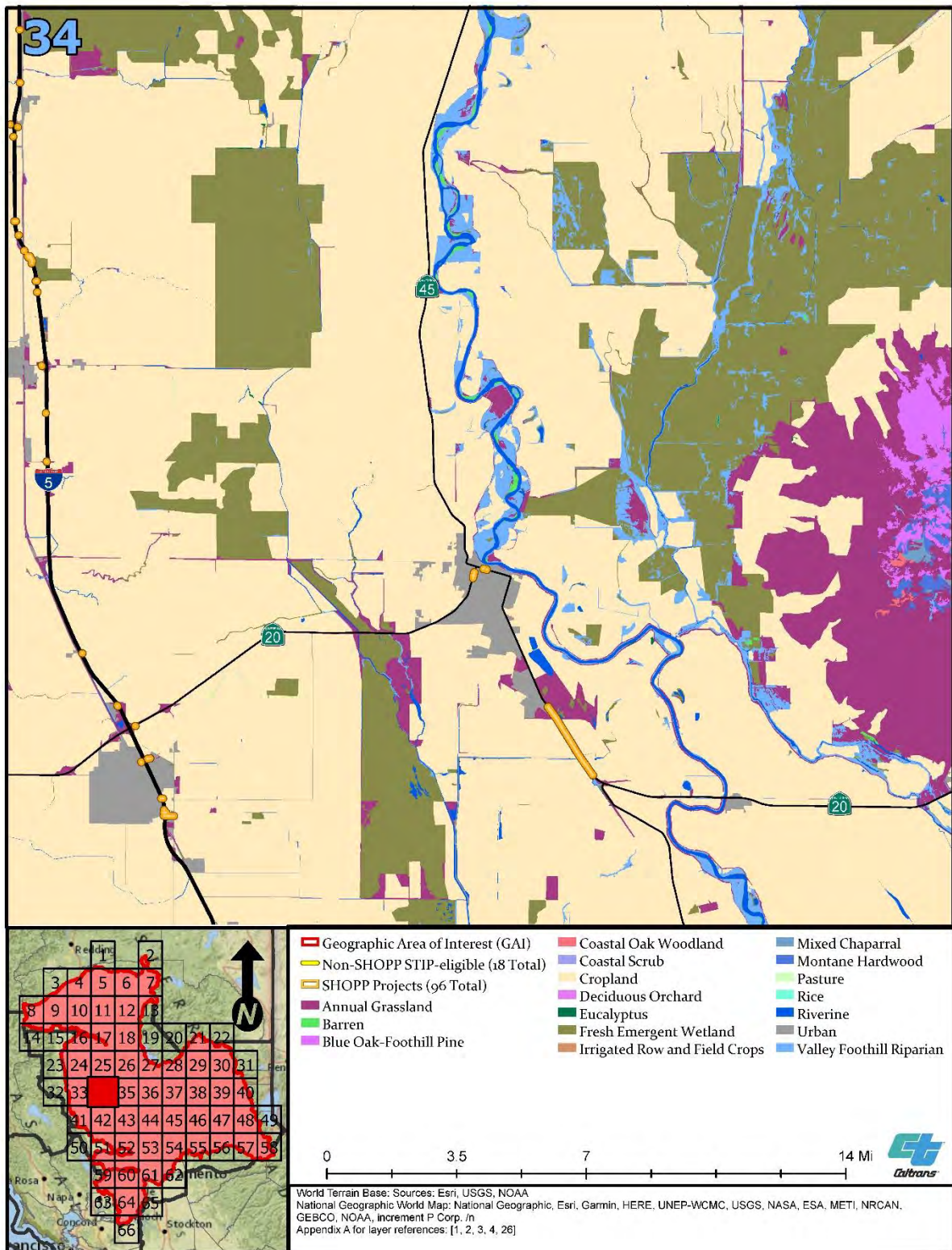




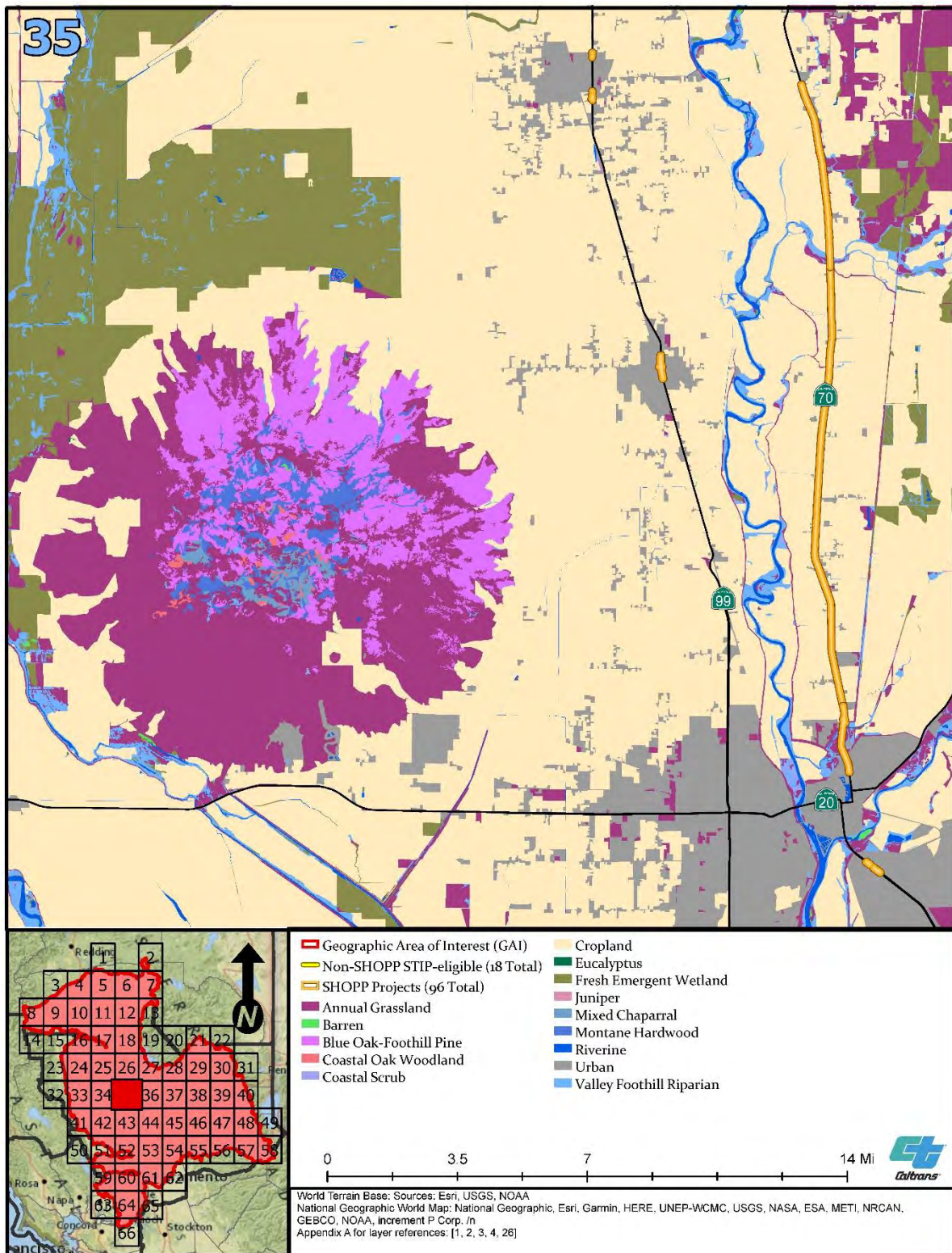




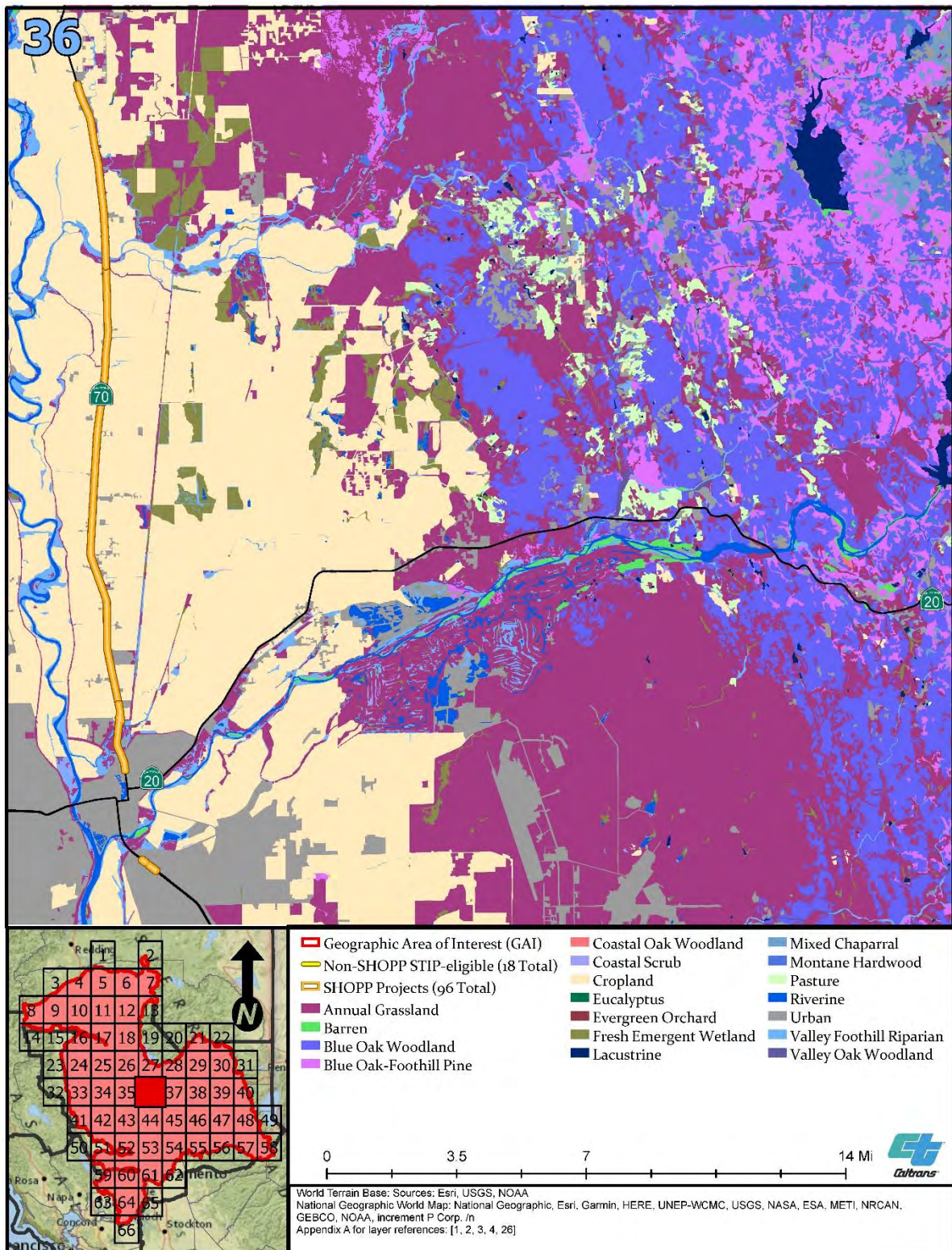




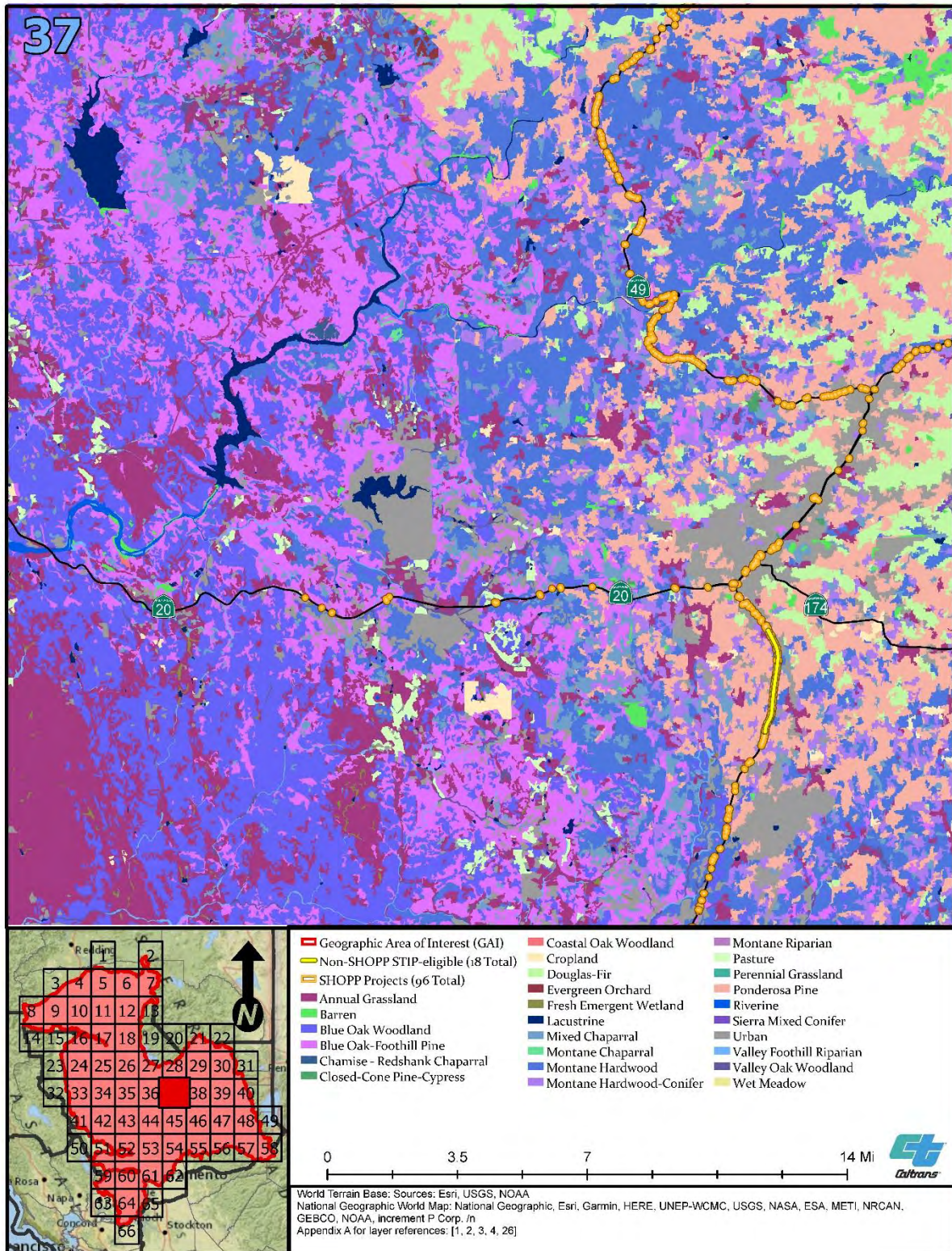




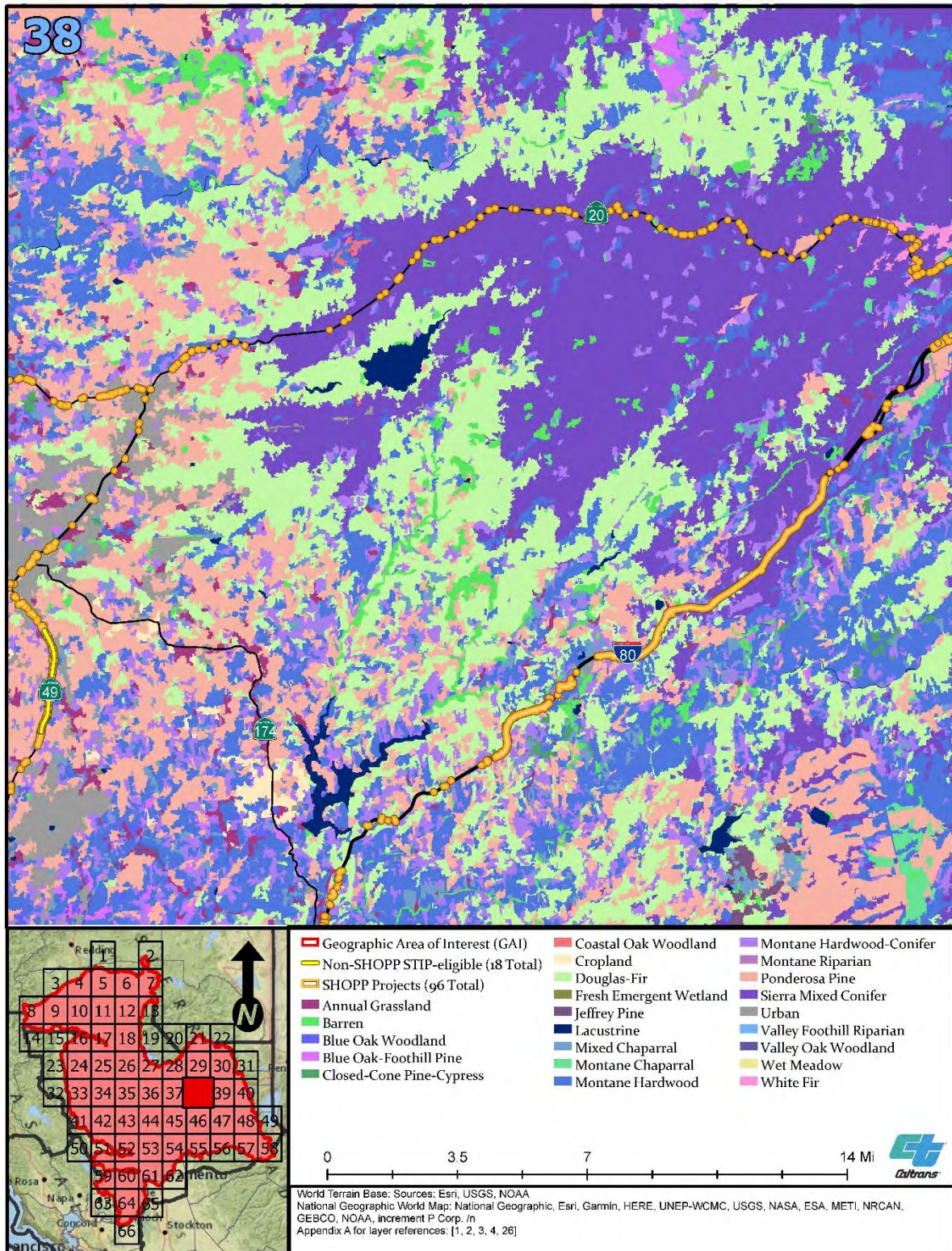




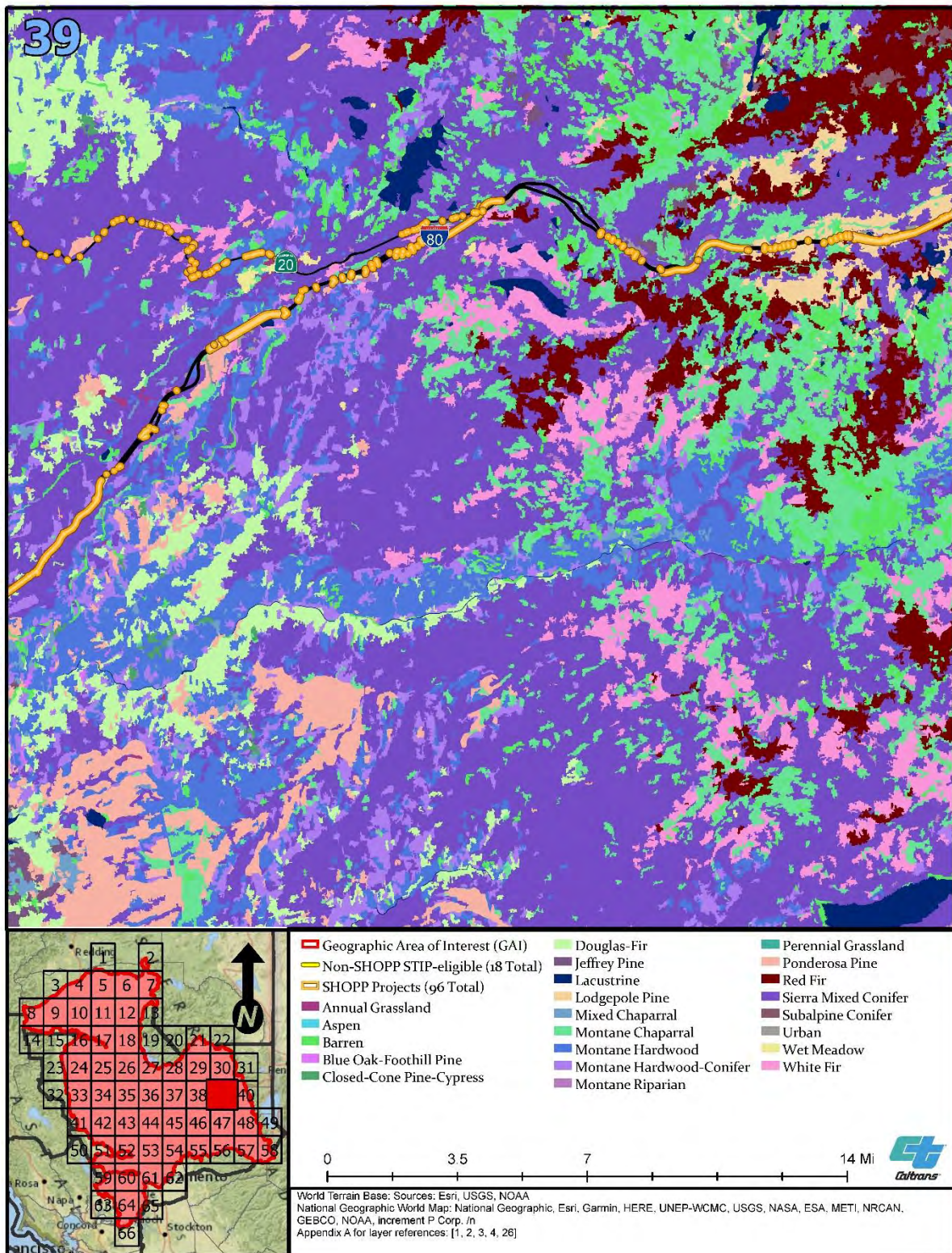




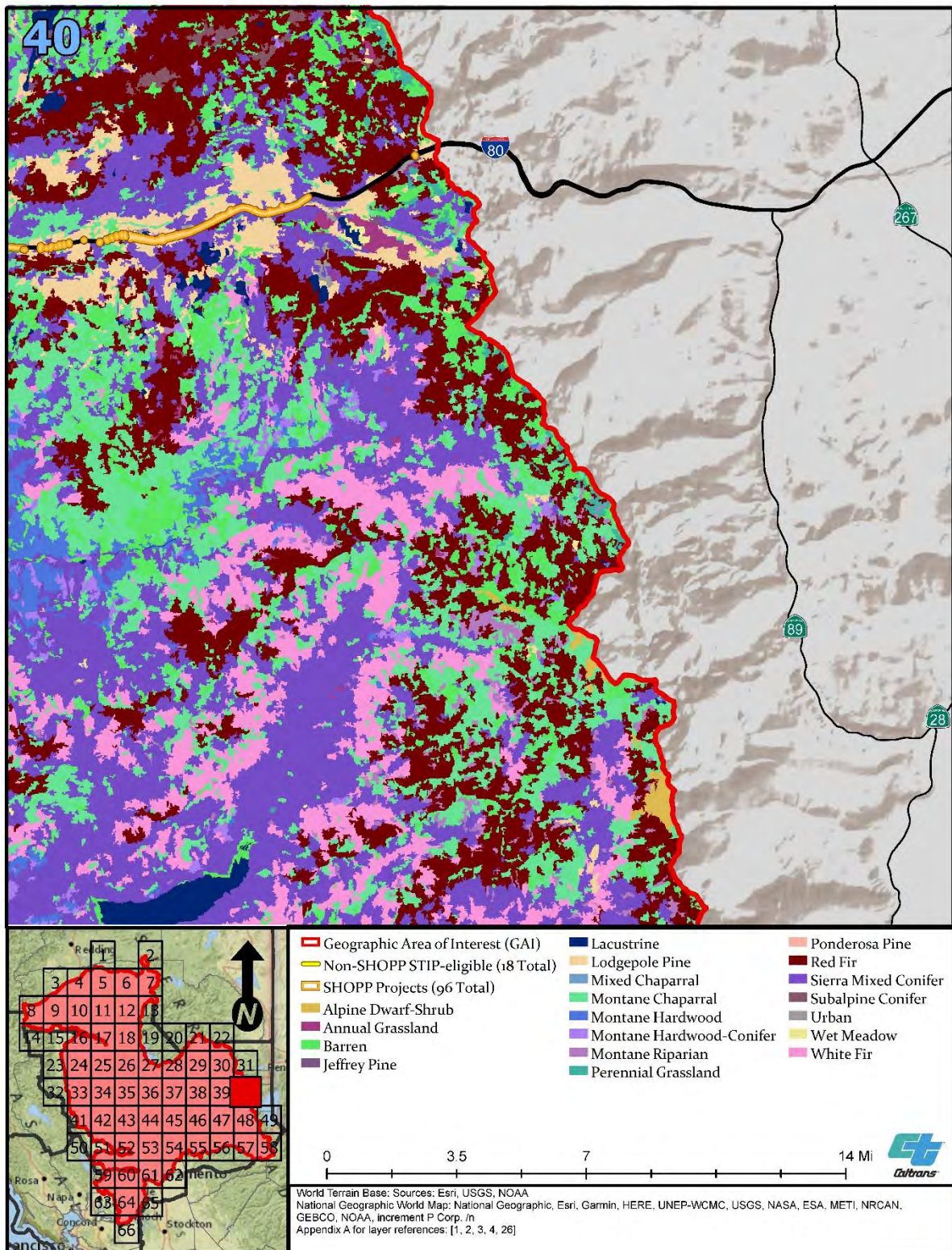




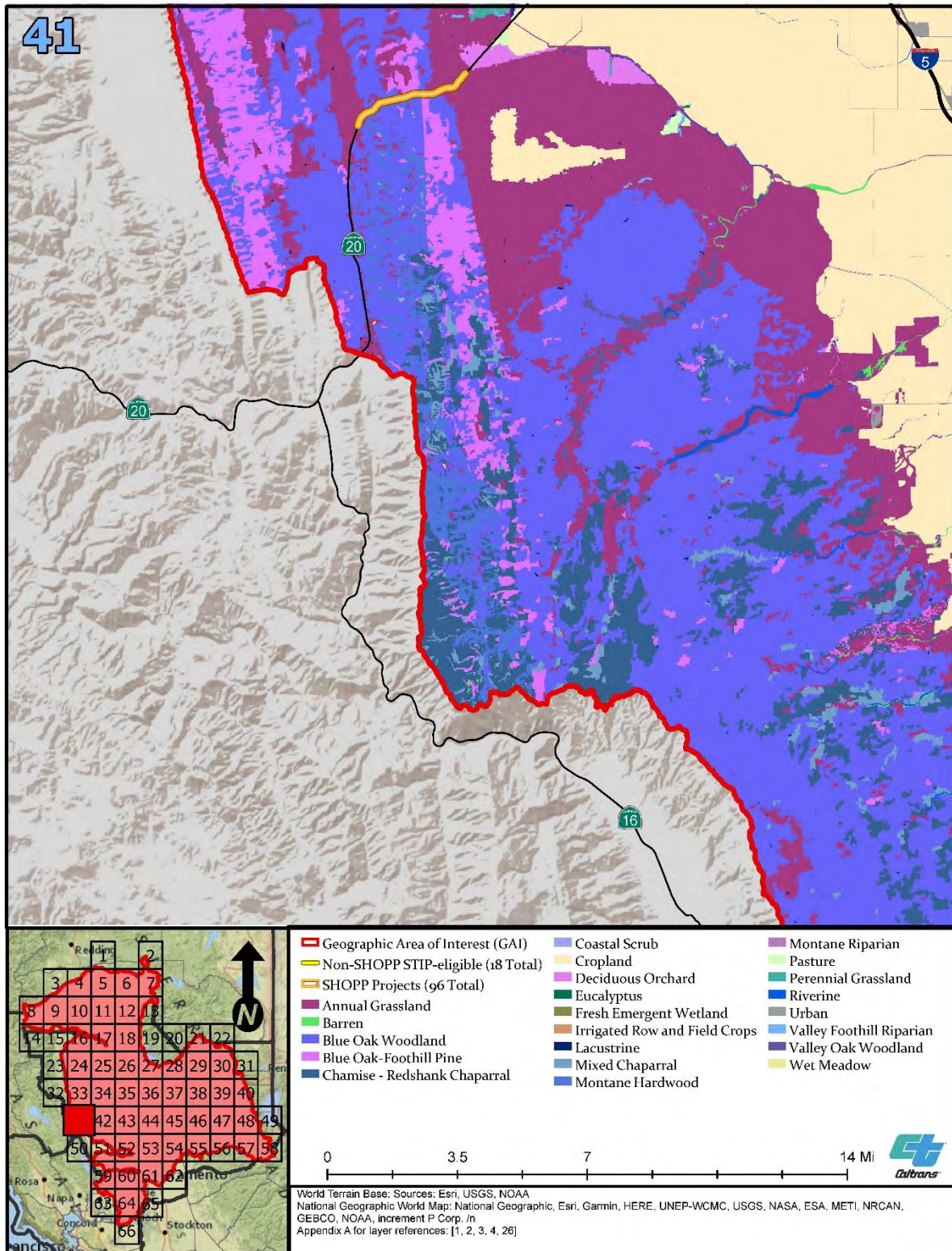




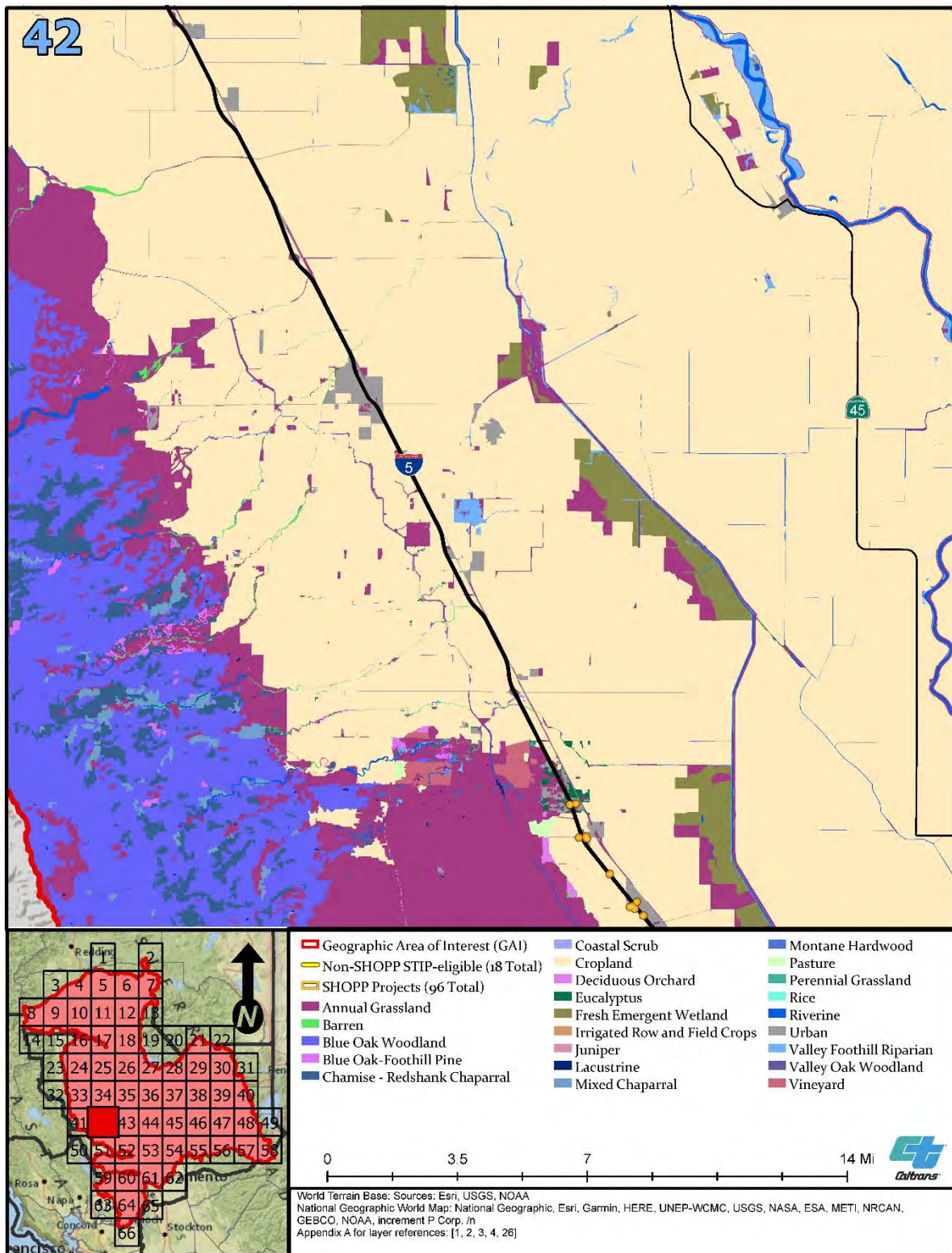




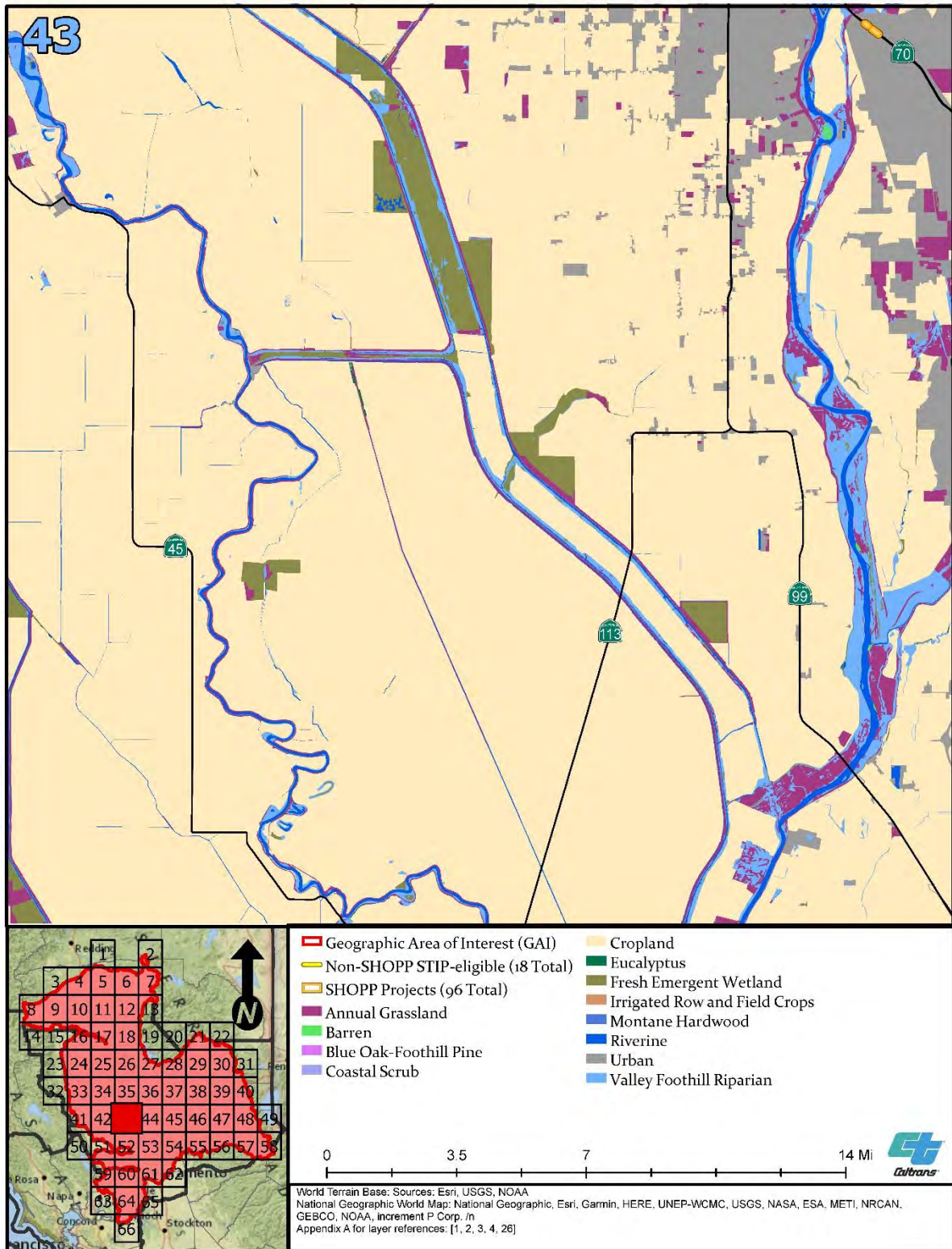




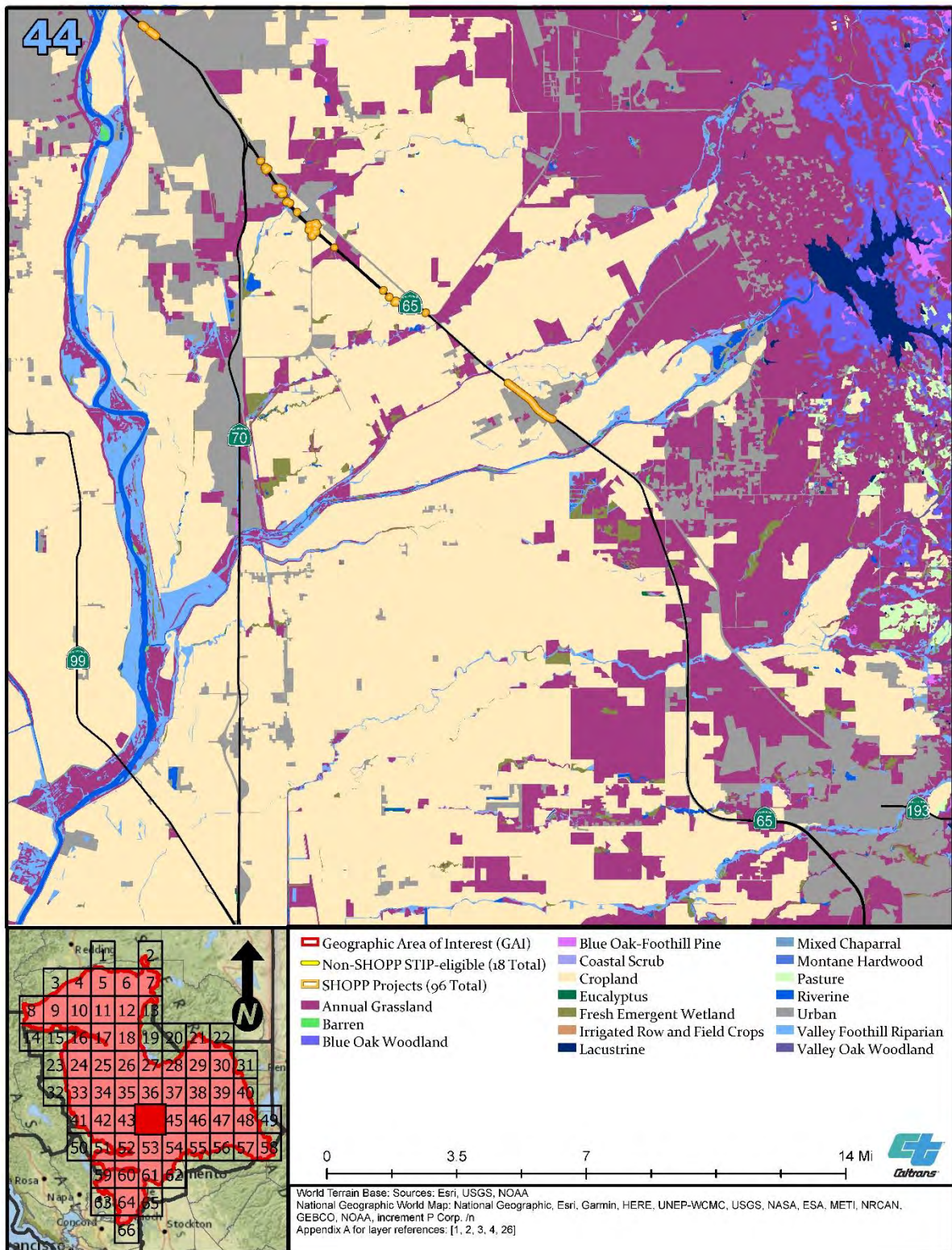




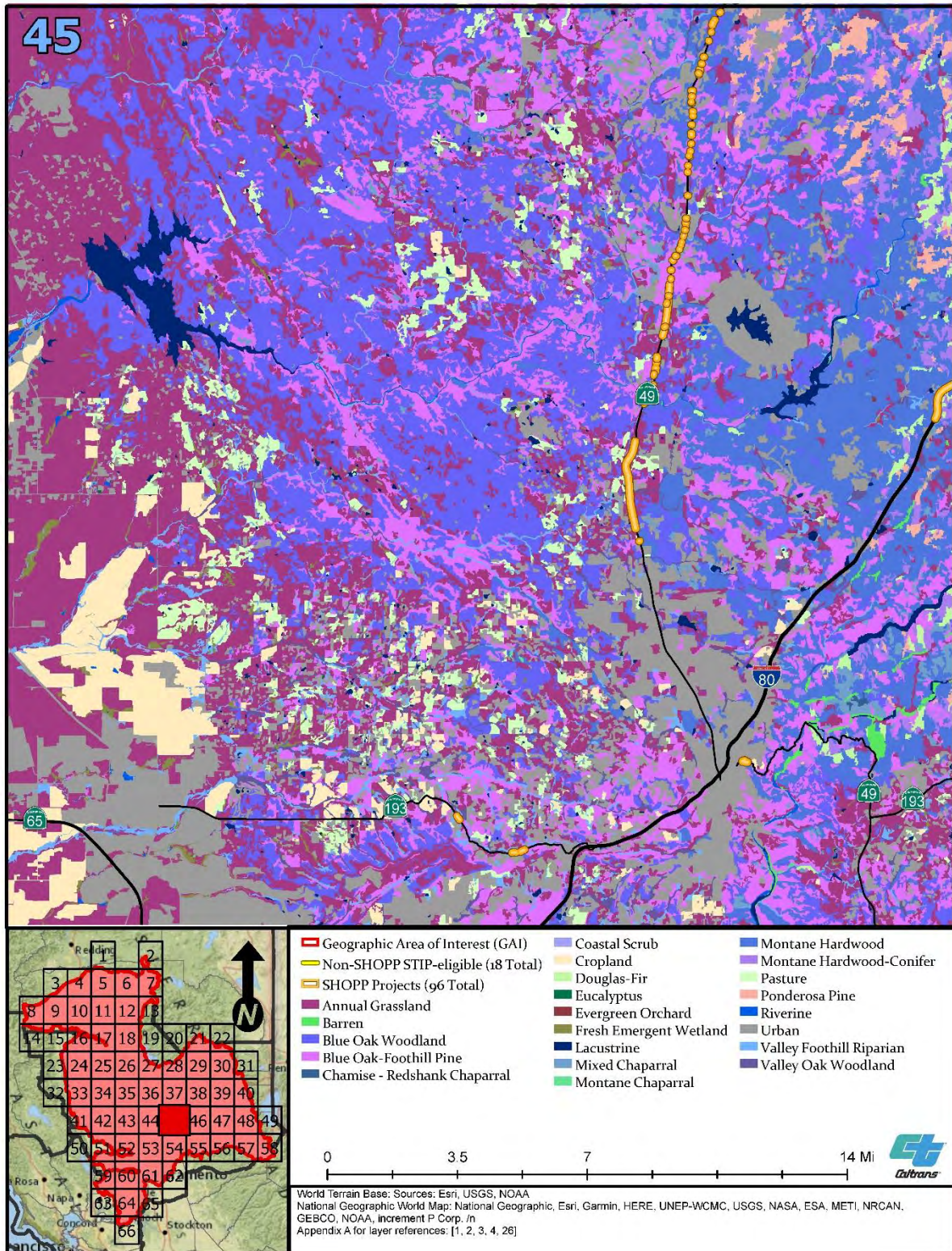




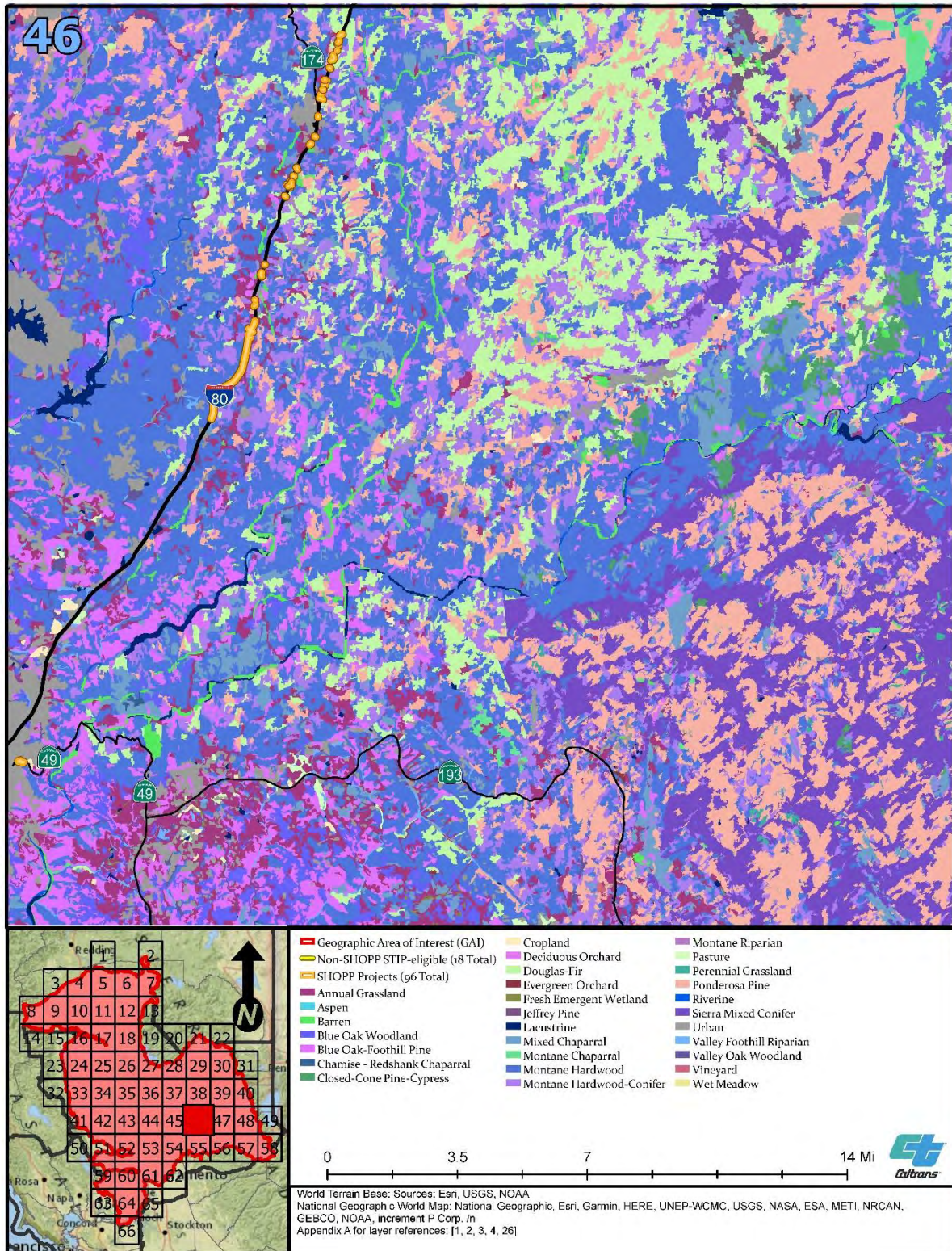




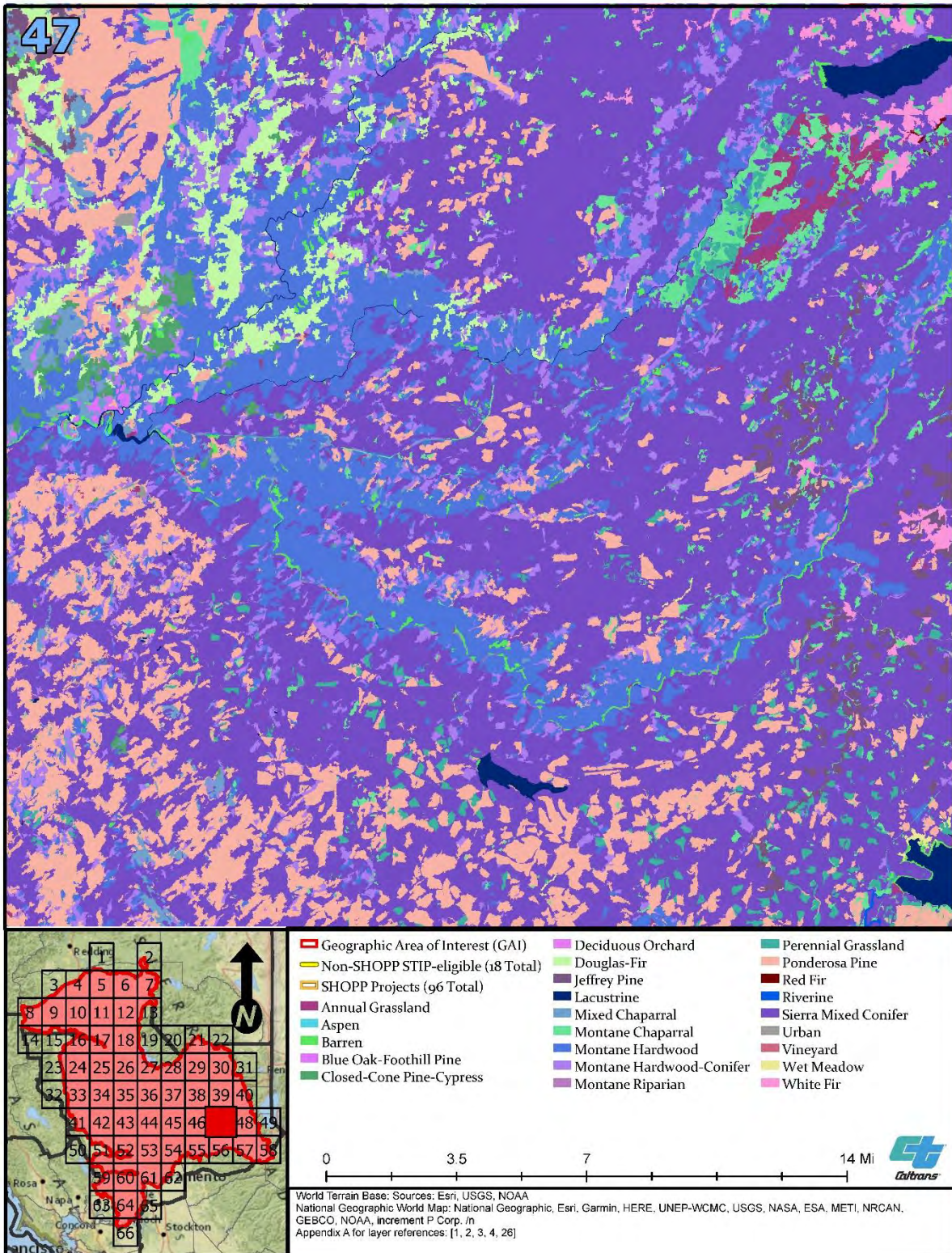




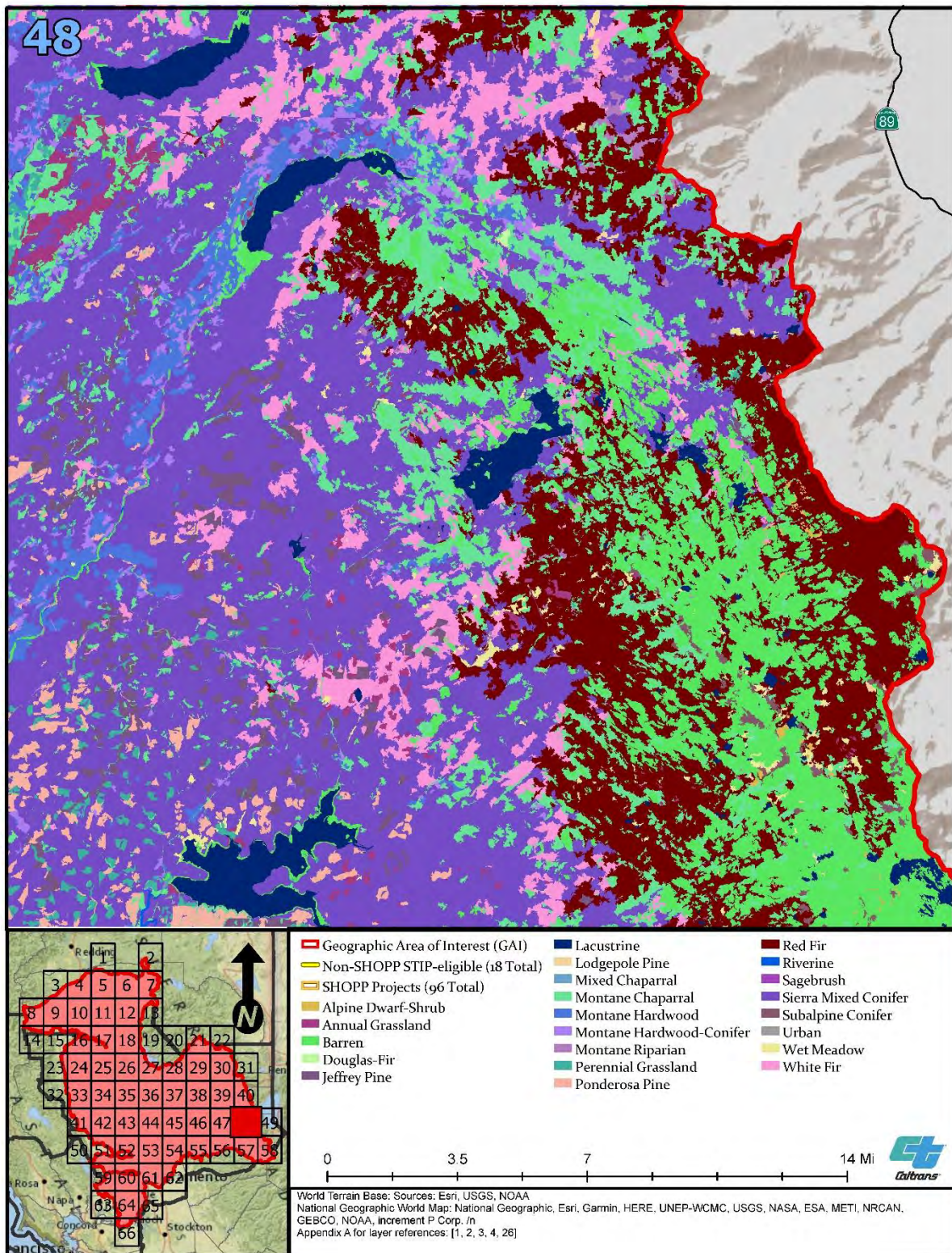




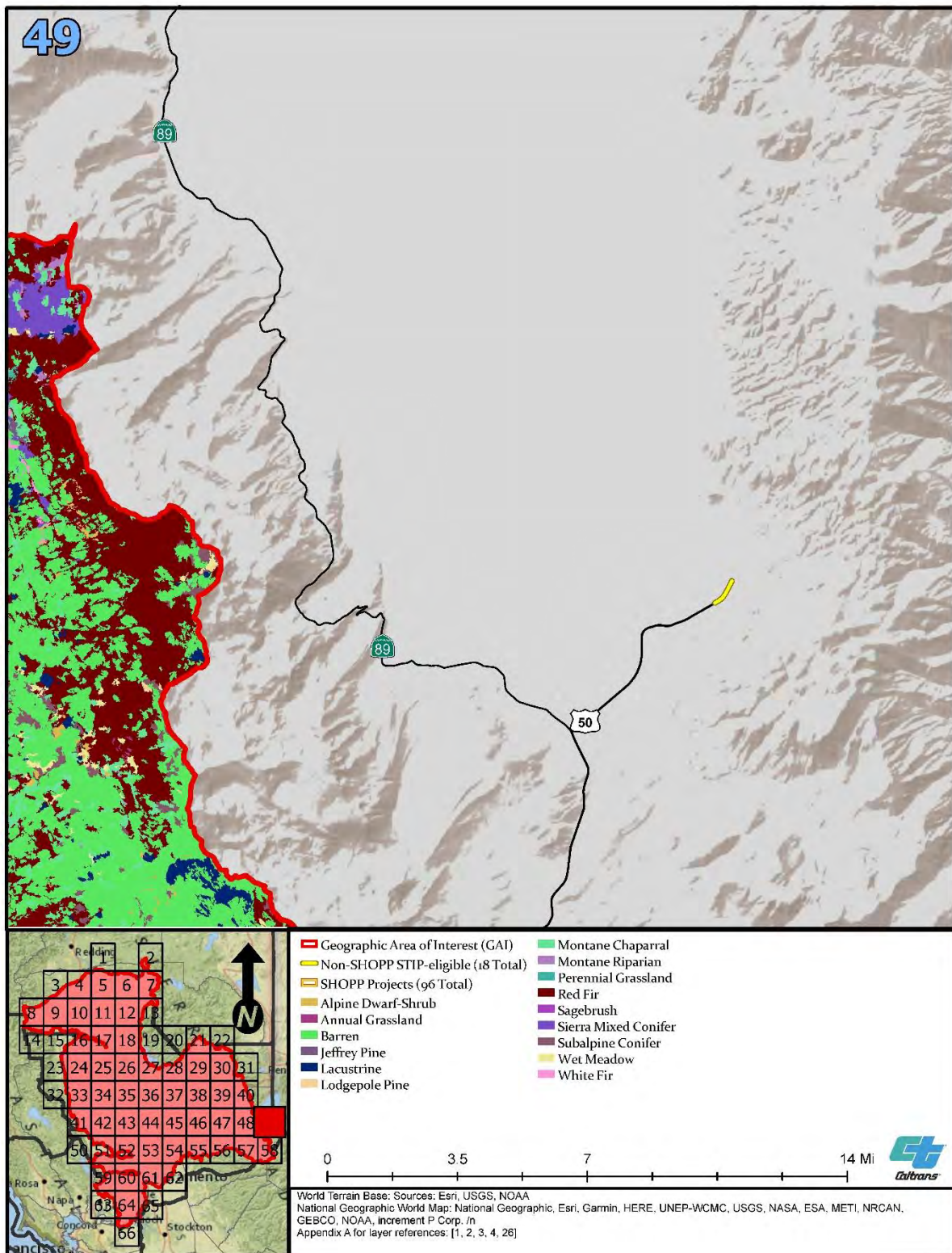




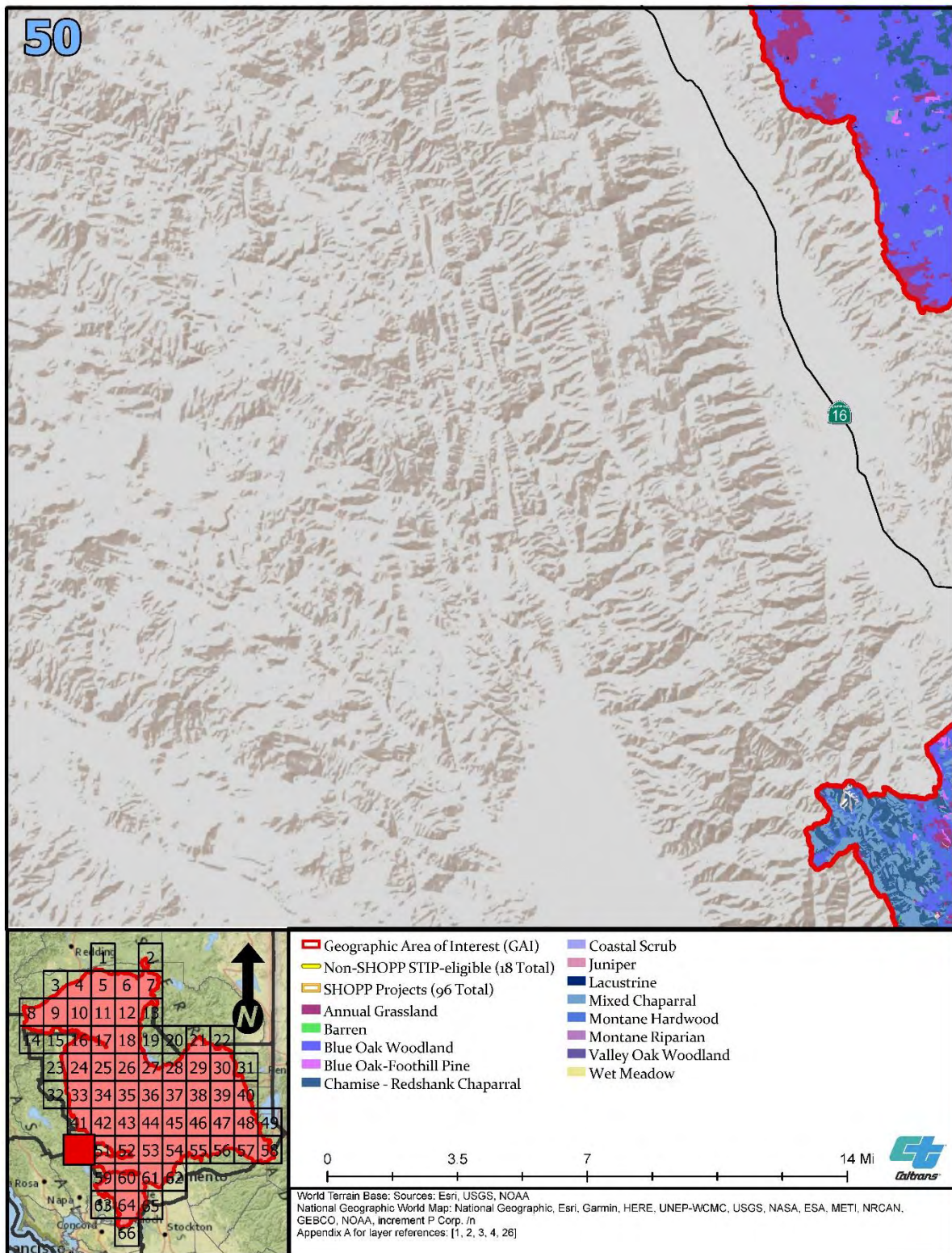




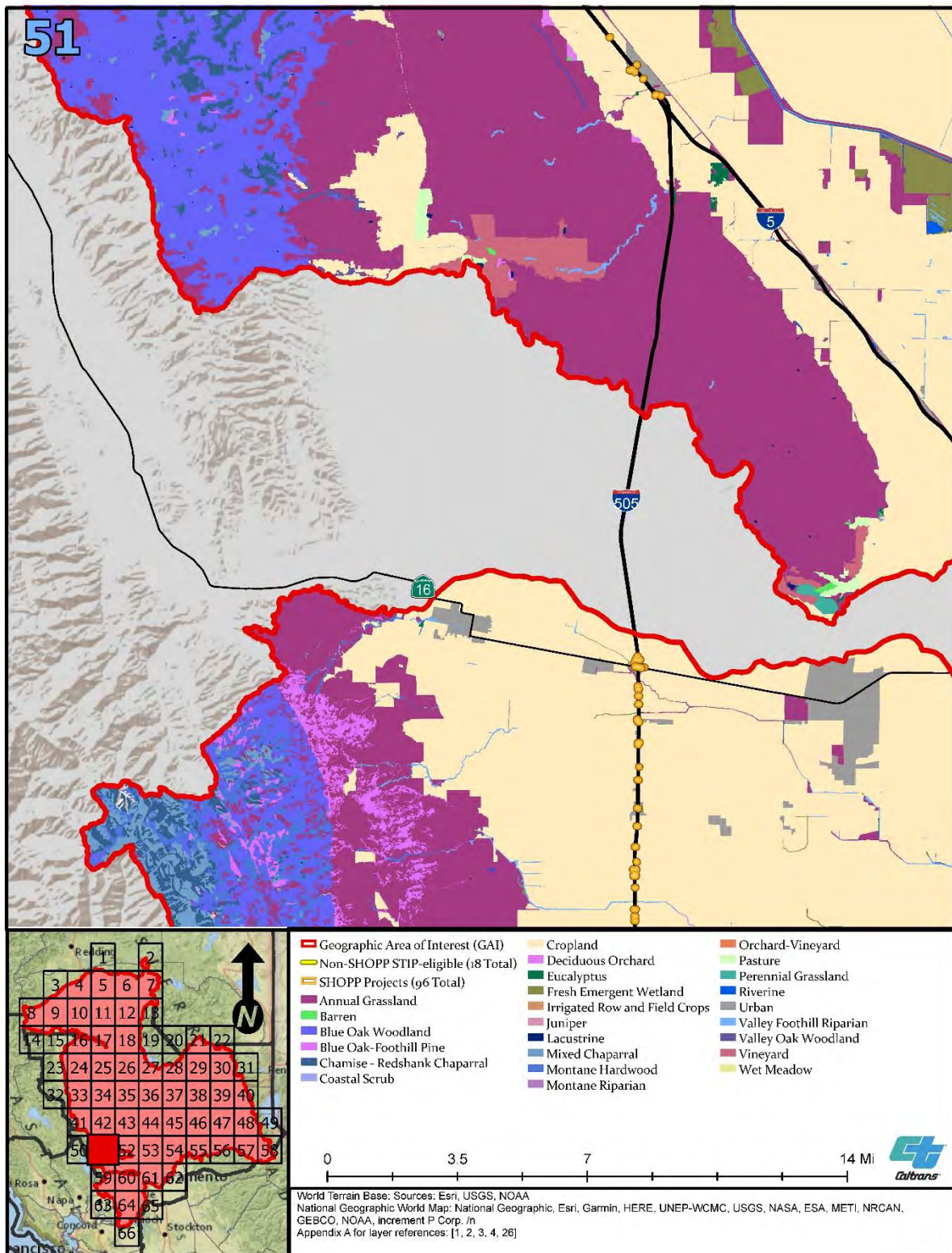


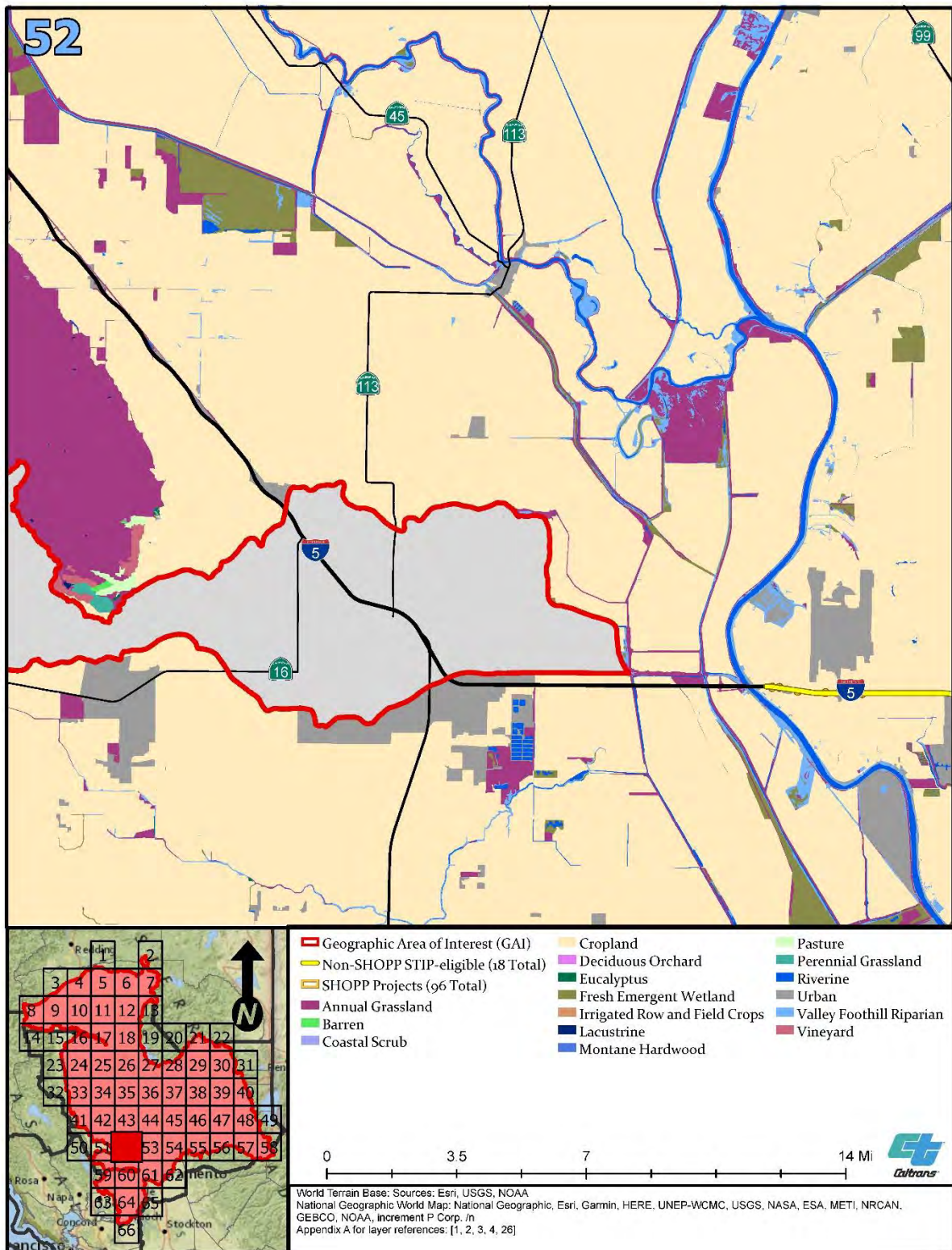




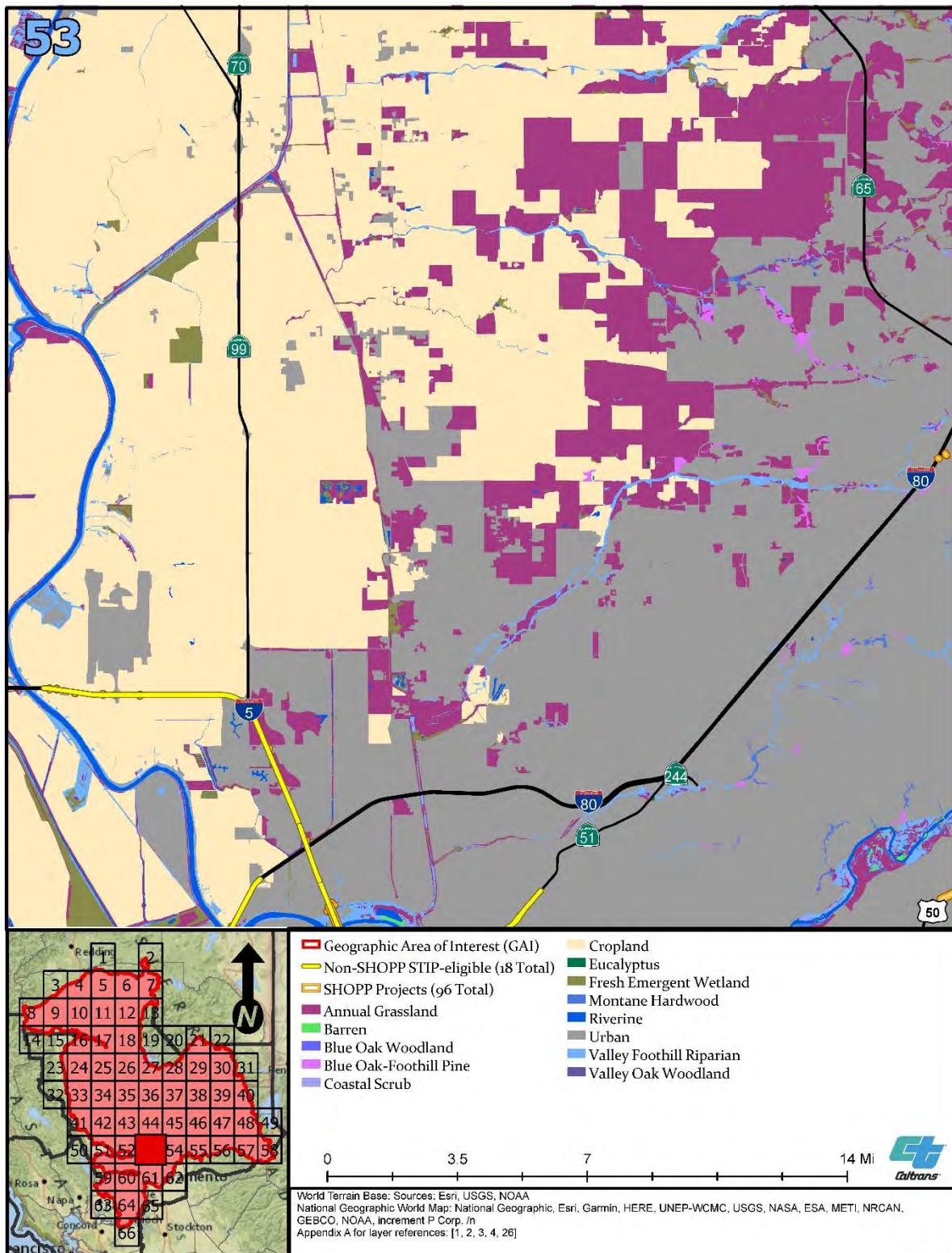




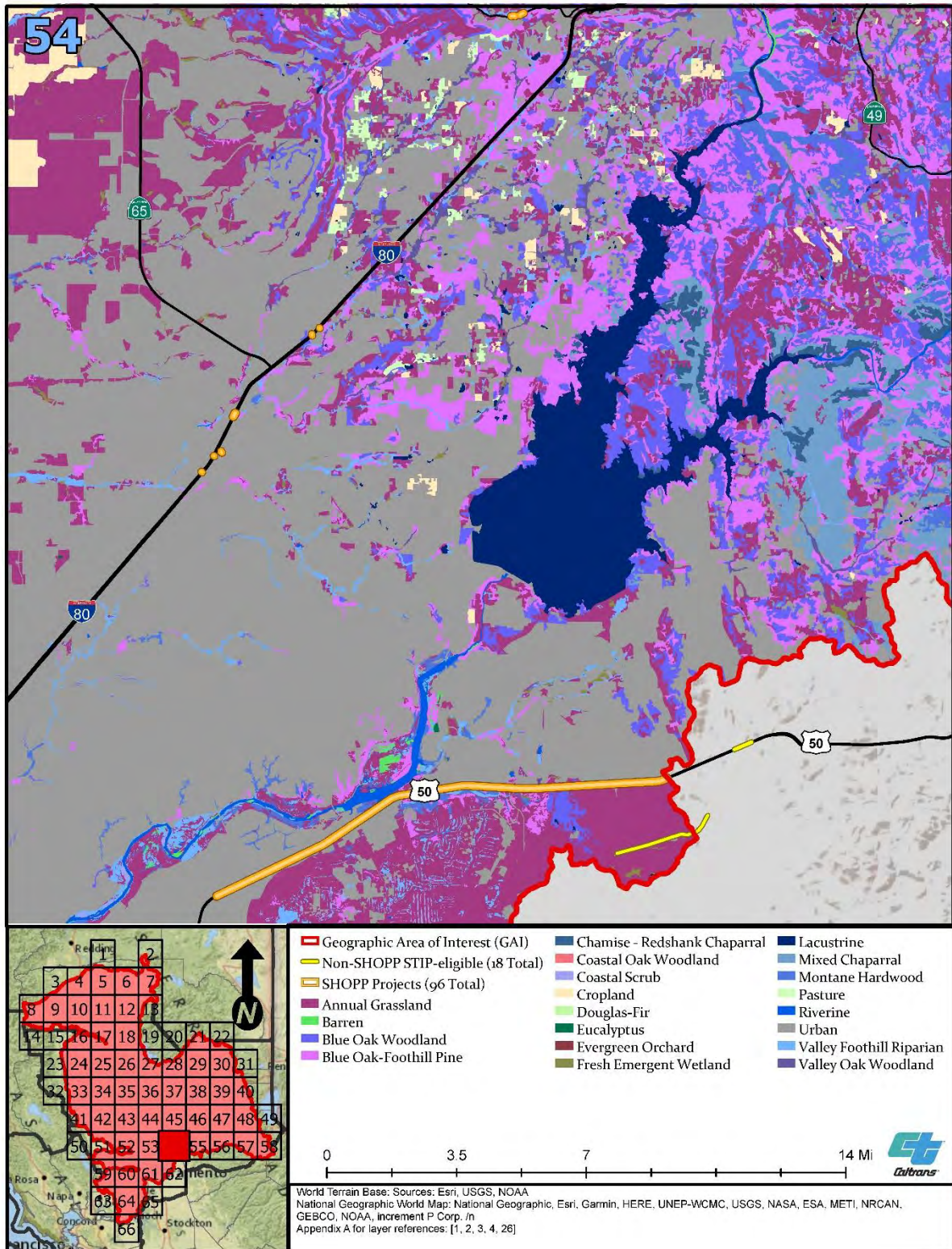




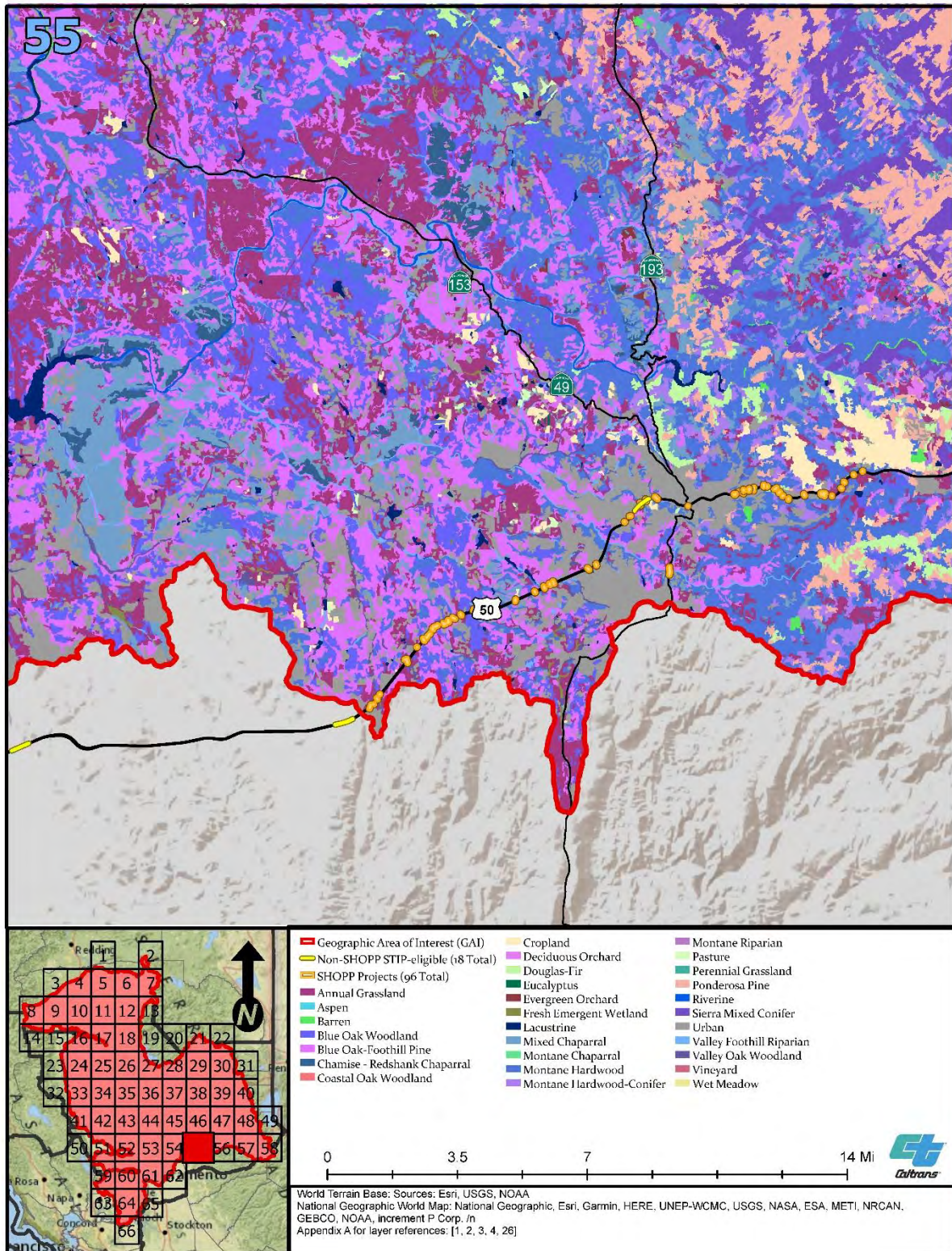




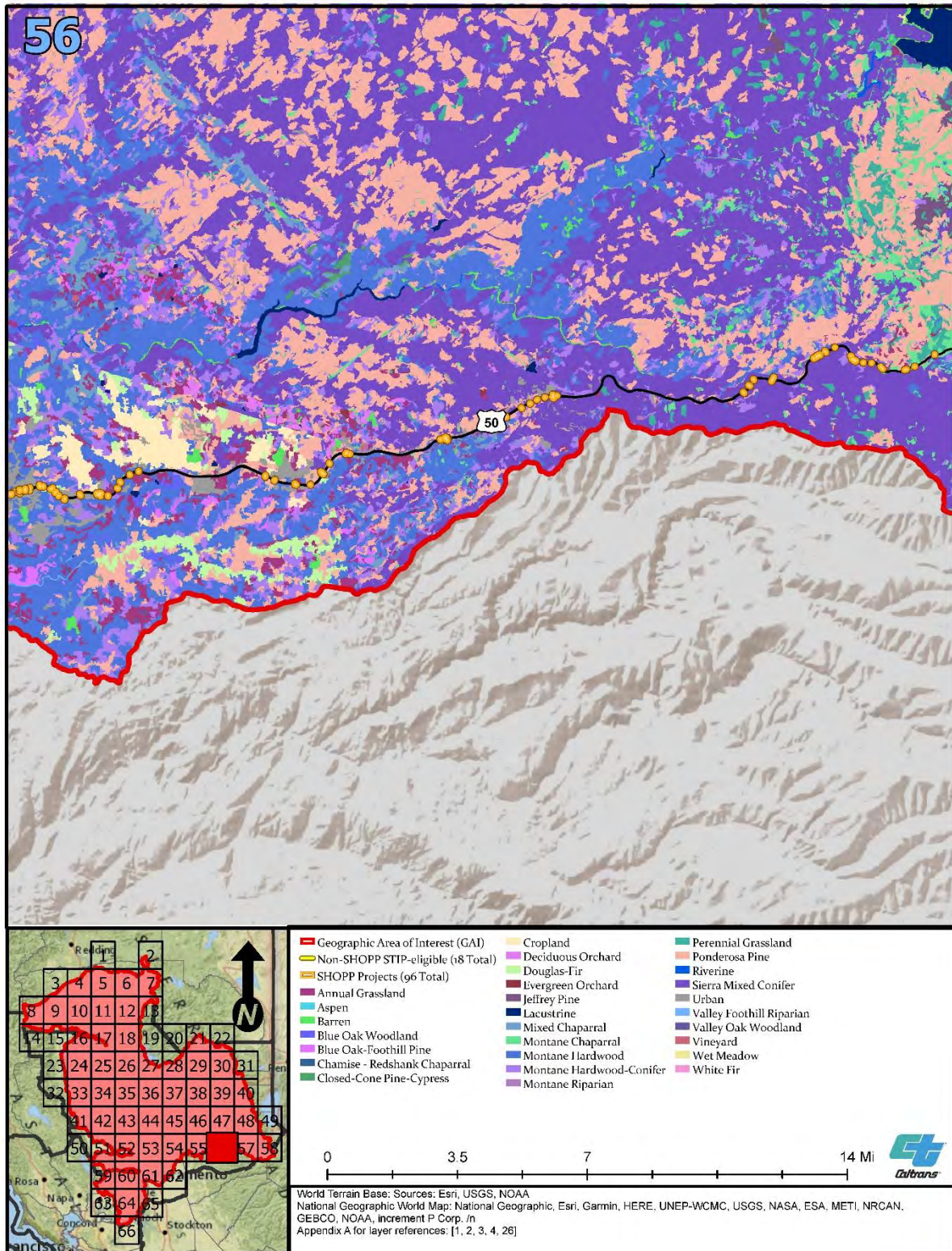




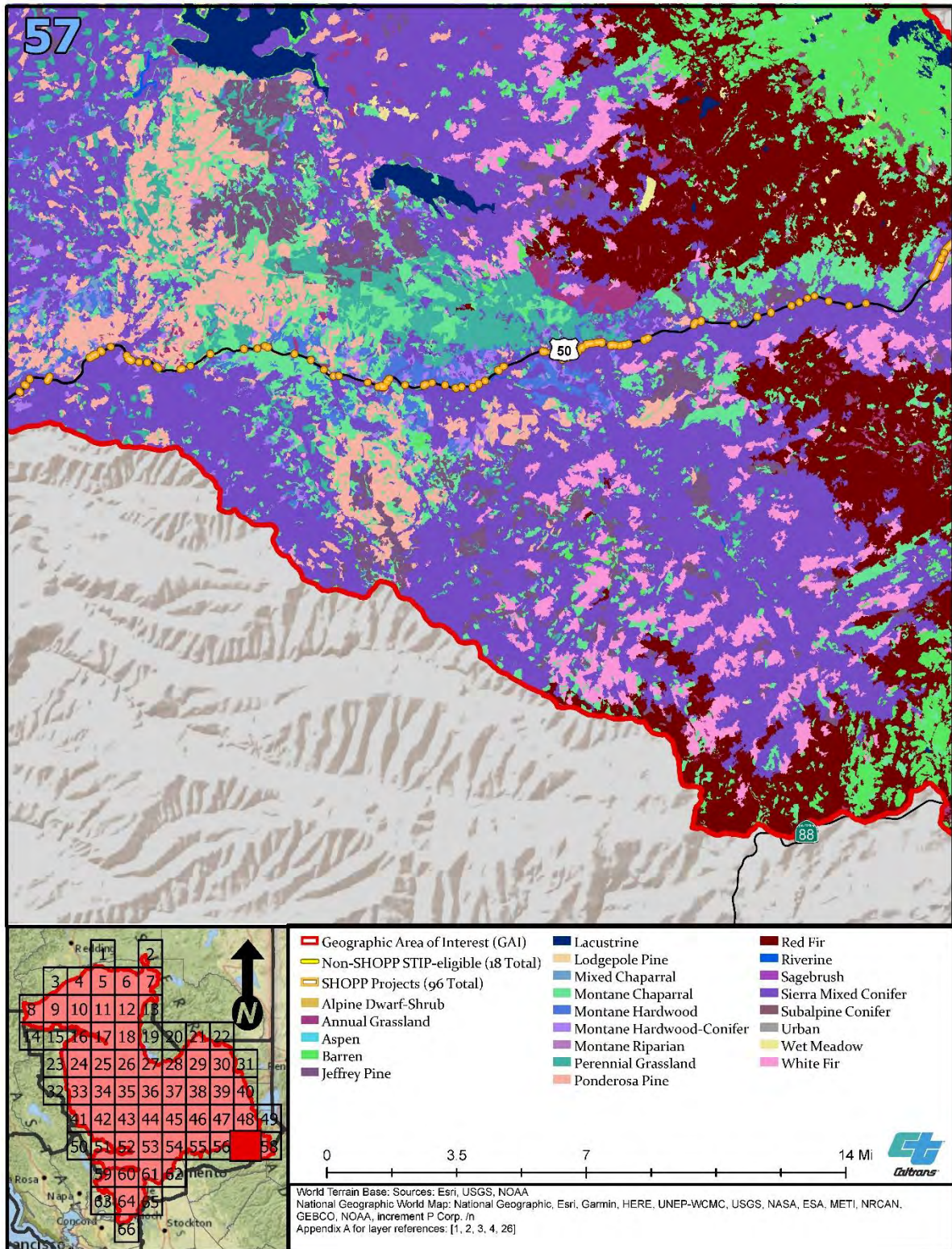




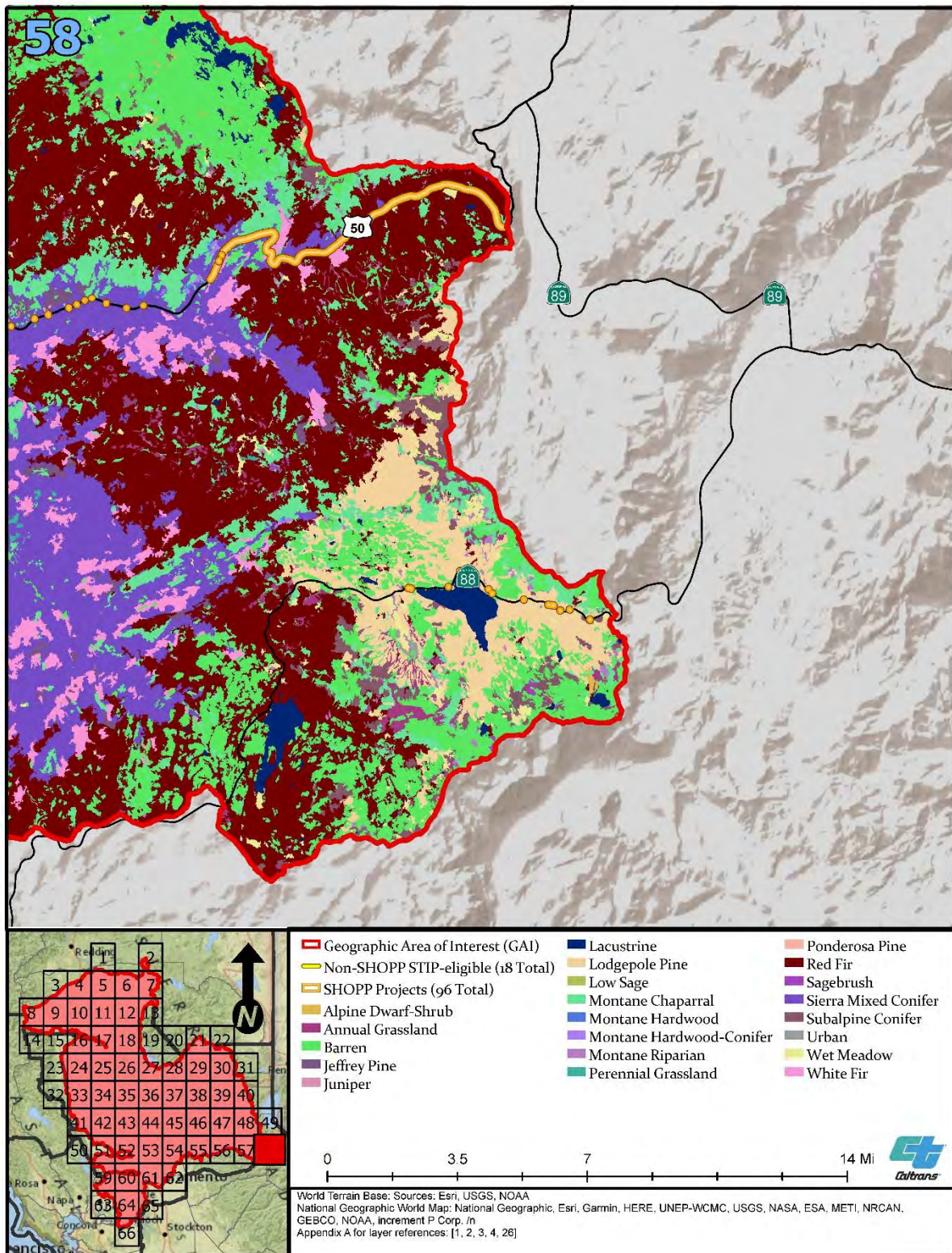




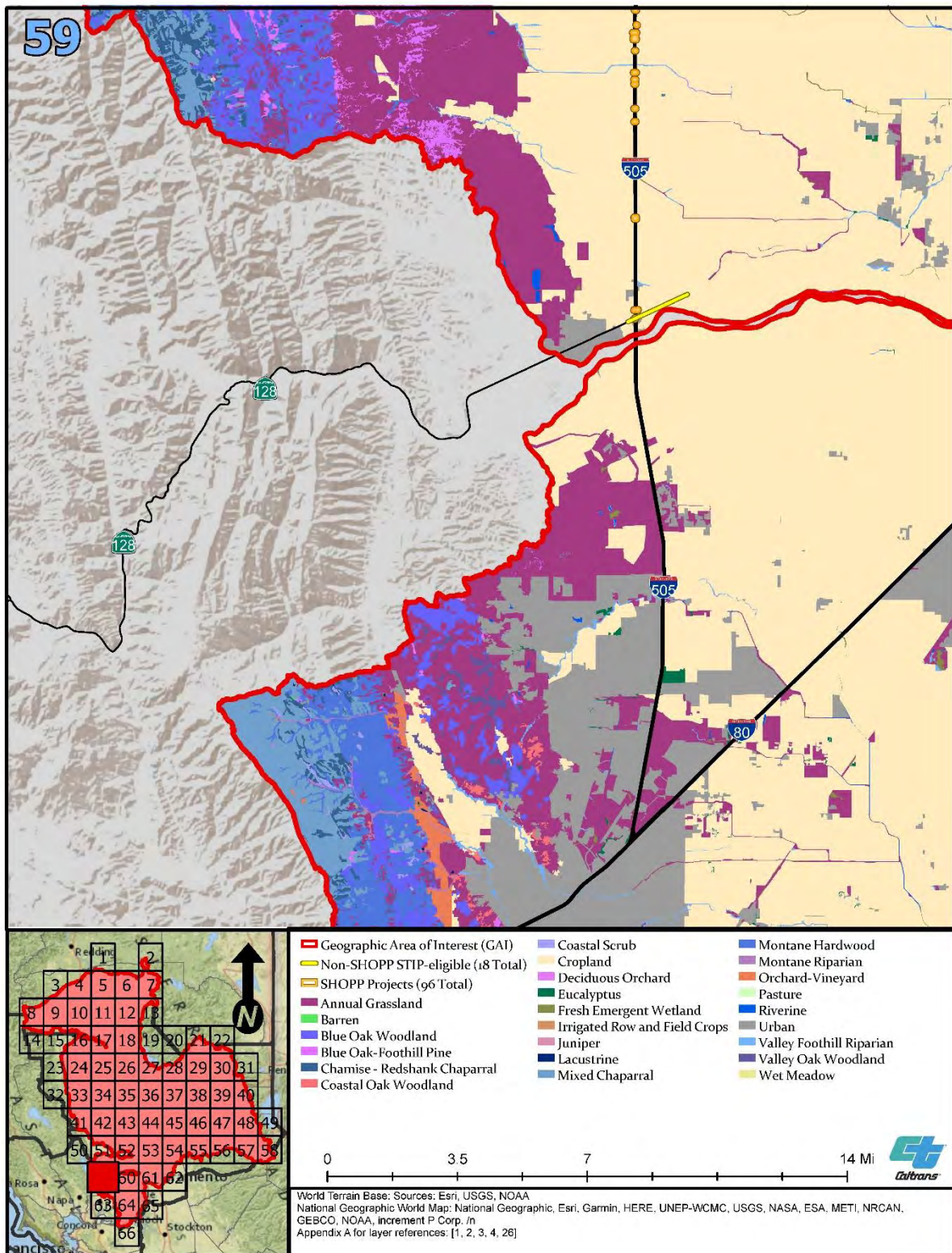




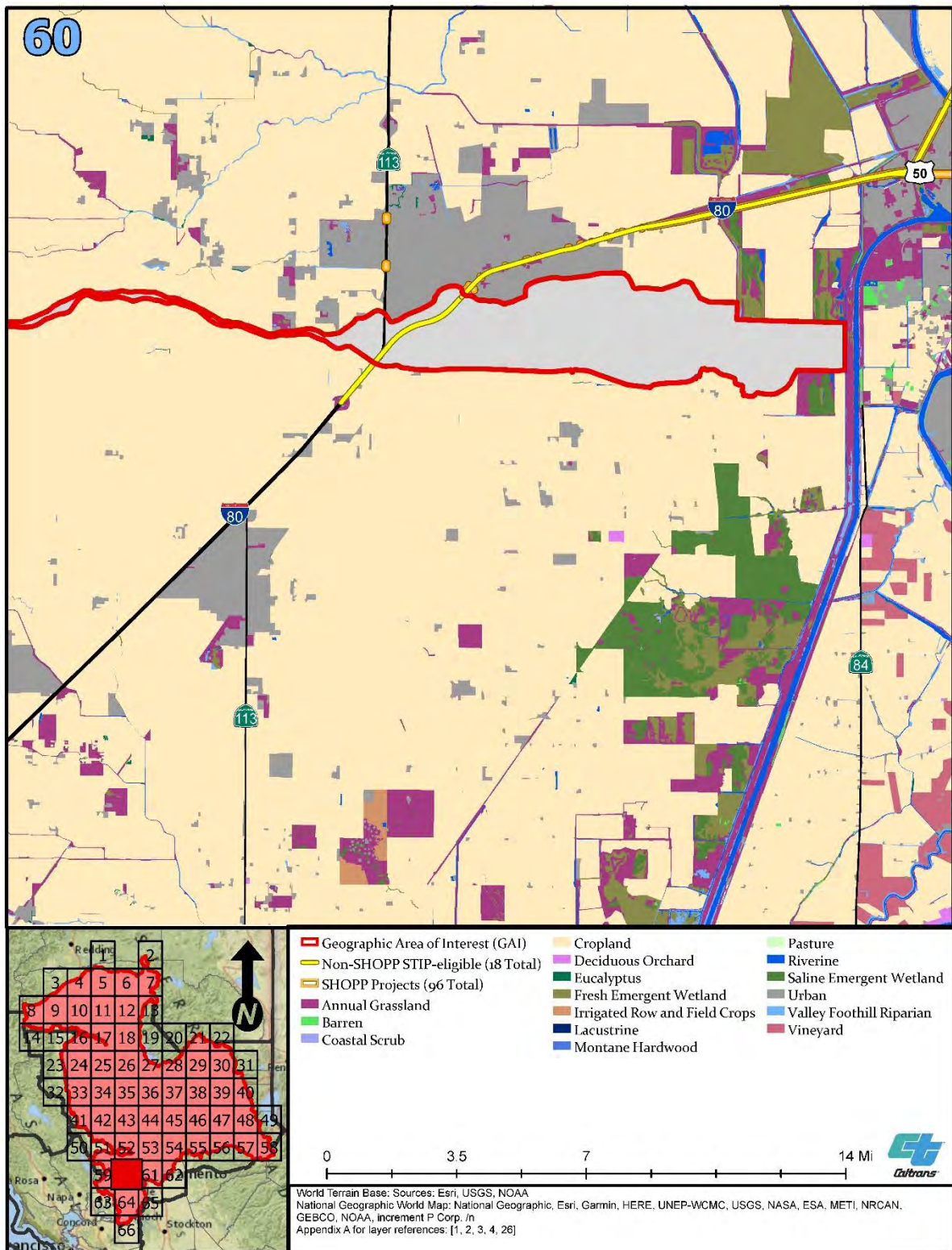




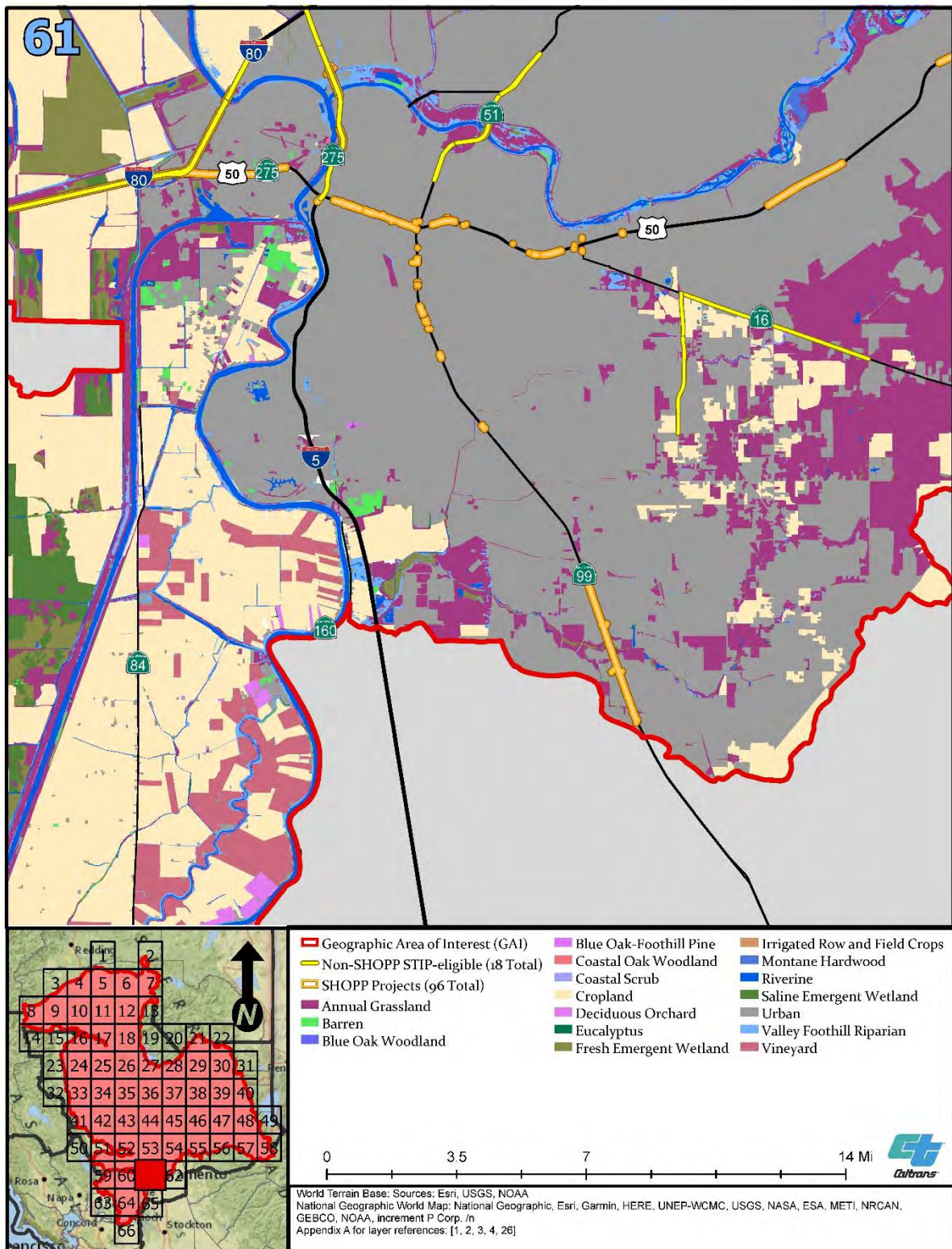


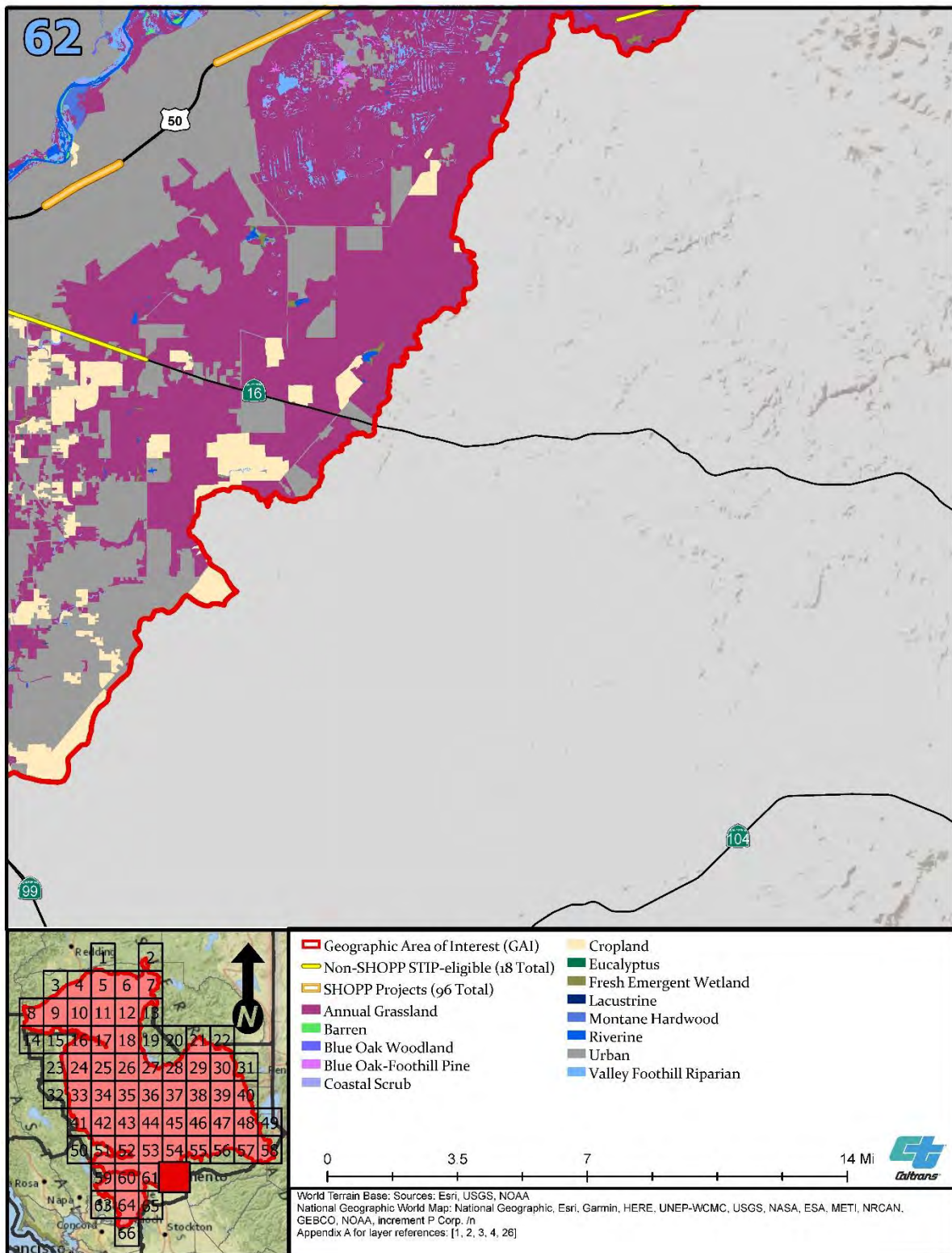




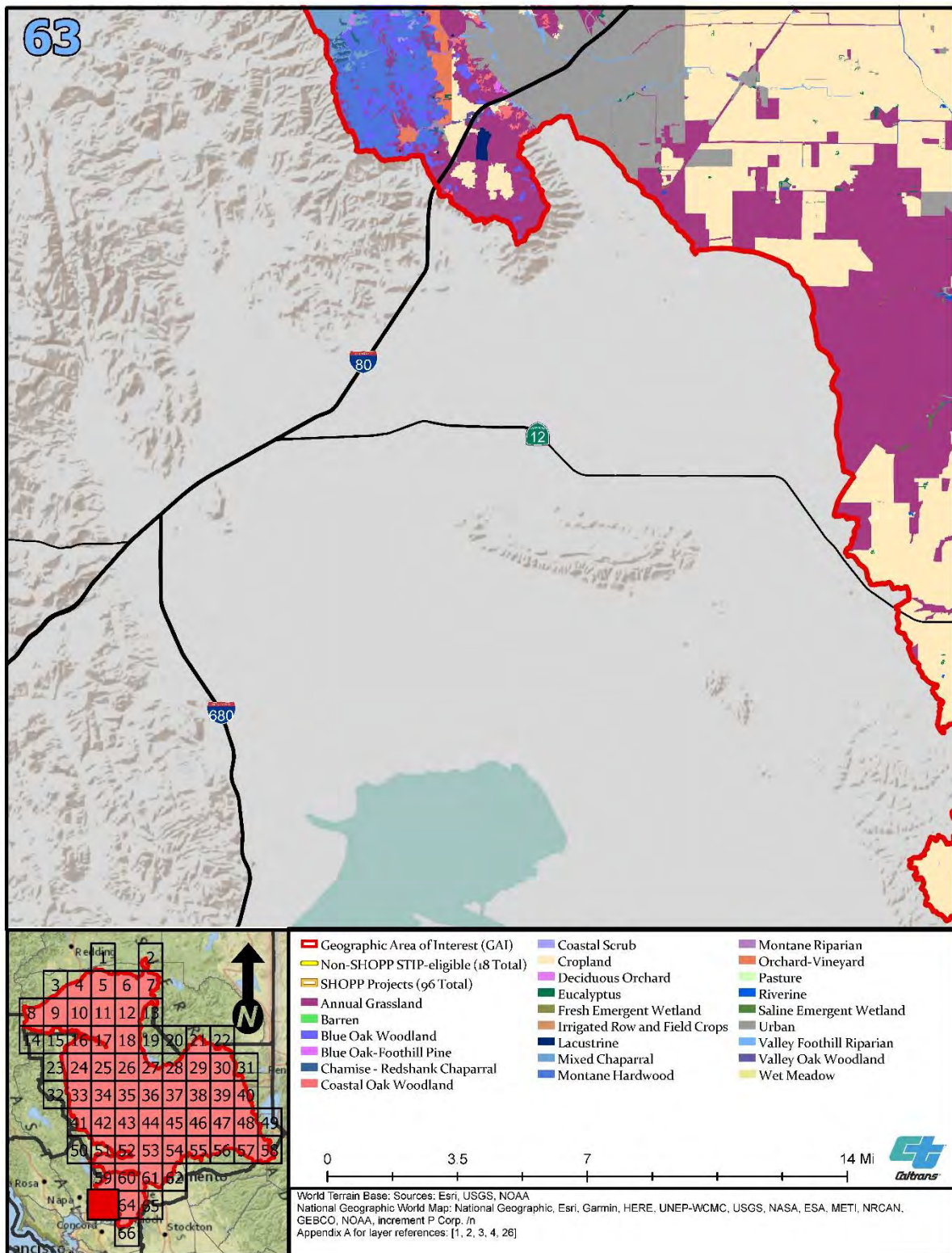


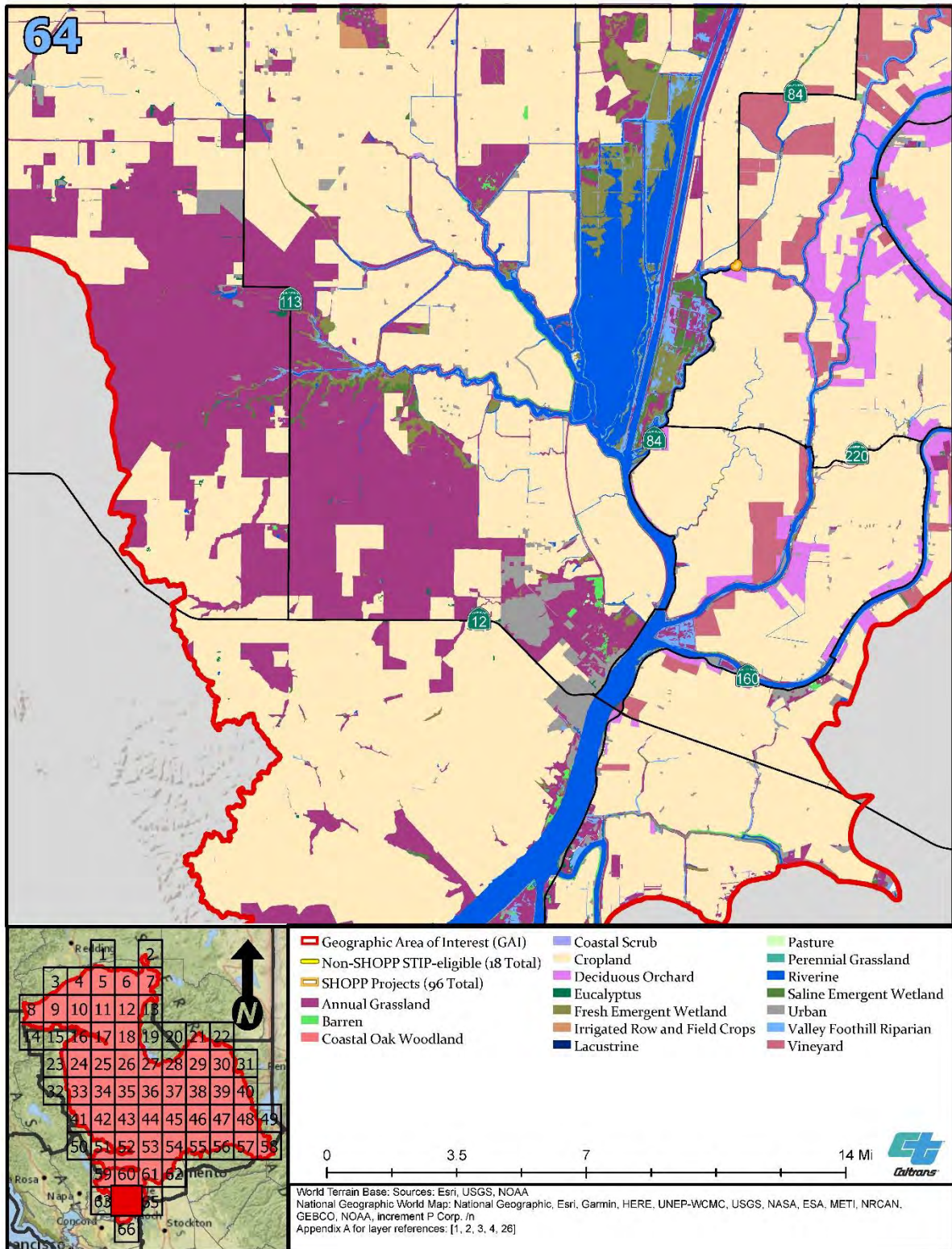




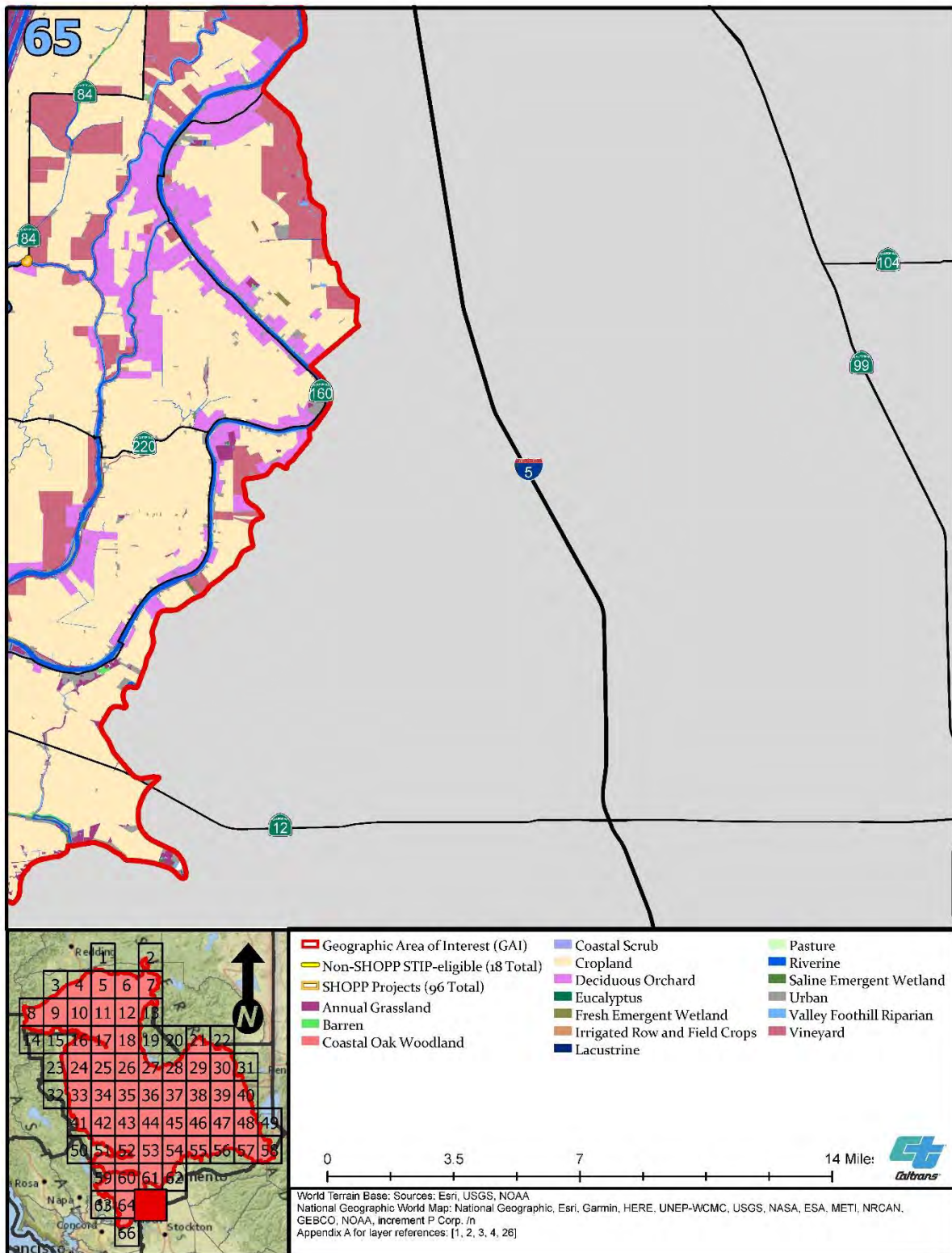


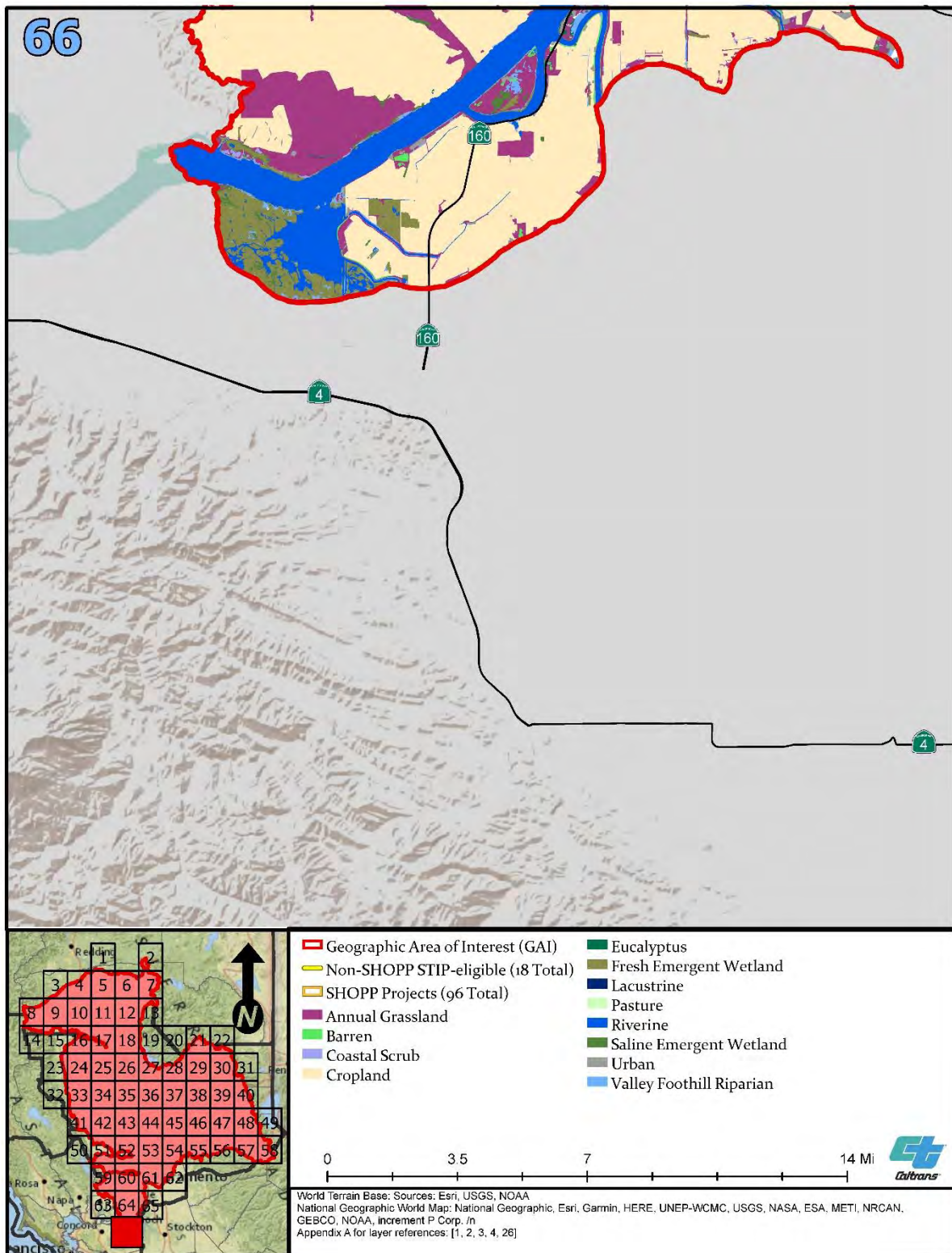














## APPENDIX C: COMPLETE SAMNA SPECIES RESULTS

Complete terrestrial species SAMNA results for the GAI are provided in Tables C-1 through C-5, which include SAMNA results for the portions of the Great Valley Section (starts on page C-3), Northern California Interior Coast Ranges Section (starts on page C-9), Southern Cascades Section (starts on page C-13), Sierra Nevada Section (starts on page C-16), and Sierra Nevada Foothills Section (starts on page C-23) within the GAI. The tables list 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 2021). SAMNA results are only as accurate as their foundational data and have not been ground-truthed.

- 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 suitable for input into the SAMNA model, SAMNA results are provided at the species level, which may include both special-status and non-special-status species. Hence, the number of species with the potential to be affected may be overestimated.
- If impacts were estimated, additional information sources 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 was excluded from this appendix.
- When no impacts for a species are estimated for any habitat, the species is included. Based on available information, it is potentially present in 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 each table. Total habitat impacts in the bottom row of each table indicate the total anticipated impacts for each habitat type and 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.

Habitats referenced in Tables C-1 through C-5 are mapped in Appendix B. While California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylei*), giant garter snake (*Thamnophis gigas*), Swainson's hawk (*Buteo swainsoni*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) are the species of

mitigation need identified for this GAI, several other special-status species share habitat with these 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, in order to improve the conservation benefits of compensatory mitigation in the GAI. For example, advance mitigation established for California red-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 Tables C-1 through C-5 and are provided in tables in Chapter 5 of the main text.

## References

Caltrans (California Department of Transportation). 2021. *Statewide Advance Mitigation Needs Assessment Report*. State Highway Operation and Protection Program. Ten-Year Project Book. Second Quarter 2019/2020 Fiscal Year. May. Sacramento, California.



Table C-1. Complete SAMNA Results for the Great Valley Section in District 3, by Land Cover (acres)

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak-Foothill Pine	Coastal Scrub	Eucalyptus	Fresh Emergent Wetland	Montane Hardwood	Riverine	Urban	Valley Foothill Riparian	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
lone manzanita <sup>a</sup>	<i>Arctostaphylos myrtifolia</i>	FT	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.92
Clara Hunt's milk-vetch <sup>a</sup>	<i>Astragalus claranus</i>	FE, ST	24.31	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	25.27
Chinese camp brodiaea <sup>a</sup>	<i>Brodiaea pallida</i>	FT, SE	0.33	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	1.25
Stebbins' morning-glory	<i>Calystegia stebbinsii</i>	FE, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.92
succulent owl's-clover <sup>a</sup>	<i>Castilleja campestris</i> var. <i>succulenta</i>	FT, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Pine Hill ceanothus	<i>Ceanothus roderickii</i>	FE, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.92
palmate-bracted bird's-beak	<i>Chloropyron palmatum</i>	FT, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Hoover's spurge	<i>Euphorbia hooveri</i>	FT	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Pine Hill flannelbush	<i>Fremontodendron decumbens</i>	FE, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.92
El Dorado bedstraw	<i>Galium californicum</i> ssp. <i>sierrae</i>	FE, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.92
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	24.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.34
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FE	24.31	0.00	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	25.27
Butte County meadowfoam	<i>Limnanthes floccosa</i> ssp. <i>californica</i>	FE, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Colusa grass	<i>Neostapfia colusana</i>	FT, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
hairy Orcutt grass	<i>Orcuttia pilosa</i>	FE, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
slender Orcutt grass	<i>Orcuttia tenuis</i>	FT, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	FE, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Layne's ragwort	<i>Packera layneae</i>	FT, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.92
Greene's tuctoria	<i>Tuctoria greenei</i>	FE, SR	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31
Crampton's tuctoria or Solano grass	<i>Tuctoria mucronata</i>	FE, SE	24.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.31

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak-Foothill Pine	Coastal Scrub	Eucalyptus	Fresh Emergent Wetland	Montane Hardwood	Riverine	Urban	Valley Foothill Riparian	Total
Invertebrates	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
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	9.12	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	10.48
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.86	4.86
vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE	13.43	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	14.79
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
California tiger salamander	<i>Ambystoma californiense</i>	FT, ST	14.50	0.00	0.07	0.00	0.13	0.00	0.00	0.00	0.00	1.13	15.83
ensatina <sup>b</sup>	<i>Ensatina eschscholtzii</i>	FS	0.00	0.00	0.00	0.00	0.07	0.00	0.21	0.00	0.00	0.00	0.28
foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
California red-legged frog	<i>Rana draytonii</i>	FT, SSC	3.67	0.00	0.00	0.00	0.00	0.00	0.80	0.32	0.00	1.30	6.09
western spadefoot	<i>Spea hammondi</i>	FS, SSC	24.34	0.00	0.07	0.16	0.13	1.36	0.00	3.67	0.00	0.00	29.73
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
striped racer <sup>c</sup>	<i>Masticophis [Coluber] lateralis<sup>d</sup></i>	FT, ST	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.21
ring-necked snake <sup>e</sup>	<i>Diadophis punctatus</i>	FS	8.20	0.00	0.07	0.16	0.13	0.00	1.75	0.00	211.02	3.64	224.97
California mountain kingsnake	<i>Lampropeltis zonata</i>	None	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.21
Coast [Blainville's] horned lizard	<i>Phrynosoma blainvillii</i>	FS, SSC	24.34	0.00	0.07	0.16	0.13	0.00	0.00	0.00	0.00	5.43	30.13
gophersnake	<i>Pituophis catenifer</i>	None	24.34	0.00	0.07	0.16	0.13	1.36	1.75	0.00	257.23	5.43	290.47
western skink <sup>f</sup>	<i>Plestiodon skiltonianus</i>	FS	0.23	0.00	0.00	0.00	0.07	0.00	0.21	0.00	0.00	0.00	0.51
giant gartersnake	<i>Thamnophis gigas</i>	FT, ST	24.08	0.00	0.00	0.00	0.00	1.36	0.00	3.67	0.00	5.43	34.54
common gartersnake <sup>g</sup>	<i>Thamnophis sirtalis</i>	FE, SE, SFP, SSC	24.34	0.00	0.07	0.16	0.13	1.36	1.75	0.00	0.00	5.43	33.24
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
red-winged blackbird <sup>h</sup>	<i>Agelaius phoeniceus</i>	SSC	24.34	0.00	0.00	0.16	0.13	1.36	0.00	0.00	257.23	5.43	288.65
tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST, SSC	24.34	0.00	0.00	0.00	0.13	1.36	0.00	0.00	257.23	5.43	288.49



Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak-Foothill Pine	Coastal Scrub	Eucalyptus	Fresh Emergent Wetland	Montane Hardwood	Riverine	Urban	Valley Foothill Riparian	Total
rufous-crowned sparrow <sup>i</sup>	<i>Aimophila ruficeps</i>	SSC	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC	24.34	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	24.47
greater white-fronted goose	<i>Anser albifrons</i>	None	24.34	0.00	0.00	0.00	0.00	1.36	0.00	3.67	0.00	0.00	29.37
tule greater white-fronted goose	<i>Anser albifrons elgasi</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.51
golden eagle	<i>Aquila chrysaetos</i>	FS, SFP, SFS	24.34	0.16	0.07	0.16	0.13	1.36	1.75	0.00	257.23	5.43	290.63
great egret	<i>Ardea alba</i>	SFS	24.34	0.00	0.07	0.00	0.13	1.36	0.00	3.67	257.23	5.43	292.23
great blue heron	<i>Ardea herodias</i>	SFS	24.34	0.00	0.07	0.16	0.13	1.36	1.75	3.67	257.23	5.43	294.14
short-eared owl	<i>Asio flammeus</i>	SSC	24.34	0.00	0.07	0.16	0.13	1.36	0.00	0.00	257.23	5.43	288.72
long-eared owl	<i>Asio otus</i>	SSC	16.35	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	4.70	21.26
burrowing owl	<i>Athene cunicularia</i>	FS, SSC	24.34	0.16	0.07	0.16	0.13	0.00	0.00	0.00	257.23	5.43	287.52
redhead	<i>Aythya americana</i>	SSC	0.00	0.00	0.00	0.00	0.00	1.36	0.00	3.62	0.00	0.00	4.98
Barrow's goldeneye	<i>Bucephala islandica</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.51
Swainson's hawk	<i>Buteo swainsoni</i>	FS, ST	24.34	0.16	0.07	0.00	0.13	0.00	1.75	0.00	257.23	5.43	289.11
California quail <sup>l</sup>	<i>Callipepla californica</i>	SSC	24.34	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	289.11
mountain plover	<i>Charadrius montanus</i>	FS, SSC	14.98	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.14
black tern	<i>Chlidonias niger</i>	SSC	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	1.36
northern harrier	<i>Circus hudsonius [cyaneus]<sup>d</sup></i>	SSC	24.34	0.16	0.07	0.16	0.13	1.36	1.75	3.67	257.23	5.43	294.30
marsh wren <sup>k</sup>	<i>Cistothorus palustris</i>	SSC	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	5.43	6.79
yellow-billed cuckoo	<i>Coccyzus americanus occidentalis<sup>d</sup></i>	FT, FS, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12
white-tailed kite	<i>Elanus leucurus</i>	FS, SFP	24.34	0.16	0.07	0.16	0.13	1.36	0.00	0.00	257.23	5.43	288.88
peregrine falcon	<i>Falco peregrinus anatum<sup>d</sup></i>	FS, SFP, SFS	24.34	0.16	0.07	0.16	0.13	1.36	1.75	3.67	257.23	5.43	294.30
common yellowthroat <sup>l</sup>	<i>Geothlypis trichas</i>	SSC	24.34	0.00	0.00	0.00	0.13	1.36	0.00	0.00	0.00	5.43	31.26
sandhill crane	<i>Antigone [Grus] canadensis<sup>d</sup></i>	None	23.69	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	5.43	30.48

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak-Foothill Pine	Coastal Scrub	Eucalyptus	Fresh Emergent Wetland	Montane Hardwood	Riverine	Urban	Valley Foothill Riparian	Total
lesser sandhill crane	<i>Antigone [Grus] canadensis canadensis<sup>d</sup></i>	SSC	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	1.14
bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE, SFP, SFS	24.34	0.16	0.07	0.16	0.13	1.36	1.75	3.67	0.00	5.43	37.07
yellow-breasted chat	<i>Icteria virens</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	2.86
least bittern	<i>Ixobrychus exilis</i>	SSC	0.00	0.00	0.00	0.00	0.00	1.36	0.00	2.37	0.00	0.00	3.73
loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	24.34	0.16	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	289.27
black rail	<i>Laterallus jamaicensis coturniculus<sup>d</sup></i>	FS, ST, SFP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.51
song sparrow	<i>Melospiza melodia</i>	None	24.34	0.00	0.07	0.16	0.13	1.36	1.75	3.67	257.23	5.43	294.14
Modesto song sparrow	<i>Melospiza melodia mailliardi</i>	SSC	23.77	0.00	0.07	0.16	0.13	1.36	1.75	3.62	251.06	5.25	287.17
osprey	<i>Pandion haliaetus</i>	SFS	19.89	0.16	0.07	0.00	0.00	0.00	1.75	3.67	0.00	5.43	30.97
savannah sparrow <sup>m</sup>	<i>Passerculus sandwichensis</i>	SSC	24.34	0.00	0.07	0.16	0.13	0.00	0.00	0.00	0.00	5.43	30.13
American white pelican <sup>n</sup>	<i>Pelecanus erythrorhynchos</i>	SSC	0.00	0.16	0.00	0.00	0.00	0.00	0.00	3.62	0.00	0.00	3.78
California towhee <sup>o</sup>	<i>Melospiza [Pipilo] crissalis<sup>d</sup></i>	FT, SE	0.00	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	264.77
spotted towhee <sup>p</sup>	<i>Pipilo maculatus</i>	SSC	0.00	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	264.77
vesper sparrow	<i>Poocetes gramineus</i>	None	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91
Oregon vesper sparrow	<i>Poocetes gramineus affinis</i>	SSC	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
purple martin	<i>Progne subis</i>	SSC	8.98	0.00	0.00	0.00	0.00	0.00	0.00	2.70	175.90	1.67	189.25
bank swallow	<i>Riparia riparia</i>	FS, ST	8.50	0.00	0.00	0.16	0.00	1.36	0.00	2.72	228.32	4.34	245.40
yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	141.14	0.12	142.06
spotted owl	<i>Strix occidentalis</i>	None	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.59
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.59
Bewick's wren <sup>q</sup>	<i>Thryomanes bewickii</i>	SSC	0.00	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	264.77
Hutton's vireo <sup>r</sup>	<i>Vireo huttoni</i>	SSC	0.00	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	264.77
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	24.34	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	25.70



Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak-Foothill Pine	Coastal Scrub	Eucalyptus	Fresh Emergent Wetland	Montane Hardwood	Riverine	Urban	Valley Foothill Riparian	Total
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
pallid bat	<i>Antrozous pallidus</i>	FS, SSC	24.34	0.16	0.07	0.16	0.13	0.00	1.75	3.67	257.23	5.43	292.94
ringtail	<i>Bassariscus astutus</i>	SFP	24.34	0.16	0.07	0.16	0.13	0.00	1.75	0.00	0.00	5.43	32.04
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	24.34	0.16	0.07	0.16	0.13	0.00	1.75	3.67	257.23	5.43	292.94
California kangaroo rat	<i>Dipodomys californicus</i>	SSC	1.54	0.00	0.00	0.00	0.07	0.00	0.21	0.00	0.00	0.00	1.82
spotted bat	<i>Euderma maculatum</i>	FS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.57	0.00	5.57
western mastiff bat	<i>Eumops perotis</i>	FS	4.01	0.00	0.07	0.00	0.00	0.00	1.75	0.00	191.13	3.07	200.03
western red bat	<i>Lasiurus blossevillii</i>	SSC	24.34	0.00	0.07	0.16	0.13	1.36	1.75	3.67	257.23	5.43	294.14
black-tailed jackrabbit <sup>s</sup>	<i>Lepus californicus</i>	SSC	24.34	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	289.11
northern river otter <sup>t</sup>	<i>Lontra canadensis</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67	0.00	5.30	8.97
California vole <sup>u</sup>	<i>Microtus californicus</i>	SSC	24.34	0.00	0.07	0.16	0.13	1.36	1.75	0.00	257.23	5.43	290.47
small-footed myotis	<i>Myotis ciliolabrum</i>	FS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.79	0.00	5.79
Yuma myotis	<i>Myotis yumanensis</i>	FS	24.34	0.00	0.07	0.16	0.13	1.36	1.75	3.67	257.23	5.43	294.14
dusky-footed woodrat <sup>v</sup>	<i>Neotoma fuscipes</i>	SSC	0.00	0.00	0.00	0.00	0.07	0.00	0.21	0.00	0.00	0.00	0.28
San Joaquin pocket mouse	<i>Perognathus inornatus</i>	FS	20.22	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.38
deer mouse <sup>w</sup>	<i>Peromyscus maniculatus</i>	SSC	24.34	0.16	0.07	0.16	0.13	1.36	1.75	0.00	257.23	5.43	290.63
harbor seal	<i>Phoca vitulina</i>	None	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.51
mountain lion	<i>Puma concolor</i>	ST	0.20	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.41
broad-footed mole <sup>x</sup>	<i>Scapanus latimanus</i>	SSC	8.08	0.00	0.07	0.16	0.07	0.00	1.75	0.00	0.00	4.39	14.52
ornate shrew <sup>y</sup>	<i>Sorex ornatus</i>	SSC	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	1.21
western spotted skunk <sup>z</sup>	<i>Spilogale gracilis</i>	SSC	24.34	0.00	0.07	0.16	0.13	0.00	1.75	0.00	257.23	5.43	289.11
brush rabbit <sup>aa</sup>	<i>Sylvilagus bachmani</i>	FE, SE	1.11	0.00	0.00	0.00	0.00	0.00	0.21	0.00	143.87	0.00	145.19
American badger	<i>Taxidea taxus</i>	SSC	24.34	0.16	0.07	0.16	0.13	0.00	1.75	0.00	0.00	5.43	32.04
red fox	<i>Vulpes vulpes</i>	None	24.34	0.16	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	24.63
Sacramento Valley red fox	<i>Vulpes vulpes patwin</i>	None	24.34	0.16	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	24.63

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak- Foothill Pine	Coastal Scrub	Eucalyptus	Fresh Emergent Wetland	Montane Hardwood	Riverine	Urban	Valley Foothill Riparian	Total
California sea-lion	<i>Zalophus californianus</i>	None	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.51
Not applicable	Not applicable	<b>Total</b>	<b>24.34</b>	<b>0.16</b>	<b>0.07</b>	<b>0.16</b>	<b>0.13</b>	<b>1.36</b>	<b>1.75</b>	<b>3.67</b>	<b>257.23</b>	<b>5.43</b>	<b>294.30</b>

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

<sup>a</sup> This plant species does not occur in the GAI.

<sup>b</sup> Ensatina. Only the large-blotched and yellow-blotched subspecies are special status, and they do not occur in the GAI (neither range further north than Kern County).

<sup>c</sup> Striped racer. Only the Alameda subspecies is special status, and it does not occur in the GAI (restricted to Contra Costa and Alameda Counties).

<sup>d</sup> Latin name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).

<sup>e</sup> Ring-necked snake. Only the San Bernardino, San Diego, and regal subspecies are special status, and they do not occur in the GAI (none range further north than Inyo County).

<sup>f</sup> Western skink. Only the Coronado subspecies is special status, and it does not occur in the GAI (does not range north of San Diego County).

<sup>g</sup> Common gartersnake. Only the south coast and San Francisco subspecies are special status, and they do not occur in the GAI (south coast ranges from Ventura County south, San Francisco is nearly endemic to San Mateo County).

<sup>h</sup> Red-winged blackbird. Only the Kern subspecies is special status, and it does not occur in the GAI (restricted to Kern County).

<sup>i</sup> Rufous-crowned sparrow. Only Santa Cruz Island subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>j</sup> California quail. Only the Catalina subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>k</sup> Marsh wren. Only the Clark's subspecies is special status, and it does not occur in the GAI (does not range north of Los Angeles County).

<sup>l</sup> Common yellowthroat. Only the San Francisco/saltmarsh subspecies is special status, and it does not occur in the GAI (occurs in Solano County, but not found east of Vallejo).

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

<sup>n</sup> American white pelican. Only nesting colonies are extended special status, and this species does not nest in this ecoregion (only in the Southern Cascades and Sierra Nevada ecoregions).

<sup>o</sup> California towhee. Only the Inyo subspecies is special status, and it does not occur in the GAI (restricted to Inyo County).

<sup>p</sup> Spotted towhee. Only the San Clemente subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>q</sup> Bewick's wren. Only the San Clemente subspecies is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).

<sup>r</sup> Hutton's vireo. Only the Catalina subspecies is special status, and it does not occur in the GAI (endemic to Santa Catalina Island).

<sup>s</sup> Black-tailed jackrabbit. Only the San Diego subspecies is special status, and it does not occur in the GAI (does not range north of Santa Barbara County).

<sup>t</sup> Northern river otter. Only the southwestern subspecies is special status, and it does not occur in the GAI (restricted to Lower Colorado River Valley).

<sup>u</sup> California vole. There are six subspecies which are special status, but none of them occur in the GAI (the closest occurring to the GAI is the San Pablo subspecies which is restricted to Contra Costa County).

<sup>v</sup> Dusky-footed woodrat. Only the San Francisco and riparian subspecies are special status, and they do not occur in the GAI (San Francisco subspecies does not range north of Contra Costa County, riparian is restricted to San Joaquin Valley west of Modesto).

<sup>w</sup> Deer mouse. Only the Channel Islands subspecies are special status, and they do not occur in the GAI (restricted to Channel Islands).

<sup>x</sup> Broad-footed mole. Only the Alameda Island subspecies is special status, and it does not occur in the GAI (endemic to Alameda Island).

<sup>y</sup> Ornate shrew. There are five subspecies which are special status, but none of them occur in the GAI (Suisun subspecies occurs in Solano County, but is not found east of Grizzly Island).

<sup>z</sup> Western spotted skunk. Only the Channel Islands subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>aa</sup> Brush rabbit. Only the riparian subspecies is special status, and it does not occur in the GAI (does not range north of Stockton).



**Table C-2. Complete SAMNA Results for the Northern California Interior Coast Ranges Ecoregion Section in District 3, by Land Cover (acres)**

Common Name	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Blue Oak- Foothill Pine	Montane Hardwood	Total
<b>Plants</b>	See below	See below	See below	See below	See below	See below	See below
Clara hunt's milk-vetch <sup>a</sup>	<i>Astragalus claranus</i>	FE, ST	6.33	0.00	0.00	0.40	6.73
Indian Valley brodiaea	<i>Brodiaea rosea</i>	SE	6.33	0.00	0.00	0.40	6.73
Tiburon paintbrush <sup>a</sup>	<i>Castilleja affinis</i> var. <i>neglecta</i>	FE, ST	6.33	0.00	0.00	0.00	6.33
succulent owl's-clover <sup>a</sup>	<i>Castilleja campestris</i> var. <i>succulenta</i>	FT, SE	3.63	0.00	0.00	0.00	3.63
palmate-bracted bird's-beak	<i>Chloropyron palmatum</i>	FE, SE	3.63	0.00	0.00	0.00	3.63
Loch Lomond button-celery <sup>a</sup>	<i>Eryngium constancei</i>	FE, SE	6.33	0.00	0.00	0.00	6.33
Hoover's spurge	<i>Euphorbia hooveri</i>	FT	3.63	0.00	0.00	0.00	3.63
Roderick's fritillary <sup>a</sup>	<i>Fritillaria roderickii</i>	SE	6.33	0.00	0.00	0.00	6.33
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	6.33	0.00	0.00	0.00	6.33
Lake County western flax <sup>a</sup>	<i>Hesperolinon didymocarpum</i>	SE	6.33	0.00	0.00	0.40	6.73
Burke's goldfields <sup>a</sup>	<i>Lasthenia burkei</i>	FE, SE	6.33	0.00	0.00	0.00	6.33
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FE	3.63	0.00	0.00	0.00	3.63
Butte County meadowfoam	<i>Limnanthes floccosa</i> ssp. <i>californica</i>	FE, SE	3.63	0.00	0.00	0.00	3.63
few-flowered navarretia <sup>a</sup>	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	FE, ST	6.33	0.00	0.00	0.00	6.33
many-flowered navarretia <sup>a</sup>	<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	FE, SE	6.33	0.00	0.00	0.00	6.33
Colusa grass	<i>Neostapfia colusana</i>	FT, SE	3.63	0.00	0.00	0.00	3.63
hairy Orcutt grass	<i>Orcuttia pilosa</i>	FE, SE	3.63	0.00	0.00	0.00	3.63
slender Orcutt grass	<i>Orcuttia tenuis</i>	FT, SE	6.33	0.00	0.00	0.00	6.33
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	FE, SE	3.63	0.00	0.00	0.00	3.63
Geysers panicum <sup>a</sup>	<i>Panicum acuminatum</i> var. <i>thermale</i>	SE	6.33	0.00	0.00	0.00	6.33
Calistoga popcornflower <sup>a</sup>	<i>Plagiobothrys strictus</i>	FE, ST	6.33	0.00	0.00	0.00	6.33
Lake County stonecrop <sup>a</sup>	<i>Sedella leiocarpa</i>	FE, SE	6.33	0.00	0.00	0.40	6.73
Keck's checkerbloom	<i>Sidalcea keckii</i>	FE	6.33	0.00	0.00	0.40	6.73
two-fork clover	<i>Trifolium amoenum</i>	FE	6.33	0.00	0.00	0.00	6.33
Greene's tuctoria	<i>Tuctoria greenei</i>	FE, SR	3.63	0.00	0.00	0.00	3.63
Crampton's tuctoria or solano grass	<i>Tuctoria mucronata</i>	FE, SE	3.63	0.00	0.00	0.00	3.63

Common Name	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Blue Oak-Foothill Pine	Montane Hardwood	Total
<b>Amphibians</b>	See below	See below	See below	See below	See below	See below	See below
ensatina <sup>b</sup>	<i>Ensatina eschscholtzii</i>	FS	0.00	3.84	1.06	0.40	5.30
foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE	3.33	0.84	0.00	0.00	4.17
California red-legged frog	<i>Rana draytonii</i>	FT, SSC	6.33	3.84	1.06	0.40	11.63
Northern leopard frog	<i>Lithobates pipiens</i>	SSC	0.99	0.00	0.00	0.00	0.99
California newt	<i>Taricha torosa</i>	SSC	4.67	1.20	0.00	0.00	5.87
western spadefoot	<i>Spea hammondi</i>	FS, SSC	6.33	3.84	1.06	0.00	11.23
<b>Reptiles</b>	See below	See below	See below	See below	See below	See below	See below
striped racer <sup>c</sup>	<i>Masticophis [Coluber] lateralis<sup>d</sup></i>	FT, ST	0.00	3.84	1.06	0.40	5.30
ring-necked snake <sup>e</sup>	<i>Diadophis punctatus</i>	FS	6.33	3.84	1.06	0.40	11.63
common sagebrush lizard	<i>Sceloporus graciosus</i>	FS	0.00	0.00	0.00	0.40	0.40
gophersnake	<i>Pituophis catenifer</i>	None	6.33	3.84	1.06	0.40	11.63
western skink <sup>f</sup>	<i>Plestiodon skiltonianus</i>	FS	6.33	3.84	1.06	0.40	11.63
giant gartersnake	<i>Thamnophis gigas</i>	FT, ST	3.63	0.00	0.00	0.00	3.63
common gartersnake <sup>g</sup>	<i>Thamnophis sirtalis</i>	SSC	3.63	0.00	0.00	0.00	3.63
<b>Birds</b>	See below	See below	See below	See below	See below	See below	See below
red-winged blackbird <sup>h</sup>	<i>Agelaius phoeniceus</i>	SSC	6.33	0.00	0.00	0.00	6.33
tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST	6.33	0.00	0.00	0.00	6.33
grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC	6.33	0.00	0.00	0.00	6.33
golden eagle	<i>Aquila chrysaetos</i>	FS, SFP, SFS	6.33	3.84	1.06	0.40	11.63
great egret	<i>Ardea alba</i>	SFS	6.33	3.84	1.06	0.00	11.23
great blue heron	<i>Ardea herodias</i>	SFS	6.33	3.84	1.06	0.40	11.63
short-eared owl	<i>Asio flammeus</i>	SSC	2.33	0.00	0.00	0.00	2.33
burrowing owl	<i>Athene cunicularia</i>	FS, SSC	6.33	3.84	1.06	0.00	11.23
Swainson's hawk	<i>Buteo swainsoni</i>	FS, ST	3.63	0.00	0.00	0.00	3.63
California quail <sup>i</sup>	<i>Callipepla californica</i>	SSC	6.33	3.84	1.06	0.40	11.63
northern harrier	<i>Circus hudsonius [cyaneus]<sup>d</sup></i>	SSC	6.33	3.84	1.06	0.40	11.63
white-tailed kite	<i>Elanus leucurus</i>	FS, SFP	6.33	3.84	1.06	0.00	11.23
peregrine falcon	<i>Falco peregrinus anatum</i>	FS, SFP, SFS	6.33	3.84	1.06	0.40	11.63
bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE, SFP, SFS	6.33	3.84	1.06	0.40	11.63



Common Name	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Blue Oak- Foothill Pine	Montane Hardwood	Total
loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	6.33	3.84	1.06	0.40	11.63
song sparrow	<i>Melospiza melodia</i>	None	6.33	3.84	1.06	0.40	11.63
osprey	<i>Pandion haliaetus</i>	SFS	6.33	3.84	1.06	0.40	11.63
savannah sparrow <sup>j</sup>	<i>Passerculus sandwichensis</i>	SSC	6.33	3.84	1.06	0.00	11.23
California towhee <sup>k</sup>	<i>Melospiza [Pipilo] crissalis<sup>d</sup></i>	FT, SE	0.00	3.84	1.06	0.40	5.30
spotted towhee <sup>l</sup>	<i>Pipilo maculatus</i>	SSC	0.00	3.84	1.06	0.40	5.30
bank swallow	<i>Riparia riparia</i>	FS, ST	0.99	0.00	0.00	0.00	0.99
Bewick's wren <sup>m</sup>	<i>Thryomanes bewickii</i>	SSC	0.00	3.84	1.06	0.40	5.30
Hutton's vireo <sup>n</sup>	<i>Vireo huttoni</i>	SSC	0.00	3.84	1.06	0.40	5.30
common yellowthroat	<i>Geothlypis trichas</i>	SSC	6.33	0.00	0.00	0.00	6.33
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	3.63	0.00	0.00	0.00	3.63
<b>Mammals</b>	See below	See below	See below	See below	See below	See below	See below
pallid bat	<i>Antrozous pallidus</i>	FS, SSC	6.33	3.84	1.06	0.40	11.63
ringtail	<i>Bassariscus astutus</i>	SFP	6.33	3.84	1.06	0.40	11.63
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	6.33	3.84	1.06	0.40	11.63
California kangaroo rat <sup>o</sup>	<i>Dipodomys californicus</i>	SSC	6.33	3.84	1.06	0.40	11.63
western red bat	<i>Lasiurus blossevillii</i>	SSC	6.33	3.84	1.06	0.40	11.63
black-tailed jackrabbit <sup>p</sup>	<i>Lepus californicus</i>	SSC	6.33	3.84	1.06	0.40	11.63
California vole <sup>q</sup>	<i>Microtus californicus</i>	SSC	6.33	3.84	1.06	0.40	11.63
Yuma myotis	<i>Myotis yumanensis</i>	FS	6.33	3.84	1.06	0.40	11.63
long-eared myotis	<i>Myotis evotis</i>	FS	0.00	3.84	1.06	0.40	5.30
fringed myotis	<i>Myotis thysanodes</i>	FS	1.04	0.36	0.00	0.00	1.40
dusky-footed woodrat <sup>r</sup>	<i>Neotoma fuscipes</i>	SSC	0.00	3.84	1.06	0.40	5.30
San Joaquin pocket mouse	<i>Perognathus inornatus</i>	FS	5.34	2.99	0.00	0.00	8.33
deer mouse <sup>s</sup>	<i>Peromyscus maniculatus</i>	SSC	6.33	3.84	1.06	0.40	11.63
mountain lion	<i>Puma concolor</i>	ST	6.33	3.84	1.06	0.40	11.63
broad-footed mole <sup>t</sup>	<i>Scapanus latimanus</i>	SSC	6.33	3.84	1.06	0.40	11.63
western spotted skunk <sup>u</sup>	<i>Spilogale gracilis</i>	SSC	6.33	3.84	1.06	0.40	11.63
brush rabbit <sup>v</sup>	<i>Sylvilagus bachmani</i>	FE, SE	6.33	3.84	1.06	0.40	11.63
American badger	<i>Taxidea taxus</i>	SSC	6.33	3.84	1.06	0.40	11.63
red fox	<i>Vulpes vulpes</i>	None	4.62	0.00	0.00	0.00	4.62

Common Name	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Blue Oak- Foothill Pine	Montane Hardwood	Total
Sacramento Valley red fox	<i>Vulpes vulpes patwin</i>	None	4.62	0.00	0.00	0.00	4.62
Not applicable	Not applicable	<b>Total</b>	<b>5.34</b>	<b>3.84</b>	<b>1.06</b>	<b>0.40</b>	<b>10.64</b>

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

<sup>a</sup> This plant species does not occur in the GAI.

<sup>b</sup> Ensatina. Only the large-blotched and yellow-blotched subspecies are special status, and they do not occur in the GAI (neither range further north than Kern County).

<sup>c</sup> Striped racer. Only the Alameda subspecies is special status, and it does not occur in the GAI (restricted to Contra Costa and Alameda Counties).

<sup>d</sup> Latin name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).

<sup>e</sup> Ring-necked snake. Only the San Bernardino, San Diego, and regal subspecies are special status, and they do not occur in the GAI (none range further north than Inyo County).

<sup>f</sup> Western skink. Only the Coronado subspecies is special status, and it does not occur in the GAI (does not range north of San Diego County).

<sup>g</sup> Common gartersnake. Only the south coast and San Francisco subspecies are special status, and they do not occur in the GAI (south coast ranges from Ventura County south, San Francisco is nearly endemic to San Mateo County).

<sup>h</sup> Red-winged blackbird. Only the Kern subspecies is special status, and it does not occur in the GAI (restricted to Kern County).

<sup>i</sup> California quail. Only the Catalina subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

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

<sup>k</sup> California towhee. Only the Inyo subspecies is special status, and it does not occur in the GAI (restricted to Inyo County).

<sup>l</sup> Spotted towhee. Only the San Clemente subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>m</sup> Bewick's wren. Only the San Clemente subspecies is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).

<sup>n</sup> Hutton's vireo. Only the Catalina subspecies is special status, and it does not occur in the GAI (endemic to Santa Catalina Island).

<sup>o</sup> California kangaroo rat. Only the Marysville subspecies is special status which does not occur in this ecoregion (only the Great Valley ecoregion).

<sup>p</sup> Black-tailed jackrabbit. Only the San Diego subspecies is special status, and it does not occur in the GAI (does not range north of Santa Barbara County).

<sup>q</sup> California vole. There are six subspecies which are special status, but none of them occur in the GAI (the closest occurring to the GAI is the San Pablo subspecies which is restricted to Contra Costa County).

<sup>r</sup> Dusky-footed woodrat. Only the San Francisco and riparian subspecies are special status, and they do not occur in the GAI (San Francisco subspecies does not range north of Contra Costa County, riparian is restricted to San Joaquin Valley west of Modesto).

<sup>s</sup> Deer mouse. Only the Channel Islands subspecies are special status, and they do not occur in the GAI (restricted to Channel Islands).

<sup>t</sup> Broad-footed mole. Only the Alameda Island subspecies is special status, and it does not occur in the GAI (endemic to Alameda Island).

<sup>u</sup> Western spotted skunk. Only the Channel Islands subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>v</sup> Brush rabbit. Only the riparian brush rabbit is special status, and it does not occur in the GAI (does not range north of Stockton).



**Table C-3. Complete SAMNA Results for the Southern Cascades Ecoregion Section in District 3, by Land Cover (acres)**

Common Name	Scientific Name	Status	Barren	Sierran Mixed Conifer	White Fir	Total
<b>Amphibians</b>	See below	See below	See below	See below	See below	See below
long-toed salamander	<i>Ambystoma macrodactylum</i>	FE, SE, SFP	0.00	9.24	2.31	11.55
northern leopard frog	<i>Lithobates pipiens</i>	SSC	0.00	9.24	2.31	11.55
foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE	0.00	9.24	2.31	11.55
Cascades frog	<i>Rana cascadae</i>	FS, SCE, SSC	0.00	9.24	2.31	11.55
<b>Reptiles</b>	See below	See below	See below	See below	See below	See below
northern rubber boa	<i>Charina bottae</i>	None	0.00	9.24	2.31	11.55
California mountain kingsnake	<i>Lampropeltis zonata</i>	None	0.00	9.24	2.31	11.55
gophersnake	<i>Pituophis catenifer</i>	None	0.00	9.24	2.31	11.55
western skink <sup>a</sup>	<i>Plestiodon skiltonianus</i>	FS	0.00	9.24	2.31	11.55
common sagebrush lizard <sup>b</sup>	<i>Sceloporus graciosus</i>	FS	0.00	9.24	2.31	11.55
common gartersnake <sup>c</sup>	<i>Thamnophis sirtalis</i>	SSC	0.00	9.24	2.31	11.55
<b>Birds</b>	See below	See below	See below	See below	See below	See below
northern goshawk	<i>Accipiter gentilis</i>	FS, SSC, SFS	0.00	9.24	2.31	11.55
golden eagle	<i>Aquila chrysaetos</i>	FS, SFP, SFS	1.50	9.24	2.31	13.05
great blue heron	<i>Ardea herodias</i>	SFS	0.00	9.24	2.31	11.55
long-eared owl	<i>Asio otus</i>	SSC	0.00	9.24	2.31	11.55
burrowing owl	<i>Athene cunicularia</i>	FS, SSC	1.50	0.00	0.00	1.50
Vaux's swift	<i>Chaetura vauxi</i>	SSC	0.00	9.24	2.31	11.55
olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0.00	9.24	2.31	11.55
sooty grouse <sup>d</sup>	<i>Dendragapus fuliginosus</i>	SSC	0.00	9.24	2.31	11.55
peregrine falcon	<i>Falco peregrinus</i>	FS, SFP, SFS	1.50	9.24	2.31	13.05
bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE, SFP, SFS	1.50	9.24	2.31	13.05
song sparrow	<i>Melospiza melodia</i>	None	0.00	9.24	2.31	11.55
osprey	<i>Pandion haliaetus</i>	SFS	1.50	9.24	2.31	13.05
American white pelican	<i>Pelecanus erythrorhynchos</i>	SSC	1.50	0.00	0.00	1.50
spotted towhee <sup>e</sup>	<i>Pipilo maculatus</i>	SSC	0.00	9.24	2.31	11.55
purple martin	<i>Progne subis</i>	SSC	0.00	9.24	2.31	11.55

Common Name	Scientific Name	Status	Barren	Sierran Mixed Conifer	White Fir	Total
yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	9.24	2.31	11.55
great gray owl	<i>Strix nebulosa</i>	FS, SE	0.00	9.24	2.31	11.55
spotted owl	<i>Strix occidentalis</i>	None	0.00	9.24	2.31	11.55
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0.00	9.24	2.31	11.55
<b>Mammals</b>	See below	See below	See below	See below	See below	See below
pallid bat	<i>Antrozous pallidus</i>	FS, SSC	1.50	9.24	2.31	13.05
ringtail	<i>Bassariscus astutus</i>	SFP	1.50	9.24	2.31	13.05
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	1.50	9.24	2.31	13.05
spotted bat	<i>Euderma maculatum</i>	FS	0.00	9.24	2.31	11.55
western mastiff bat	<i>Eumops perotis</i>	FS	1.50	0.00	0.00	1.50
northern flying squirrel	<i>Glaucomys sabrinus</i>	None	0.00	9.24	2.31	11.55
wolverine	<i>Gulo gulo</i>	FS, ST, SFP	1.50	9.24	2.31	13.05
snowshoe hare	<i>Lepus americanus</i>	SSC	0.00	9.24	2.31	11.55
black-tailed jackrabbit <sup>f</sup>	<i>Lepus californicus</i>	SSC	0.00	9.24	2.31	11.55
Pacific marten	<i>Martes caurina</i>	FS	1.50	9.24	2.31	13.05
small-footed myotis	<i>Myotis ciliolabrum</i>	FS	1.50	9.24	2.31	13.05
long-eared myotis	<i>Myotis evotis</i>	FS	1.50	9.24	2.31	13.05
fringed myotis	<i>Myotis thysanodes</i>	FS	1.50	9.24	2.31	13.05
Yuma myotis	<i>Myotis yumanensis</i>	FS	0.00	9.24	2.31	11.55
fisher	<i>Pekania pennanti</i>	FS, SSC	0.00	9.24	2.31	11.55
deer mouse <sup>g</sup>	<i>Peromyscus maniculatus</i>	SSC	1.50	9.24	2.31	13.05
mountain lion	<i>Puma concolor</i>	ST	0.00	9.24	2.31	11.55
broad-footed mole <sup>h</sup>	<i>Scapanus latimanus</i>	SSC	0.00	9.24	2.31	11.55
vagrant shrew <sup>i</sup>	<i>Sorex vagrans</i>	SSC	0.00	9.24	2.31	11.55
western spotted skunk <sup>j</sup>	<i>Spilogale gracilis</i>	SSC	0.00	9.24	2.31	11.55
lodgepole chipmunk <sup>k</sup>	<i>Tamias speciosus</i>	FS	0.00	9.24	2.31	11.55
American badger	<i>Taxidea taxus</i>	SSC	1.50	9.24	2.31	13.05
red fox	<i>Vulpes vulpes</i>	None	1.50	9.24	2.31	13.05



Common Name	Scientific Name	Status	Barren	Sierran Mixed Conifer	White Fir	Total
Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	FE, ST, SFS	1.50	9.24	2.31	13.05
Not applicable	Not applicable	<b>Total</b>	<b>1.50</b>	<b>9.24</b>	<b>2.31</b>	<b>13.05</b>

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

<sup>a</sup> Western skink. Only the Coronado subspecies is special status, and it does not occur in the GAI (does not range north of San Diego County).

<sup>b</sup> Common sagebrush lizard. Only the northern subspecies is special status, and it does not occur in the GAI (occurs only in the Great Basin).

<sup>c</sup> Common gartersnake. Only the south coast and San Francisco subspecies are special status, and they do not occur in the GAI (south coast ranges from Ventura County south, San Francisco is nearly endemic to San Mateo County).

<sup>d</sup> Sooty grouse. Only the Mount Pinos subspecies is special status, and it does not occur in the GAI (does not range north of Inyo County).

<sup>e</sup> Spotted towhee. Only the San Clemente subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>f</sup> Black-tailed jackrabbit. Only the San Diego subspecies is special status, and it does not occur in the GAI (does not range north of Santa Barbara County).

<sup>g</sup> Deer mouse. Only the Channel Islands subspecies are special status, and they do not occur in the GAI (restricted to Channel Islands).

<sup>h</sup> Broad-footed mole. Only the Alameda Island subspecies is special status, and it does not occur in the GAI (endemic to Alameda Island).

<sup>i</sup> Vagrant shrew. Only the salt-marsh wandering and Monterey subspecies are special status, and they do not occur in the GAI (salt-marsh wandering does not range north of Contra Costa County, Monterey does not range north of San Mateo County).

<sup>j</sup> Western spotted skunk. Only the Channel Islands subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>k</sup> Lodgepole chipmunk. Only the Mount Pinos subspecies is special status, and it does not occur in the GAI (does not range north of Kern County).

Table C-4. Complete SAMNA Results for the Sierra Nevada Ecoregion Section in District 3, by Land Cover (acres)

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	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	See below	See below	See below	See below	See below
lone manzanita <sup>a</sup>	<i>Arctostaphylos myrtifolia</i>	FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.91
Chinese camp brodiaea <sup>a</sup>	<i>Brodiaea pallida</i>	FT, SE	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.48
Stebbins' morning-glory	<i>Calystegia stebbinsii</i>	FE, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.91
Pine Hill ceanothus	<i>Ceanothus roderickii</i>	FE, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.91
lone buckwheat <sup>a</sup>	<i>Eriogonum apricum</i> var. <i>apricum</i>	FE, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61
Irish Hill buckwheat <sup>a</sup>	<i>Eriogonum apricum</i> var. <i>prostratum</i>	FE, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61
Pine Hill flannelbush	<i>Fremontodendron decumbens</i>	FE, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.91
El Dorado bedstraw	<i>Galium californicum</i> ssp. <i>sierrae</i>	FE, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	4.30	7.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.14
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	1.18	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	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Webber's ivesia <sup>a</sup>	<i>Ivesia webberi</i>	FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98
Layne's ragwort	<i>Packera layneae</i>	FT, SR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.61	0.00	4.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.91
Tahoe yellow cress <sup>a</sup>	<i>Rorippa subumbellata</i>	SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.00	2.91
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	See below	See below	See below	See below	See below
long-toed salamander	<i>Ambystoma macrodactylum</i>	FE, SE, SFP	0.00	0.00	0.00	0.00	0.00	0.00	0.11	5.37	0.00	0.00	0.24	0.85	0.06	0.34	18.09	0.00	18.10	0.00	0.00	0.93	3.72	47.81



Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	Wet Meadow	White Fir	Total
Yosemite toad	<i>Anaxyrus canorus</i>	FT, FS, SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.07	0.00	0.47
ensatina <sup>b</sup>	<i>Ensatina eschscholtzii</i>	FS	0.00	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	0.47	13.30	16.03	0.18	14.48	0.00	0.00	15.64	0.00	0.00	0.00	0.85	73.29
Mount Lyell salamander	<i>Hydromantes platycephalus</i>	None	0.00	21.83	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	18.09	0.00	10.88	0.02	0.00	0.91	3.43	55.83
northern leopard frog	<i>Lithobates pipiens</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	0.01	0.00	0.00	0.00	0.80	0.00	0.00	0.65	0.00	1.46
foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE	3.28	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	0.55	13.07	15.70	0.18	14.14	0.00	0.07	15.77	0.00	0.00	0.00	0.91	76.01
California red-legged frog	<i>Rana draytonii</i>	FT, SSC	2.71	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	0.00	12.83	14.18	0.10	13.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.37
Sierra Nevada yellow-legged frog	<i>Rana sierrae</i>	FE, FS, ST	0.00	0.00	0.00	0.00	0.00	0.00	0.11	5.37	0.00	0.00	6.47	8.04	0.18	4.00	18.09	0.07	32.30	0.02	0.00	0.93	4.34	79.92
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	See below	See below	See below	See below	See below
northern rubber boa	<i>Charina bottae</i>	None	0.00	0.00	0.00	0.00	1.24	6.62	0.11	5.37	0.00	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.00	0.00	0.93	4.34	122.15
striped racer <sup>c</sup>	<i>Masticophis [Coluber] lateralis<sup>d</sup></i>	FT, ST	0.00	0.00	0.26	0.08	0.00	6.62	0.00	0.00	4.14	0.32	12.86	15.02	0.10	13.21	0.00	0.00	11.31	0.00	0.00	0.00	0.85	64.77
ring-necked snake <sup>e</sup>	<i>Diadophis punctatus</i>	FS	2.71	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	0.00	10.11	13.21	0.10	13.15	0.00	0.00	2.97	0.00	46.85	0.00	0.00	101.44
California mountain kingsnake	<i>Lampropeltis zonata</i>	FS	3.28	0.00	0.26	0.08	1.24	6.62	0.11	0.00	4.14	4.13	13.30	16.45	0.22	14.48	0.00	0.00	32.54	0.00	0.00	0.66	4.34	101.85
Coast [Blainville's] horned lizard	<i>Phrynosoma blainvillii</i>	FS, SSC	2.01	0.00	0.26	0.08	1.24	0.00	0.00	0.00	3.88	0.00	0.00	12.04	0.00	11.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.06
gophersnake	<i>Pituophis catenifer</i>	None	3.28	0.00	0.26	0.08	1.24	6.62	0.11	0.00	4.14	7.27	13.30	16.45	0.24	14.48	0.00	0.00	31.51	0.00	139.73	0.49	4.34	243.54
western skink <sup>f</sup>	<i>Plestiodon skiltonianus</i>	FS	3.28	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	7.94	13.30	16.45	0.24	14.48	0.00	0.00	32.54	0.00	0.00	0.00	4.34	104.91
common sagebrush lizard <sup>g</sup>	<i>Sceloporus graciosus</i>	FS	0.00	0.00	0.00	0.00	0.00	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.00	14.48	0.00	0.00	32.54	0.00	0.00	0.00	4.34	105.79

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	Wet Meadow	White Fir	Total
common gartersnake <sup>h</sup>	<i>Thamnophis sirtalis</i>	SSC	3.28	0.00	0.26	0.08	1.24	6.62	0.11	0.00	4.14	8.44	13.30	16.45	0.24	14.48	0.00	0.00	32.54	0.00	0.00	0.86	4.34	106.38
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	See below	See below	See below	See below	See below
northern goshawk	<i>Accipiter gentilis</i>	FS, SSC, SFS	0.00	0.00	0.26	0.08	0.00	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.02	0.00	0.00	4.34	124.48
red-winged blackbird <sup>i</sup>	<i>Agelaius phoeniceus</i>	SSC	3.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	139.73	0.93	0.00	144.18
tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST, 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	0.00	0.00	0.00	0.00	1.72	0.00	0.00	1.72
golden eagle	<i>Aquila chrysaetos</i>	FS, SFP, SFS	3.28	25.62	0.26	0.08	0.00	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.02	139.73	0.93	4.34	294.04
great egret	<i>Ardea alba</i>	SFS	0.00	0.00	0.03	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72	0.00	0.00	2.47
great blue heron	<i>Ardea herodias</i>	SFS	3.28	0.00	0.26	0.08	1.24	6.62	0.00	0.00	0.00	0.00	13.30	15.75	0.24	14.17	0.00	0.07	19.72	0.00	139.63	0.22	0.91	215.49
short-eared owl	<i>Asio flammeus</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	0.00	0.00	0.00	0.00	1.43	0.00	0.00	1.43
long-eared owl	<i>Asio otus</i>	SSC	3.28	0.00	0.26	0.08	0.00	0.00	0.00	0.00	4.14	8.44	13.30	16.45	0.24	14.48	0.00	0.00	32.54	0.00	0.00	0.93	4.34	98.48
burrowing owl	<i>Athene cunicularia</i>	FS, SSC	0.00	0.06	0.03	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	0.00	4.72	0.00	0.00	4.81
California quail <sup>j</sup>	<i>Callipepla californica</i>	SSC	1.57	0.00	0.18	0.08	0.00	2.50	0.00	0.00	1.06	0.00	3.61	4.49	0.10	9.47	0.00	0.00	0.44	0.00	11.97	0.00	0.00	35.47
Vaux's swift	<i>Chaetura vauxi</i>	SSC	0.00	0.00	0.00	0.08	1.24	6.62	0.11	0.00	4.14	4.13	13.30	16.45	0.22	14.48	8.26	0.07	32.54	0.00	132.64	0.66	4.34	239.28
northern harrier	<i>Circus hudsonius [cyaneus]<sup>d</sup></i>	SSC	0.00	0.06	0.03	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72	0.00	0.00	6.41
marsh wren <sup>k</sup>	<i>Cistothorus palustris</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	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0.00	0.00	0.00	0.08	0.00	6.62	0.11	5.37	4.14	0.00	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.02	0.00	0.00	4.34	115.78
black swift	<i>Cypseloides niger</i>	SSC	0.00	1.27	0.02	0.00	0.00	1.05	0.11	4.70	0.10	1.93	0.65	1.17	0.09	0.21	0.00	0.00	10.63	0.00	53.31	0.02	0.06	75.32
sooty grouse <sup>l</sup>	<i>Dendragapus fuliginosus</i>	SSC	1.06	0.00	0.00	0.00	0.00	0.66	0.11	5.37	0.00	0.00	4.41	4.64	0.18	2.32	18.09	0.00	32.30	0.02	0.00	0.00	4.34	73.50



Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	Wet Meadow	White Fir	Total
white-tailed kite	<i>Elanus leucurus</i>	FS, SFP	0.00	0.06	0.03	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	0.00	1.75	0.00	0.00	1.84
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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.66
peregrine falcon	<i>Falco peregrinus</i>	FS, SFP, SFS	3.28	25.62	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.07	32.54	0.00	139.73	0.93	4.34	295.33
bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE, SFP, SFS	3.28	25.62	0.26	0.08	0.00	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.07	32.54	0.02	0.00	0.93	4.34	154.38
harlequin duck	<i>Histrionicus histrionicus</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	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.07
yellow-breasted chat	<i>Icteria virens</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	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	0.00	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.75	0.00	0.00	5.72
song sparrow	<i>Melospiza melodia</i>	None	3.28	0.00	0.26	0.08	1.24	6.62	0.11	0.00	4.14	0.00	13.30	16.45	0.24	14.48	0.00	0.07	32.54	0.00	139.73	0.93	4.34	237.81
osprey	<i>Pandion haliaetus</i>	SFS	3.28	25.62	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.07	32.54	0.02	0.00	0.93	4.34	155.62
savannah sparrow <sup>m</sup>	<i>Passerculus sandwichensis</i>	SSC	0.00	0.00	0.03	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	0.00	0.00	0.00	0.00	0.03
California towhee <sup>n</sup>	<i>Melozone [Pipilo] crissalis</i>	FT, SE	0.00	0.00	0.26	0.08	1.24	0.00	0.00	0.00	3.88	0.00	8.90	12.09	0.06	11.29	0.00	0.00	0.00	0.00	28.04	0.00	0.00	65.84
spotted towhee <sup>o</sup>	<i>Pipilo maculatus</i>	SSC	0.00	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	0.47	13.30	16.03	0.18	14.48	0.00	0.00	15.64	0.00	80.89	0.00	0.85	154.18
vesper sparrow	<i>Poocetes gramineus</i>	None	0.00	0.00	0.03	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	0.00	0.00	0.00	0.00	0.03
purple martin	<i>Progne subis</i>	SSC	2.71	0.00	0.26	0.08	1.24	6.62	0.00	0.00	0.00	0.00	12.86	15.02	0.10	13.21	0.00	0.00	11.31	0.00	77.47	0.00	0.85	141.73
yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	0.00	0.26	0.08	1.24	6.62	0.00	0.00	4.14	0.47	13.30	16.03	0.18	14.48	0.00	0.00	15.64	0.00	80.89	0.00	0.85	154.18
great gray owl	<i>Strix nebulosa</i>	FS, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70	0.00	0.00	0.00	0.00	0.00	0.00	8.86	0.00	32.54	0.00	0.00	0.66	4.34	51.10
spotted owl	<i>Strix occidentalis</i>	None	0.00	0.00	0.00	0.08	0.00	6.62	0.00	4.71	0.00	0.00	13.30	16.41	0.24	14.48	18.09	0.00	31.74	0.00	0.00	0.00	4.34	110.01
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0.00	0.00	0.00	0.08	0.00	6.62	0.00	4.70	0.00	0.00	13.30	16.41	0.24	14.48	16.51	0.00	31.74	0.00	0.00	0.00	4.34	108.42

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	Wet Meadow	White Fir	Total
Bewick's wren <sup>p</sup>	<i>Thryomanes bewickii</i>	SSC	0.00	0.00	0.26	0.08	0.00	6.16	0.00	0.00	4.14	0.15	10.04	13.35	0.13	14.08	0.00	0.00	0.00	0.00	46.85	0.00	0.00	95.24
Hutton's vireo <sup>q</sup>	<i>Vireo huttoni</i>	None	0.00	0.00	0.26	0.08	1.24	5.96	0.00	0.00	3.98	0.00	9.50	12.09	0.06	11.95	0.00	0.00	0.66	0.00	28.39	0.00	0.00	74.17
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	See below	See below	See below	See below	See below
pallid bat	<i>Antrozous pallidus</i>	FS, SSC	3.28	25.62	0.26	0.08	0.00	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.07	32.54	0.00	139.73	0.93	4.34	294.09
mountain beaver	<i>Apodontia rufa</i>	SSC	0.00	0.00	0.00	0.00	0.00	3.82	0.11	5.37	0.00	0.00	6.13	6.91	0.13	4.09	18.09	0.00	32.10	0.02	0.00	0.93	4.34	82.04
ringtail	<i>Bassariscus astutus</i>	SFP	3.28	25.62	0.26	0.08	1.24	6.62	0.11	0.00	4.14	8.44	13.30	16.45	0.24	14.48	0.00	0.00	32.54	0.00	0.00	0.93	4.34	132.07
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	3.28	4.77	0.26	0.08	0.00	6.62	0.11	4.70	4.14	2.82	13.30	16.45	0.22	14.48	0.00	0.07	23.59	0.00	132.74	0.02	4.14	231.79
California kangaroo rat <sup>r</sup>	<i>Dipodomys californicus</i>	SSC	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91
spotted bat	<i>Euderma maculatum</i>	FS	3.28	0.00	0.26	0.08	0.00	0.00	0.11	0.00	0.00	8.44	0.00	16.45	0.24	14.48	0.00	0.07	32.54	0.00	139.73	0.93	4.34	220.95
western mastiff bat	<i>Eumops perotis</i>	FS	2.33	0.65	0.26	0.08	1.24	0.00	0.00	0.00	3.98	0.00	9.55	12.37	0.06	12.85	0.00	0.00	0.00	0.00	31.01	0.00	0.00	74.38
northern flying squirrel	<i>Glaucomys sabrinus</i>	None	0.00	0.00	0.23	0.08	0.00	5.90	0.11	5.37	0.00	0.00	11.97	14.49	0.24	14.48	18.09	0.00	32.54	0.02	0.00	0.00	4.34	107.86
wolverine	<i>Gulo gulo</i>	FS, ST, FP	0.00	23.57	0.00	0.00	0.00	0.00	0.11	5.37	0.00	7.96	0.00	0.85	0.06	0.00	18.09	0.00	18.35	0.02	0.00	0.93	3.46	78.77
western red bat	<i>Lasiurus blossevillii</i>	SSC	2.71	0.00	0.26	0.08	0.00	6.62	0.00	0.00	4.14	0.05	10.15	13.57	0.10	13.15	0.00	0.00	6.55	0.00	58.81	0.00	0.00	116.19
snowshoe hare	<i>Lepus americanus</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.66	0.11	5.37	0.00	0.00	0.00	0.00	0.10	0.00	18.09	0.00	30.45	0.02	0.00	0.00	4.34	59.14
black-tailed jackrabbit <sup>s</sup>	<i>Lepus californicus</i>	SSC	3.28	0.00	0.26	0.08	1.24	6.62	0.11	0.21	4.14	2.33	13.30	16.45	0.22	14.48	0.00	0.00	24.05	0.00	129.60	0.02	4.17	220.56
white-tailed jackrabbit	<i>Lepus townsendii</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	9.48	0.00	0.00	0.02	0.00	0.07	0.00	10.24
northern river otter <sup>t</sup>	<i>Lontra canadensis</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	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.00	1.03



Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	Wet Meadow	White Fir	Total
Pacific marten	<i>Martes caurina</i>	FS	0.00	25.06	0.00	0.00	0.00	4.62	0.11	5.37	0.00	0.00	0.00	7.57	0.18	4.46	18.09	0.00	32.54	0.02	0.00	0.93	4.34	103.29
California vole <sup>u</sup>	<i>Microtus californicus</i>	SSC	3.21	0.00	0.26	0.08	0.00	6.00	0.00	0.00	4.04	0.05	10.19	13.56	0.13	13.93	0.00	0.00	8.70	0.00	60.61	0.00	0.00	120.76
small-footed myotis	<i>Myotis ciliolabrum</i>	FS	3.21	0.77	0.26	0.08	0.00	0.00	0.00	0.00	4.14	0.05	12.06	13.94	0.18	13.93	0.00	0.00	11.87	0.00	76.76	0.00	0.69	137.94
long-eared myotis	<i>Myotis evotis</i>	FS	0.00	25.07	0.02	0.02	1.24	5.15	0.11	5.37	0.46	8.44	8.15	8.29	0.24	5.89	18.09	0.07	32.54	0.02	0.00	0.93	4.34	124.44
fringed myotis	<i>Myotis thysanodes</i>	FS	3.28	25.62	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.07	32.54	0.00	139.73	0.00	4.34	294.40
Yuma myotis	<i>Myotis yumanensis</i>	FS	3.28	0.00	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.07	32.54	0.02	139.73	0.93	4.34	269.73
dusky-footed woodrat <sup>v</sup>	<i>Neotoma fuscipes</i>	SSC	0.00	0.00	0.26	0.08	1.24	6.51	0.00	0.00	4.14	0.32	12.18	14.90	0.10	12.10	0.00	0.00	11.07	0.00	0.00	0.00	0.85	63.75
big-eared woodrat <sup>w</sup>	<i>Neotoma macrotis</i>	FS, SSC	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.15	1.13	1.13	0.07	2.38	0.00	0.00	4.56	0.00	0.00	0.00	0.00	9.52
fisher	<i>Pekania pennanti</i>	FS, SSC	0.00	0.00	0.00	0.00	0.00	5.79	0.11	5.37	0.00	0.00	0.00	12.18	0.24	14.42	18.09	0.00	32.54	0.02	0.00	0.00	4.34	93.10
deer mouse <sup>x</sup>	<i>Peromyscus maniculatus</i>	SSC	3.28	25.62	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.02	139.73	0.93	4.34	295.28
mountain lion	<i>Puma concolor</i>	ST	3.28	0.00	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.02	0.00	0.93	4.34	129.93
broad-footed mole <sup>y</sup>	<i>Scapanus latimanus</i>	SSC	3.28	0.00	0.26	0.08	0.00	6.62	0.11	5.37	0.00	0.00	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.00	0.00	0.93	4.34	116.09
ornate shrew <sup>z</sup>	<i>Sorex ornatus</i>	SSC	2.07	0.00	0.26	0.08	0.00	0.00	0.00	0.00	3.85	0.00	0.00	10.08	0.06	10.26	0.00	0.00	0.64	0.00	0.00	0.00	0.00	27.30
vagrant shrew <sup>aa</sup>	<i>Sorex vagrans</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	0.00	5.47	0.00	0.00	0.01	0.00	16.52	0.00	0.90	0.02	0.00	0.72	0.00	24.93
western spotted skunk <sup>bb</sup>	<i>Spilogale gracilis</i>	SSC	3.28	0.00	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.00	139.73	0.93	4.34	269.64
brush rabbit <sup>cc</sup>	<i>Sylvilagus bachmani</i>	FE, SE	2.71	0.00	0.26	0.08	0.00	6.62	0.00	0.00	4.14	0.32	12.86	15.02	0.10	13.21	0.00	0.00	11.31	0.00	77.47	0.00	0.00	144.10
lodgepole chipmunk <sup>dd</sup>	<i>Tamias speciosus</i>	FS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.32	0.00	6.48	0.00	0.00	0.00	0.00	18.09	0.00	10.39	0.02	0.00	0.00	0.20	40.50
American badger	<i>Taxidea taxus</i>	SSC	3.28	25.62	0.26	0.08	1.24	6.62	0.11	5.37	4.14	8.44	13.30	16.45	0.24	14.48	18.09	0.00	32.54	0.02	0.00	0.93	4.34	155.55
red fox	<i>Vulpes vulpes</i>	None	0.00	22.30	0.00	0.00	0.00	0.00	0.00	0.67	0.00	6.03	0.00	0.70	0.01	0.34	18.09	0.00	13.31	0.02	0.00	0.91	3.43	65.81

Common Name	Scientific Name	Status	Annual Grassland	Barren	Blue Oak Woodland	Blue Oak-Foothill Pine	Closed-Cone Pine-Cypress	Douglas-Fir	Jeffrey Pine	Lodgepole Pine	Mixed Chaparral	Montane Chaparral	Montane Hardwood	Montane Hard-wood-Conifer	Montane Riparian	Ponderosa Pine	Red Fir	Riverine	Sierran Mixed Conifer	Subalpine Conifer	Urban	Wet Meadow	White Fir	Total
Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	FE, ST, SFS	0.00	22.30	0.00	0.00	0.00	0.00	0.00	0.67	0.00	6.03	0.00	0.70	0.01	0.34	18.09	0.00	13.31	0.02	0.00	0.91	3.43	65.81
Not applicable	Not applicable	<b>Total</b>	<b>3.28</b>	<b>25.62</b>	<b>0.26</b>	<b>0.08</b>	<b>1.24</b>	<b>6.62</b>	<b>0.11</b>	<b>5.37</b>	<b>4.14</b>	<b>8.44</b>	<b>13.30</b>	<b>16.45</b>	<b>0.24</b>	<b>14.48</b>	<b>18.09</b>	<b>0.07</b>	<b>32.54</b>	<b>0.02</b>	<b>139.73</b>	<b>0.93</b>	<b>4.34</b>	<b>295.35</b>

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

<sup>a</sup> This plant species does not occur in the Sierra Nevada Ecoregion Section.

<sup>b</sup> Ensatina. Only the large-blotched and yellow-blotched subspecies are special status, and they do not occur in the GAI (neither range further north than Kern County).

<sup>c</sup> Striped racer. Only the Alameda subspecies is special status, and it does not occur in the GAI (restricted to Contra Costa and Alameda Counties).

<sup>d</sup> Latin name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).

<sup>e</sup> Ring-necked snake. Only the San Bernardino, San Diego, and regal subspecies are special status, and they do not occur in the GAI (none range further north than Inyo County).

<sup>f</sup> Western skink. Only the Coronado subspecies is special status, and it does not occur in the GAI (does not range north of San Diego County).

<sup>g</sup> Common sagebrush lizard. Only the northern subspecies is special status, and it does not occur in the GAI (occurs only in the Great Basin).

<sup>h</sup> Common gartersnake. Only the south coast and San Francisco subspecies are special status, and they do not occur in the GAI (south coast ranges from Ventura County south, San Francisco is nearly endemic to San Mateo County).

<sup>i</sup> Red-winged blackbird. Only the Kern subspecies is special status, and it does not occur in the GAI (restricted to Kern County).

<sup>j</sup> California quail. Only the Catalina subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>k</sup> Marsh wren. Only the Clark's subspecies is special status, and it does not occur in the GAI (does not range north of Los Angeles County).

<sup>l</sup> Sooty grouse. Only the Mount Pinos subspecies is special status, and it does not occur in the GAI (does not range north of Inyo County).

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

<sup>n</sup> California towhee. Only the Inyo subspecies is special status, and it does not occur in the GAI (restricted to Inyo County).

<sup>o</sup> Spotted towhee. Only the San Clemente subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>p</sup> Bewick's wren. Only the San Clemente subspecies is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).

<sup>q</sup> Hutton's vireo. Only the Catalina subspecies is special status, and it does not occur in the GAI (endemic to Santa Catalina Island).

<sup>r</sup> California kangaroo rat. Only the Marysville subspecies is special status which does not occur in this ecoregion (only the Great Valley ecoregion).

<sup>s</sup> Black-tailed jackrabbit. Only the San Diego subspecies is special status, and it does not occur in the GAI (does not range north of Santa Barbara County).

<sup>t</sup> Northern river otter. Only the southwestern subspecies is special status, and it does not occur in the GAI (restricted to Lower Colorado River Valley).

<sup>u</sup> California vole. There are six subspecies which are special status, but none of them occur in the GAI (the closest occurring to the GAI is the San Pablo subspecies which is restricted to Contra Costa County).

<sup>v</sup> Dusky-footed woodrat. Only the San Francisco and riparian subspecies are special status, and they do not occur in the GAI (San Francisco subspecies does not range north of Contra Costa County, riparian is restricted to San Joaquin Valley west of Modesto).

<sup>w</sup> Big-eared woodrat. Only the Monterey subspecies is special status, and it does not occur in the GAI (does not range north of San Benito County).

<sup>x</sup> Deer mouse. Only the Channel Islands subspecies are special status, and they do not occur in the GAI (restricted to Channel Islands).

<sup>y</sup> Broad-footed mole. Only the Alameda Island subspecies is special status, and it does not occur in the GAI (endemic to Alameda Island).

<sup>z</sup> Ornate shrew. There are five subspecies which are special status, but none of them occur in the GAI (Suisun subspecies occurs in Solano County, but does not range east of Grizzly Island).

<sup>aa</sup> Vagrant shrew. Only the salt-marsh wandering and Monterey subspecies are special status, and they do not occur in the GAI (salt-marsh wandering does not range north of Contra Costa County, Monterey does not range north of San Mateo County).

<sup>bb</sup> Western spotted skunk. Only the Channel Islands subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>cc</sup> Brush rabbit. Only the riparian brush rabbit is special status, and it does not occur in the GAI (does not range north of Stockton).

<sup>dd</sup> Lodgepole chipmunk. Only the Mount Pinos subspecies is special status, and it does not occur in the GAI (does not range north of Kern County).



Table C-5. Complete SAMNA Results for the Sierra Nevada Foothills Ecoregion Section in District 3, by Land Cover (acres)

	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Mixed Chaparral	Montane Hardwood	Pasture	Urban	Valley Foothill Riparian	Valley Oak Woodland	Total
Plants	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
lone manzanita <sup>a</sup>	<i>Arctostaphylos myrtifolia</i>	FT	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	2.83
Clara Hunt's milk-vetch <sup>a</sup>	<i>Astragalus claranus</i>	FE, ST	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Chinese camp brodiaea <sup>a</sup>	<i>Brodiaea pallida</i>	FT, SE	10.83	0.00	0.00	2.83	0.00	0.00	0.00	0.00	13.66
Stebbins' morning-glory	<i>Calystegia stebbinsii</i>	FE, SE	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	2.83
succulent owl's-clover <sup>a</sup>	<i>Castilleja campestris</i> var. <i>succulenta</i>	FT, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Pine Hill ceanothus	<i>Ceanothus roderickii</i>	FE, SR	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	2.83
palmate-bracted bird's-beak	<i>Chloropyron palmatum</i>	FT, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Hoover's spurge	<i>Euphorbia hooveri</i>	FT	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Pine Hill flannelbush	<i>Fremontodendron decumbens</i>	FE, SR	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	2.83
El Dorado bedstraw	<i>Galium californicum</i> ssp. <i>sierrae</i>	FE, SR	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	2.83
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	11.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.46
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Butte County meadowfoam	<i>Limnanthes floccosa</i> ssp. <i>californica</i>	FE, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Colusa grass	<i>Neostapfia colusana</i>	FT, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
hairy Orcutt grass	<i>Orcuttia pilosa</i>	FE, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
slender Orcutt grass	<i>Orcuttia tenuis</i>	FT, SE	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	FE, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Layne's ragwort	<i>Packera layneae</i>	FT, SR	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	2.83
Greene's tuctoria	<i>Tuctoria greenei</i>	FE, SR	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Crampton's tuctoria or Solano grass	<i>Tuctoria mucronata</i>	FE, SE	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Invertebrates	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.22

	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Mixed Chaparral	Montane Hardwood	Pasture	Urban	Valley Foothill Riparian	Valley Oak Woodland	Total
vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	FE	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
<b>Amphibians</b>	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
ensatina <sup>b</sup>	<i>Ensatina eschscholtzii</i>	FS	0.00	2.23	0.00	2.83	0.00	0.00	3.59	2.36	11.01
foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE	10.83	1.84	0.00	2.79	0.00	0.00	3.56	2.36	21.38
California red-legged frog	<i>Rana draytonii</i>	FT, SSC	11.46	2.23	0.00	2.83	0.00	0.00	3.59	2.36	22.47
Sierra Nevada yellow-legged frog	<i>Rana sierrae</i>	FE, FS, ST	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
western spadefoot	<i>Spea hammondi</i>	FS, SSC	0.81	0.39	0.00	0.00	0.00	0.00	0.00	0.14	1.34
<b>Reptiles</b>	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
northern rubber boa	<i>Charina bottae</i>	None	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
striped racer <sup>c</sup>	<i>Masticophis [Coluber] lateralis<sup>d</sup></i>	FT, ST	0.00	2.23	0.00	2.83	0.00	0.00	3.59	2.36	11.01
ring-necked snake <sup>e</sup>	<i>Diadophis punctatus</i>	FS	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
California mountain kingsnake	<i>Lampropeltis zonata</i>	None	10.83	2.23	0.00	2.83	0.00	0.00	3.59	2.36	21.84
Coast [Blainville's] horned lizard	<i>Phrynosoma blainvillii</i>	FS, SSC	11.46	2.23	0.00	0.00	0.00	0.00	3.59	2.36	19.64
gophersnake	<i>Pituophis catenifer</i>	None	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
western skink <sup>f</sup>	<i>Plestiodon skiltonianus</i>	FS	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
common sagebrush lizard <sup>g</sup>	<i>Sceloporus graciosus</i>	FS	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
giant gartersnake	<i>Thamnophis gigas</i>	FT, ST	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
common gartersnake <sup>h</sup>	<i>Thamnophis sirtalis</i>	SSC	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
<b>Birds</b>	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
northern goshawk	<i>Accipiter gentilis</i>	FS, SSC, SFS	0.00	0.26	0.00	0.45	0.00	0.00	0.29	0.16	1.16
red-winged blackbird <sup>i</sup>	<i>Agelaius phoeniceus</i>	SSC	11.46	0.00	0.00	0.00	0.00	14.56	3.59	0.00	29.61
tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST	11.46	0.00	0.00	0.00	0.00	14.56	3.59	0.00	29.61
rufous-crowned sparrow <sup>j</sup>	<i>Aimophila ruficeps</i>	SSC	11.46	0.00	0.00	0.00	0.00	0.00	3.59	0.00	15.05
grasshopper sparrow	<i>Ammodramus savannarum</i>	SSC	11.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.46
greater white-fronted goose	<i>Anser albifrons</i>	None	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03



	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Mixed Chaparral	Montane Hardwood	Pasture	Urban	Valley Foothill Riparian	Valley Oak Woodland	Total
golden eagle	<i>Aquila chrysaetos</i>	FS, SFP, SFS	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
great egret	<i>Ardea alba</i>	SFS	11.46	2.23	0.00	0.00	0.00	14.56	3.59	2.36	34.20
great blue heron	<i>Ardea herodias</i>	SFS	11.46	2.23	0.00	2.83	0.00	14.56	3.59	2.36	37.03
short-eared owl	<i>Asio flammeus</i>	SSC	11.46	2.23	0.00	0.00	0.00	14.56	3.59	2.36	34.20
long-eared owl	<i>Asio otus</i>	SSC	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
burrowing owl	<i>Athene cunicularia</i>	FS, SSC	11.46	2.23	0.00	0.00	3.35	14.56	3.59	2.36	37.55
Swainson's hawk	<i>Buteo swainsoni</i>	FS, ST	0.03	0.39	0.00	0.04	0.00	1.41	0.00	0.00	1.87
California quail <sup>k</sup>	<i>Callipepla californica</i>	SSC	11.46	2.23	0.00	2.83	0.00	14.56	3.59	2.36	37.03
Vaux's swift	<i>Chaetura vauxi</i>	SSC	0.00	0.00	0.00	0.02	0.00	4.81	0.00	0.00	4.83
northern harrier	<i>Circus hudsonius [cyaneus]<sup>d</sup></i>	SSC	11.46	2.23	0.00	2.83	0.00	14.56	3.59	2.36	37.03
marsh wren <sup>l</sup>	<i>Cistothorus palustris</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	3.59	0.00	3.59
olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
white-tailed kite	<i>Elanus leucurus</i>	FS, SFP	11.46	2.23	0.00	0.00	0.00	14.56	3.59	2.36	34.20
peregrine falcon	<i>Falco peregrinus</i>	FS, SFP, SFS	11.46	2.23	0.00	2.83	0.00	14.56	3.59	2.36	37.03
common yellowthroat <sup>m</sup>	<i>Geothlypis trichas</i>	SSC	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
sandhill crane	<i>Antigone [Grus] canadensis<sup>d</sup></i>	None	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
lesser sandhill crane	<i>Antigone [Grus] canadensis canadensis<sup>d</sup></i>	SSC	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SE, SFP SFS	11.46	2.23	0.00	2.83	0.00	0.00	3.59	2.36	22.47
yellow-breasted chat	<i>Icteria virens</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	3.59	0.00	3.59
loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	11.46	2.23	0.00	2.83	0.00	14.56	3.59	2.36	37.03
song sparrow	<i>Melospiza melodia</i>	None	11.46	2.23	0.00	2.83	0.00	14.56	3.59	2.36	37.03
Modesto song sparrow	<i>Melospiza melodia mailliardi</i>	SSC	0.00	0.07	0.00	0.04	0.00	1.38	0.00	0.00	1.49
osprey	<i>Pandion haliaetus</i>	SFS	11.46	2.23	0.00	2.83	0.00	0.00	3.59	2.36	22.47
savannah sparrow <sup>n</sup>	<i>Passerculus sandwichensis</i>	SSC	11.46	2.23	0.00	0.00	3.35	0.00	3.59	2.36	22.99
California towhee <sup>o</sup>	<i>Melospiza [Pipilo] crissalis</i>	FT, SE	0.00	2.23	0.00	2.83	0.00	14.56	3.59	2.36	25.57
spotted towhee <sup>p</sup>	<i>Pipilo maculatus</i>	SSC	0.00	2.23	0.00	2.83	0.00	14.56	3.59	2.36	25.57

	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Mixed Chaparral	Montane Hardwood	Pasture	Urban	Valley Foothill Riparian	Valley Oak Woodland	Total
vesper sparrow	<i>Poocetes gramineus</i>	None	10.48	2.23	0.00	0.00	0.00	0.00	0.00	2.36	15.07
Oregon vesper sparrow	<i>Poocetes gramineus affinis</i>	SSC	10.27	1.97	0.00	0.00	0.00	0.00	0.00	2.20	14.44
purple martin	<i>Progne subis</i>	SSC	1.32	0.91	0.00	1.68	0.00	7.15	0.00	0.77	11.83
bank swallow	<i>Riparia riparia</i>	FS, ST	0.00	0.00	0.00	0.00	0.00	1.10	0.00	0.00	1.10
yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	2.23	0.00	2.83	0.00	14.56	3.59	2.36	25.57
spotted owl	<i>Strix occidentalis</i>	None	0.00	0.00	0.00	2.83	0.00	0.00	3.37	0.00	6.20
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0.00	0.00	0.00	2.83	0.00	0.00	3.37	0.00	6.20
Bewick's wren <sup>q</sup>	<i>Thryomanes bewickii</i>	SSC	0.00	2.23	0.00	2.83	0.00	14.56	3.59	2.36	25.57
Hutton's vireo <sup>r</sup>	<i>Vireo huttoni</i>	SSC	0.00	2.23	0.00	2.83	0.00	14.56	3.59	2.36	25.57
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
<b>Mammals</b>	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below	See below
pallid bat	<i>Antrozous pallidus</i>	FS, SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
ringtail	<i>Bassariscus astutus</i>	SFP	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
California pocket mouse <sup>s</sup>	<i>Chaetodipus californicus</i>	SSC	0.24	0.67	0.00	0.93	0.00	0.00	0.00	0.40	2.24
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
California kangaroo rat <sup>t</sup>	<i>Dipodomys californicus</i>	SSC	11.46	2.23	0.00	2.83	0.00	0.00	0.00	2.36	18.88
Heermann's kangaroo rat <sup>u</sup>	<i>Dipodomys heermanni</i>	FE, SE	0.00	0.67	0.00	0.45	0.00	0.00	0.00	0.40	1.52
spotted bat	<i>Euderma maculatum</i>	FS	10.65	1.84	0.00	0.00	0.00	14.19	3.56	2.36	32.60
western mastiff bat	<i>Eumops perotis</i>	FS	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
northern flying squirrel	<i>Glaucomys sabrinus</i>	None	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29
western red bat	<i>Lasiurus blossevillii</i>	SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
black-tailed jackrabbit <sup>v</sup>	<i>Lepus californicus</i>	SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
northern river otter <sup>w</sup>	<i>Lontra canadensis</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.00	1.17
California vole <sup>x</sup>	<i>Microtus californicus</i>	SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
small-footed myotis	<i>Myotis ciliolabrum</i>	FS	11.14	1.84	0.00	2.79	3.35	15.05	3.37	2.22	39.76
long-eared myotis	<i>Myotis evotis</i>	FS	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.29



	Scientific Name	Status	Annual Grassland	Blue Oak Woodland	Mixed Chaparral	Montane Hardwood	Pasture	Urban	Valley Foothill Riparian	Valley Oak Woodland	Total
fringed myotis	<i>Myotis thysanodes</i>	FS	1.69	1.22	0.19	2.53	0.03	7.23	1.61	1.08	15.58
Yuma myotis	<i>Myotis yumanensis</i>	FS	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
dusky-footed woodrat <sup>y</sup>	<i>Neotoma fuscipes</i>	SSC	0.00	1.56	0.00	1.98	0.00	0.00	2.42	1.95	7.91
big-eared woodrat <sup>z</sup>	<i>Neotoma macrotis</i>	FS, SSC	0.00	0.67	0.00	0.85	0.00	0.00	1.17	0.40	3.09
deer mouse <sup>aa</sup>	<i>Peromyscus maniculatus</i>	SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
mountain lion	<i>Puma concolor</i>	ST	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
broad-footed mole <sup>bb</sup>	<i>Scapanus latimanus</i>	SSC	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
ornate shrew <sup>cc</sup>	<i>Sorex ornatus</i>	SSC	10.65	1.84	0.00	0.00	0.00	0.00	3.56	2.36	18.41
western spotted skunk <sup>dd</sup>	<i>Spilogale gracilis</i>	SSC	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
brush rabbit <sup>ee</sup>	<i>Sylvilagus bachmani</i>	FE, SE	11.46	2.23	0.00	2.83	3.35	14.56	3.59	2.36	40.38
American badger	<i>Taxidea taxus</i>	SSC	11.46	2.23	0.00	2.83	3.35	0.00	3.59	2.36	25.82
red fox	<i>Vulpes vulpes</i>	None	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Sacramento Valley red fox	<i>Vulpes vulpes patwin</i>	None	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Not applicable	Not applicable	Total	11.46	2.23	0.19	2.83	3.35	15.05	3.59	2.36	41.06

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

<sup>a</sup> This plant species does not occur in the Sierra Nevada Foothills Ecoregion Section.

<sup>b</sup> Ensatina. Only the large-blotched and yellow-blotched subspecies are special status, and they do not occur in the GAI (neither range further north than Kern County).

<sup>c</sup> Striped racer. Only the Alameda subspecies is special status, and it does not occur in the GAI (restricted to Contra Costa and Alameda Counties).

<sup>d</sup> Latin name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).

<sup>e</sup> Ring-necked snake. Only the San Bernardino, San Diego, and regal subspecies are special status, and they do not occur in the GAI (none range further north than Inyo County).

<sup>f</sup> Western skink. Only the Coronado subspecies is special status, and it does not occur in the GAI (does not range north of San Diego County).

<sup>g</sup> Common sagebrush lizard. Only the northern subspecies is special status, and it does not occur in the GAI (occurs only in the Great Basin).

<sup>h</sup> Common gartersnake. Only the south coast and San Francisco subspecies are special status, and they do not occur in the GAI (south coast ranges from Ventura County south, San Francisco is nearly endemic to San Mateo County).

<sup>i</sup> Red-winged blackbird. Only the Kern subspecies is special status, and it does not occur in the GAI (restricted to Kern County).

<sup>j</sup> Rufous-crowned sparrow. Only Santa Cruz Island subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>k</sup> California quail. Only the Catalina subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>l</sup> Marsh wren. Only the Clark's subspecies is special status, and it does not occur in the GAI (does not range north of Los Angeles County).

<sup>m</sup> Common yellowthroat. Only the San Francisco/Saltmarsh subspecies is special status, and it does not occur in the GAI (occurs in Solano County, but not found east of Vallejo).

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

<sup>o</sup> California towhee. Only the Inyo subspecies is special status, and it does not occur in the GAI (restricted to Inyo County).

<sup>p</sup> Spotted towhee. Only the San Clemente subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).

<sup>q</sup> Bewick's wren. Only the San Clemente subspecies is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).

<sup>r</sup> Hutton's vireo. Only the Catalina subspecies is special status, and it does not occur in the GAI (endemic to Santa Catalina Island).

<sup>s</sup> California pocket mouse. Only the Dulzura subspecies is special status which does not occur in the GAI (does not range north of Ventura County).

<sup>t</sup> California kangaroo rat. Only the Marysville subspecies is special status which does not occur in this ecoregion (only the Great Valley ecoregion).

<sup>u</sup> Heermann's kangaroo rat. Only the Morro Bay subspecies is special status which does not occur in the GAI (endemic to San Luis Obispo County).

<sup>v</sup> Black-tailed jackrabbit. Only the San Diego subspecies is special status, and it does not occur in the GAI (does not range north of Santa Barbara County).

<sup>w</sup> Northern river otter. Only the southwestern subspecies is special status, and it does not occur in the GAI (restricted to Lower Colorado River Valley).

<sup>x</sup> California vole. There are six subspecies which are special status, but none of them occur in the GAI (the closest occurring to the GAI is the San Pablo subspecies which is restricted to Contra Costa County).

<sup>y</sup> Dusky-footed woodrat. Only the San Francisco and riparian subspecies are special status, and they do not occur in the GAI (San Francisco subspecies does not range north of Contra Costa County, riparian is restricted to San Joaquin Valley west of Modesto).

<sup>z</sup> Big-eared woodrat. Only the Monterey subspecies is special status, and it does not occur in the GAI (does not range north of San Benito County).  
<sup>aa</sup> Deer mouse. Only the Channel Islands subspecies are special status, and they do not occur in the GAI (restricted to Channel Islands).  
<sup>bb</sup> Broad-footed mole. Only the Alameda Island subspecies is special status, and it does not occur in the GAI (endemic to Alameda Island).  
<sup>cc</sup> Ornate shrew. There are five subspecies which are special status, but none of them occur in the GAI (Suisun subspecies occurs in Solano County, but does not range east of Grizzly Island).  
<sup>dd</sup> Western spotted skunk. Only the Channel Islands subspecies is special status, and it does not occur in the GAI (restricted to Channel Islands).  
<sup>ee</sup> Brush rabbit. Only the riparian brush rabbit is special status, and it does not occur in the GAI (does not range north of Stockton).



## APPENDIX D: HYDROLOGIC UNITS

### Sub-basin Descriptions

Thirteen sub-basins overlap the GAI. A description of each sub-basin is provided in the following sections. A crosswalk between the HUC-8 sub-basins and HUs is provided in Table D-1 at the end of this appendix.

#### Big Chico Creek-Sacramento River Sub-basin

The Big Chico Creek-Sacramento River sub-basin drains an area of 609,427 acres (952 square miles) and includes 2,093 rivers and streams that traverse 2,830 miles. As noted in Table D-1, the Big Chico Creek-Sacramento River sub-basin includes portions of the Ball Mountain, Butte Creek, Colusa Basin, Eastern Tehama, Feather River, Stony Creek, and Tehama HUs. Descriptions of these HUs are provided below and may include features that occur outside of the Big Chico Creek-Sacramento River sub-basin or GAI.

The Ball Mountain HU is associated with the Thomes Creek watershed. Tributaries to Thomes Creek include Doll, Fish, Snake, and Willow Creeks (EPA n.d.). The Thomes Creek watershed originates within the western portion of the Tehama West watershed. The creek flows east for 70 miles before entering the Sacramento River (NMFS 2014).

The Butte Creek HU is associated with the Butte Creek watershed. The creek originates in the Butte Meadows/Jonesville Basin region where several smaller tributary streams converge. Water flows through a steep canyon and valley near Chico. Lower Butte Creek transitions into complex water supply systems, eventually draining into the Sacramento River (Sacramento River Watershed Program 2021). The part of the Butte Creek HU that lies within the Big Chico Creek-Sacramento River sub-basin includes portions of the Upper Butte Creek and Upper Little Chico hydrologic areas.

The Colusa Basin HU is located on the western side of the Sacramento Valley along the natural levees of the Sacramento River, with gentle slopes that rise toward the Coast Range foothills. The area consists of complex individual smaller flood basins isolated by a meandering, intermingled network of floodplain channel ridges formed along adjacent slough channels. Streams that drain winter rainfall from the Coast Range foothills, portions of the Stony Creek alluvial fan, and overflow from the Sacramento River contribute to the regular seasonal flooding of the Colusa Basin (Colusa County Resource Conservation District 2008). The part of the Colusa Basin HU that lies within the Big Chico Creek-Sacramento River sub-basin includes portions of the Upper Butte Basin and Glen Colusa hydrologic areas.

The Eastern Tehama HU is associated with the Big Chico Creek, Deer Creek, Upper Mill Creek, and Antelope Creek watersheds. Upper Mill Creek includes Mill Creek and Rocky Gulch Creek tributaries. Antelope Creek includes the North Fork, Middle, and South Fork Antelope Creek tributaries (EPA n.d.). The headwaters of Big Chico Creek, 45 miles long, originate on the southwestern slope of Colby Mountain. Deer Creek originates near the summit of Butt Mountain and flows 60 miles southwest into the Sacramento River. Mill

Creek originates near a thermal spring area in Lassen Volcanic National Park, flowing 60 miles into the Sacramento River. Antelope Creek originates in Lassen Volcanic National Park, flowing into the Sacramento River (NMFS 2014). The part of the Eastern Tehama HU that lies within the Big Chico Creek-Sacramento River sub-basin includes portions of the Barkley Mountain, Cohasset, and Deer Creek hydrologic areas.

The Feather River HU is associated with the Upper and Lower Feather River watersheds. The headwaters of the Upper Feather River watershed are within the Sierra Nevada crest. There are several tributaries from its headwaters to Lake Oroville, including Spanish, Rock, and Sly Creeks. The Lower Feather River watershed originates from Lake Oroville. Waters flow 60 miles south from the lake to join with the Sacramento River at Verona (Sacramento River Watershed Program 2021). The part of the Feather River HU that lies within the Big Chico Creek-Sacramento River sub-basin includes a portion of the North Fork Feather hydrologic area.

The Stony Creek HU is associated with the Stony Creek watershed. Stony Creek, the major water body within the HU, is the second largest tributary on the west side of the Sacramento Valley entering the Sacramento River. Headwaters of Upper Stony Creek start near the confluence of Grindstone Creek and flow into the Black Butte Reservoir. Lower Stony Creek resumes at the reservoir and flows east into the Sacramento River (Sacramento River Watershed Program 2021). The part of the Stony Creek HU that lies within the Big Chico Creek-Sacramento River sub-basin includes a portion of the Newville hydrologic area.

The Tehama HU is associated with the Tehama East and Tehama West watersheds. The Tehama East watershed includes Antelope, Dye, Inks, Paynes, Pine, Salt, Seven Mile, and Toomes Creeks, and Hoag Slough. Peak flows from these drainages contribute to flooding problems caused by the Sacramento River overflowing its banks (Sacramento River Watershed Program 2021). The Tehama West watershed includes Reeds, Red Bank, Thomes, and Elder Creeks, along with several smaller water features that drain into the Sacramento River. Water flow is mainly attributed to rainfall, and the lower reaches of streams become dry during summer (Sacramento River Watershed Program 2021). The part of the Tehama HU that lies within the Big Chico Creek-Sacramento River sub-basin includes portions of the Black Butte, Lower Stony Creek, and Red Bluff hydrologic areas.

### **Butte Creek Sub-basin**

The Butte Creek sub-basin drains an area of 524,577 acres (820 square miles) and includes 2,318 rivers and streams that traverse 2,406 miles. As noted in Table D-1, the Butte Creek sub-basin includes portions of the Butte Creek, Colusa Basin, Eastern Tehama, Feather River, Marysville, and Tehama HUs. Descriptions of the Butte Creek, Colusa Basin, Eastern Tehama, Feather River, and Tehama HUs are provided in the Big Chico Creek-Sacramento River sub-basin section.

The part of the Butte Creek HU that lies within the Butte Creek sub-basin includes portions of the Upper Butte Creek, Upper Dry Creek, and Upper Little Chico hydrologic areas.



The part of the Colusa Basin HU that lies within the Butte Creek sub-basin includes portions of the Butte Basin, Sutter Bypass, and Sycamore-Sutter hydrologic areas.

The part of the Eastern Tehama HU that lies within the Butte Creek sub-basin includes portions of the Cohasset and Deer Creek hydrologic areas.

The part of the Feather River HU that lies within the Butte Creek sub-basin includes portions of the Below Oroville Reservoir, Bloomer Hill, North Fork Feather, and West Branch North Fork hydrologic areas.

The Marysville HU is associated with the Lower Yuba River and Lower Feather River watersheds, which also include Bear River (EPA n.d.). The Lower Yuba River begins after the Daguerre Point Dam and flows southwest past Marysville before eventually joining with the Feather River (Water Education Foundation 2009). The Lower Feather River watershed is 803 square miles and begins downstream of Lake Oroville. The river flows 60 miles south before entering the Sacramento River. Both the Lower Yuba and Bear Rivers confluence with the Lower Feather River (Sacramento River Watershed Program 2021). The part of the Marysville HU that lies within the Butte Creek sub-basin includes a portion of the Lower Feather River hydrologic area.

The part of the Tehama HU that lies within the Butte Creek sub-basin includes a portion of the Red Bluff hydrologic area.

### **Honcut Headwaters-Lower Feather Sub-basin**

The Honcut Headwaters-Lower Feather sub-basin drains an area of 495,300 acres (774 square miles) and includes 1,584 rivers and streams that traverse 1,724 miles. As noted in Table D-1, the Honcut Headwaters-Lower Feather sub-basin includes portions of the Bear River, Butte Creek, Colusa Basin, Feather River, Marysville, Valley-American, and Yuba River HUs. Descriptions of the Butte Creek, Colusa Basin, and Feather River HUs are provided in the Big Chico Creek-Sacramento River sub-basin section. A description of the Marysville HU is provided in the Butte Creek sub-basin section.

The Bear River HU is associated with the Bear River watershed. The main waterbody, Bear River, is the second largest tributary to the Feather River with headwaters 20 miles west of the Sierra Nevada. Waters from Spaulding Lake feed into the river via Drum Canal, downstream of the headwaters. Bear River runs roughly parallel to Interstate 80, feeding into Camp Far West Reservoir before joining with the Feather River south of Yuba City/Marysville (Sacramento River Watershed Program 2021). The part of the Bear River HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes portions of the Dry Creek and Reeds Creek hydrologic areas.

The part of the Butte Creek HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes a portion of the Upper Dry Creek hydrologic area.

The part of the Colusa Basin HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes portions of the Butte Basin, Sutter Bypass, and Sycamore-Sutter hydrologic areas.

The part of the Feather River HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes portions of the Below Oroville Reservoir and Bloomer Hill hydrologic areas.

The part of the Marysville HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes portions of the Lower Bear River, Lower Feather River, Lower Yuba River, and Olivehurst hydrologic areas.

The Valley-American HU is associated with the Lower American and Pleasant Grove watersheds, which outlet to the American, Sacramento, and Feather Rivers (EPA n.d.). The Lower American River has headwaters just below Nimbus Dam and flows through the American River Parkway to the confluence with the Sacramento River (California Wilderness Coalition 2020). The Pleasant Grove watershed has headwaters within the foothills of the Sierra Nevada ranges and flows east, draining into Pleasant Grove Creek Canal, ultimately reaching a confluence with the Sacramento River (Placer County 2006). The part of the Valley-American HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes a portion of the Coon-American hydrologic area.

The Yuba River HU is associated with the Yuba River watershed, which originates on the western slopes of the Sierra Nevada and flows near Donner Pass to the Feather River near Yuba City. Streams include Canyon and Slate Creeks on the North Fork Yuba River, Kanaka and Grizzly Creeks on the Middle Fork Yuba River, and Canyon and Poorman Creeks on the South Fork Yuba River (Sacramento River Watershed Program 2021). The part of the Yuba River HU that lies within the Honcut Headwaters-Lower Feather sub-basin includes portions of the Olive Hill, South Honcut Creek, and Ure Mountain hydrologic areas.

### **Lower American Sub-basin**

The Lower American sub-basin drains an area of 187,211 acres (293 square miles) and includes 321 rivers and streams that traverse 539 miles. As noted in Table D-1, the Lower American sub-basin includes portions of the American River, Middle Sierra, North Valley Floor, and Valley-American HUs. A description of the Valley-American HU is provided in the Honcut Headwaters-Lower Feather sub-basin section.

The American River HU is associated with the Upper and Lower American River watersheds. The main body of water in both watersheds is the American River. The Upper American River watershed has its headwaters in the Sierra Nevada, just west of Lake Tahoe. Major streams include Rubicon River, Duncan Creek, Long Canyon Creek, and Silver Creek (Sacramento River Watershed Program 2021). The Lower American River watershed originates at Folsom Dam and flows 30 miles southwest to its confluence with the Sacramento River near downtown Sacramento. Major streams in the watershed include Coon Creek, Markham Ravine, Auburn Ravine, Pleasant Grove Creek, Curry Creek, Dry Creek, Cordova Creek, and Arcade Creek (Sacramento River Watershed Program 2021). The part of the American River HU that lies within the Lower American sub-basin includes a portion of the Foothill Drain hydrologic area.



The Middle Sierra HU is part of the San Joaquin hydrologic basin. It includes parts of the Cosumnes River, Sutter Creek, and Upper Mokelumne River. The part of the Middle Sierra HU that lies within the Lower American sub-basin includes a portion of the Cosumnes hydrologic area.

The North Valley Floor HU is part of the San Joaquin hydrologic basin. It includes parts of the Lower Cosumnes River, Dry Creek, Lower Mokelumne River, Lower Calaveras River, Duck Creek, and Littlejohns Creek. The part of the North Valley Floor HU that lies within the Lower American sub-basin includes a portion of the Lower Cosumnes-Dry hydrologic area.

The part of the Valley-American HU that lies within the Lower American sub-basin includes portions of the Coon-American and Morrison Creek hydrologic areas.

### **Lower Sacramento Sub-basin**

The Lower Sacramento sub-basin drains an area of 786,273 acres (1,229 square miles) and includes 7,034 rivers and streams that traverse 3,824 miles. As noted in Table D-1, the Lower Sacramento sub-basin includes portions of the Colusa Basin, North Valley Floor, Putah Creek, Sacramento Delta, San Joaquin Delta, Suisun, Upper Elmira, Valley-American, Valley Putah-Cache, and Valley-American HUs. A description of the Colusa Basin HU is provided in the Big Chico Creek-Sacramento River sub-basin section. A description of the North Valley Floor HU is provided in the Lower American sub-basin section. A description of the Valley-American HU is provided in the Honcut Headwaters-Lower Feather sub-basin section.

The part of the Colusa Basin HU that lies within the Lower Sacramento sub-basin includes portions of the Glen Colusa and Sycamore-Sutter hydrologic areas.

The part of the North Valley Floor HU that lies within the Lower Sacramento sub-basin includes a portion of the Lower Cosumnes-Dry hydrologic area.

The Putah Creek HU is associated with the Putah Creek watershed. The creek originates from the springs on the eastern Cobb Mountain within the Coast Ranges. The 70-mile-long creek flows into the Monticello Dam and the Yolo Bypass before draining into the Sacramento River (Sacramento River Watershed Program 2021). The part of the Putah Creek HU that lies within the Lower Sacramento sub-basin includes a portion of the Berryessa hydrologic area.

The Sacramento Delta HU includes the Sacramento River, Steamboat Slough, and Prospect Slough. The Sacramento River stretches for 400 miles, originating within the eastern slopes of the Coast Range, Mount Shasta, the western slopes of the southernmost region of the Cascades, and the northern portion of the Sierra Nevada (Rivers for Change 2014). The river then meets with the San Joaquin River to form the Sacramento Delta before flowing out to the Pacific Ocean.

The San Joaquin Delta HU includes the San Joaquin, Middle, and Old Rivers. The San Joaquin River originates in the high Sierra Nevada and flows west for 100 miles before

turning north for 260 miles. The waters confluence with the Sacramento River and form the San Joaquin Delta before flowing out to the Pacific Ocean (EPA 2020).

The Suisun HU is associated with Suisun Bay within the San Francisco Bay Drainage Province. The Suisun Drainage Canal flows south to Peytonia Slough, Suisun Marsh, and Suisun Bay. Suisun Bay is located at the confluence of the Sacramento and San Joaquin Rivers, forming the entrance to the Sacramento Delta (City of Suisun 2015). The part of the Suisun HU that lies within the Lower Sacramento sub-basin includes a portion of the Fairfield hydrologic area.

The Upper Elmira HU includes the Santa Cruz Mountains, South Santa Clara Valley, and Pacheco and Santa Ana Creeks. The part of the Upper Elmira HU that lies within the Lower Sacramento sub-basin includes portions of the East Blue Ridge and East Rocky Ridge hydrologic areas.

The part of the Valley-American HU that lies within the Lower Sacramento sub-basin includes portions of the Coon-American and Morrison Creek hydrologic areas.

The Valley Putah-Cache HU is associated with the Lower Putah Creek watershed, which outlets to the Yolo Bypass and the Sacramento Bypass (EPA n.d.). The Lower Putah Creek watershed includes the Putah Creek reach from Monticello Dam east toward the Sacramento River. Tributaries for this reach include Thompson, Cold, Bray Canyon, and Pleasants Creeks (Lower Putah Creek Coordinating Committee 2005). The part of the Valley Putah-Cache HU that lies within the Lower Sacramento sub-basin includes portions of the Elmira, Lower Cache Creek, and Lower Putah Creek hydrologic areas.

### **North Fork American Sub-basin**

The North Fork American sub-basin drains an area of 648,089 acres (1,013 square miles) and includes 14,627 rivers and streams that traverse 5,539 miles. As noted in Table D-1, the North Fork American sub-basin includes portions of the American River, Bear River, Lake Tahoe, Truckee River, and Yuba River HUs. A description of the American River HU is provided in the Lower American sub-basin section. Descriptions of the Bear River and Yuba River HUs are provided in the Honcut Headwaters-Lower Feather sub-basin section.

The part of the American River HU that lies within the North Fork American sub-basin includes portions of the Foothill Drain, Middle Fork American, North Fork American, and South Fork American hydrologic areas.

The part of the Bear River HU that lies within the North Fork American sub-basin includes a portion of the Upper Bear hydrologic area.

The Lake Tahoe HU includes Lake Tahoe, which is 192 square miles in surface area and 1,645 feet deep. There are 63 streams that contribute water to the lake and one outlet at the start of the Truckee River (EPA 2021). The part of the Lake Tahoe HU that lies within the North Fork American sub-basin includes a portion of the North Tahoe hydrologic area.



The Truckee River HU is associated with the Truckee River watershed. The Little Truckee River tributary is a separate hydrologic unit that has significant hydrologic, sediment, and nutrient contributions to the main river. The Truckee River emerges from the northwest periphery of Lake Tahoe, flows to the northeast for 121 miles, drains part of the high Sierra Nevada, and empties into Pyramid Lake in the Great Basin (Lahontan RWQCB 2019). The part of the Truckee River HU that lies within the North Fork American sub-basin includes a portion of the Truckee River hydrologic area.

The part of the Yuba River HU that lies within the North Fork American sub-basin includes a portion of the South Yuba hydrologic area.

### **Paynes Creek-Sacramento River Sub-basin**

The Paynes Creek-Sacramento River sub-basin drains an area of 271,113 acres (424 square miles) and includes 4,588 rivers and streams that traverse 1,796 miles. As noted in Table D-1, the Paynes Creek-Sacramento River sub-basin includes portions of the Ball Mountain, Eastern Tehama, Redding, Shasta Bally, Tehama, and Whitmore HUs. A description of the Ball Mountain HU is provided in the Big Chico Creek-Sacramento River sub-basin section. Descriptions of the Eastern Tehama and Tehama HUs are provided in the Big Chico Creek-Sacramento River sub-basin section.

The part of the Ball Mountain HU that lies within the Paynes Creek-Sacramento River sub-basin includes a portion of the Valentine Ridge hydrologic area.

The part of the Eastern Tehama HU that lies within the Paynes Creek-Sacramento River sub-basin includes a portion of the Lyonsville hydrologic area.

The Redding HU is associated with the Enterprise Flat and Lower Cottonwood watersheds. The Enterprise Flat watershed includes Anderson, Ash, Battle, Churn, Clear, Cow, Olney, Paynes, and Stillwater Creeks, which outlet to the Sacramento River. The Lower Cottonwood watershed includes Cottonwood Creek, which has Middle Fork and South Fork Cottonwood Creeks as tributaries (EPA n.d.). The Cottonwood Creek watershed originates on the east slope of the Coast Ranges and Klamath Mountains and the southern slopes of the Trinity Mountains. The creek flows east toward the Sacramento River (Sacramento River Watershed Program 2021). The part of the Redding HU that lies within the Paynes Creek-Sacramento River sub-basin includes portions of the Enterprise Flat and Lower Cottonwood hydrologic areas.

The Shasta Bally HU is associated with the South Fork, Platina, Spring Creek, and Kanaka Peak watersheds, which outlet to South Fork Cottonwood Creek, Middle Fork Cottonwood Creek, Sacramento River, and Clear Creek, respectively. South Fork Cottonwood Creek includes the Cold Fork Cottonwood Creek tributary. Middle Fork Cottonwood Creek includes the Beegum Creek tributary (EPA n.d.). The part of the Shasta Bally HU that lies within the Paynes Creek-Sacramento River sub-basin includes a portion of the Cottonwood Creek hydrologic area.

The part of the Tehama HU that lies within the Paynes Creek-Sacramento River sub-basin includes a portion of the Red Bluff hydrologic area.

The Whitmore HU is associated with the Inks Creek, Battle Creek, and Inwood watersheds. Battle Creek includes two tributaries: North Fork and South Fork Battle Creek. The Inwood watershed includes both Bear and Dry Creeks (EPA n.d.). Battle Creek flows for 50 miles from Lassen Volcanic National Park to the Sacramento River (Sacramento River Watershed Program 2021). The part of the Whitmore HU that lies within the Paynes Creek-Sacramento River sub-basin includes a portion of the Manton hydrologic area.

### **Sacramento-Stone Corral Sub-basin**

The Sacramento-Stone Corral sub-basin drains an area of 1,205,843 acres (1,884 square miles) and includes 5,445 rivers and streams that traverse 5,583 miles. As noted in Table D-1, the Sacramento-Stone Corral sub-basin includes portions of the Cache Creek, Colusa Basin, Cortina, Stony Creek, Tehama, Upper Elmira, Valley-American, and Valley Putah-Cache HUs. Descriptions of the Colusa Basin, Stony Creek, and Tehama HUs are provided in the Big Chico Creek-Sacramento River sub-basin section. Descriptions of the Upper Elmira and Valley Putah-Cache HUs are provided in the Lower Sacramento sub-basin section. A description of the Valley-American HU is provided in the Honcut Headwaters-Lower Feather sub-basin section.

The Cache Creek HU is associated with the Cache Creek watershed, originating from Clear Lake outside the GAI. The North Fork Cache Creek tributary originates within Goat Mountain in the Mendocino National Forest, running 16 miles and flowing into Indian Valley Reservoir. The Bear Creek tributary flows through Bear Valley, parallel to State Route 16 and through the Capay Valley in Yolo County (Sacramento River Watershed Program 2021). The part of the Cache Creek HU that lies within the Sacramento-Stone Corral sub-basin includes portions of the Bear Creek and Middle Cache Creek hydrologic areas.

The part of the Colusa Basin HU that lies within the Sacramento-Stone Corral sub-basin includes portions of the Butte Basin, Glenn Colusa, Sutter Bypass, and Sycamore-Sutter hydrologic areas.

The Cortina HU includes Cortina Creek. The part of the Cortina HU that lies within the Sacramento-Stone Corral sub-basin includes portions of the Cortina Creek, Logan Creek, Nye Creek, Stone Corral Creek, and Whiskey Hill hydrologic areas.

The part of the Stony Creek HU that lies within the Sacramento-Stone Corral sub-basin includes portions of the Fouts Springs, Newville, and Western Glenn hydrologic areas.

The part of the Tehama HU that lies within the Sacramento-Stone Corral sub-basin includes a portion of the Lower Stony Creek hydrologic area.

The part of the Upper Elmira HU that lies within the Sacramento-Stone Corral sub-basin includes a portion of the East Blue Ridge hydrologic area.

The part of the Valley-American HU that lies within the Sacramento-Stone Corral sub-basin includes a portion of the Coon-American hydrologic area.



The part of the Valley Putah-Cache HU that lies within the Sacramento-Stone Corral sub-basin includes portions of the Lower Cache Creek and Lower Putah Creek hydrologic areas.

### **South Fork American Sub-basin**

The South Fork American sub-basin drains an area of 543,766 acres (850 square mile) and includes 9,824 rivers and streams that traverse 4,126 miles. As noted in Table D-1, the South Fork American sub-basin includes portions of the American River, Lake Tahoe, Middle Sierra, and West Fork Carson River HUs. Descriptions of the American River and Middle Sierra HUs are provided in the Lower American sub-basin section. A description of the Lake Tahoe HU is provided in the North Fork American sub-basin section.

The part of the American River HU that lies within the South Fork American sub-basin includes portions of the Foothill Drain, Middle Fork American, and South Fork American hydrologic areas.

The part of the Lake Tahoe HU that lies within the South Fork American sub-basin includes a portion of the South Tahoe hydrologic area.

The part of the Middle Sierra HU that lies within the South Fork American sub-basin includes portions of the Cosumnes and Upper Mokelumne hydrologic areas.

The portion of the West Fork Carson River HU that is within the GAI is associated with the west fork of the Carson River south of Lake Tahoe. Along with the East Fork Carson River, the two join to form the Carson River near Genoa, Nevada, outside the GAI. Several tributaries, including Indian and Bryant Creeks, cross the California-Nevada state line separately from the main forks (Lahontan RWQCB 2019). The part of the West Fork Carson River HU that lies within the South Fork American sub-basin includes a portion of the Upper West Fork Carson River hydrologic area.

### **Thomes Creek-Sacramento River Sub-basin**

The Thomes Creek-Sacramento River sub-basin drains an area of 645,690 acres (1,009 square miles) and includes 8,347 rivers and streams that traverse 4,033 miles. As noted in Table D-1, the Thomes Creek-Sacramento River sub-basin includes portions of the Ball Mountain, Eastern Tehama, Eel River, Feather River, Shasta Bally, Stony Creek, Tehama, and Whitmore HUs. Descriptions of the Ball Mountain, Eastern Tehama, Feather River, Stony Creek, and Tehama HUs are provided in the Big Chico Creek-Sacramento River sub-basin section. A description of the Shasta Bally HU is provided in the Paynes Creek-Sacramento River sub-basin section. A description of the Whitmore HU is provided in the Paynes Creek-Sacramento River sub-basin section.

The part of the Ball Mountain HU that lies within the Thomes Creek-Sacramento River sub-basin includes portions of the Paskenta, Thomes Creek, and Valentine Ridge hydrologic areas.

The part of the Eastern Tehama HU that lies within the Thomes Creek-Sacramento River sub-basin includes portions of the Barkley Mountain, Deer Creek, and Lyonsville hydrologic areas.

The Eel River HU is associated with the Eel River watershed. The headwaters are in the Mendocino National Forest and water flows toward the coast, south of the city of Eureka. The Eel River is about 200 miles long and is a large producer of salmon and steelhead in California (Water Education Foundation 2021). The part of the Eel River HU that lies within the Thomes Creek-Sacramento River sub-basin includes a portion of the Middle Fork Eel River hydrologic area.

The part of the Feather River HU that lies within the Thomes Creek-Sacramento River sub-basin includes a portion of the North Fork Feather hydrologic area.

The part of the Shasta Bally HU that lies within the Thomes Creek-Sacramento River sub-basin includes a portion of the Cottonwood Creek hydrologic area.

The part of the Stony Creek HU that lies within the Thomes Creek-Sacramento River sub-basin includes portions of the Newville and Western Glenn hydrologic areas.

The part of the Tehama HU that lies within the Thomes Creek-Sacramento River sub-basin includes a portion of the Red Bluff hydrologic area.

The part of the Whitmore HU that lies within the Thomes Creek-Sacramento River sub-basin includes a portion of the Manton hydrologic area.

### **Upper Bear Sub-basin**

The Upper Bear sub-basin drains an area of 303,546 acres (474 square miles) and includes 2,250 rivers and streams that traverse 1,527 miles. As noted in Table D-1, the Upper Bear sub-basin includes portions of the American River, Bear River, Marysville, Valley-American, and Yuba River HUs. A description of the American River HU is provided in the Lower American sub-basin section. Descriptions of the Bear River, Valley-American, and Yuba River HUs are provided in the Honcut Headwaters-Lower Feather sub-basin section. A description of the Marysville HU is provided in the Butte Creek sub-basin section.

The part of the American River HU that lies within the Upper Bear sub-basin includes portions of the Foothill Drain and North Fork American hydrologic areas.

The part of the Bear River HU that lies within the Upper Bear sub-basin includes portions of the Dry Creek, Reeds Creek, and Upper Bear hydrologic areas.

The part of the Marysville HU that lies within the Upper Bear sub-basin includes portions of the Lower Bear River and Olivehurst hydrologic areas.

The part of the Valley-American HU that lies within the Upper Bear sub-basin includes a portion of the Coon-American hydrologic area.

The part of the Yuba River HU that lies within the Upper Bear sub-basin includes portions of the Nevada City, South Yuba, and Ure Mountain hydrologic areas.



### **Upper Coon-Upper Auburn Sub-basin**

The Upper Coon-Upper Auburn sub-basin drains an area of 277,772 acres (434 square miles) and includes 1,078 rivers and streams that traverse 1,195 miles. As noted in Table D-1, the Upper Coon-Upper Auburn sub-basin includes portions of the American River, Bear River, Marysville, Valley-American, and Valley Putah-Cache HUs. A description of the American River HU is provided in the Lower American sub-basin section. Descriptions of the Bear River and Valley-American HUs are provided in the Honcut Headwaters-Lower Feather sub-basin section. A description of the Marysville HU is provided in the Butte Creek sub-basin section. A description of the Valley Putah-Cache HU is provided in the Lower Sacramento sub-basin section.

The part of the American River HU that lies within the Upper Coon-Upper Auburn sub-basin includes portions of the Foothill Drain and North Fork American hydrologic areas.

The part of the Bear River HU that lies within the Upper Coon-Upper Auburn sub-basin includes a portion of the Upper Bear hydrologic area.

The part of the Marysville HU that lies within the Upper Coon-Upper Auburn sub-basin includes portions of the Lower Bear River and Olivehurst hydrologic areas.

The part of the Valley-American HU that lies within the Upper Coon-Upper Auburn sub-basin includes portions of the Coon-American and Morrison Creek hydrologic areas.

The part of the Valley Putah-Cache HU that lies within the Upper Coon-Upper Auburn sub-basin includes a portion of the Lower Putah Creek hydrologic area.

### **Upper Yuba Sub-basin**

The Upper Yuba sub-basin drains an area of 860,756 acres (1,345 square miles) and includes 22,416 rivers and streams that traverse 7,478 miles. As noted in Table D-1, the Upper Yuba sub-basin includes portions of the American River, Bear River, Feather River, Little Truckee River, Marysville, Truckee River, and Yuba River HUs. A description of the American River HU is provided in the Lower American sub-basin section. Descriptions of the Bear River and Yuba River HUs are provided in the Honcut Headwaters-Lower Feather sub-basin section. A description of the Feather River HU is provided in the Big Chico Creek-Sacramento River sub-basin section. A description of the Marysville HU is provided in the Butte Creek sub-basin section. A description of the Truckee River HU is provided in the North Fork American sub-basin section.

The part of the American River HU that lies within the Upper Yuba sub-basin includes a portion of the North Fork American hydrologic area.

The part of the Bear River HU that lies within the Upper Yuba sub-basin includes portions of the Dry Creek, Reeds Creek, and Upper Bear hydrologic areas.

The part of the Feather River HU that lies within the Upper Yuba sub-basin includes portions of the Bloomer Hill, Middle Fork Feather, and South Fork Feather hydrologic areas.

The Little Truckee River HU is associated with the largest tributary to the Truckee River, the Little Truckee River. Headwaters are located north of Perazzo Creek and flow east and southeast to Stampede Reservoir and Boca Reservoir before feeding into the larger Truckee River (Sacramento River Watershed Program 2021).

The part of the Marysville HU that lies within the Upper Yuba sub-basin includes portions of the Lower Feather River, Lower Yuba River, and Olivehurst hydrologic areas.

The part of the Truckee River HU that lies within the Upper Yuba sub-basin includes a portion of the Truckee River hydrologic area.

The part of the Yuba River HU that lies within the Upper Yuba sub-basin includes portions of the Middle Yuba, Nevada City, North Yuba, Olive Hill, South Honcut Creek, South Yuba, and Ure Mountain hydrologic areas.

### **Crosswalk: HUC-8s to HUs**

The SAMNA Reporting Tool expresses the landscape in terms of USGS HUC-8 sub-basins (Caltrans 2021; USGS 2014). However, SWRCB considers beneficial uses in terms of HUs (California Department of Water Resources 2016). Table D-1 provides a crosswalk between the HUC-8 and HU classification systems for the GAI.



**Table D-1. Crosswalk Table of HUC-8 Sub-basins with HUs in the GAI**

HUC-8 #	HUC-8 Name	HUC-8 Acreage <sup>a</sup>	HU #	HU Name	HU Acreage <sup>a</sup>
18020157	Big Chico Creek-Sacramento River	609,427	523	Ball Mountain	246,471
18020157	Big Chico Creek-Sacramento River	609,427	521	Butte Creek	158,419
18020157	Big Chico Creek-Sacramento River	609,427	520	Colusa Basin	1,516,902
18020157	Big Chico Creek-Sacramento River	609,427	509	Eastern Tehama	373,529
18020157	Big Chico Creek-Sacramento River	609,427	518	Feather River	287,211
18020157	Big Chico Creek-Sacramento River	609,427	522	Stony Creek	131,101
18020157	Big Chico Creek-Sacramento River	609,427	504	Tehama	694,906
18020158	Butte Creek	524,577	521	Butte Creek	158,419
18020158	Butte Creek	524,577	520	Colusa Basin	1,516,902
18020158	Butte Creek	524,577	509	Eastern Tehama	373,529
18020158	Butte Creek	524,577	518	Feather River	287,211
18020158	Butte Creek	524,577	519	Feather River	54,803
18020158	Butte Creek	524,577	515	Marysville	259,148
18020158	Butte Creek	524,577	504	Tehama	694,906
18020159	Honcut Headwaters-Lower Feather	495,300	516	Bear River	257,356
18020159	Honcut Headwaters-Lower Feather	495,300	521	Butte Creek	158,419
18020159	Honcut Headwaters-Lower Feather	495,300	520	Colusa Basin	1,516,902
18020159	Honcut Headwaters-Lower Feather	495,300	515	Marysville	259,148
18020159	Honcut Headwaters-Lower Feather	495,300	519	Valley-American	492,918
18020159	Honcut Headwaters-Lower Feather	495,300	517	Yuba River	529,305
18020159	Honcut Headwaters-Lower Feather	495,300	518	Yuba River	417,302
18020111	Lower American	187,211	514	American River	1,089,076

HUC-8 #	HUC-8 Name	HUC-8 Acreage <sup>a</sup>	HU #	HU Name	HU Acreage <sup>a</sup>
18020111	Lower American	187,211	532	Middle Sierra	129,039
18020111	Lower American	187,211	531	North Valley Floor	2,62,716
18020111	Lower American	187,211	519	Valley-American	492,918
18020163	Lower Sacramento	786,273	520	Colusa Basin	1,516,902
18020163	Lower Sacramento	786,273	531	North Valley Floor	262,716
18020163	Lower Sacramento	786,273	512	Putah Creek	23,670
18020163	Lower Sacramento	786,273	510	Sacramento Delta	289,458
18020163	Lower Sacramento	786,273	544	San Joaquin Delta	433,312
18020163	Lower Sacramento	786,273	207	Suisun	116,736
18020163	Lower Sacramento	786,273	560	Upper Elmira	64,973
18020163	Lower Sacramento	786,273	519	Valley-American	492,918
18020163	Lower Sacramento	786,273	511	Valley Putah-Cache	498,605
18020128	North Fork American	648,089	514	American River	1,089,076
18020128	North Fork American	648,089	515	American River	223,219
18020128	North Fork American	648,089	516	Bear River	257,356
18020128	North Fork American	648,089	634	Lake Tahoe	79,931
18020128	North Fork American	648,089	635	Truckee River	49,442
18020128	North Fork American	648,089	517	Yuba River	539,305
18020155	Paynes Creek-Sacramento River	271,113	523	Ball Mountain	246,471
18020155	Paynes Creek-Sacramento River	271,113	510	Eastern Tehama	199,139
18020155	Paynes Creek-Sacramento River	271,113	508	Redding	407,881
18020155	Paynes Creek-Sacramento River	271,113	524	Shasta Bally	60,780
18020155	Paynes Creek-Sacramento River	271,113	504	Tehama	694,906
18020155	Paynes Creek-Sacramento River	271,113	507	Whitmore	98,940
18020104	Sacramento-Stone Corral	1,205,843	513	Cache Creek	52,195
18020104	Sacramento-Stone Corral	1,205,843	520	Colusa Basin	1,516,902
18020104	Sacramento-Stone Corral	1,205,843	561	Cortina	166,697
18020104	Sacramento-Stone Corral	1,205,843	562	Cortina	63,868



HUC-8 #	HUC-8 Name	HUC-8 Acreage <sup>a</sup>	HU #	HU Name	HU Acreage <sup>a</sup>
18020104	Sacramento-Stone Corral	1,205,843	522	Stony Creek	131,101
18020104	Sacramento-Stone Corral	1,205,843	504	Tehama	694,906
18020104	Sacramento-Stone Corral	1,205,843	560	Upper Elmira	64,973
18020104	Sacramento-Stone Corral	1,205,843	519	Valley-American	492,918
18020104	Sacramento-Stone Corral	1,205,843	511	Valley Putah-Cache	298,605
18020129	South Fork American	543,766	514	American River	1,089,076
18020129	South Fork American	543,766	634	Lake Tahoe	79,931
18020129	South Fork American	543,766	532	Middle Sierra	129,039
18020129	South Fork American	543,766	533	Middle Sierra	44,721
18020129	South Fork American	543,766	633	West Fork Carson River	14,534
18020156	Thomes Creek-Sacramento River	645,690	523	Ball Mountain	246,471
18020156	Thomes Creek-Sacramento River	645,690	509	Eastern Tehama	373,529
18020156	Thomes Creek-Sacramento River	645,690	510	Eastern Tehama	199,139
18020156	Thomes Creek-Sacramento River	645,690	112	Eel River	33,417
18020156	Thomes Creek-Sacramento River	645,690	518	Feather River	287,211
18020156	Thomes Creek-Sacramento River	645,690	524	Shasta Bally	60,780
18020156	Thomes Creek-Sacramento River	645,690	522	Stony Creek	131,101
18020156	Thomes Creek-Sacramento River	645,690	504	Tehama	694,906
18020156	Thomes Creek-Sacramento River	645,690	507	Whitmore	98,940
18020126	Upper Bear	303,546	514	American River	1,089,076
18020126	Upper Bear	303,546	515	American River	223,219
18020126	Upper Bear	303,546	516	Bear River	257,356
18020126	Upper Bear	303,546	515	Marysville	259,148
18020126	Upper Bear	303,546	519	Valley-American	492,918
18020126	Upper Bear	303,546	517	Yuba River	539,305

HUC-8 #	HUC-8 Name	HUC-8 Acreage <sup>a</sup>	HU #	HU Name	HU Acreage <sup>a</sup>
18020161	Upper Coon-Upper Auburn	277,772	514	American River	1,089,076
18020161	Upper Coon-Upper Auburn	277,772	515	American River	223,219
18020161	Upper Coon-Upper Auburn	277,772	516	Bear River	257,356
18020161	Upper coon-Upper Auburn	277,772	515	Marysville	259,148
18020161	Upper Coon-Upper Auburn	277,772	519	Valley-American	492,918
18020161	Upper Coon-Upper Auburn	277,772	511	Valley Putah-Cache	498,605
18020125	Upper Yuba	860,756	515	American River	223,219
18020125	Upper Yuba	860,756	516	Bear River	257,356
18020125	Upper Yuba	860,756	518	Feather River	287,211
18020125	Upper Yuba	860,756	636	Little Truckee River	25,441
18020125	Upper Yuba	860,756	515	Marysville	259,148
18020125	Upper Yuba	860,756	635	Truckee River	49,442
18020125	Upper Yuba	860,756	517	Yuba River	539,305
18020125	Upper Yuba	860,756	518	Yuba River	417,302

Source: Caltrans (2021)

<sup>a</sup> Numbers were rounded to the nearest whole number.



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## APPENDIX E: LIST OF 303(d) IMPAIRED WATERS

Section 303(d) of the CWA requires that every 2 years, each state submit to EPA a list of rivers, lakes, and reservoirs in the state for which pollution control or requirements have failed to meet water quality standards. Waterbodies in the GAI that are included on the Section 303(d) list of impaired waters, their impairments, and whether TMDLs have been established are provided in Table E-1 (SWRCB 2018).

**Table E-1. Impaired Waters in the GAI**

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Sacramento-Stone Corral	Butte Slough	Dichlorvos, Propanil (DCPA mono- and di-acide degrad), Dissolved Oxygen, Toxicity <sup>b</sup>	Required, not established yet	Yes
Sacramento-Stone Corral	Colusa Basin Drain	Diazinon, Malathion	Being addressed with action other than TMDL	Yes
Sacramento-Stone Corral	Colusa Basin Drain	Azinphos-methyl (Guthion), Carbofuran, Toxicity, Group A Pesticides, Low Dissolved Oxygen, Mercury, Indicator Bacteria, Dichlorodiphenyltrichloro-ethane ("DDT"), Dieldrin	Required, not established yet	Yes
Sacramento-Stone Corral	Feather River, Lower (Lake Oroville Dam to confluence with Sacramento River)	Polychlorinated biphenyls("PCBs"), Mercury, Group A Pesticides, Toxicity	Required, not established yet	Yes
Sacramento-Stone Corral	Feather River, Lower (Lake Oroville Dam to confluence with Sacramento River)	Chlorpyrifos	Being addressed with action other than TMDL	Yes
Sacramento-Stone Corral	Freshwater Creek (Little Valley to Salt Creek, Colusa County)	Indicator Bacteria	Required, not established yet	No
Sacramento-Stone Corral	Knights Landing Ridge Cut (Yolo County)	Dissolved Oxygen, Salinity	Required, not established yet	Yes
Sacramento-Stone Corral	Sacramento River (Red Bluff to Knights Landing)	Mercury, PCBs, Toxicity, DDT, Dieldrin	Required, not established yet	Yes
Sacramento-Stone Corral	Sacramento River (Knights Landing to the Delta)	Mercury, Dieldrin, DDT, Chlordane, PCBs, Toxicity	Required, not established yet	Yes

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Sacramento-Stone Corral	Sacramento Slough	Mercury, Dissolved Oxygen, Toxicity	Required, not established yet	Yes
Sacramento-Stone Corral	Sand Creek (Colusa County)	Dissolved Oxygen	Required, not established yet	Yes
Sacramento-Stone Corral	Spring Creek (Colusa County)	Diazinon, Chlorpyrifos	Being addressed with action other than TMDL	Yes
Sacramento-Stone Corral	Spring Creek (Colusa County)	Aldicarb, Dissolved Oxygen, Salinity, Toxicity	Required, not established yet	Yes
Sacramento-Stone Corral	Stone Corral Creek	Dissolved Oxygen	Required, not established yet	Yes
Sacramento-Stone Corral	Sutter Bypass	Mercury	Required, not established yet	Yes
Sacramento-Stone Corral	Sycamore Slough (Yolo County)	Dissolved Oxygen	Required, not established yet	Yes
Sacramento-Stone Corral	Walker Creek (Glenn County)	Chlorpyrifos	Being addressed with action other than TMDL	Yes
Sacramento-Stone Corral	Walker Creek (Glenn County)	Indicator Bacteria, Dissolved Oxygen, Toxicity	Required, not established yet	Yes
Lower American	American River, Lower (Nimbus Dam to confluence with Sacramento River)	Mercury, Toxicity, PBCs, Bifenthrin, Pyrethroids, Indicator Bacteria	Required, not established yet	Yes
Lower American	Arcade Creek	Diazinon, Chlorpyrifos	Being addressed with EPA-approved TMDL	Yes
Lower American	Arcade Creek	Copper, Malathion, Pyrethroids, Toxicity	Required, not established yet	Yes
Lower American	Chicken Ranch Slough	Chlorpyrifos, Diazinon	Being addressed with EPA-approved TMDL	Yes
Lower American	Chicken Ranch Slough	Toxicity, Pyrethroids	Required, not established yet	Yes
Lower American	Dry Creek (Placer and Sacramento Counties)	Indicator Bacteria	Required, not established yet	No



Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Lower American	Miners Ravine (Placer County)	Dissolved Oxygen	Required, not established yet	Yes
Lower American	Natomas East Main Drainage Canal (Steelhead Creek, downstream of confluence with Arcade Creek)	PCBs, Mercury	Required, not established	Yes
Lower American	Natomas East Main Drainage Canal (Steelhead Creek, downstream of confluence with Arcade Creek)	Diazinon	Being addressed with EPA-approved TMDL	Yes
Lower American	Natomas East Main Drainage Canal (Steelhead Creek, upstream of confluence with Arcade Creek)	PCBs	Required, not established yet	Yes
Lower American	Strong Ranch Slough	Chlorpyrifos, Diazinon	Being addressed with EPA-approved TMDL	Yes
Lower American	Strong Ranch Slough	Toxicity, Pyrethroids	Required, not established yet	Yes
Upper Yuba	Castle Creek, Upper (Nevada County)	pH	Required, not established yet	Yes
Upper Yuba	Cherokee Creek (Sierra County)	pH	Required, not established yet	Yes
Upper Yuba	Deer Creek (from Deer Creek Reservoir to Lake Wildwood, Nevada County)	Mercury, Indicator Bacteria, pH	Required, not established yet	Yes
Upper Yuba	Deer Creek (Nevada County, above Scotts Flat Reservoir to the confluence of Deer Creek North and South Forks)	pH	Required, not established yet	Yes
Upper Yuba	Gold Run (Nevada County)	Mercury	Required, not established yet	Yes
Upper Yuba	Humbug Creek (Digging Creek to Yuba River, South Fork)	Zinc, Sedimentation/Siltation, Mercury, Copper, Chromium, Iron, pH	Required, not established yet	Yes

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Upper Yuba	Kanaka Creek	Arsenic	Required, not established yet	Yes
Upper Yuba	Kentucky Creek (Nevada County)	Iron, Dissolved Oxygen, pH	Required, not established yet	Yes
Upper Yuba	Little Deer Creek	Mercury, pH	Required, not established yet	Yes
Upper Yuba	Oregon Creek (Yuba and Sierra Counties)	Copper, Iron	Required, not established yet	Yes
Upper Yuba	Poorman Creek (Nevada County)	Copper, pH	Required, not established yet	Yes
Upper Yuba	Rock Creek (Nevada County)	pH	Required, not established	Yes
Upper Yuba	Scotchman Creek (Nevada County)	Copper, Iron, pH	Required, not established yet	Yes
Upper Yuba	Shady Creek (Nevada County)	Copper, Iron, pH	Required, not established yet	Yes
Upper Yuba	Spring Creek (Nevada County)	Copper, Iron	Required, not established yet	Yes
Upper Yuba	Squirrel Creek (Nevada County)	Indicator Bacteria	Required, not established yet	No
Upper Yuba	Yuba River (confluence of North and Middle Yuba Rivers to Englebright Lake)	Mercury, Chromium	Required, not established yet	Yes
Upper Yuba	Yuba River (Englebright Lake Dam to Feather River, Lower)	Mercury, Copper	Required, not established yet	Yes
Upper Yuba	Yuba River, North Fork	Mercury	Required, not established yet	Yes
Upper Yuba	Yuba River, South Fork (Headwaters to Spaulding Lake)	pH, Copper	Required, not established yet	Yes
Upper Yuba	Yuba River, South Fork (Spaulding Lake to Englebright Lake)	Mercury, Water Temperature, Chromium, Copper, Iron	Required, not established yet	Yes
Upper Bear	Bear River, Lower (below Camp Far West Reservoir)	Copper, Mercury	Required, not established yet	Yes



Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Upper Bear	Bear River, Lower (below Camp Far West Reservoir)	Chlorpyrifos	Being addressed with EPA-approved TMDL	Yes
Upper Bear	Bear River, Upper (from Combie Lake to Camp Far West Reservoir, Nevada and Placer Counties)	Mercury	Required, not established yet	Yes
Upper Bear	French Ravine	Indicator Bacteria	Required, not established yet	No
Upper Bear	Wolf Creek (Nevada County)	Indicator Bacteria	Required, not established yet	No
Upper Bear	Yankee Slough (Placer and Sutter Counties)	Chlorpyrifos	Being addressed with EPA-approved TMDL	Yes
Upper Bear	Yankee Slough (Placer and Sutter Counties)	Toxicity	Required, not established yet	Yes
North Fork American	American River, North Fork	Mercury	Required, not established yet	Yes
South Fork American	American River, South Fork (below Slab Creek Reservoir to Folsom Lake)	Mercury	Required, not established yet	Yes
South Fork American	Coon Hollow Creek (El Dorado County)	Dichlorodiphenyldichloroethylene ("DDE"), Toxicity	Required, not established yet	Yes
South Fork American	North Canyon Creek (El Dorado County)	Indicator Bacteria, Toxicity	Required, not established yet	Yes
Paynes Creek-Sacramento River	Sacramento River (Cottonwood Creek to Red Bluff)	Toxicity, Mercury	Required, not established yet	Yes
Thomes Creek-Sacramento River	Coyote Creek (Tehama County)	Dissolved Oxygen	Required, not established	Yes
Thomes Creek-Sacramento River	Mill Creek (Tehama County)	Mercury	Required, not established yet	Yes

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Thomes Creek-Sacramento River	Sacramento River (Cottonwood Creek to Red Bluff)	Toxicity, Mercury	Required, not established yet	Yes
Thomes Creek-Sacramento River	Sacramento River (Red Bluff to Knights Landing)	Mercury, PCBs, Toxicity, DDT, Dieldrin	Required, not established yet	Yes
Big Chico Creek-Sacramento River	Big Chico Creek (Butte and Tehama Counties)	Mercury	Required, not established yet	Yes
Big Chico Creek-Sacramento River	Burch Creek (Tehama County)	Toxicity	Required, not established yet	Yes
Big Chico Creek-Sacramento River	China Slough (from Leininger Road to Sacramento River, Tehama County)	Toxicity	Required, not established yet	Yes
Big Chico Creek-Sacramento River	Mud Creek (Butte County)	Toxicity	Required, not established yet	Yes
Big Chico Creek-Sacramento River	Pine Creek (Butte County)	Toxicity	Required, not established yet	Yes
Big Chico Creek-Sacramento River	Pine Creek (Butte County)	Chlorpyrifos	Being addressed with action other than TMDL	Yes
Big Chico Creek-Sacramento River	Sacramento River (Red Bluff to Knights Landing)	Mercury, PCBs, Toxicity, DDT, Dieldrin	Required, not established yet	Yes
Butte Creek	Butte Creek (Butte County)	pH, Mercury	Required, not established yet	Yes
Butte Creek	Butte Slough	Dichlorvos, Toxicity, Propanil (DCPA mono- and di-acid degrad), Dissolved Oxygen	Required, not established yet	Yes

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Butte Creek	Hamilton Slough (from South of Thermalito Afterbay to south of Biggs, Butte County)	Toxicity	Required, not established yet	Yes
Butte Creek	Main Drainage Canal	Dissolved Oxygen	Required, not established yet	Yes
Butte Creek	Main Drainage Canal	Diazinon	Being addressed by action other than TMDL	Yes
Butte Creek	Sacramento River (Red Bluff to Knights Landing)	Mercury, PCBs, Toxicity, DDT, Dieldrin	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Butte Slough	Dichlorvos, Toxicity, Propanil (DCPA mono- and di-acid degrad), Dissolved Oxygen	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Feather River, Lower (Lake Oroville Dam to confluence with Sacramento River)	PCBs, Mercury, Group A Pesticides, Toxicity	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Feather River, Lower (Lake Oroville Dam to confluence with Sacramento River)	Chlorpyrifos	Being addressed by action other than TMDL	Yes
Honcut Headwaters-Lower Feather	Gilsizer Slough (from Yuba City to downstream of Township Road, Sutter County)	pH, Oxyfluorfen, Dissolved Oxygen, Diuron, Toxicity	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Gilsizer Slough (from Yuba City to downstream of Township Road, Sutter County)	Diazinon	Being addressed with action other than TMDL	Yes
Honcut Headwaters-Lower Feather	Hamilton Slough (from south of Thermalito Afterbay to south of Biggs, Butte County)	Toxicity	Required, not established	Yes
Honcut Headwaters-Lower Feather	Honcut Creek (Butte and Yuba Counties)	Dissolved Oxygen, Indicator Bacteria	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Jack Slough	Diazinon	Being addressed with action other than TMDL	Yes



Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Honcut Headwaters-Lower Feather	Jack Slough	Toxicity, Dissolved Oxygen	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Live Oak Slough	Dissolved Oxygen, Oxyfluorfen	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Live Oak Slough	Diazinon	Being addressed with action other than TMDL	Yes
Honcut Headwaters-Lower Feather	Morrison Slough	Diazinon	Being addressed with action other than TMDL	Yes
Honcut Headwaters-Lower Feather	Simmerly Slough (Yuba County)	Toxicity	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Snake River (Butte and Sutter Counties)	Chlorpyrifos	Being addressed with action other than TMDL	Yes
Honcut Headwaters-Lower Feather	Snake River (Butte and Sutter Counties)	Toxicity, Indicator Bacteria	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Sutter Bypass	Mercury	Required, not established yet	Yes
Honcut Headwaters-Lower Feather	Wadsworth Canal	Diazinon, Chlorpyrifos	Being addressed with action other than TMDL	Yes
Honcut Headwaters-Lower Feather	Yuba River (Englebright Lake Dam to Feather River, Lower)	Mercury, Copper	Required, not established yet	Yes
Upper Coon-Upper Auburn	American River, Lower (Nimbus Dam to confluence with Sacramento River)	Mercury, Toxicity, PCBs, Bifenthrin, Pyrethroids, Indicator Bacteria	Required, not established yet	Yes
Upper Coon-Upper Auburn	Coon Creek (from confluence of Orr and Dry Creeks to East Side Canal, Placer and Sutter Counties)	Indicator Bacteria, Total Ammonia as N	Required, not established yet	Yes

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Upper Coon-Upper Auburn	Coon Creek, Lower (from Pacific Avenue to Main Canal, Sutter County)	Toxicity, Indicator Bacteria, Dissolved Oxygen	Required, not established yet	Yes
Upper Coon-Upper Auburn	Curry Creek (Placer and Sutter Counties)	Toxicity, Pyrethroids	Required, not established yet	Yes
Upper Coon-Upper Auburn	Kaseberg Creek (tributary to Pleasant Grove Creek, Placer County)	Pyrethroids, Bifenthrin, Cyfluthrin, Lambda Cyhalothrin, Cypermethrin, Deltamethrin	Required, not established yet	Yes
Upper Coon-Upper Auburn	Kaseberg Creek, unnamed eastern tributary (from Green Grove Lane to Del Webb Boulevard)	Bifenthrin, Cyfluthrin, Lambda Cyhalothrin, Cypermethrin, Toxicity	Required, not established yet	Yes
Upper Coon-Upper Auburn	Kaseberg Creek, unnamed southeastern tributary (from Silverado Middle School to Timber Creek Golf Course, Placer County)	Bifenthrin, Cyfluthrin, Lambda Cyhalothrin, Cypermethrin, Deltamethrin, Toxicity	Required, not established yet	Yes
Upper Coon-Upper Auburn	Kaseberg Creek, unnamed southern tributary (Baseline Road to Timber Creek Golf Course, Placer County)	Bifenthrin, Cyfluthrin, Lambda Cyhalothrin, Cypermethrin, Deltamethrin, Toxicity	Required, not established yet	Yes
Upper Coon-Upper Auburn	Natomas Cross Canal (Sutter County)	Mercury	Required, not established yet	Yes
Upper Coon-Upper Auburn	Pleasant Grove Creek	Pyrethroids, Dissolved Oxygen, Toxicity, Bifenthrin, Cypermethrin	Required, not established yet	Yes
Upper Coon-Upper Auburn	Pleasant Grove Creek, South Branch	Pyrethroids, Toxicity, Dissolved Oxygen, Bifenthrin, Cyfluthrin, Cypermethrin, Deltamethrin	Required, not established yet	Yes
Upper Coon-Upper Auburn	Pleasant Grove Creek, South Branch, unnamed southeastern tributary (from east of Sierra View County Club to confluence with Pleasant Grove Creek, South Branch)	Bifenthrin, Cyfluthrin, Cypermethrin, Toxicity	Required, not established yet	Yes

Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Upper Coon-Upper Auburn	Pleasant Grove Creek, unnamed northern tributary (from Greywood Circle to confluence with Pleasant Grove Creek)	Cyfluthrin, Cypermethrin, Toxicity	Required, not established yet	Yes
Upper Coon-Upper Auburn	Pleasant Grove Creek, unnamed northern tributary (from Mt. Tamalpais Drive to confluence with Pleasant Grove Creek)	Bifenthrin, Cyfluthrin, Lambda Cyhalothrin, Cypermethrin, Deltamethrin, Total Permethrin, Toxicity	Required, not established	Yes
Upper Coon-Upper Auburn	Rock Creek (Placer County)	Indicator Bacteria	Required, not established yet	No
Upper Coon-Upper Auburn	Sacramento River (Knights Landing to the Delta)	Mercury, Dieldrin, DDT, Chlordane, PCBs, Toxicity	Required, not established	Yes
Lower Sacramento	Duck Slough (in Delta Waterways, northern portion)	Chlorpyrifos	Being addressed with EPA-approved TMDL	Yes
Lower Sacramento	Elder Creek	Chlorpyrifos, Diazinon	Being addressed with EPA-approved TMDL	Yes
Lower Sacramento	Elder Creek	Toxicity, Pyrethroids	Required, not established	Yes
Lower Sacramento	Elk Grove Creek	Diazinon	Being addressed with EPA-approved TMDL	Yes
Lower Sacramento	Knights Landing Ridge Cut (Yolo County)	Dissolved Oxygen, Salinity	Required, not established yet	Yes
Lower Sacramento	Morrison Creek	Diazinon	Being addressed with EPA-approved TMDL	Yes
Lower Sacramento	Morrison Creek	Toxicity, Pyrethroids, Pentachlorophenol ("PCP")	Required, not established yet	Yes
Lower Sacramento	Sacramento River (Knights Landing to the Delta)	Mercury, Dieldrin, DDT, Chlordane, PCBs, Toxicity	Required, not established yet	Yes
Lower Sacramento	Sweany Creek (Solano County)	Toxicity	Required, not established	Yes



Sub-basin	Impaired Water	Impairment	TMDL Status	Relevant to RAMNA? <sup>a</sup>
Lower Sacramento	Tule Canal (Yolo County)	Boron, Indicator Bacteria, Salinity	Required, not established yet	Yes
Lower Sacramento	Ulati Creek (Solano County)	Toxicity, Diuron	Required, not established yet	Yes
Lower Sacramento	Ulati Creek (Solano County)	Diazinon, Chlorpyrifos	Being addressed with EPA-approved TMDL	Yes
Lower Sacramento	Willow Slough (Yolo County)	Toxicity, Boron	Required, not established yet	Yes
Lower Sacramento	Willow Slough Bypass (Yolo County)	Indicator Bacteria, Boron, Selenium, Malathion, Specific Conductivity, Toxicity	Required, not established	Yes
Lower Sacramento	Willow Slough Bypass (Yolo County)	Chlorpyrifos, Diuron	Being addressed by action other than TMDL	Yes
Lower Sacramento	Winters Canal (Yolo County)	Diazinon	Being addressed with action other than TMDL	Yes

Source: SWRCB (2018)

<sup>a</sup> TMDLs relevant to the RAMNA reflect impaired aquatic resource-related beneficial uses.

<sup>b</sup> Refers to toxicity to aquatic organisms

## References

SWRCB (State Water Resources Control Board). 2018. "2014 and 2016 California Integrated Report." Clean Water Act Sections 303(d) and 305(b). Accessed March 12, 2021.  
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## APPENDIX F: AQUATIC RESOURCE LOCATIONS

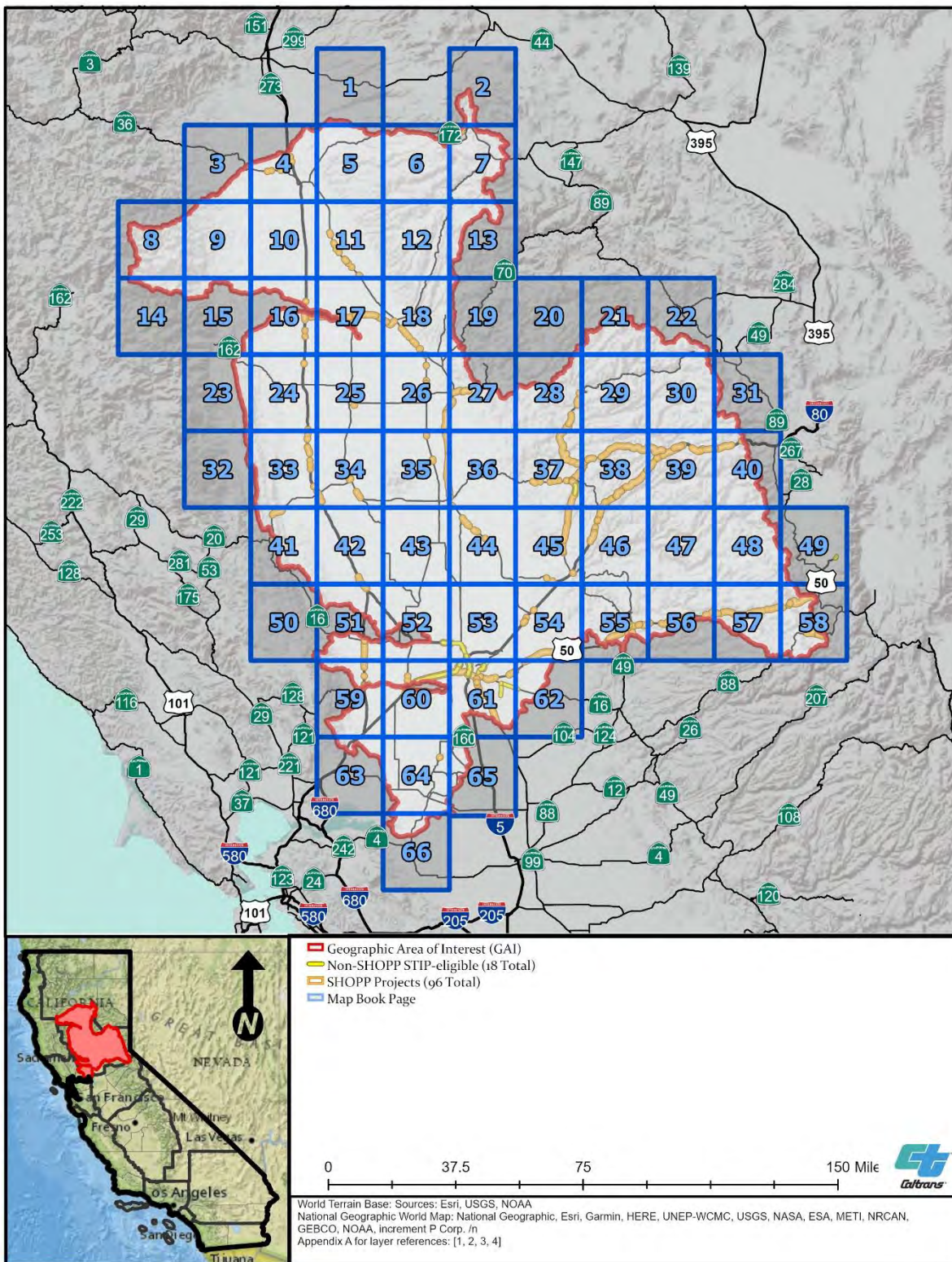
Aquatic resource locations are shown by HUC-8 sub-basin and HU in the following maps, which also include major landmarks for perspective. These locations were excerpted from the SAMNA Reporting Tool's water and wetland layers (Caltrans 2021a, 2021b). Hydrologic units are described in Appendix D, which includes a crosswalk table of HUC-8 subbasins and HUs. These 66 maps correspond with the land cover maps in Appendix B.

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 National Wetlands Inventory (2017) and the San Francisco Estuary Institute California Aquatic Resource Inventory (2018) are the only known datasets that include the distribution, extent, and types of aquatic resources in the GAI, and the SAMNA Reporting Tool relies upon them (Caltrans 2021a, 2021b).

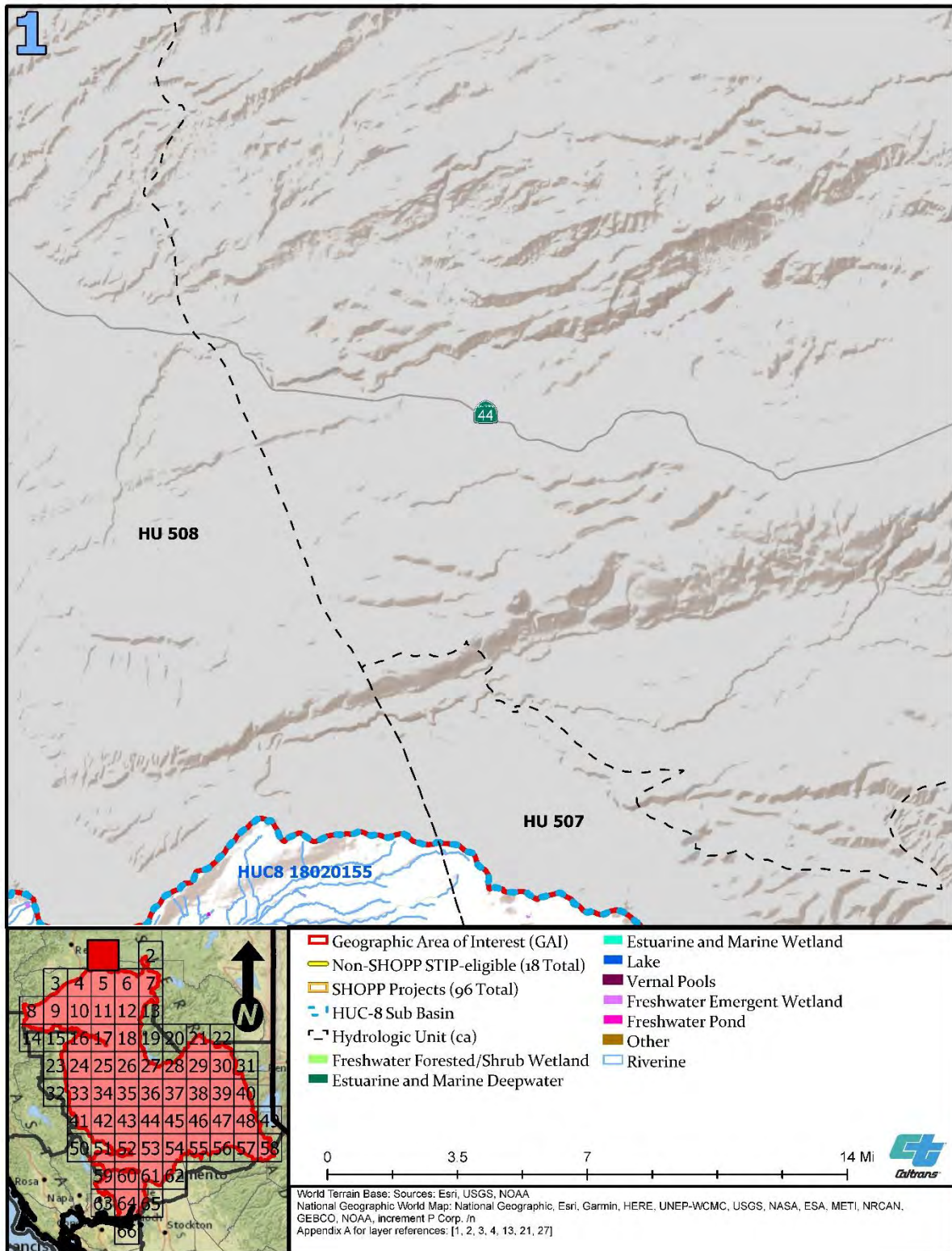
### References

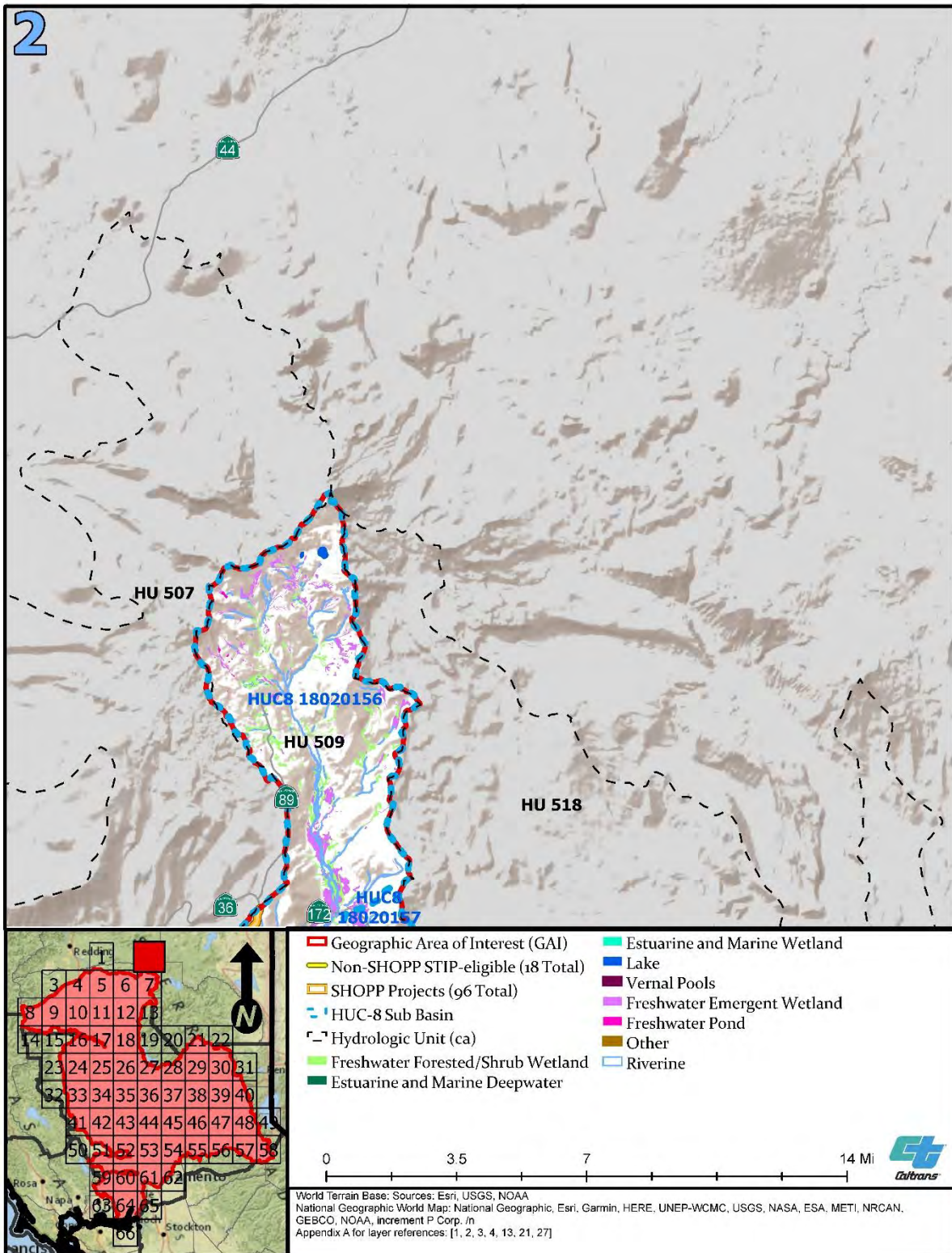
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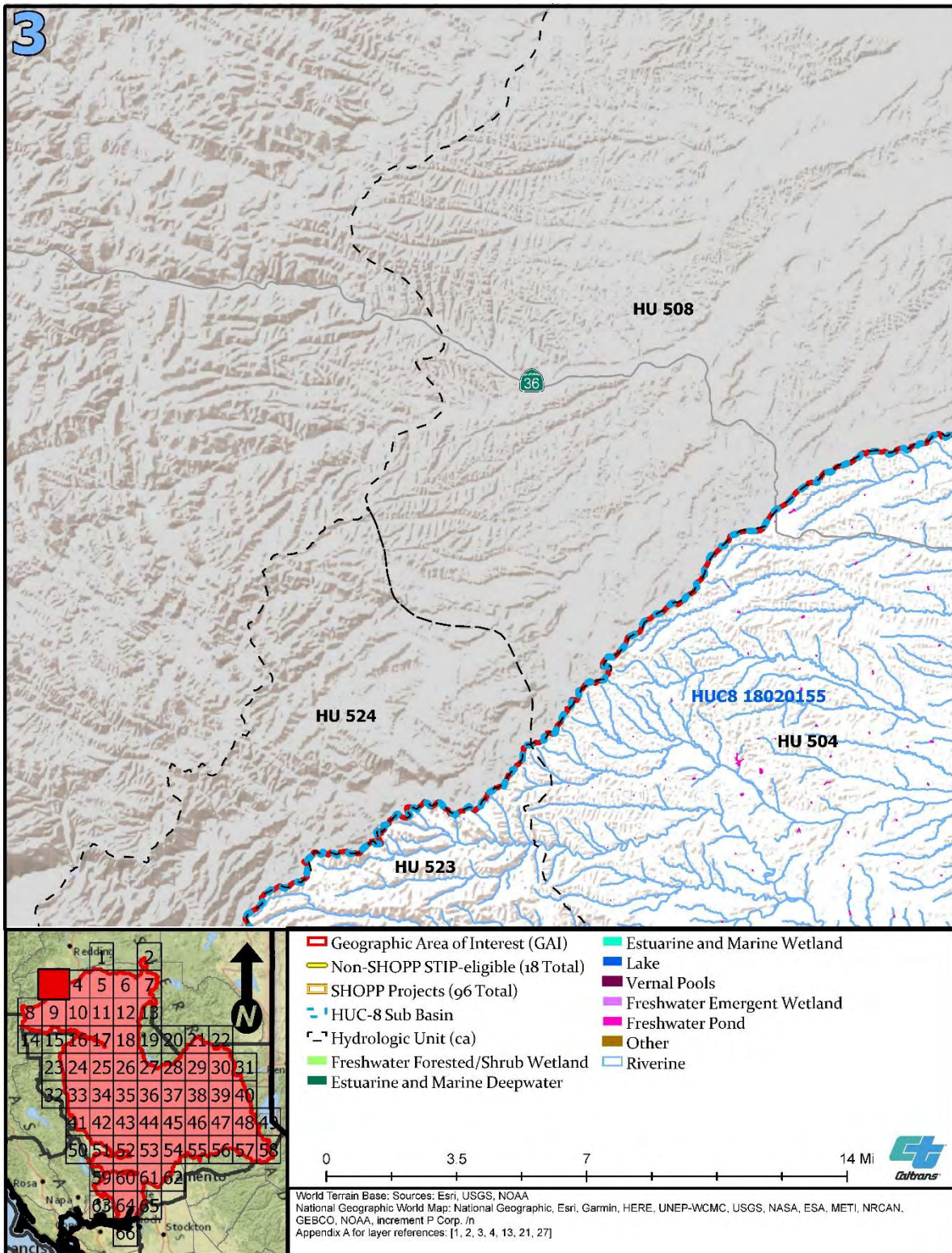




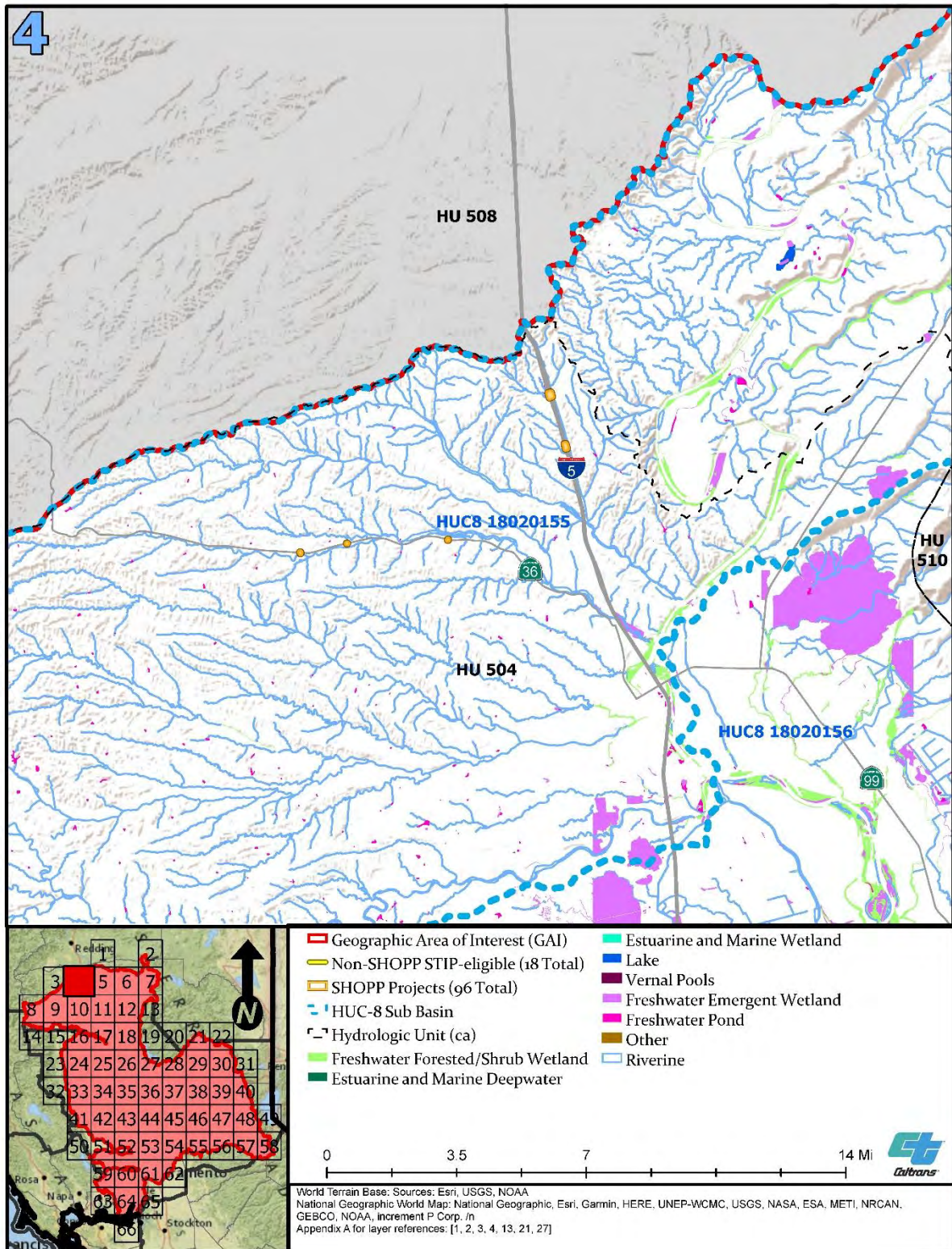




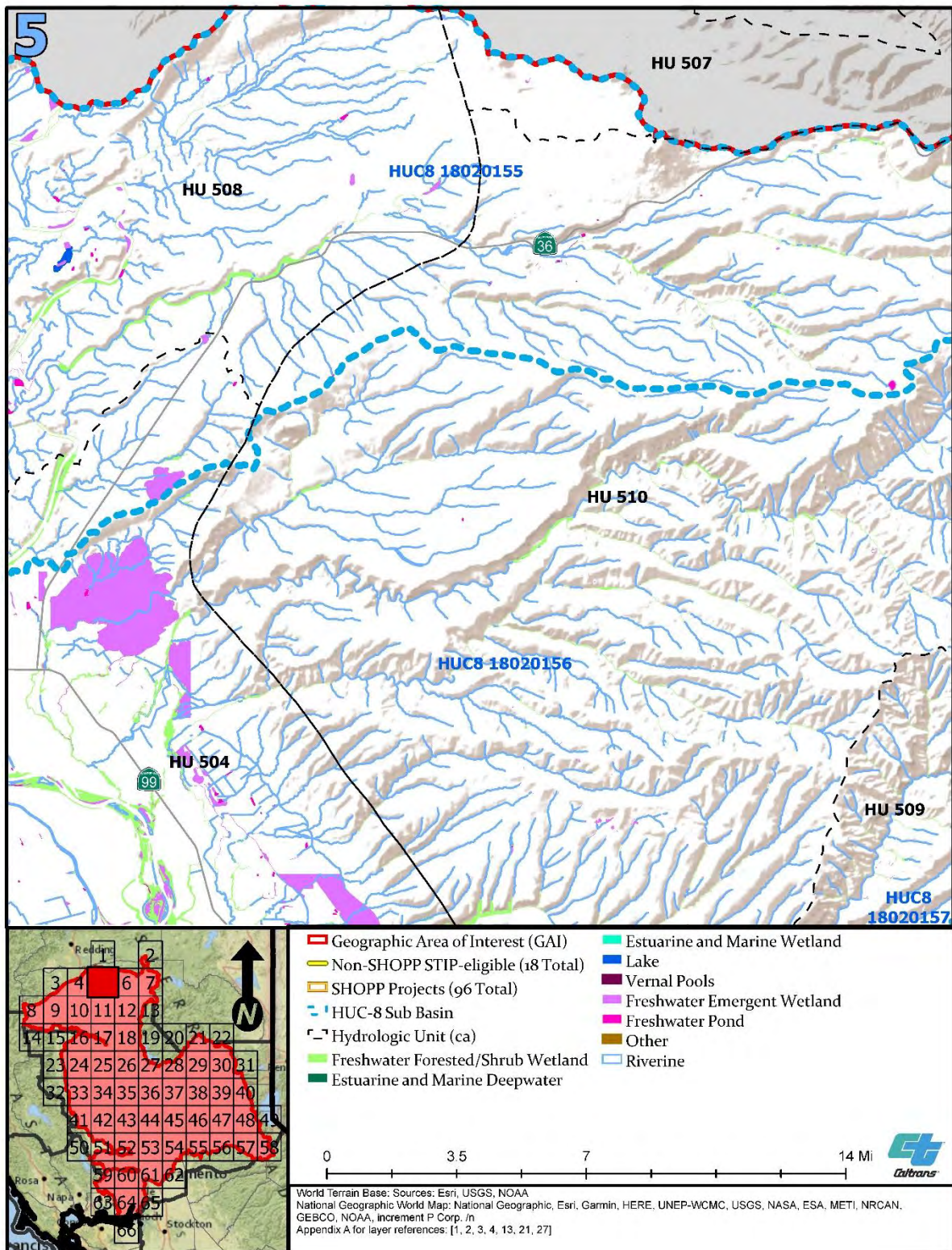




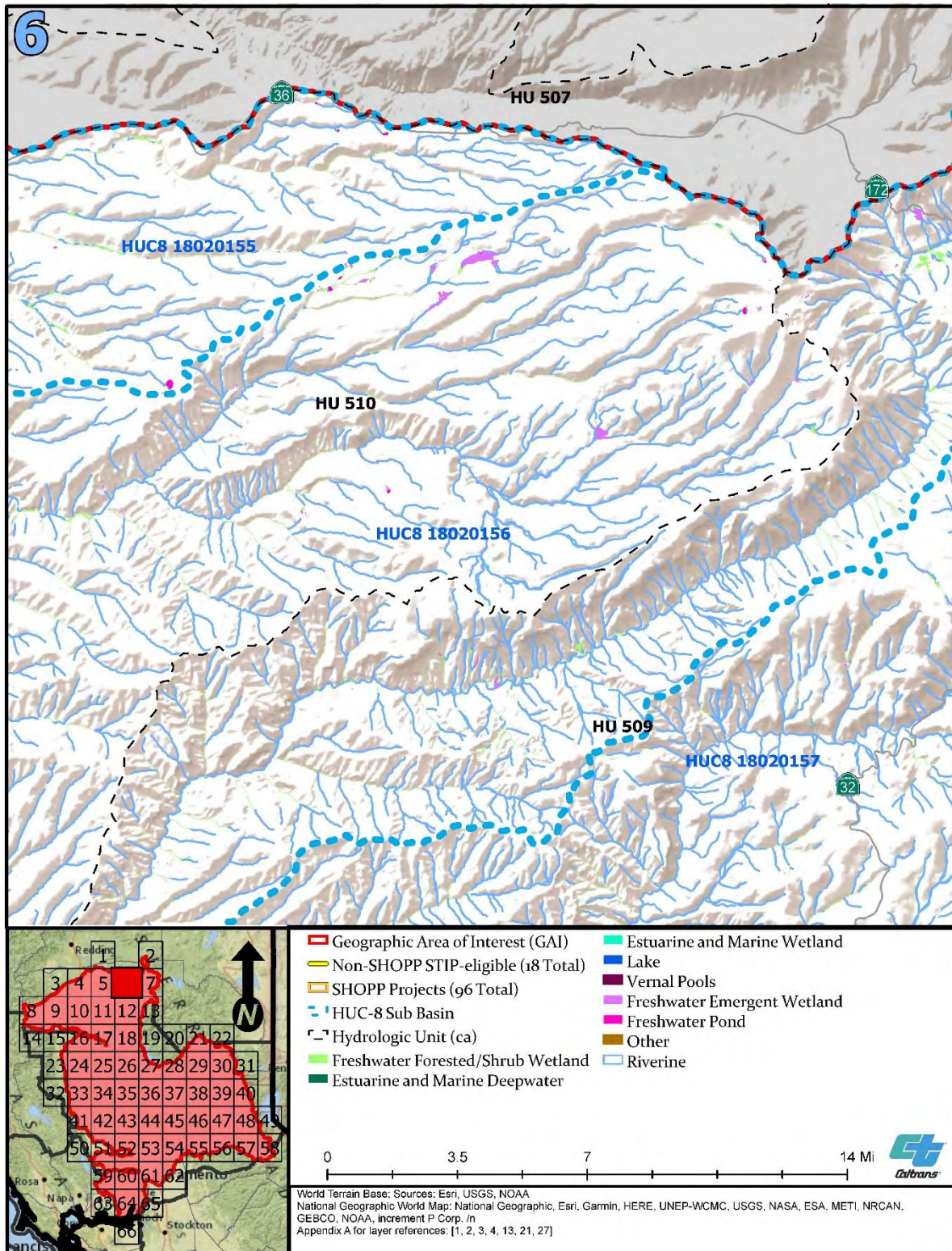




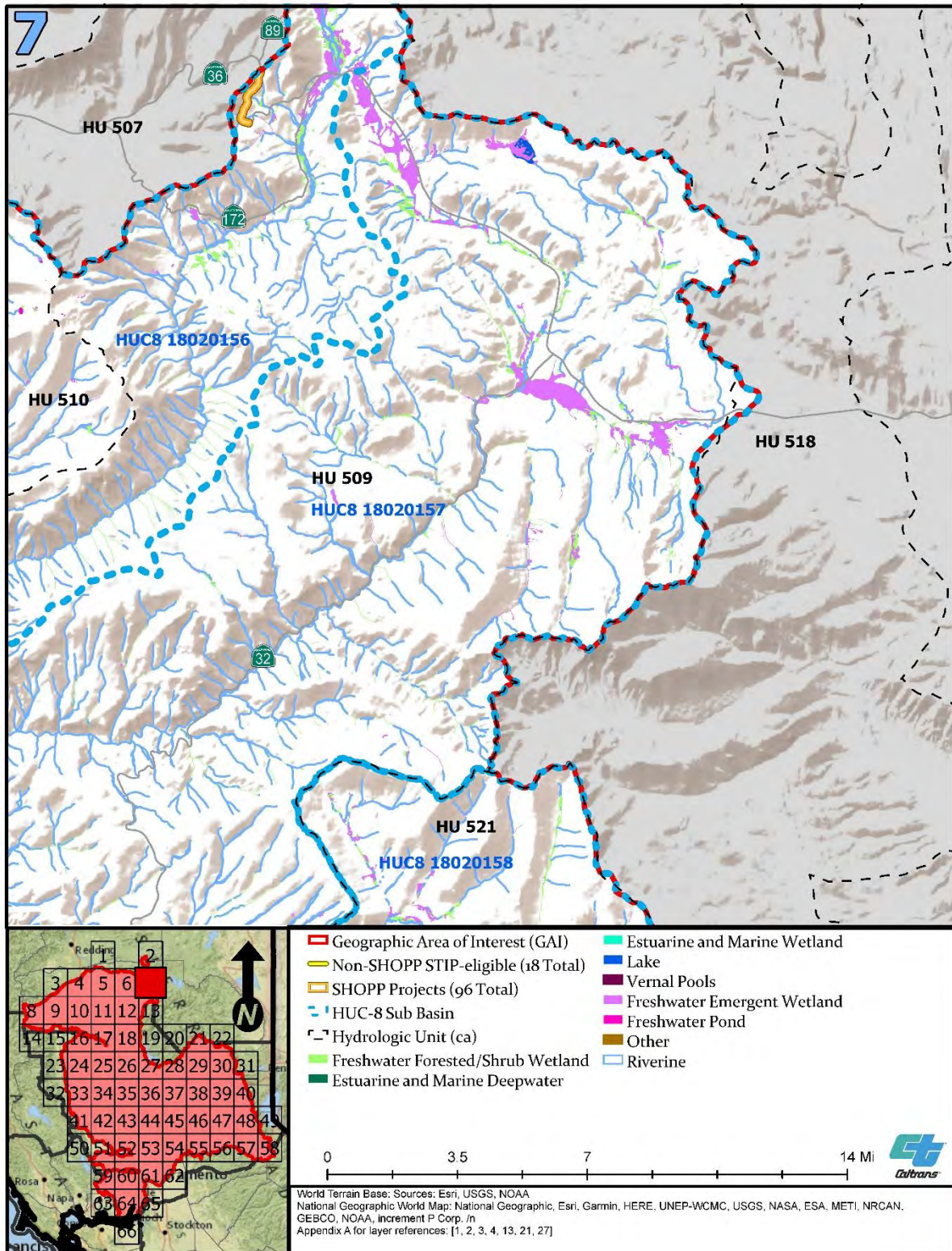




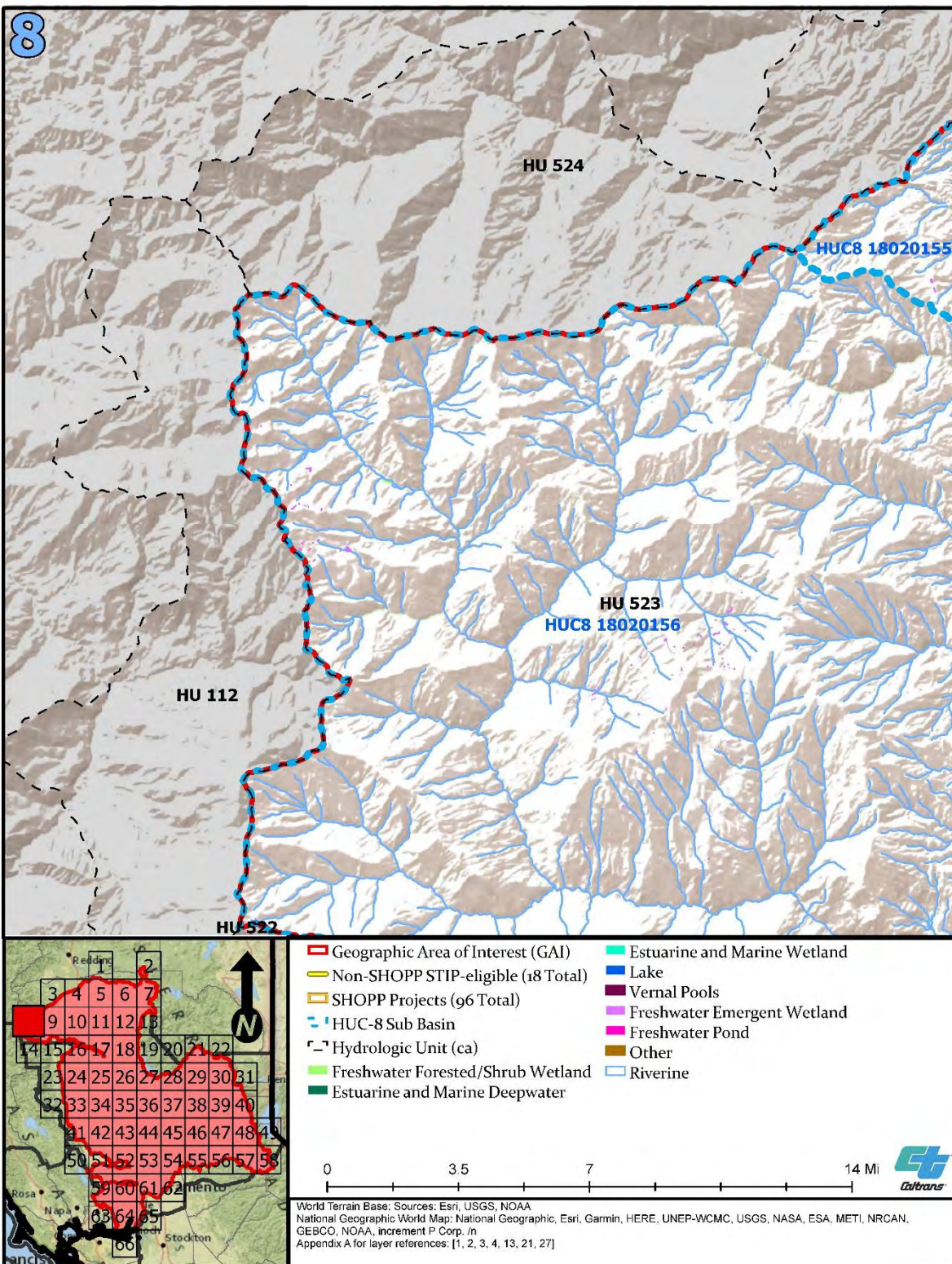




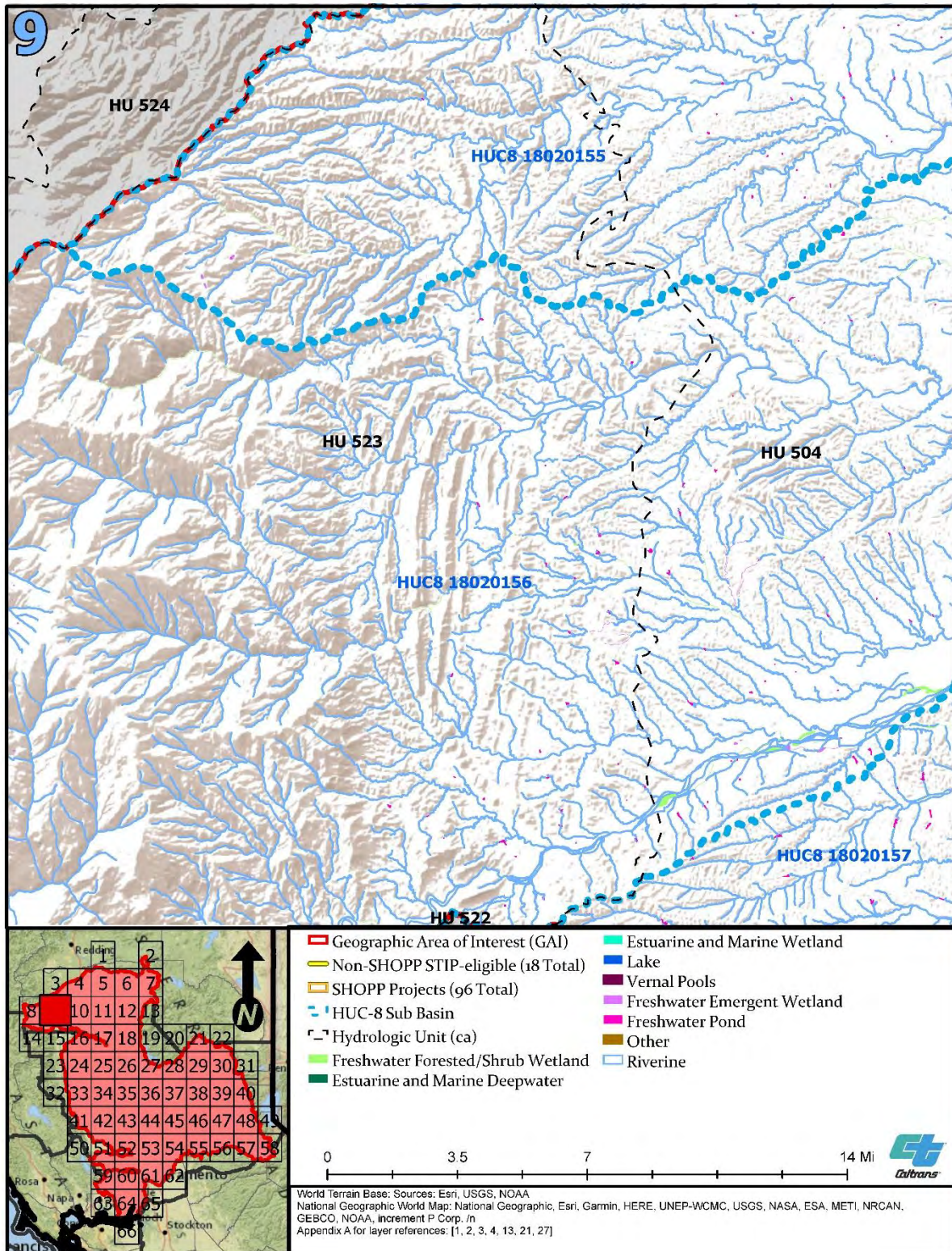




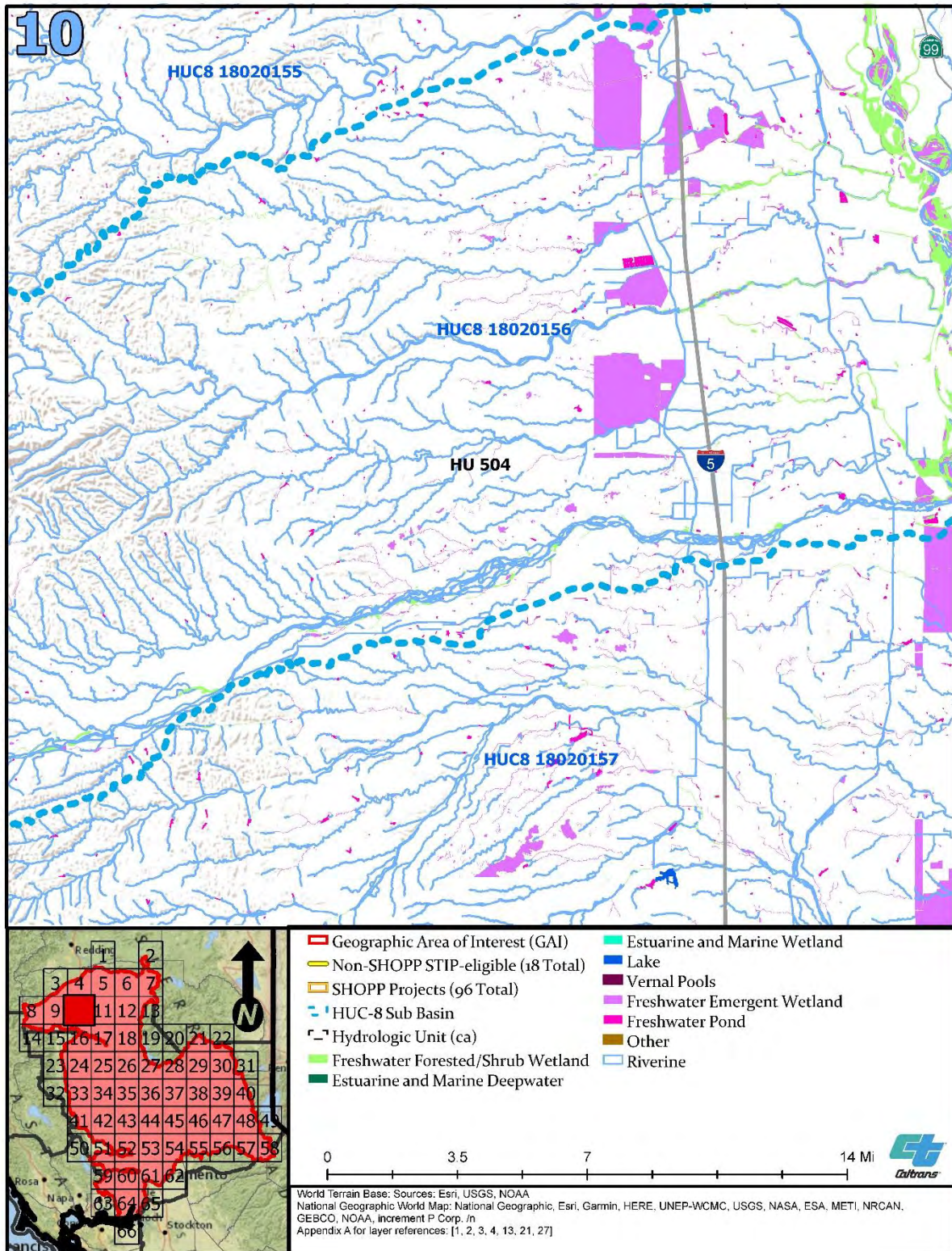




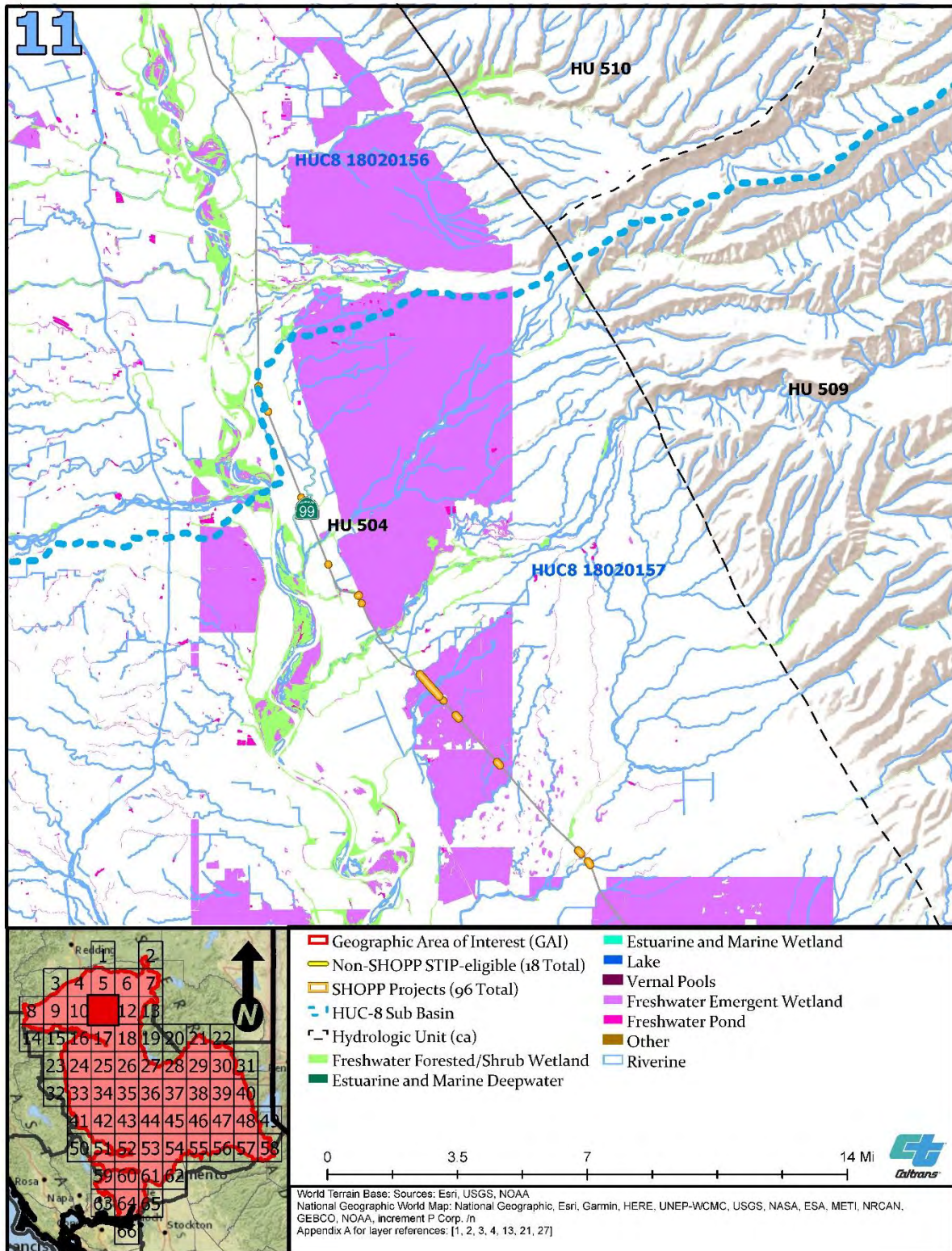




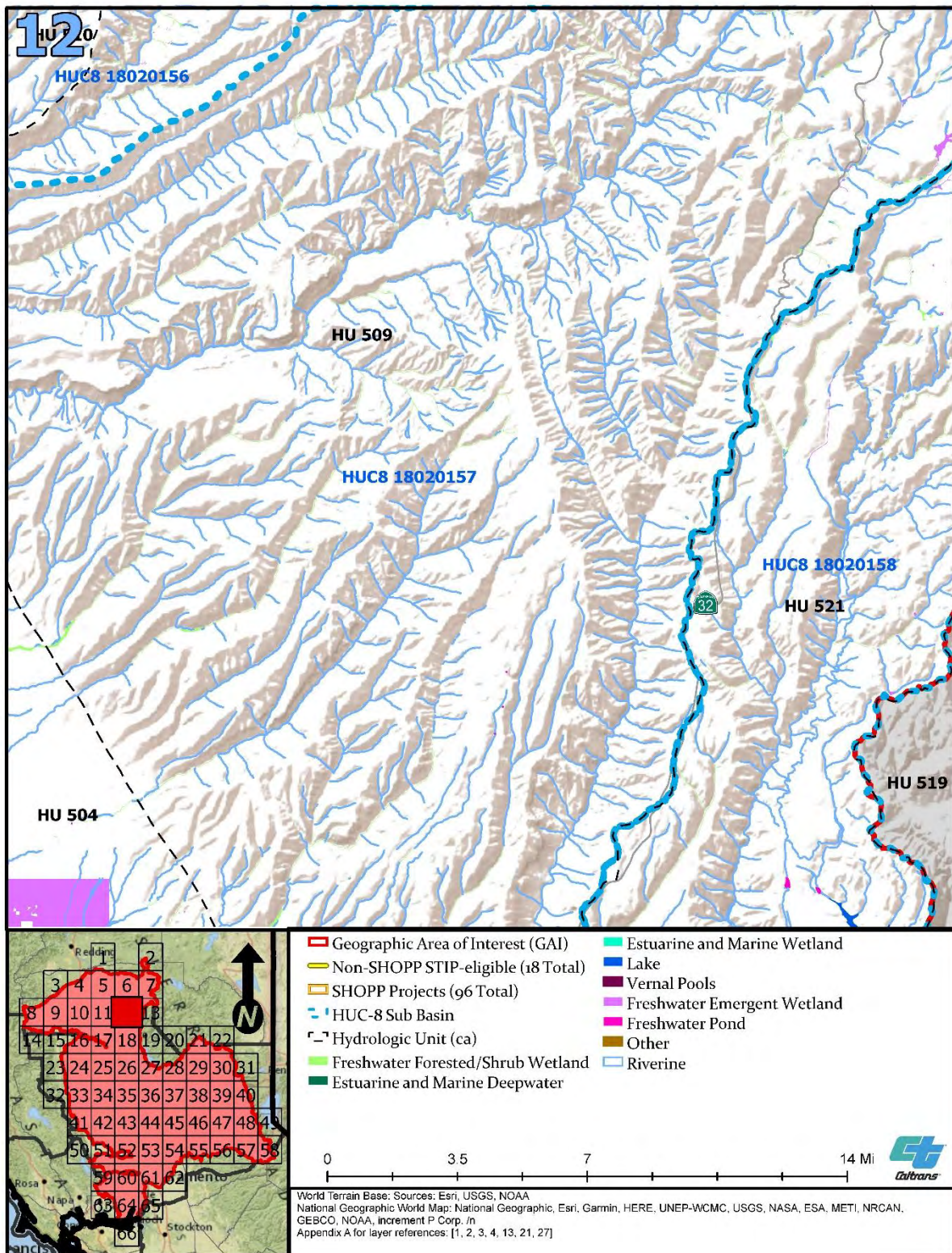




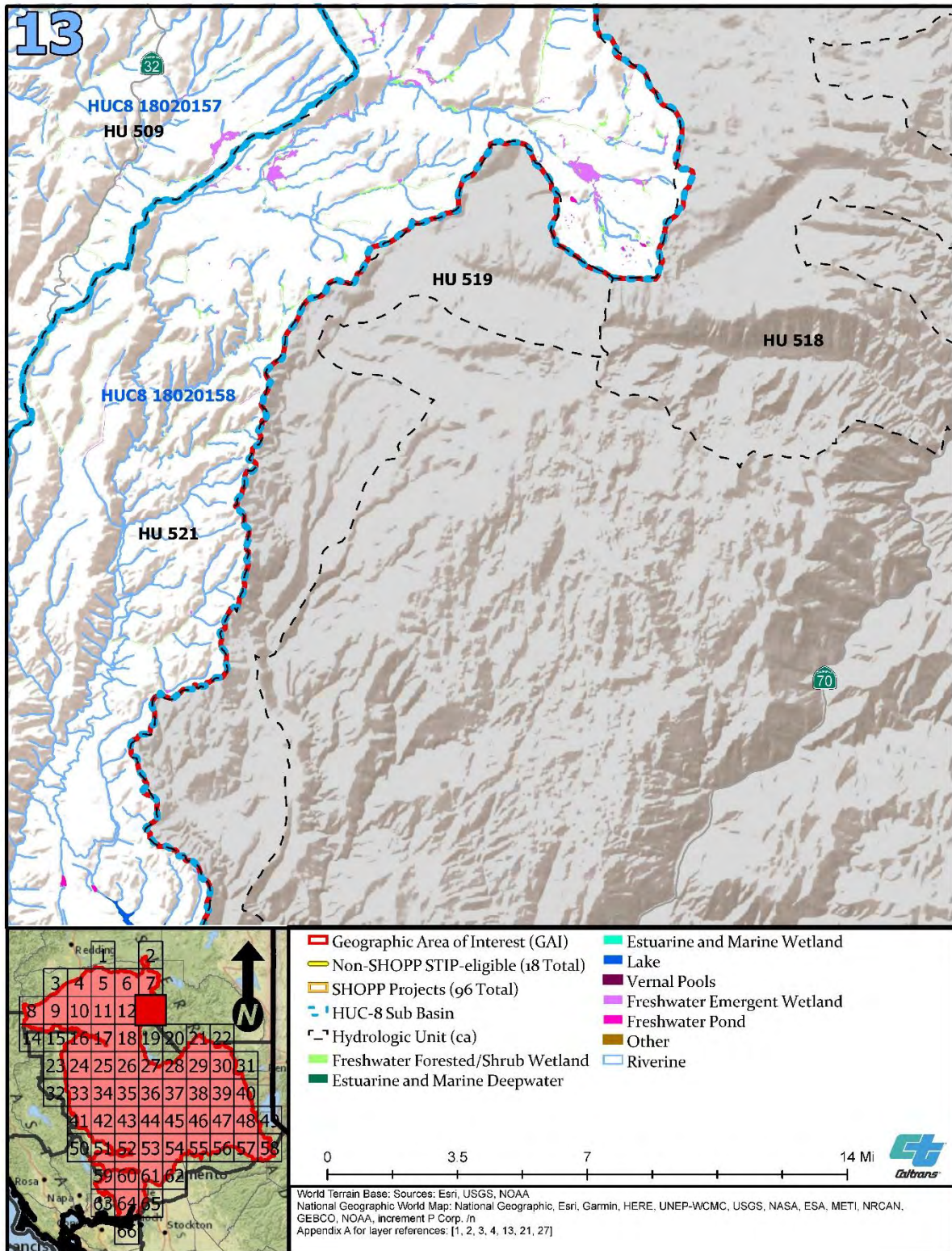




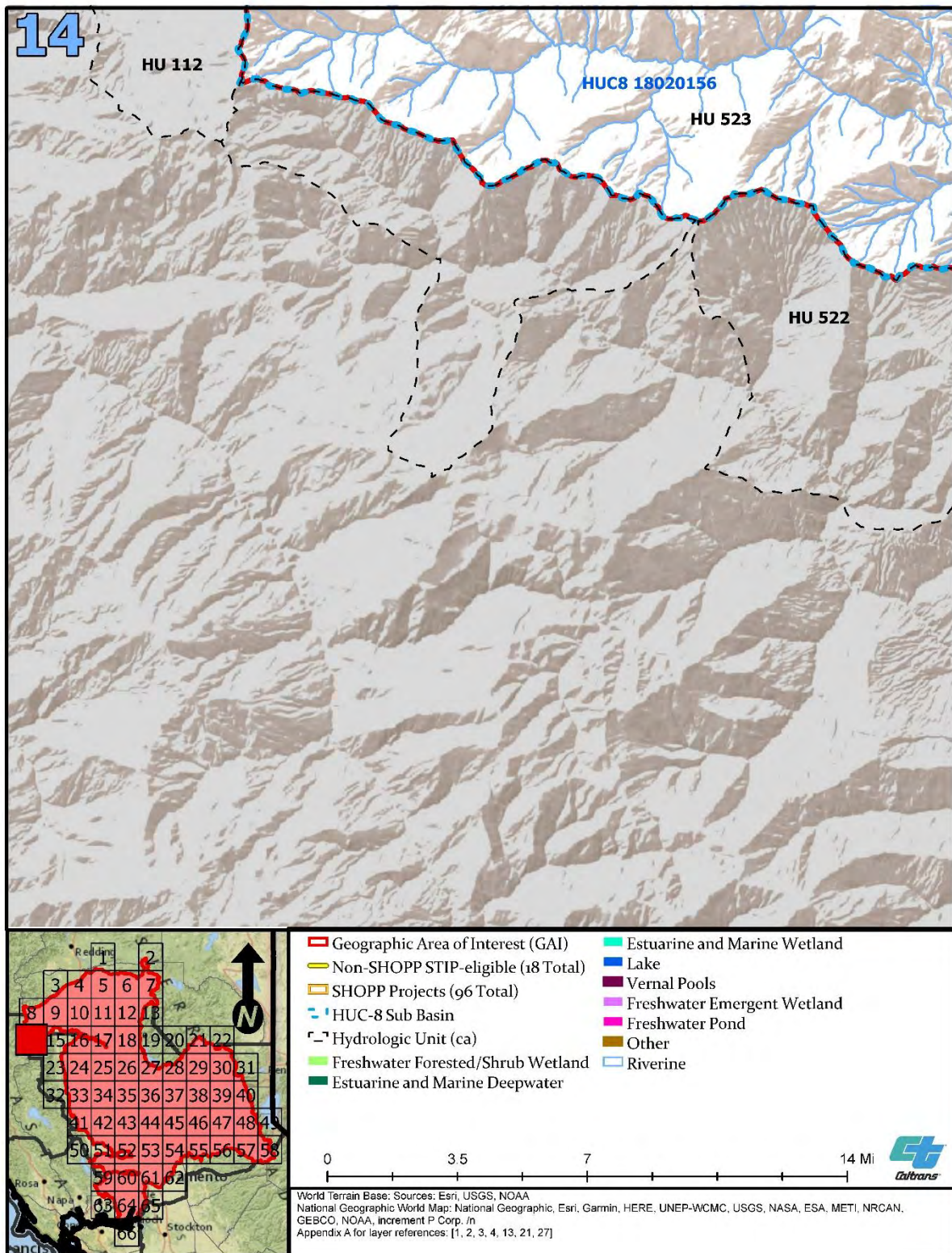




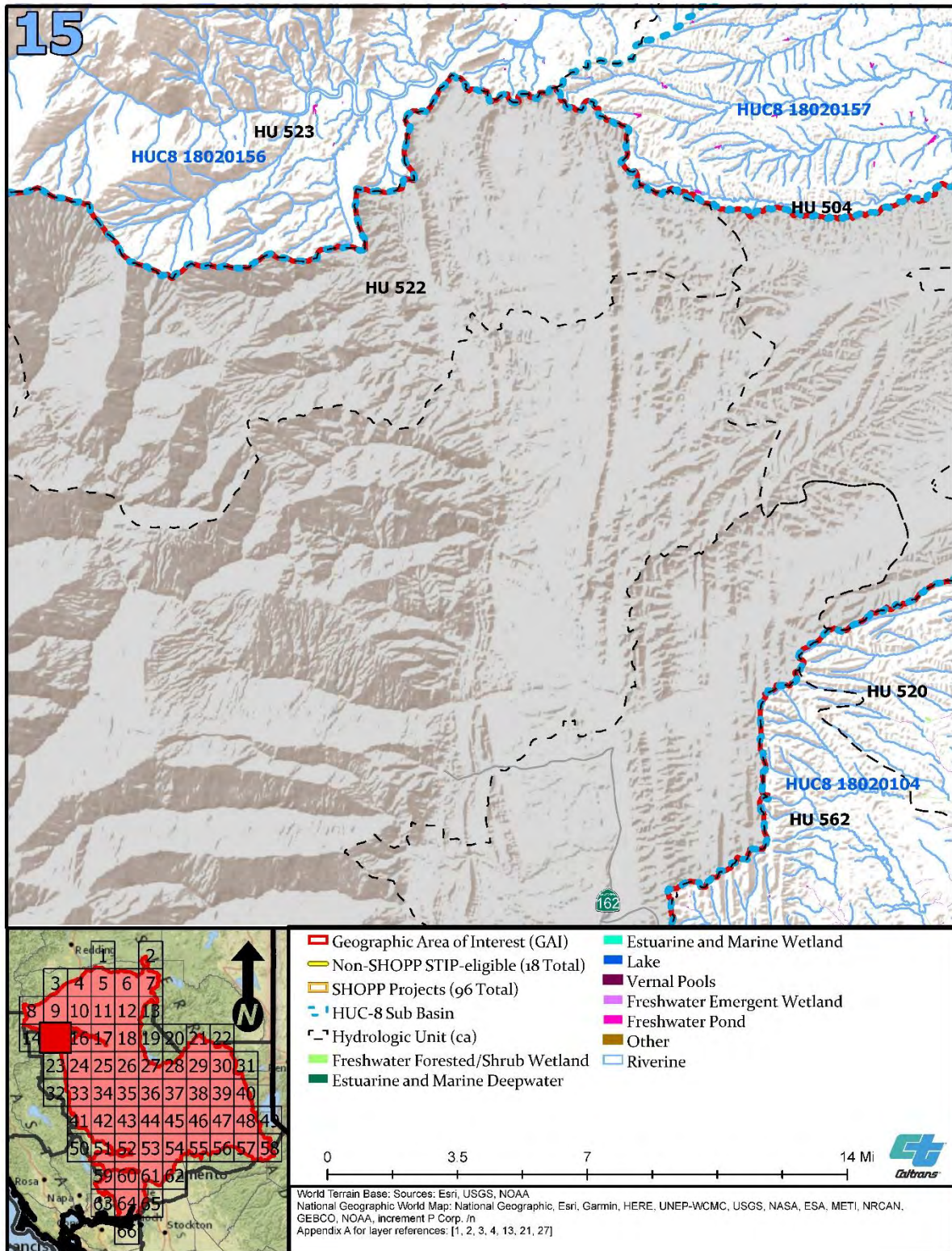




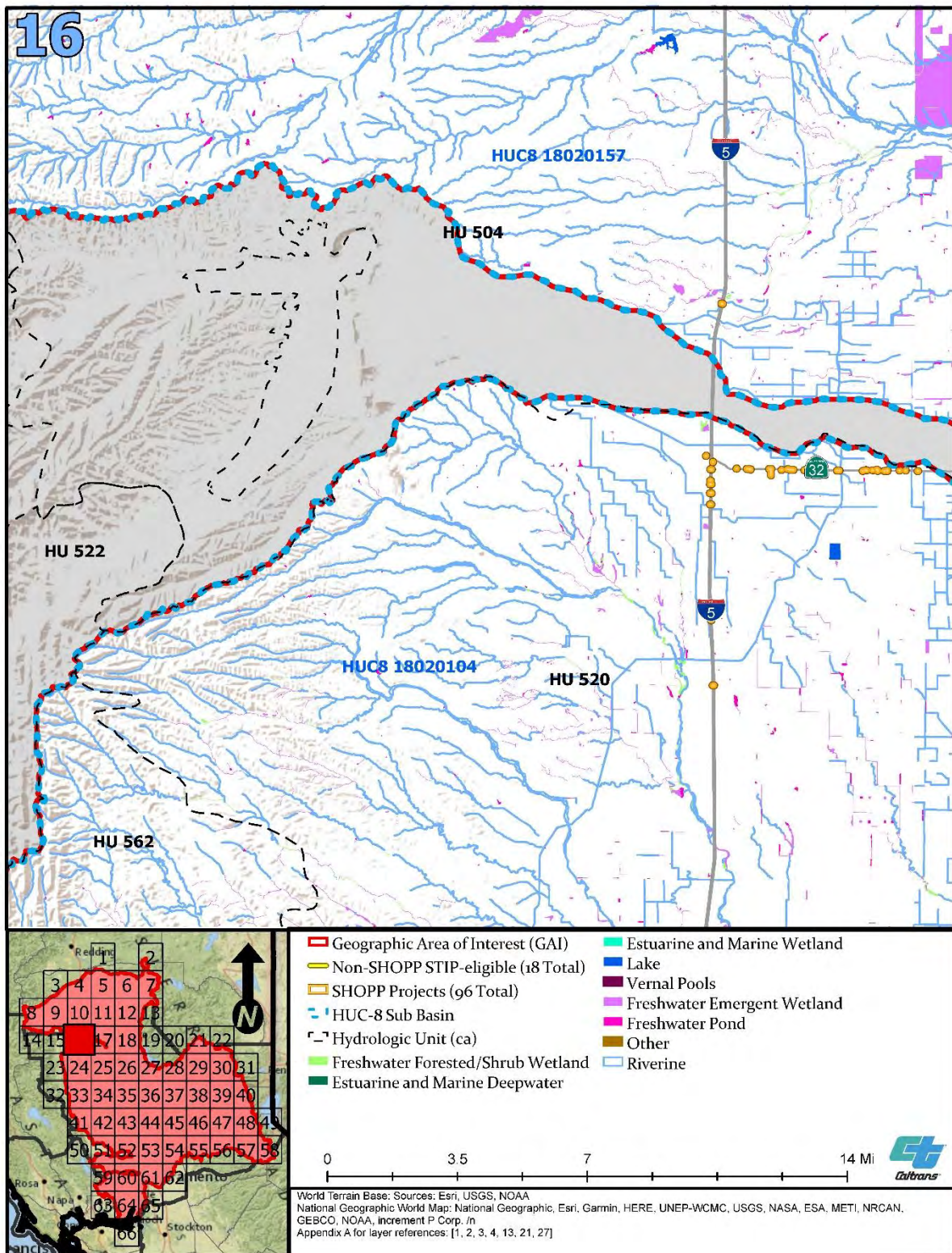




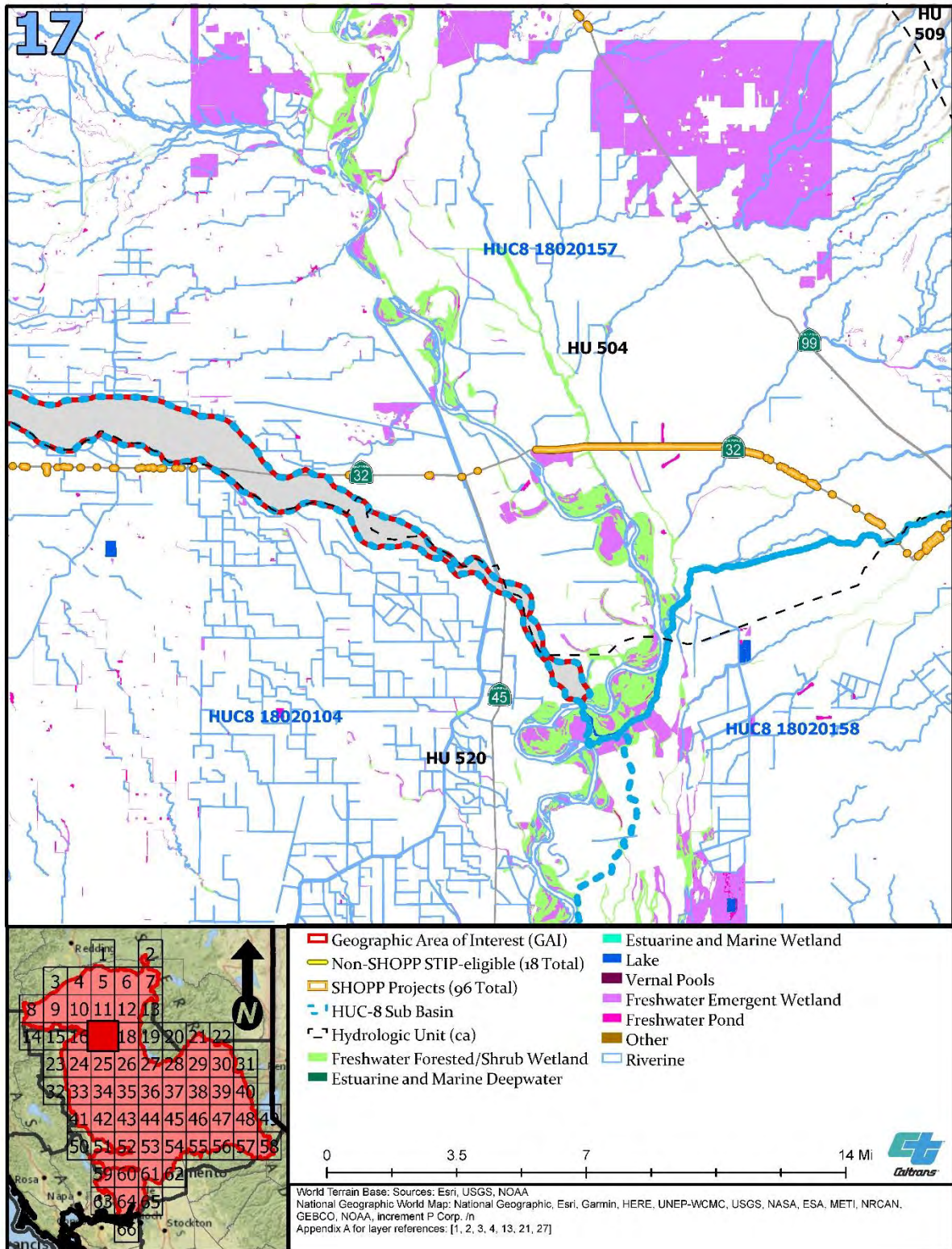




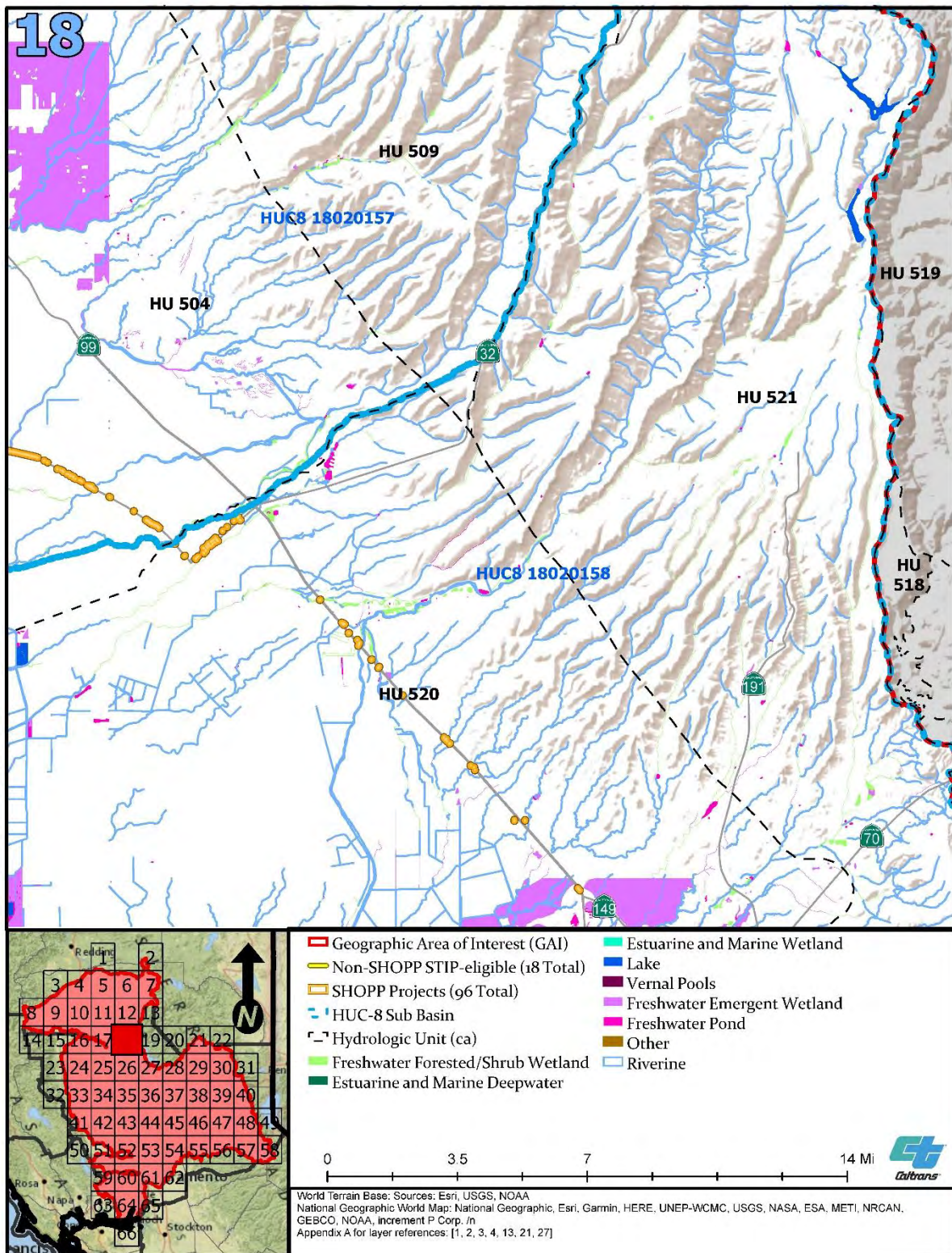




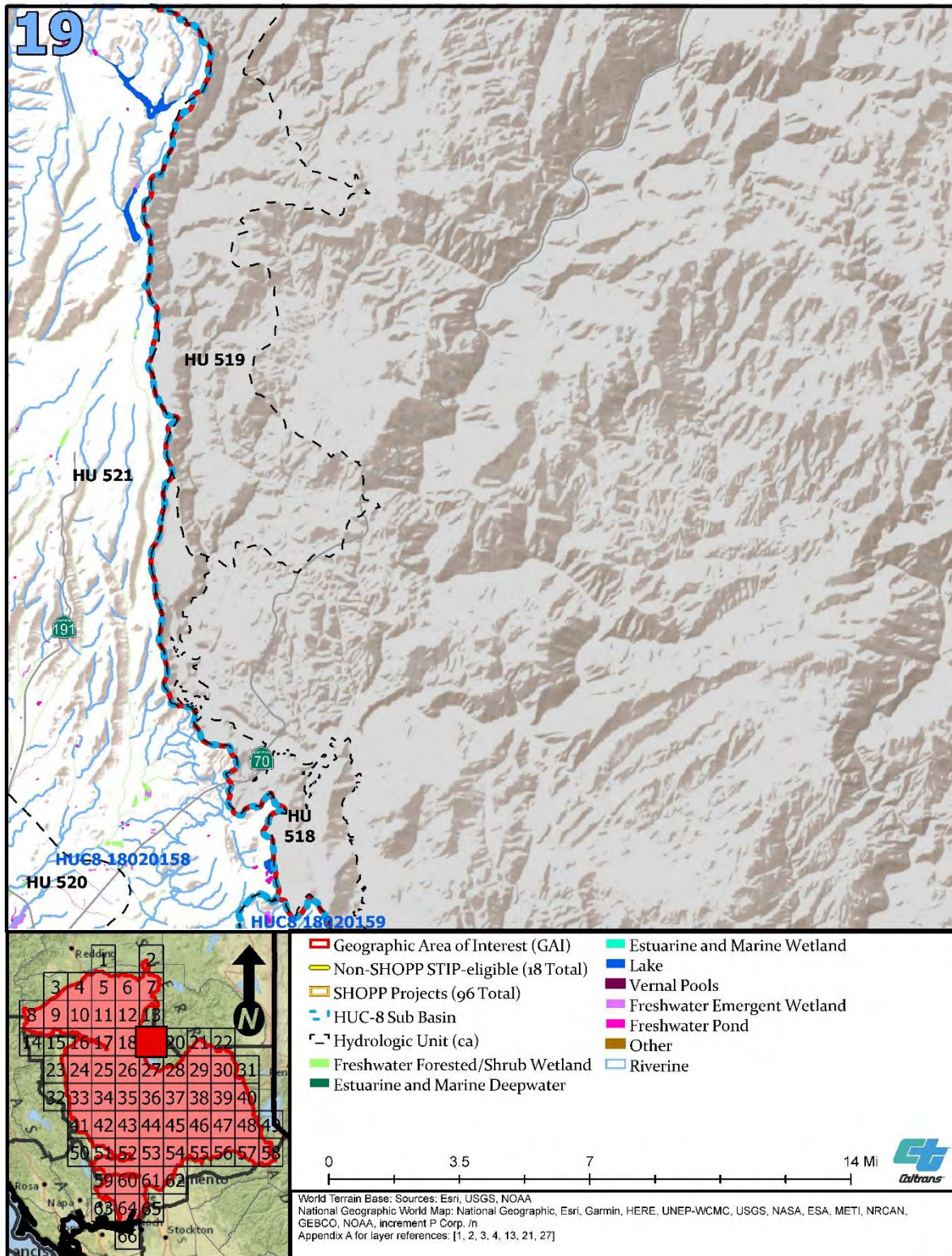




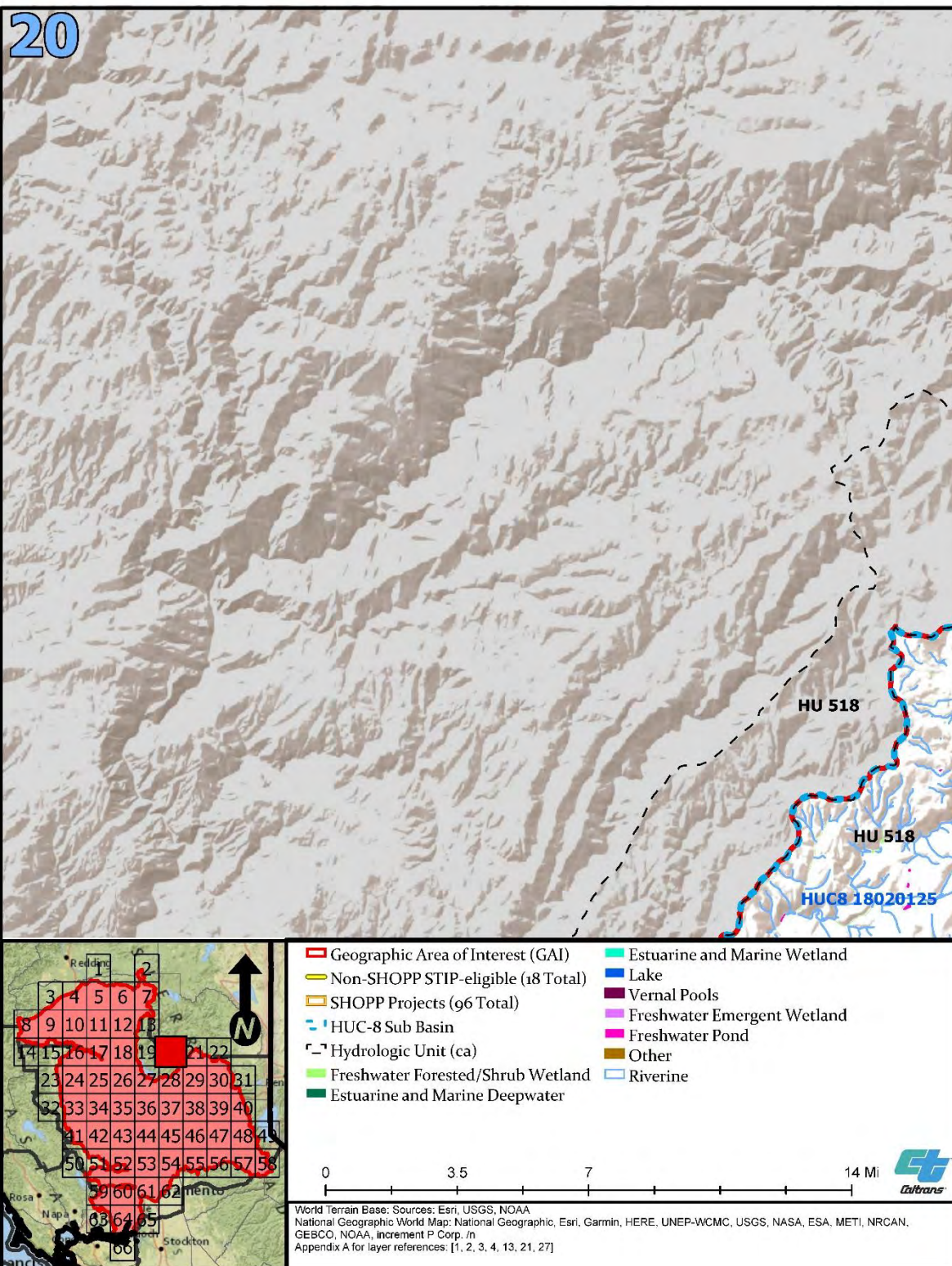




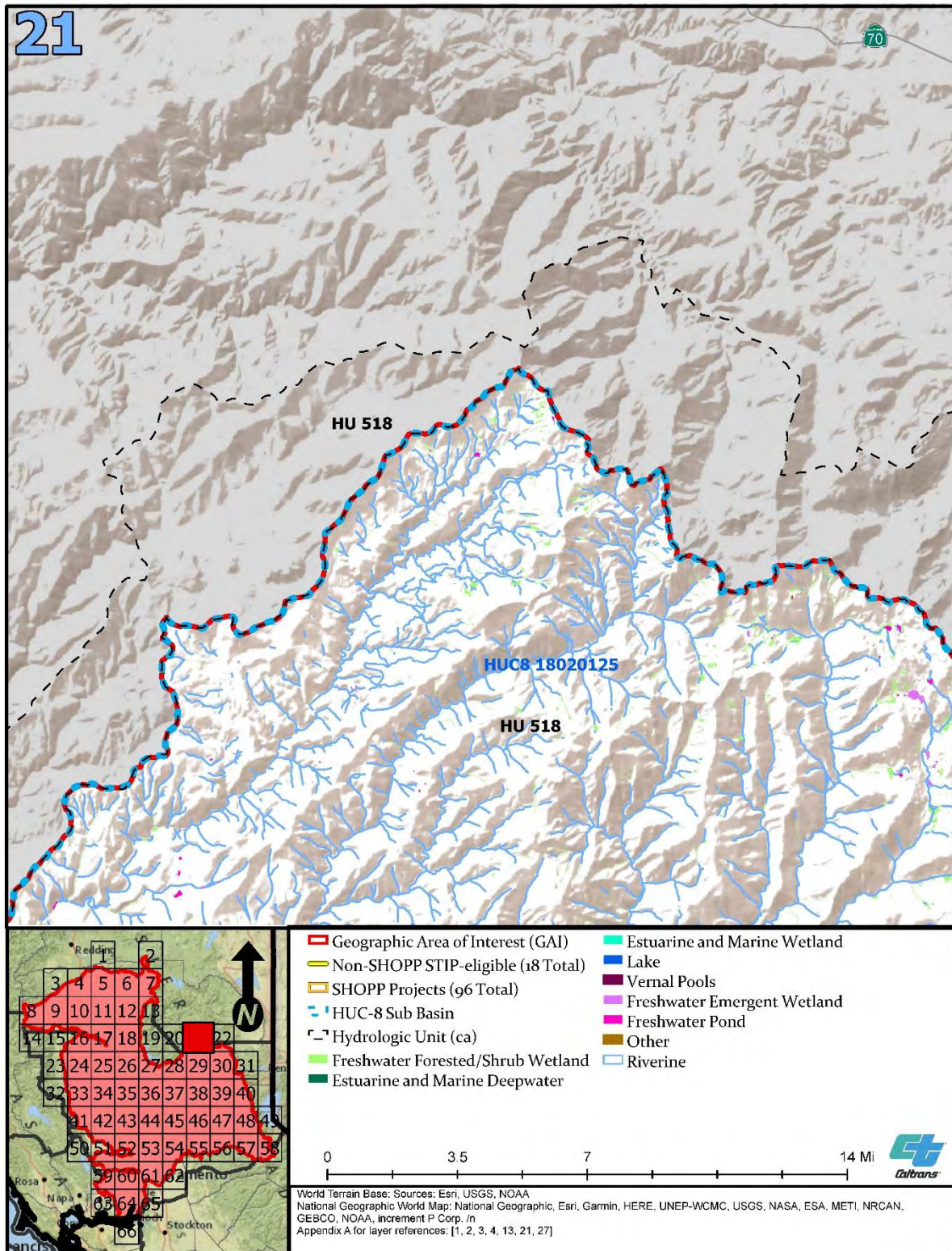




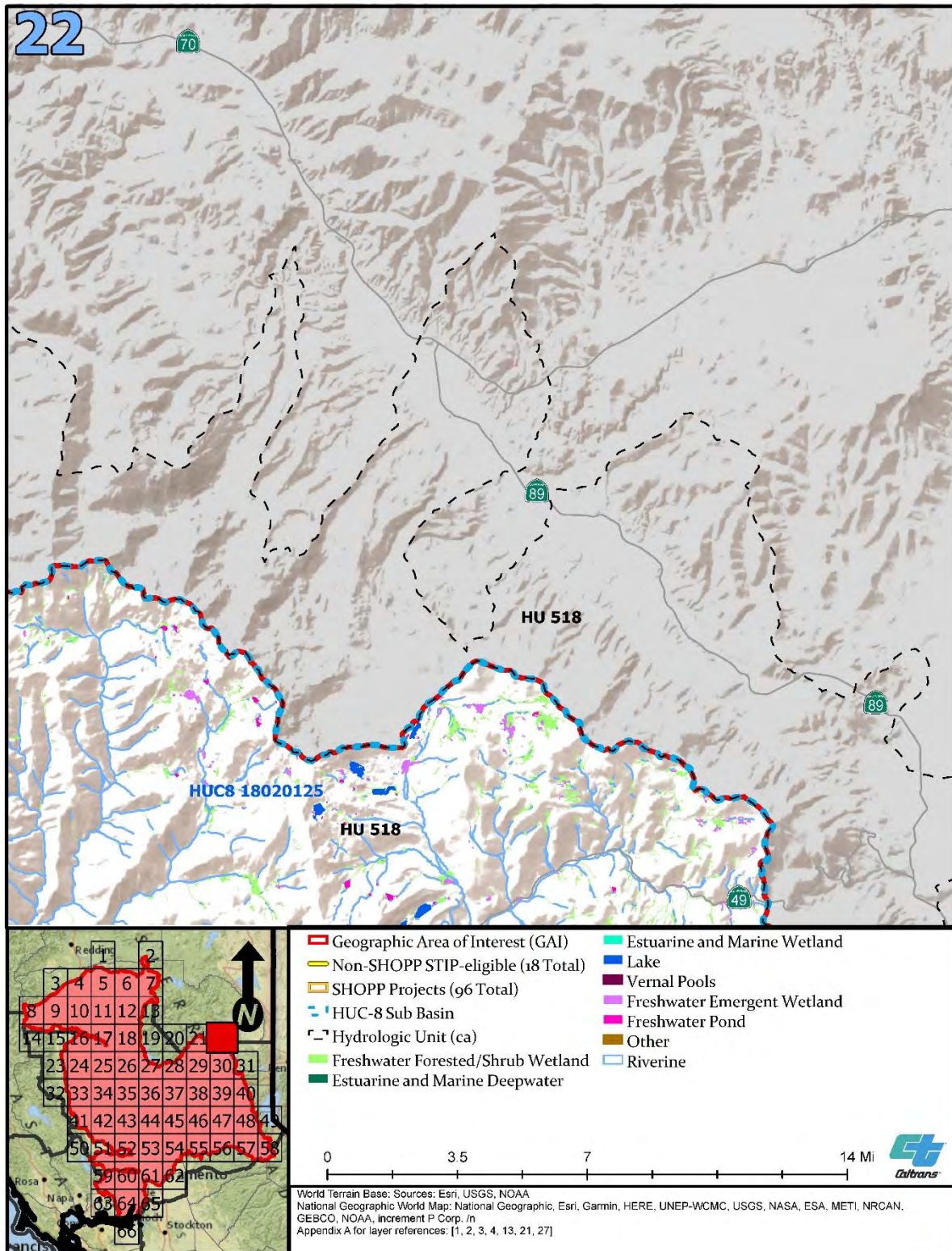




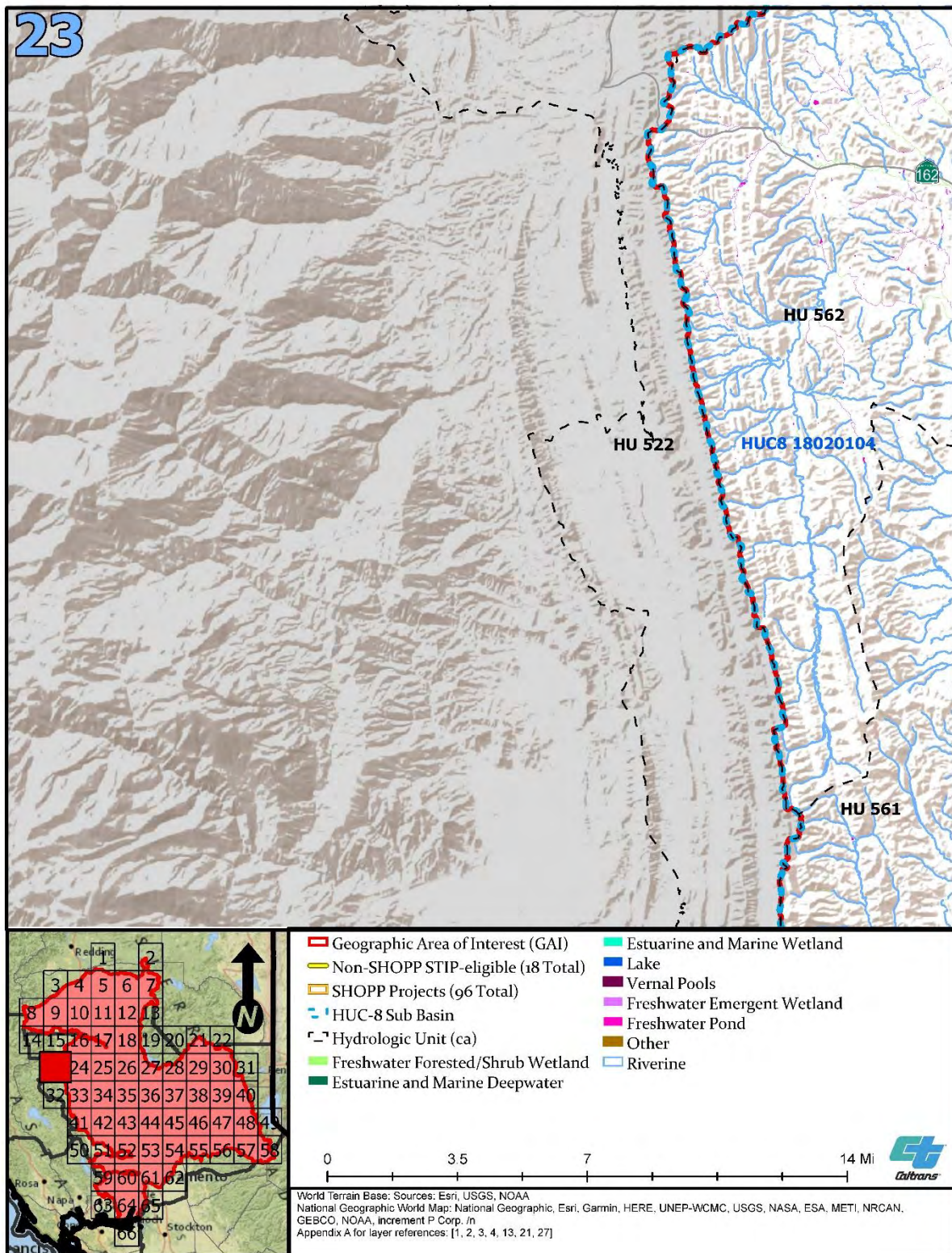




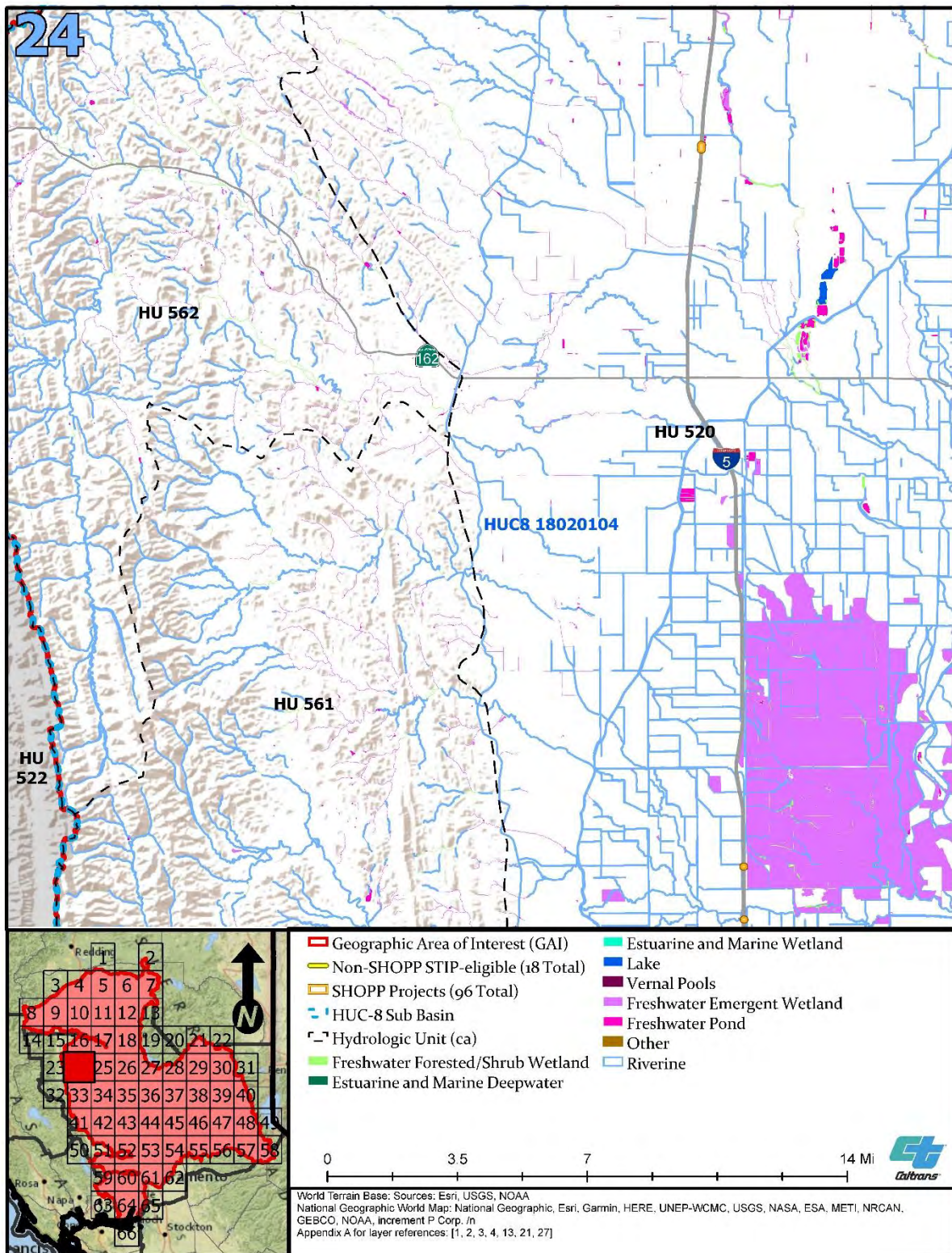




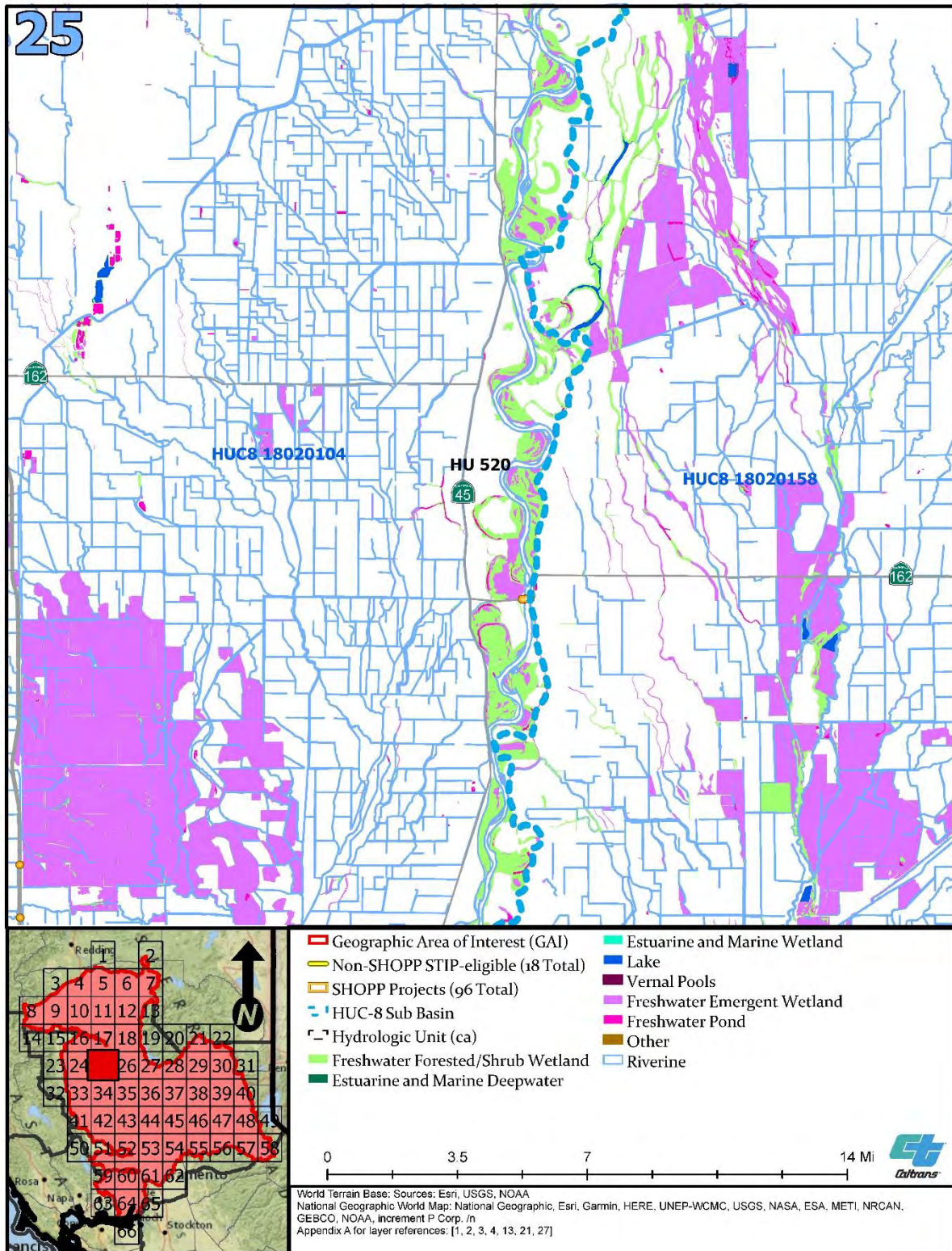




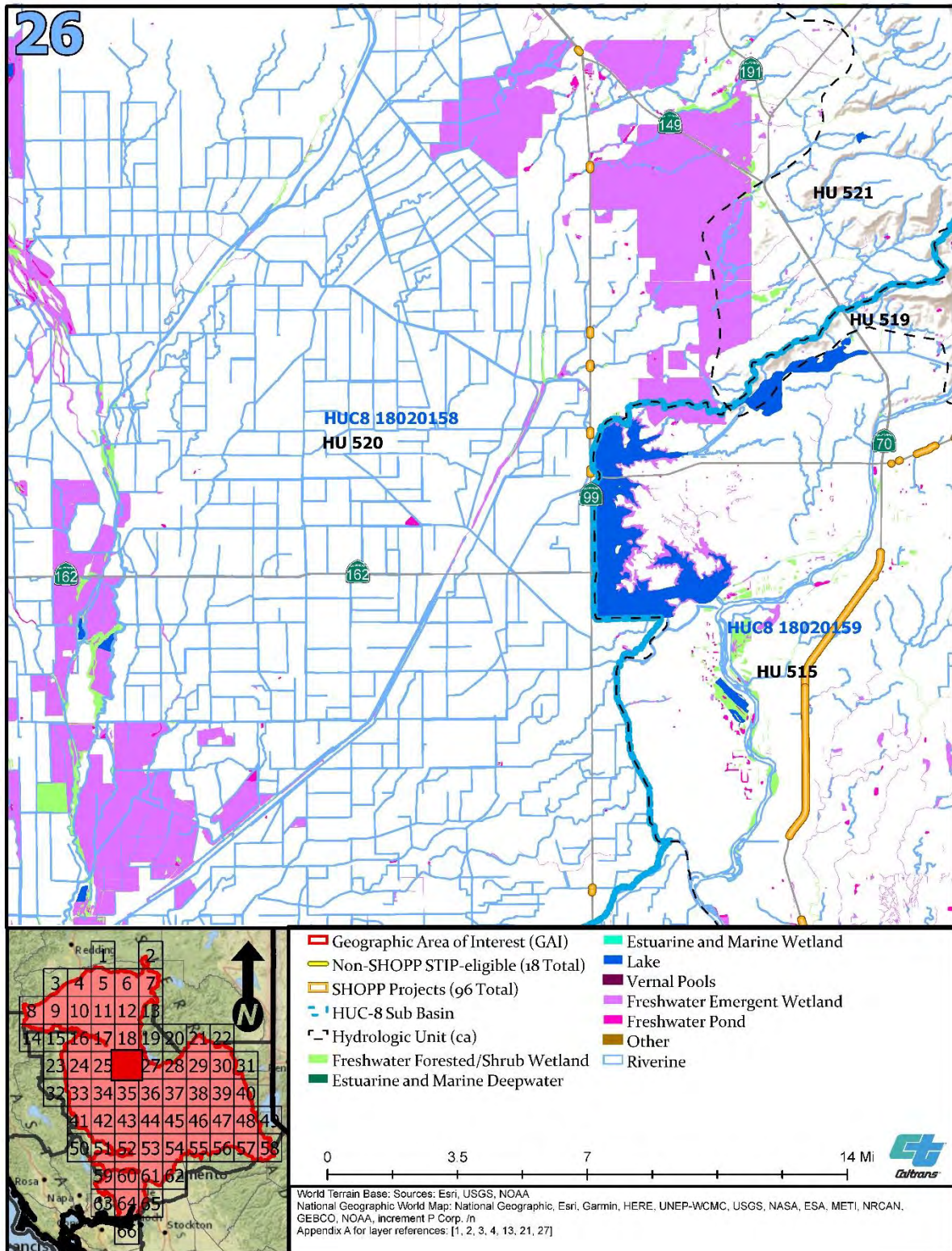




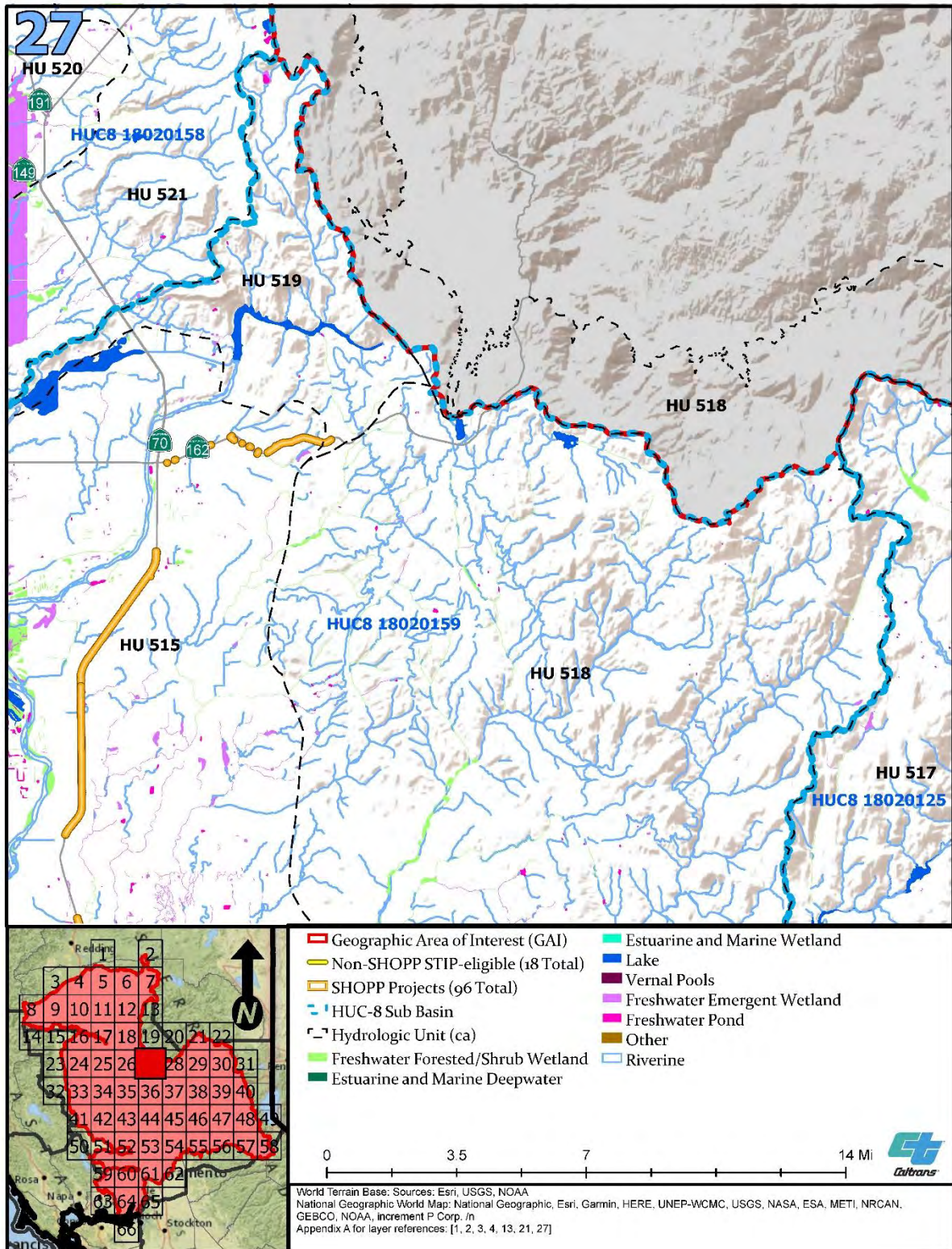




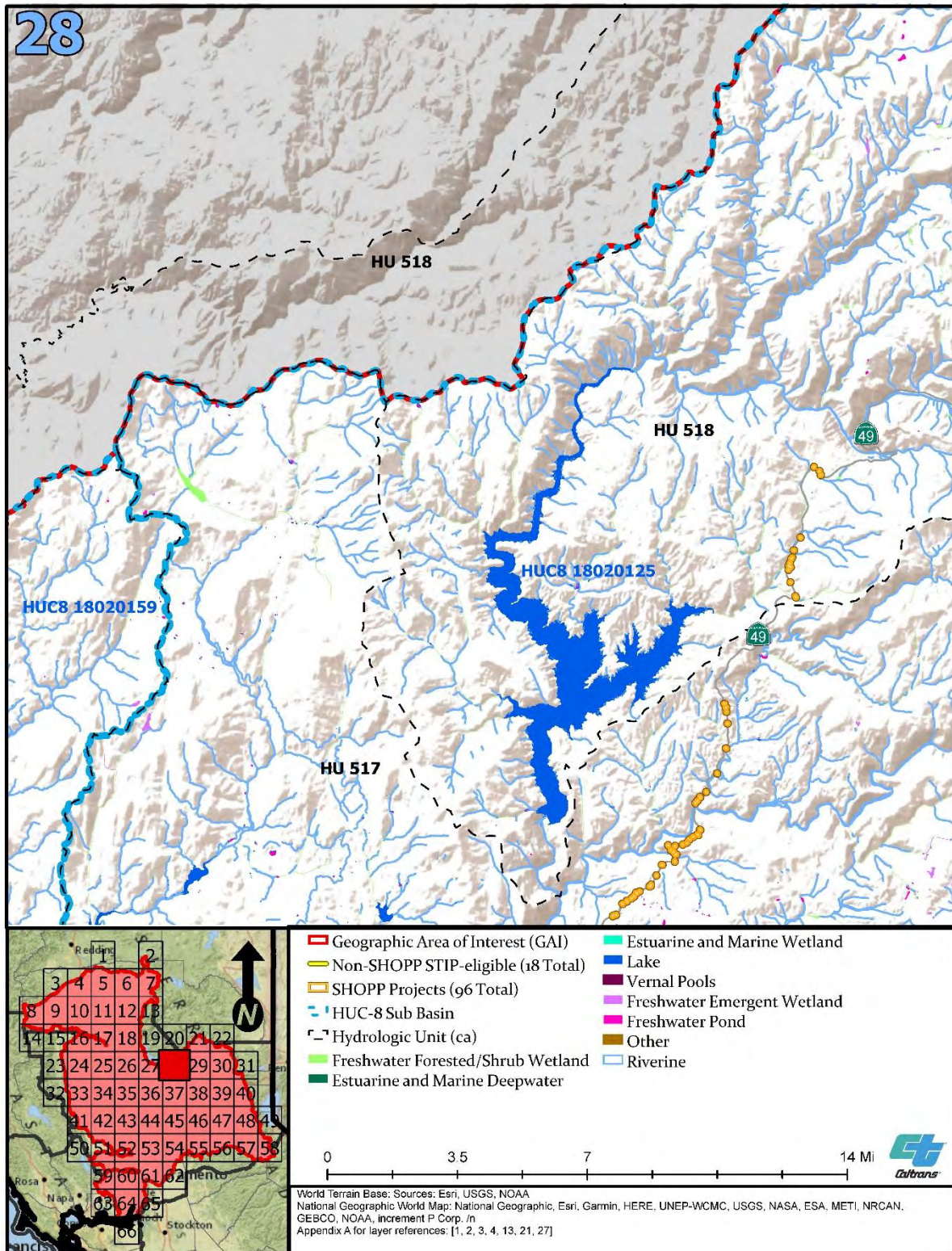




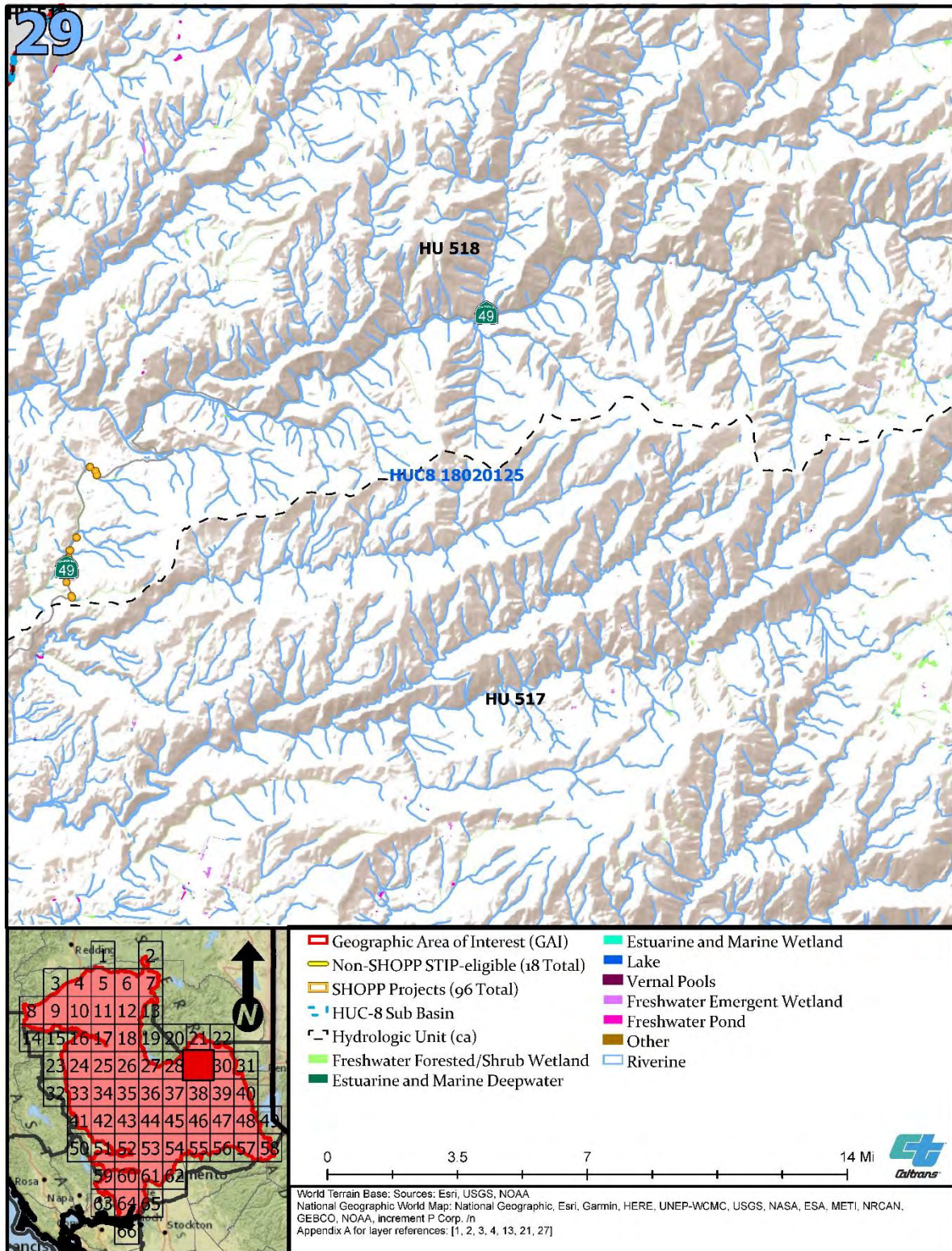




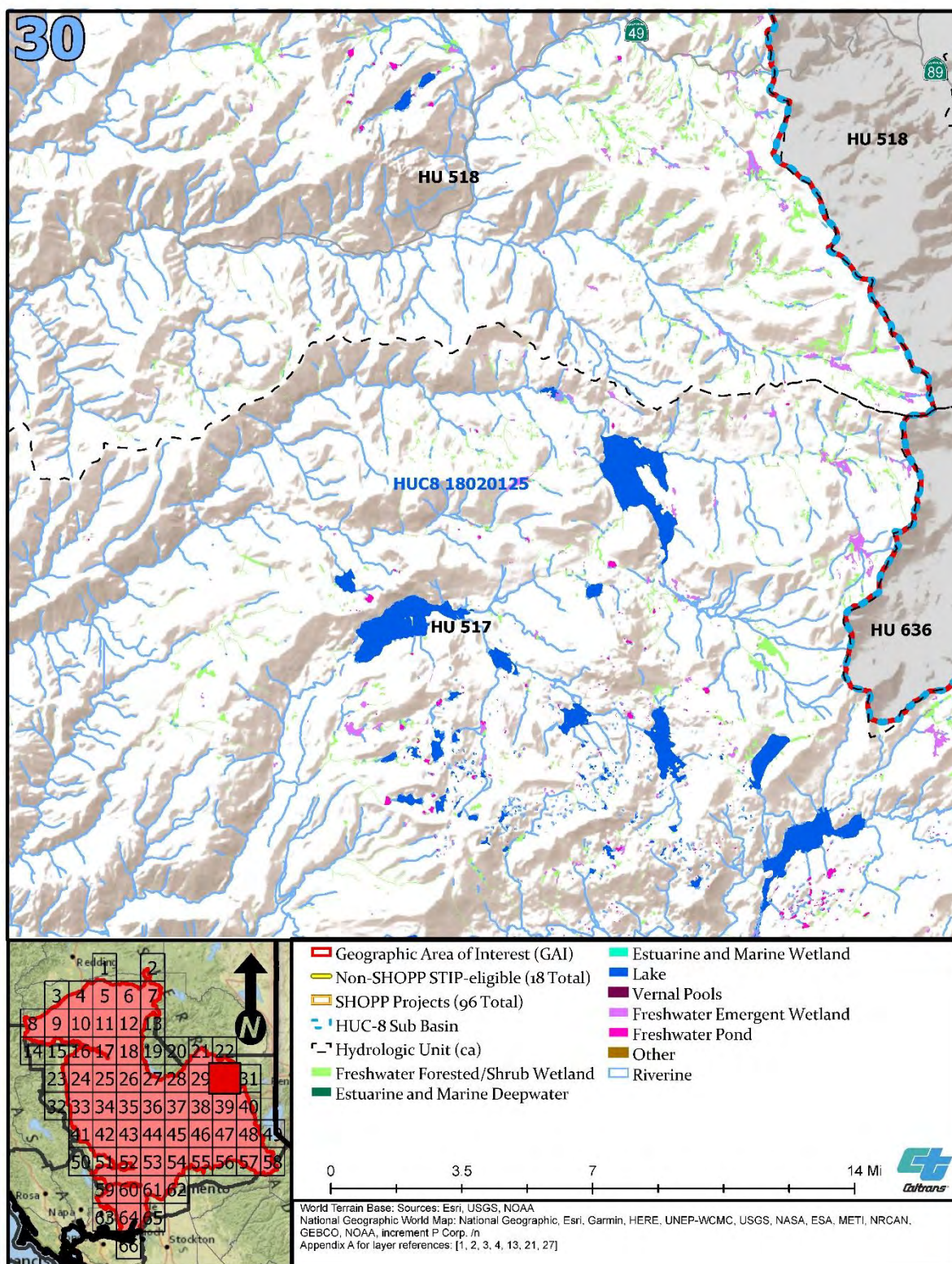




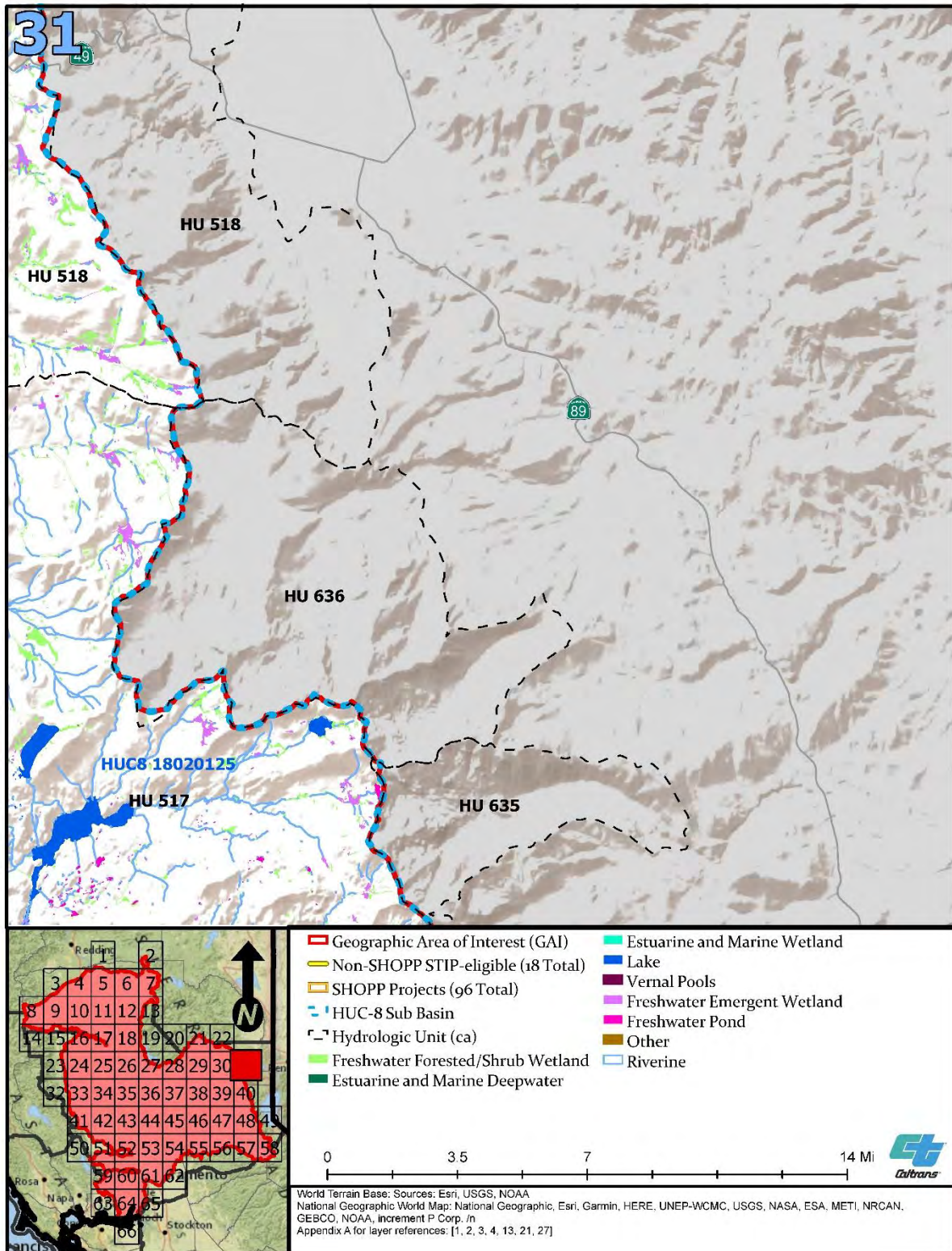




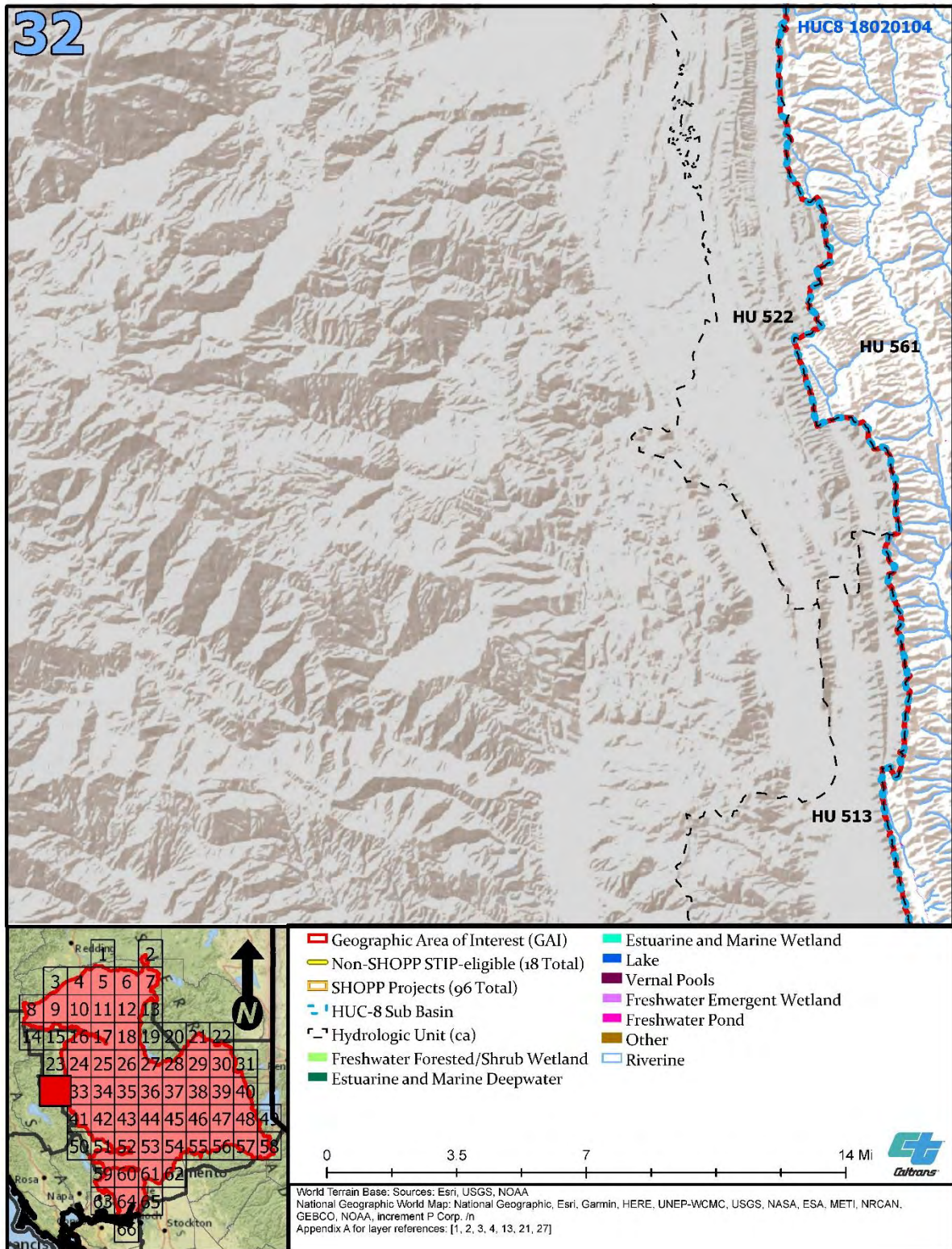








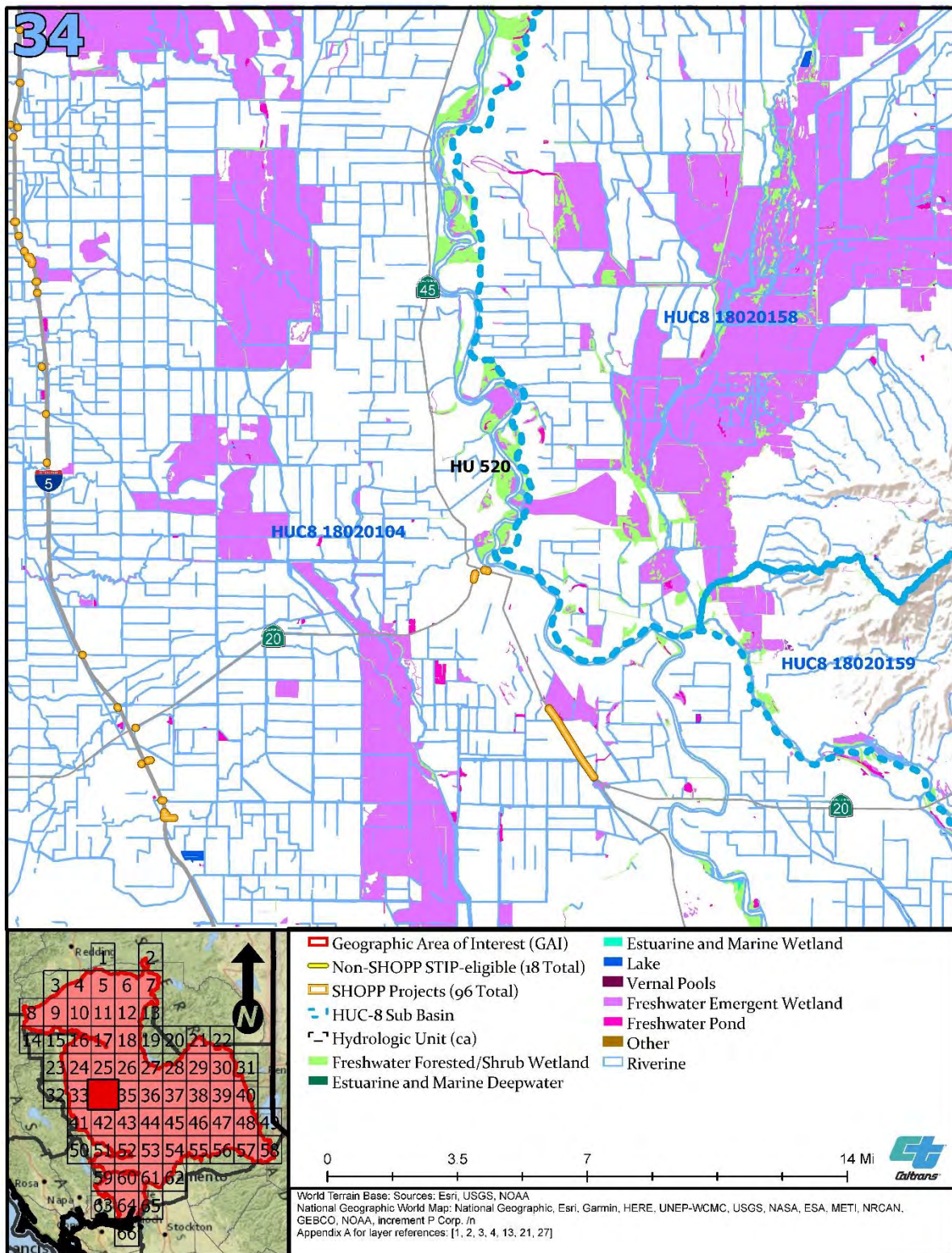




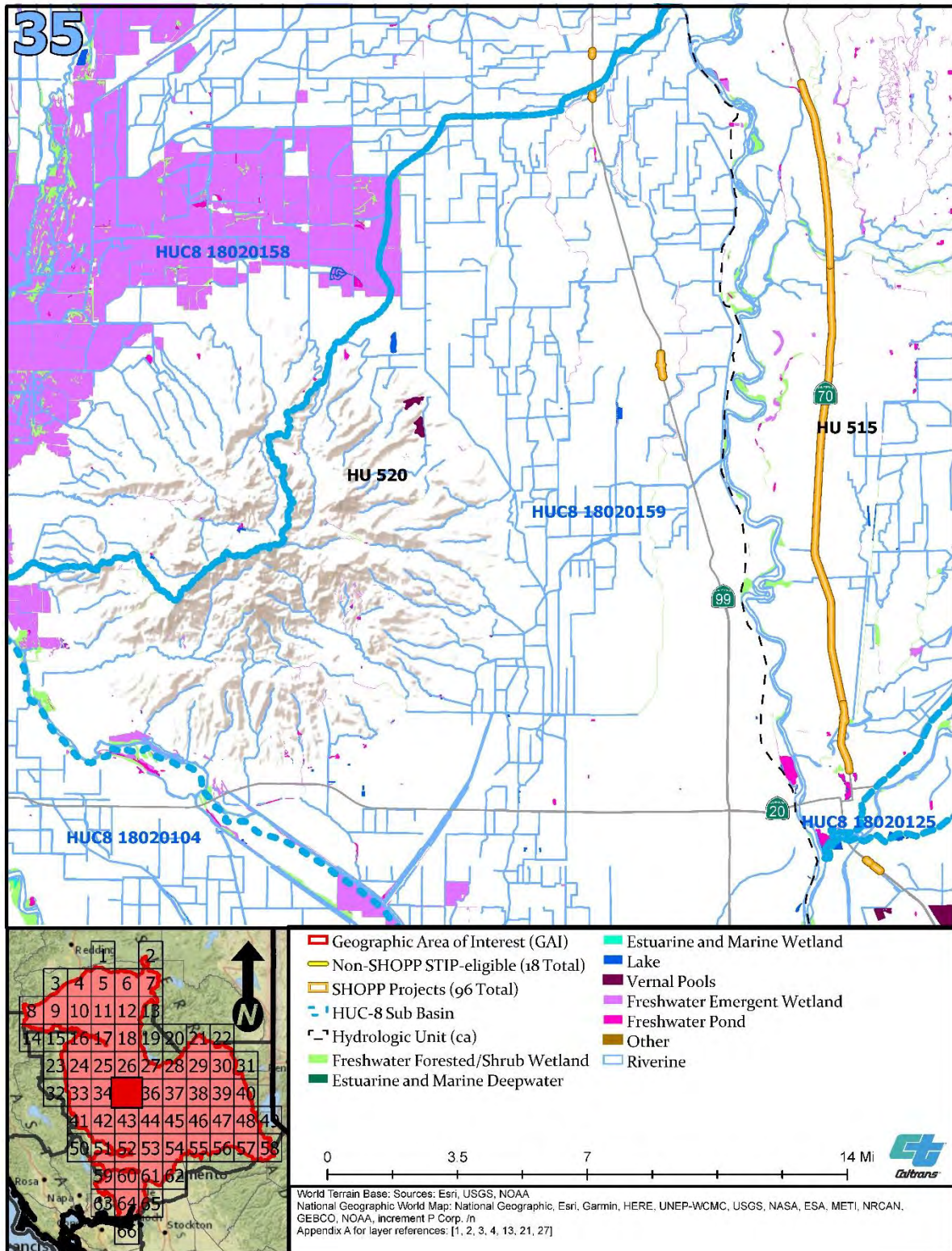




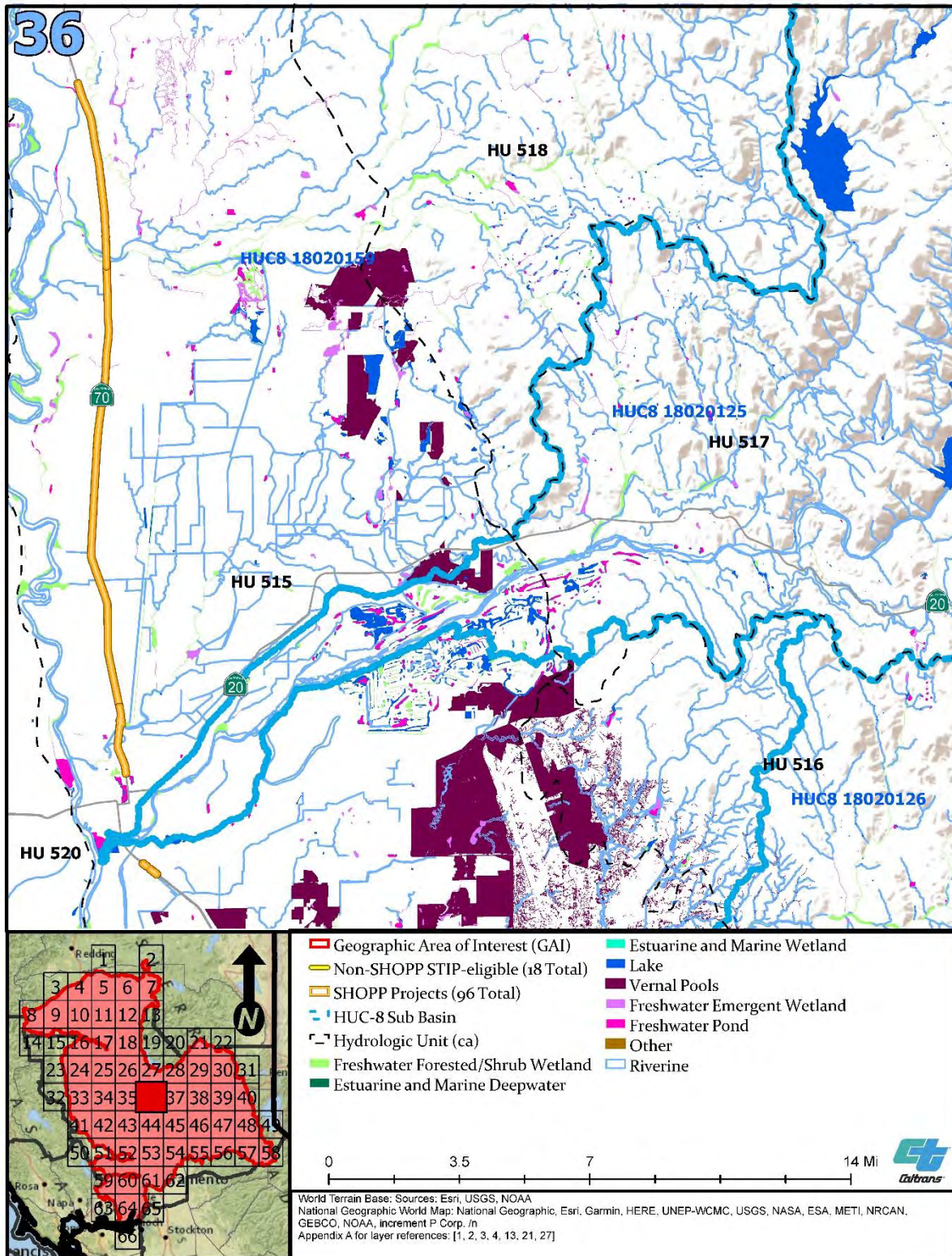




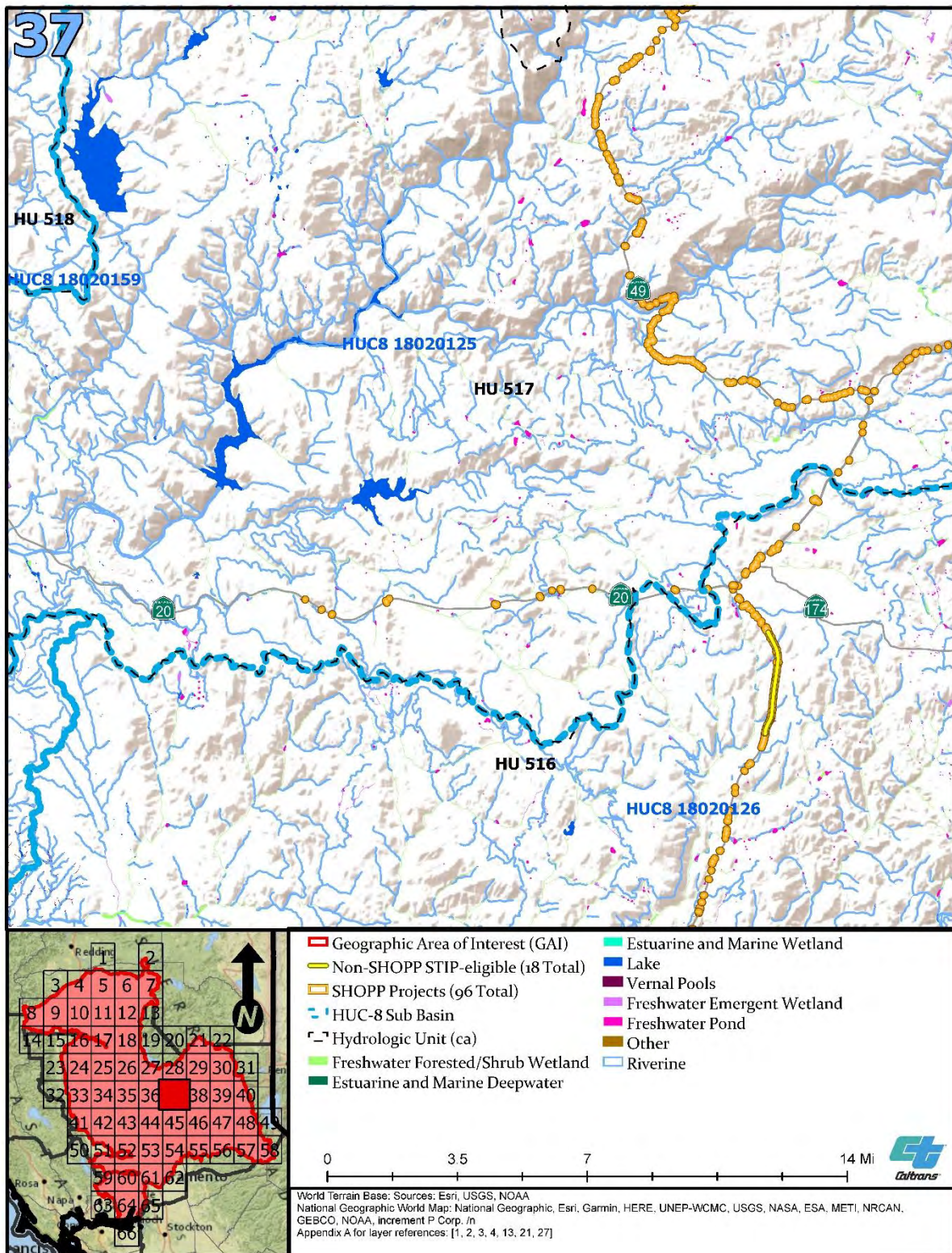




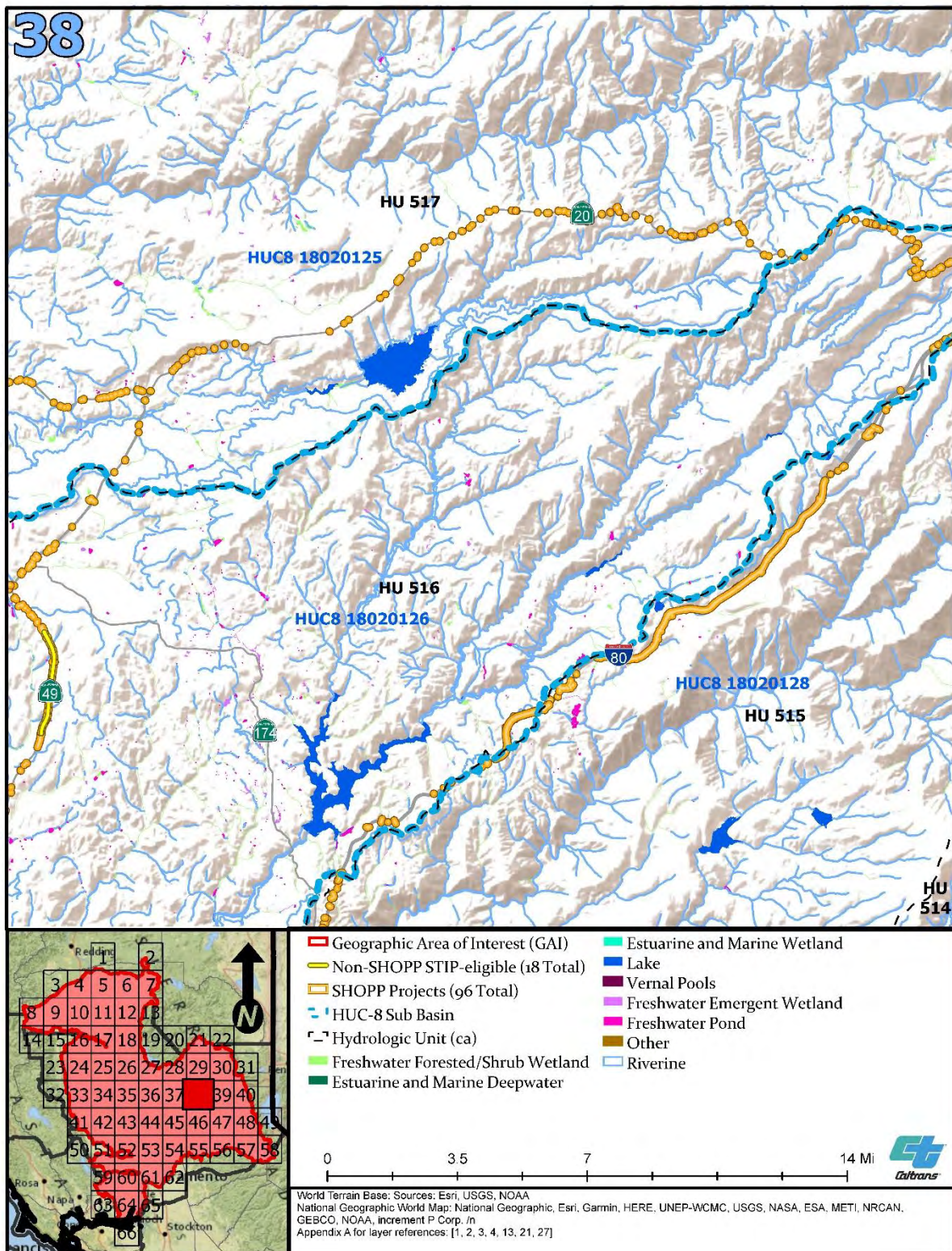




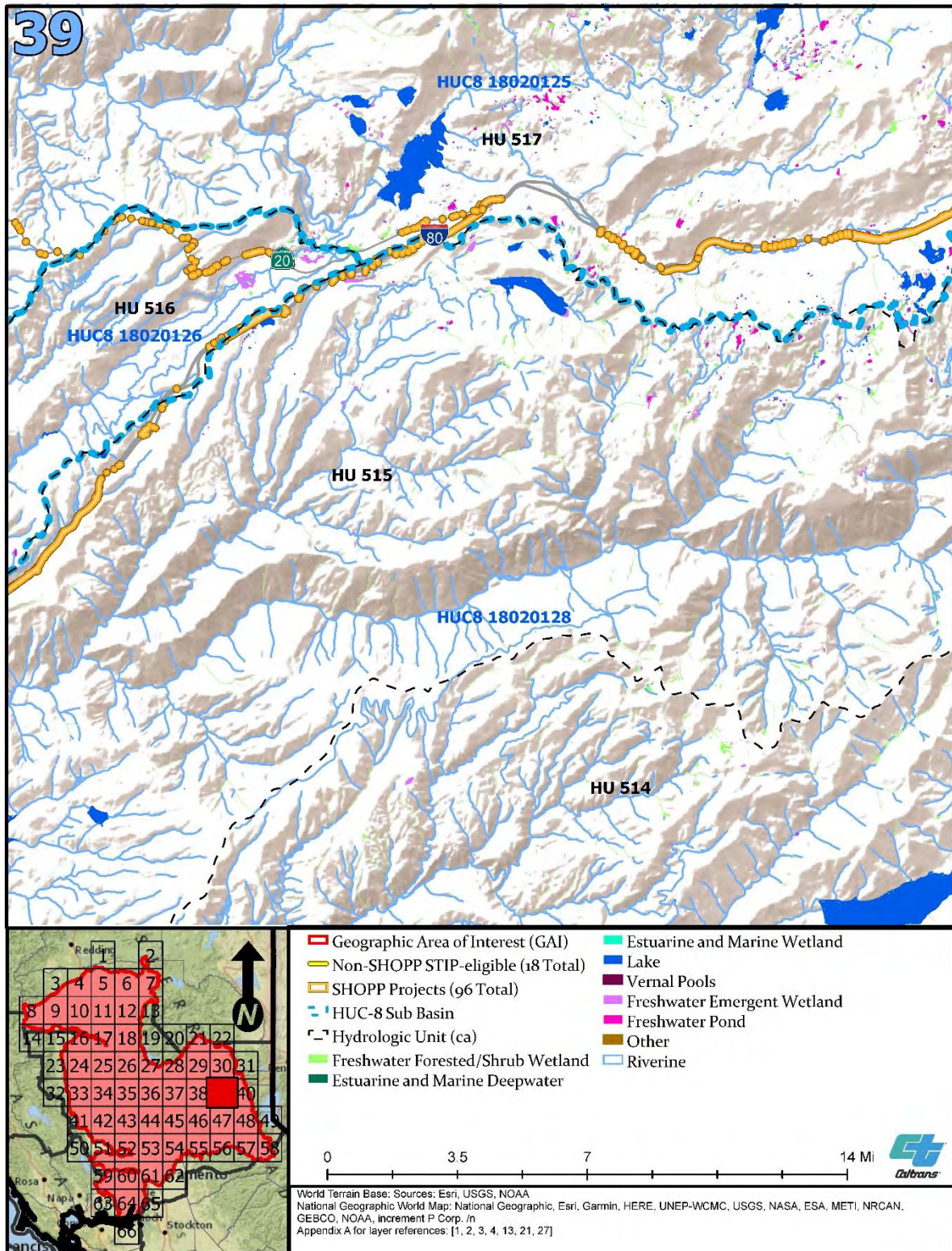




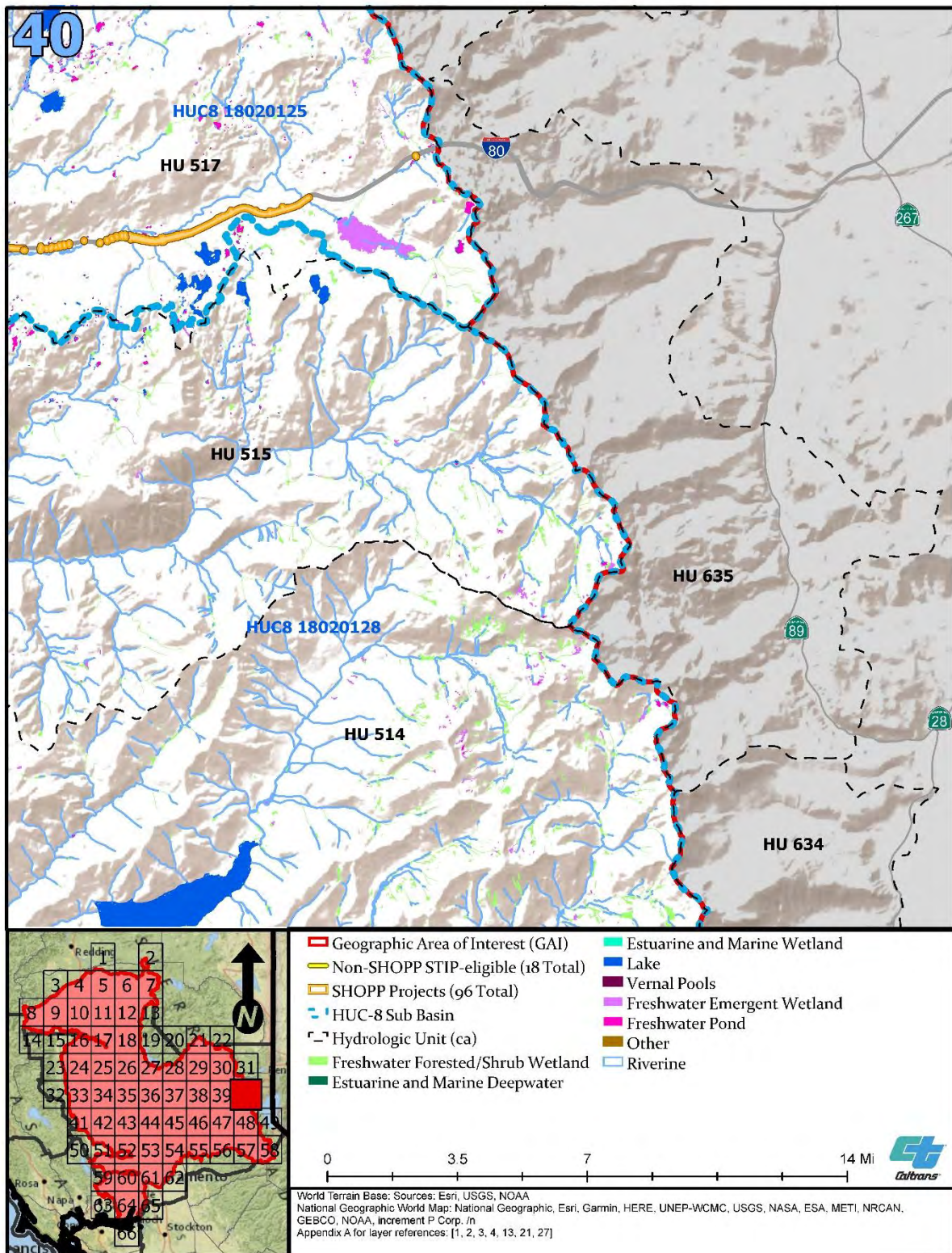




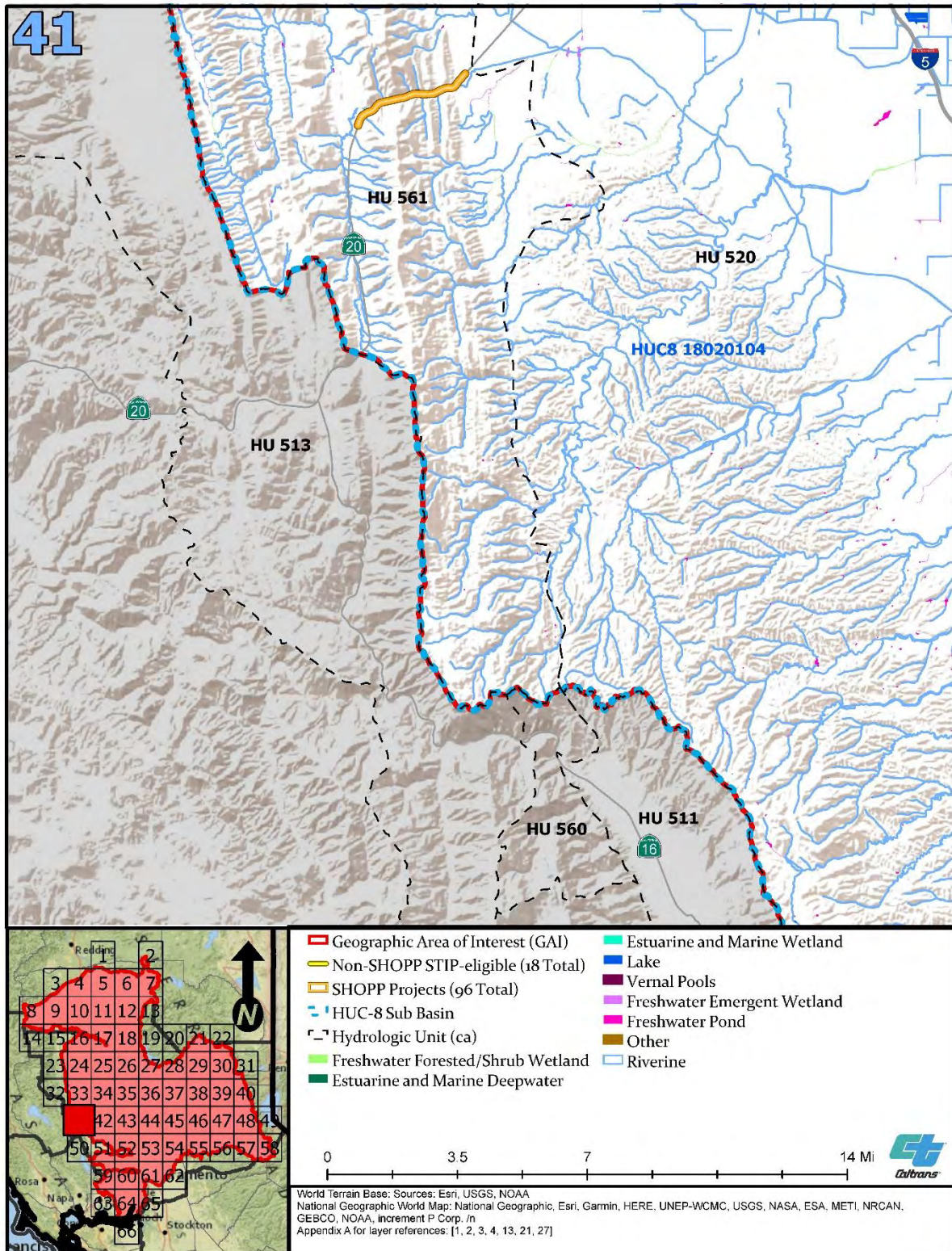




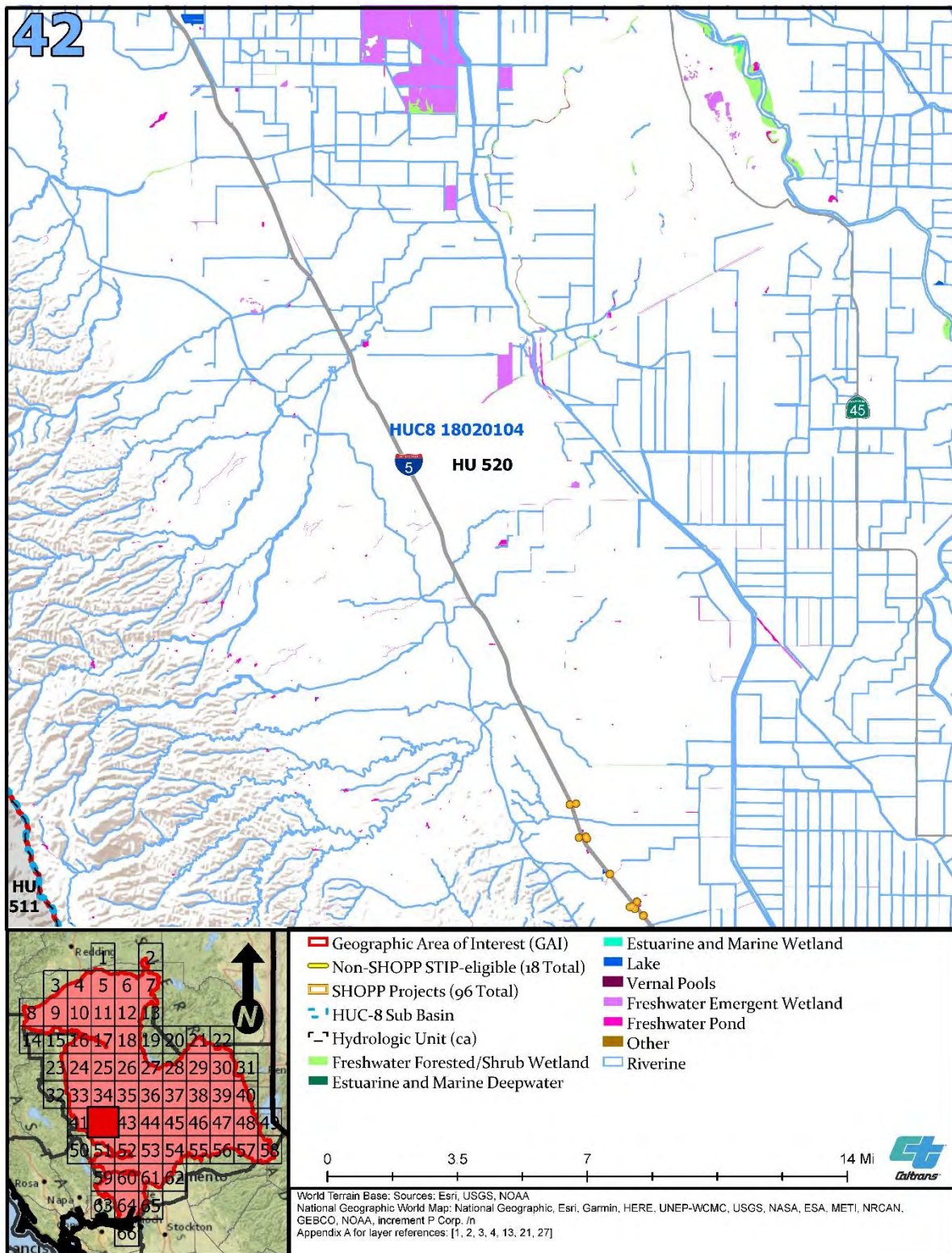




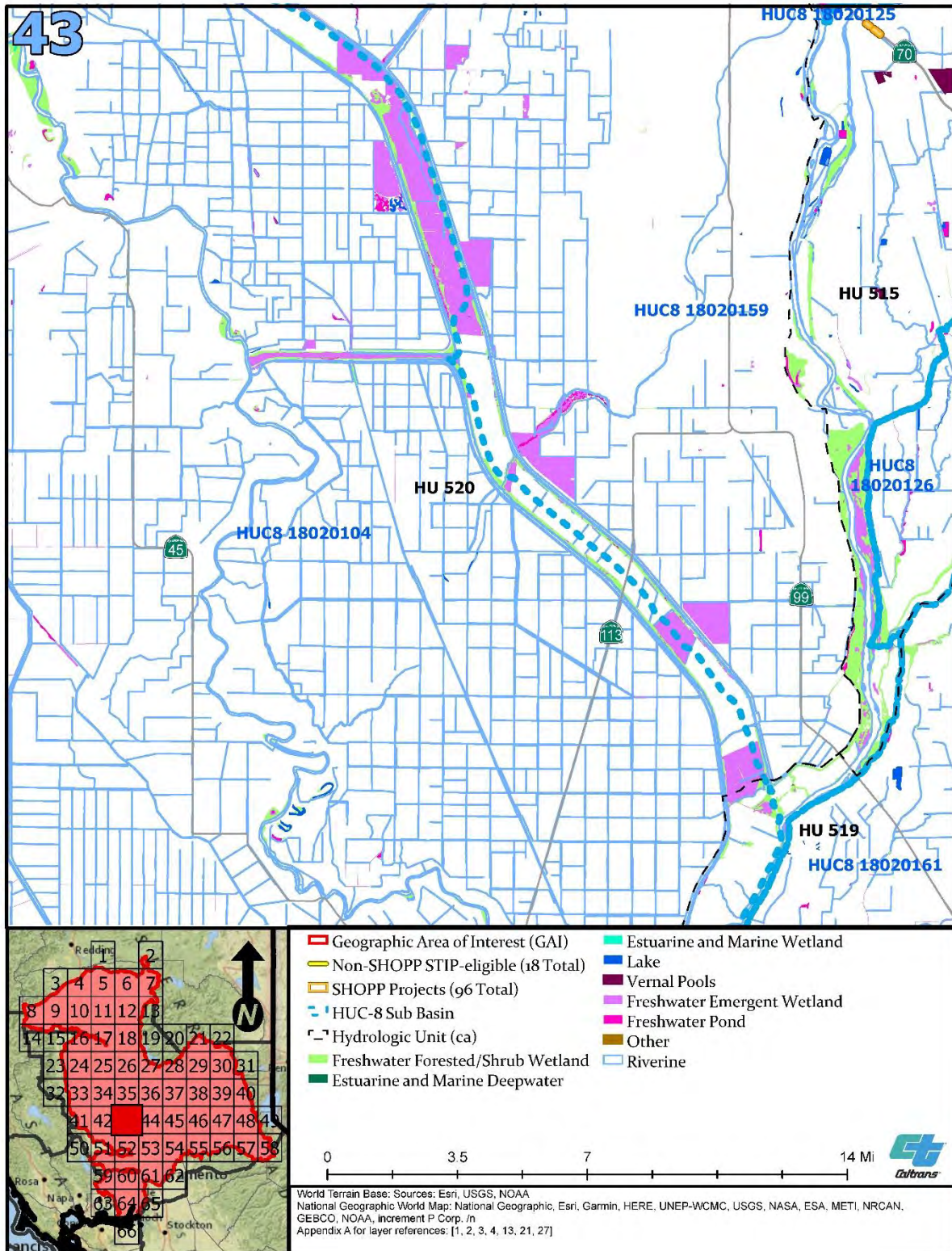




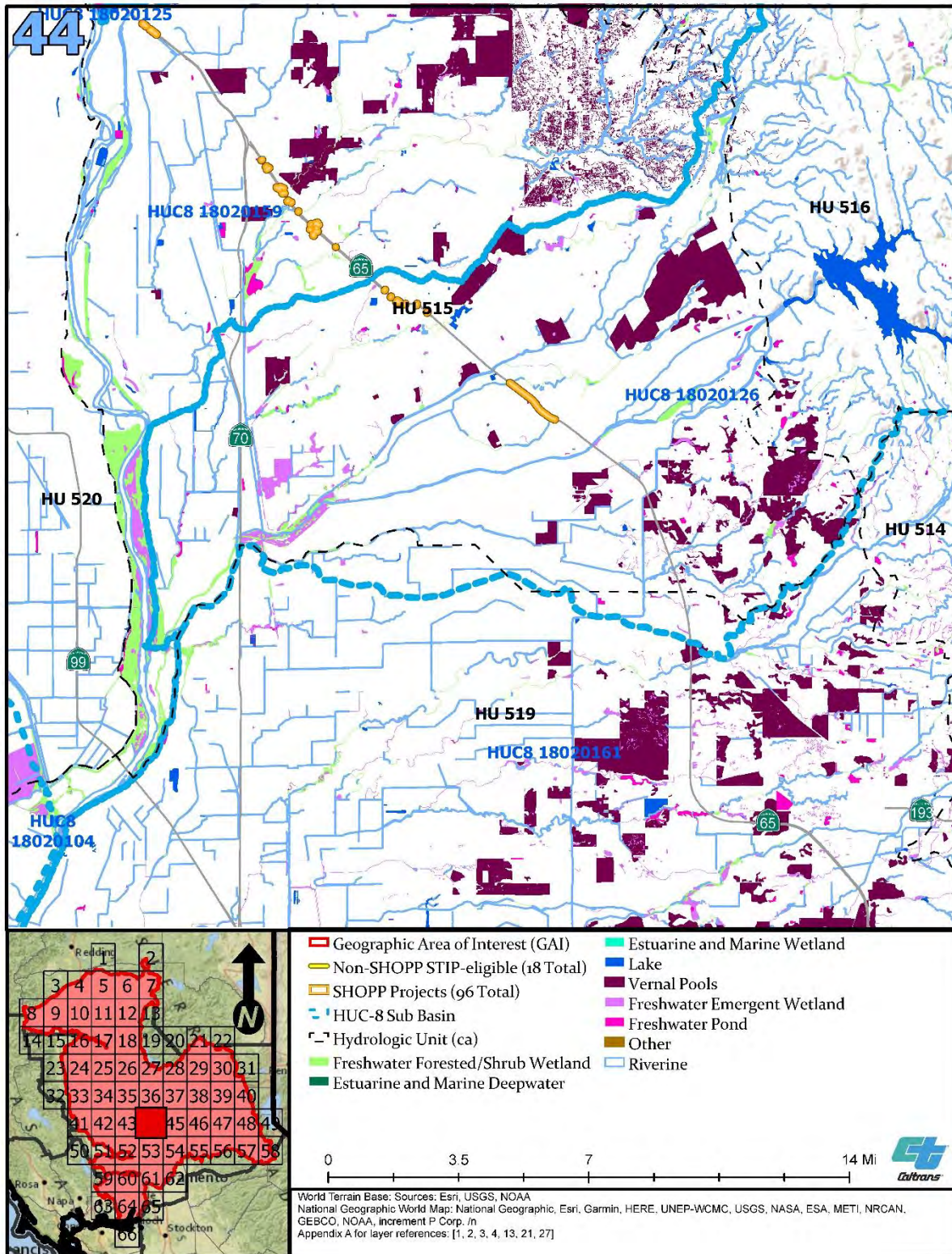




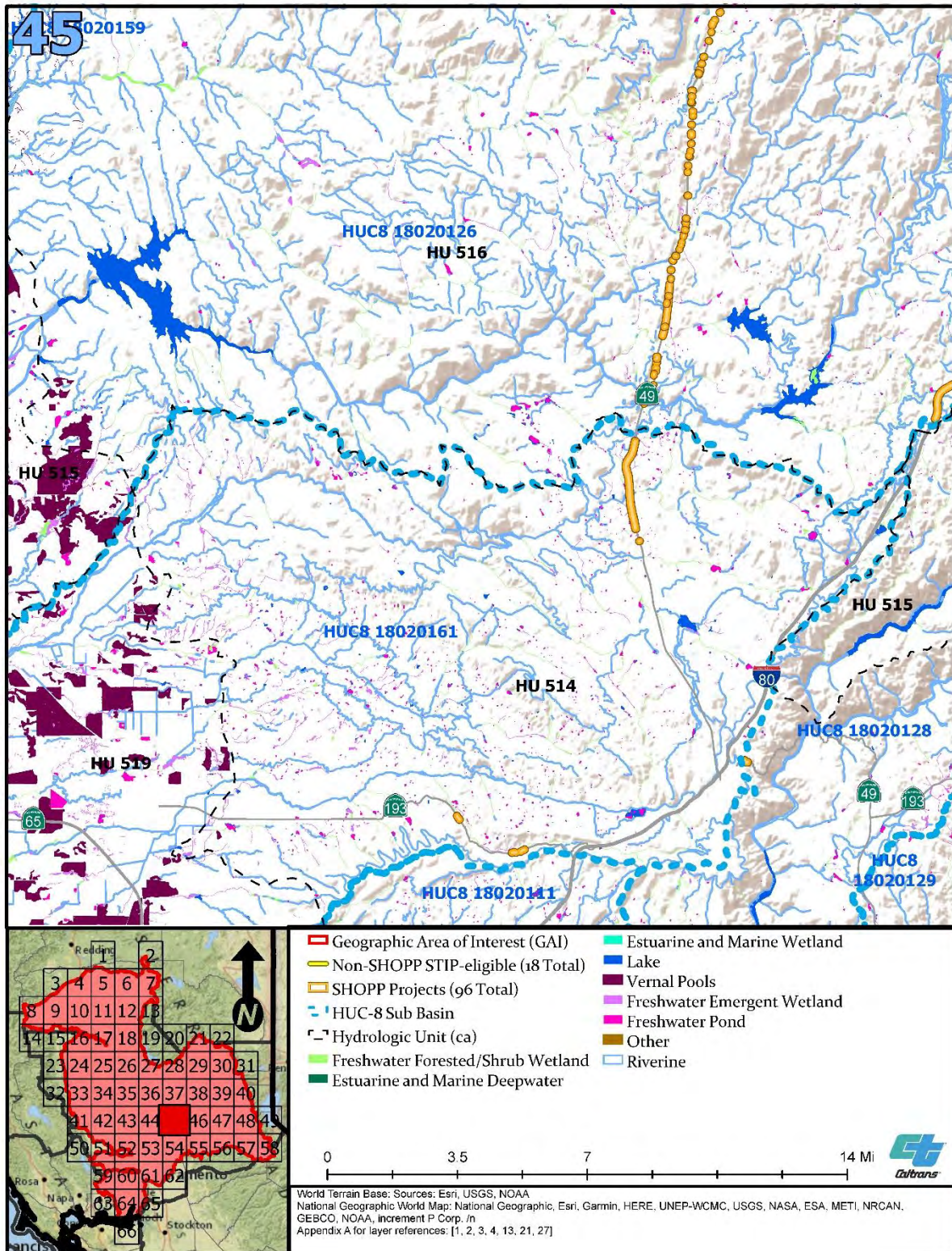




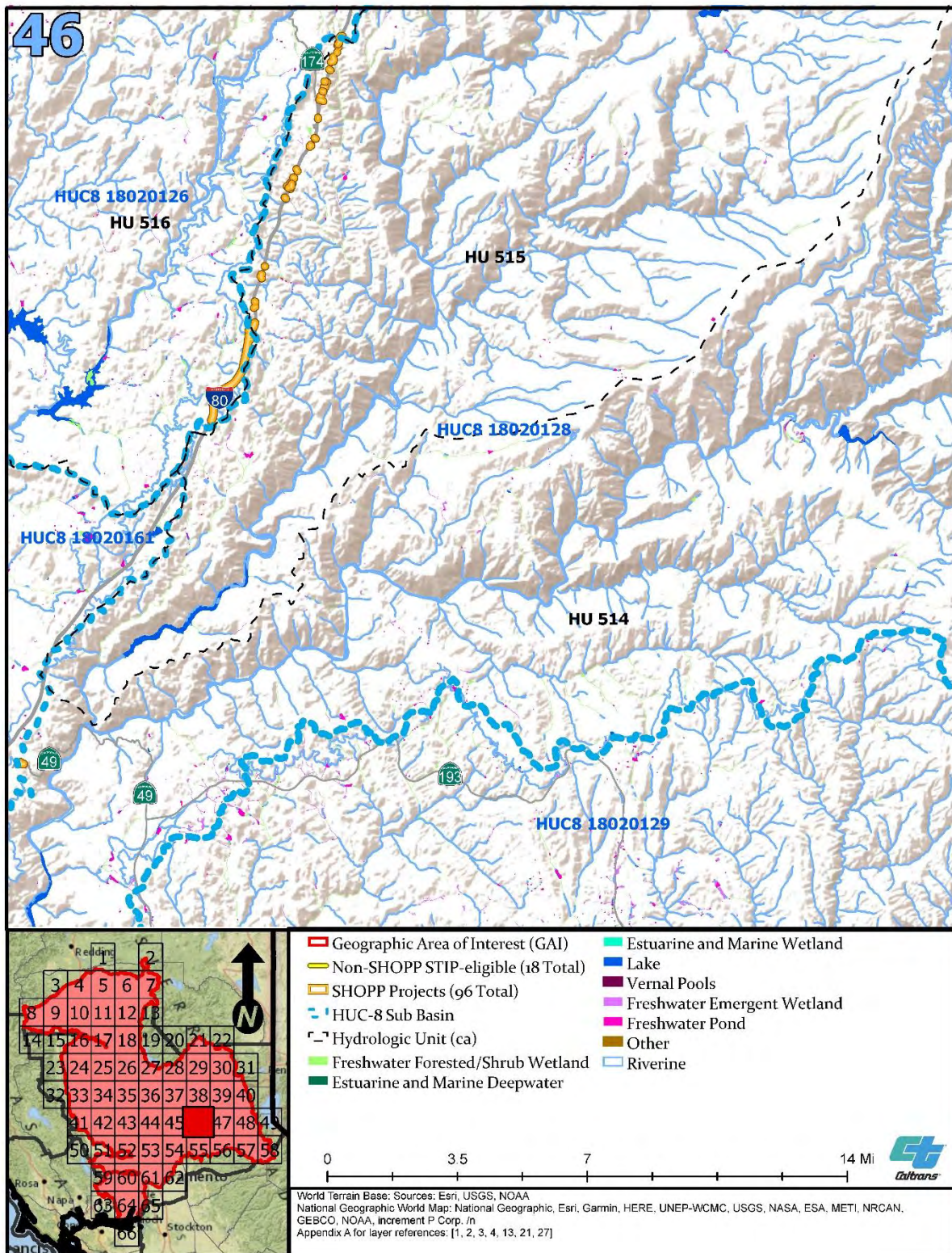




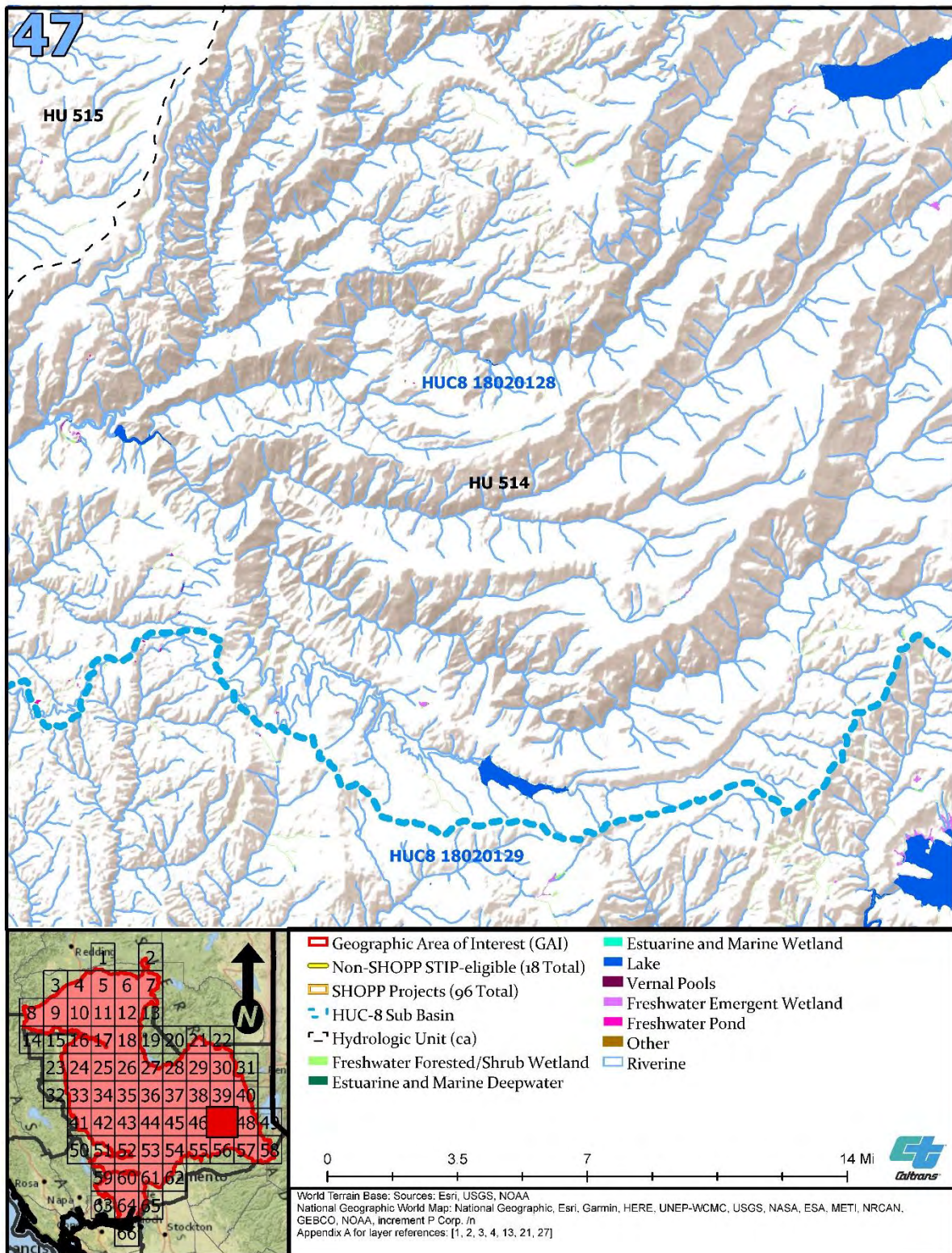




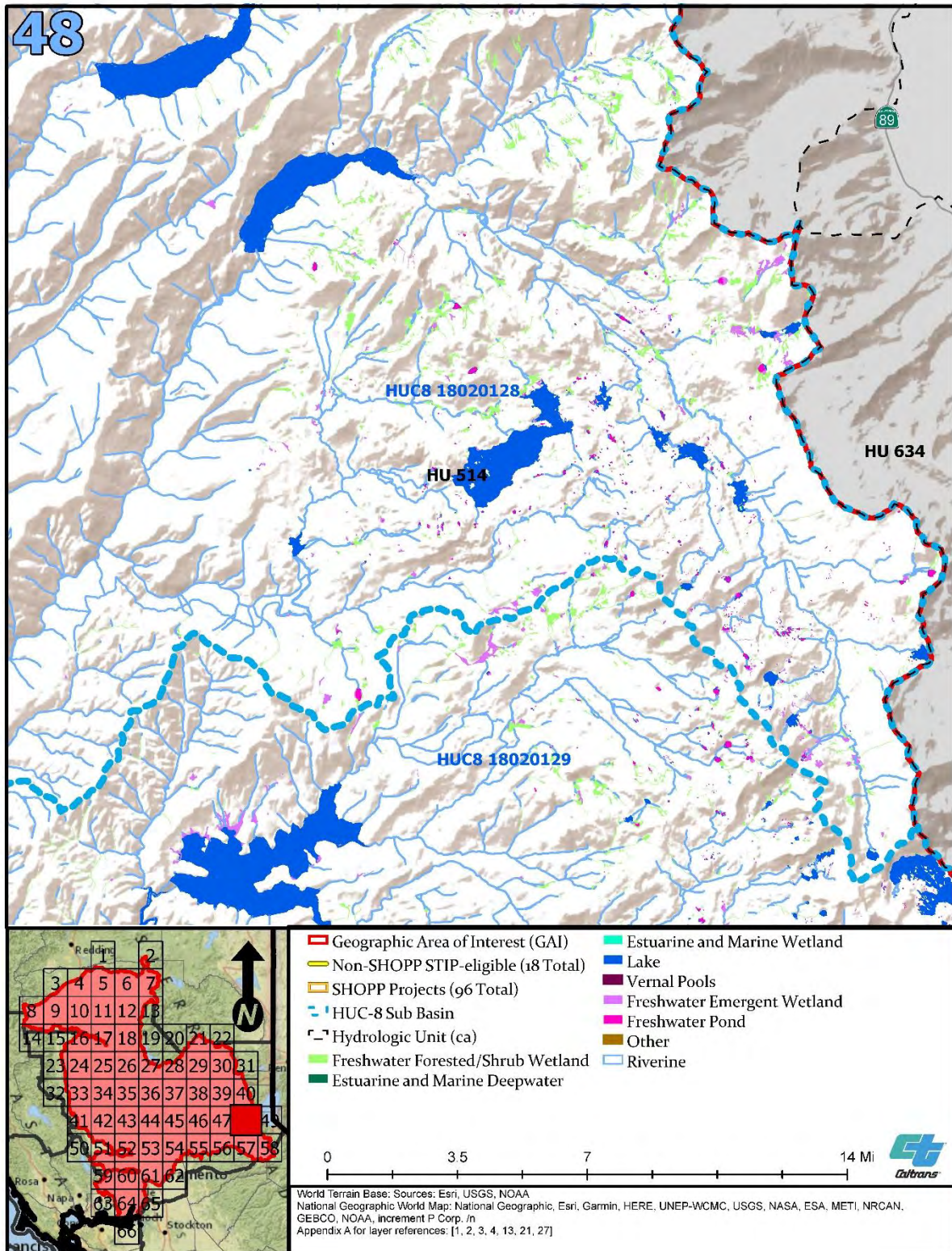




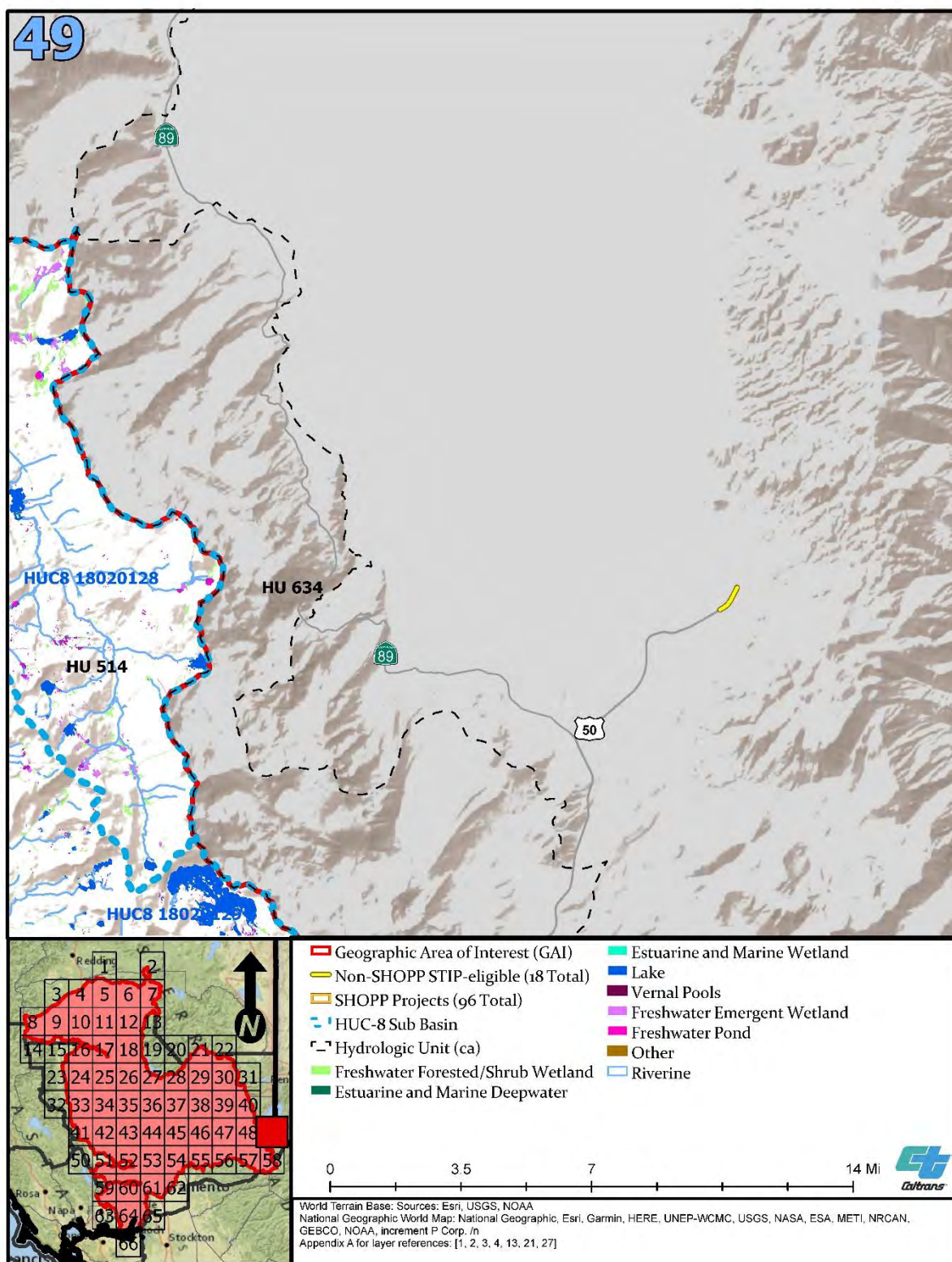




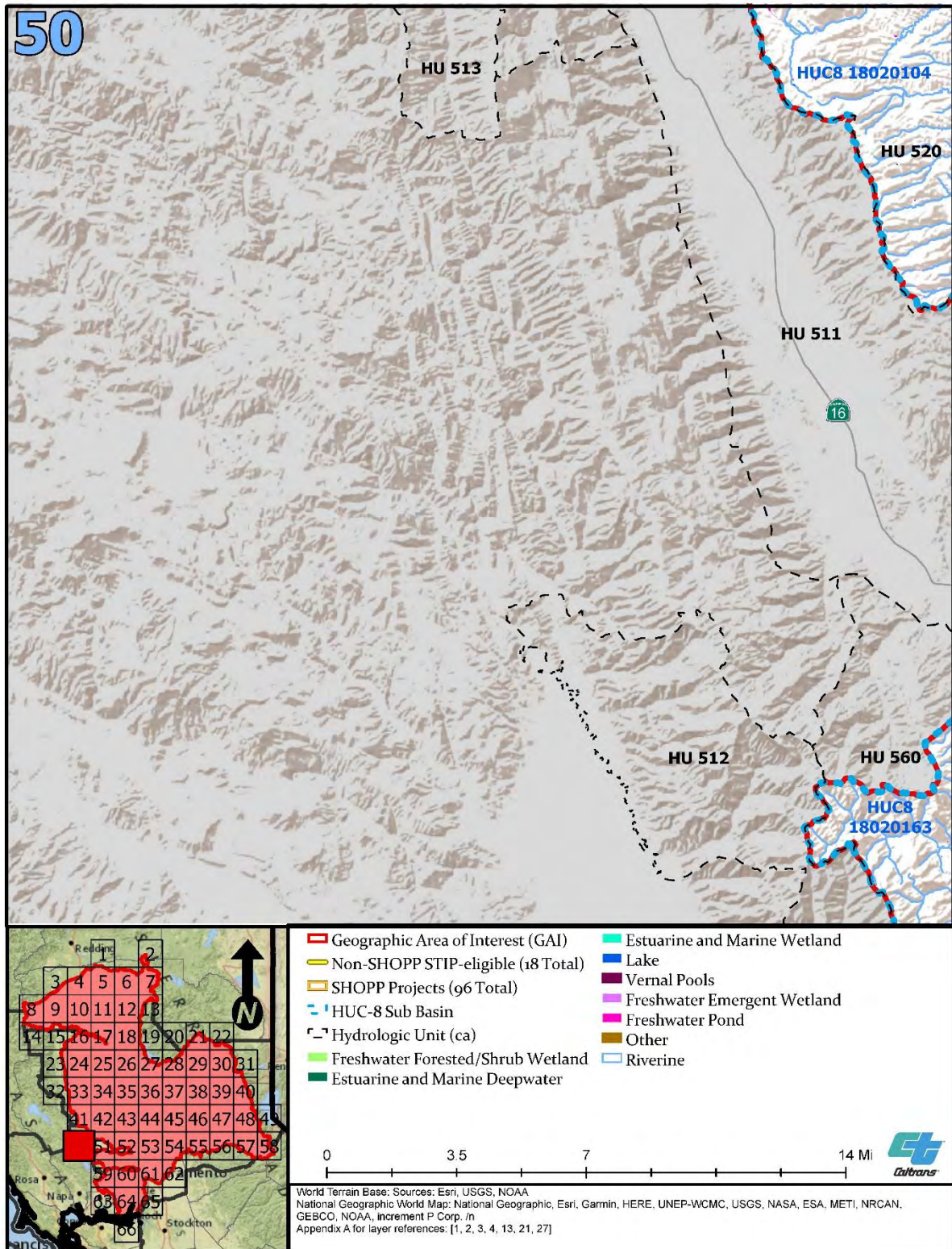




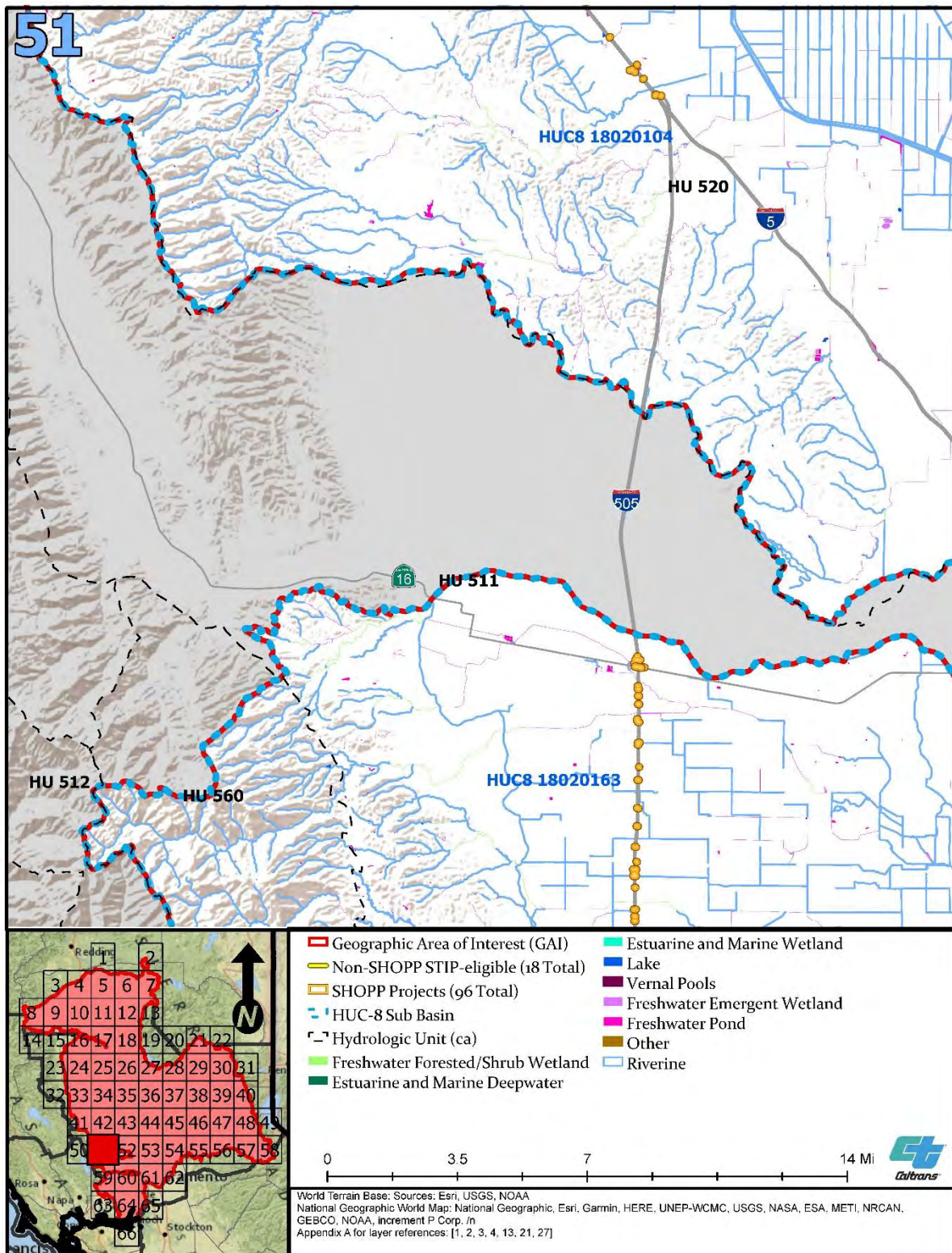




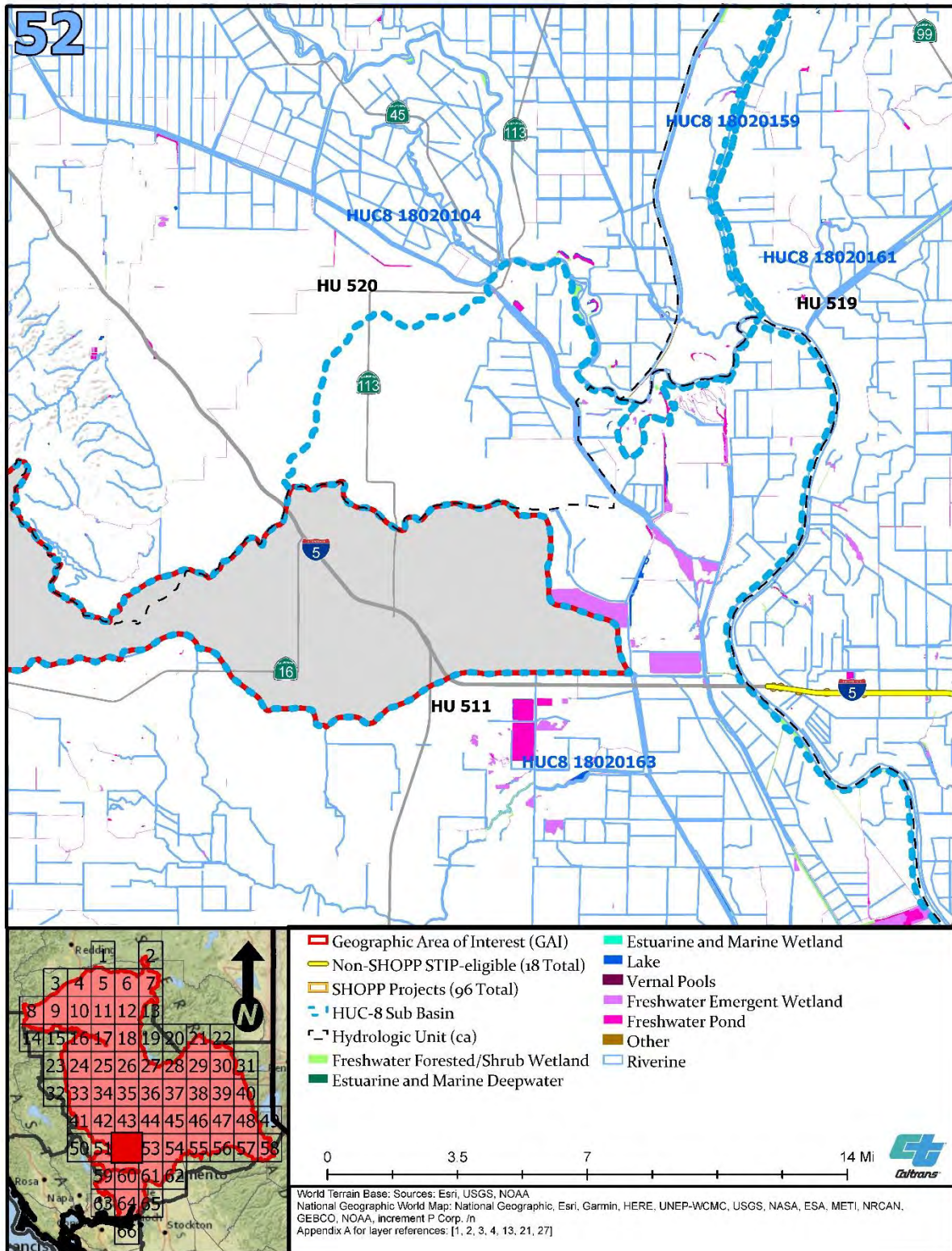




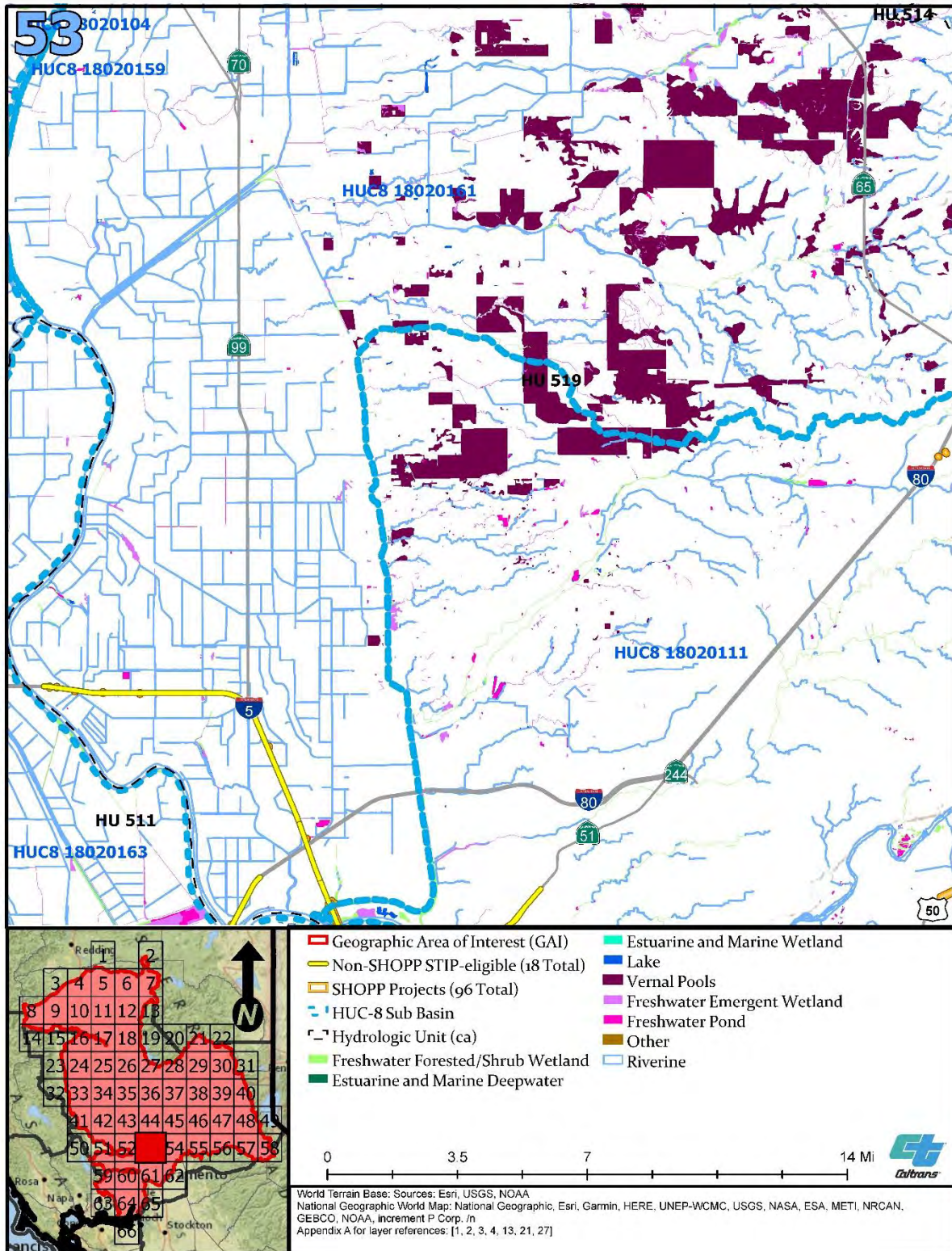




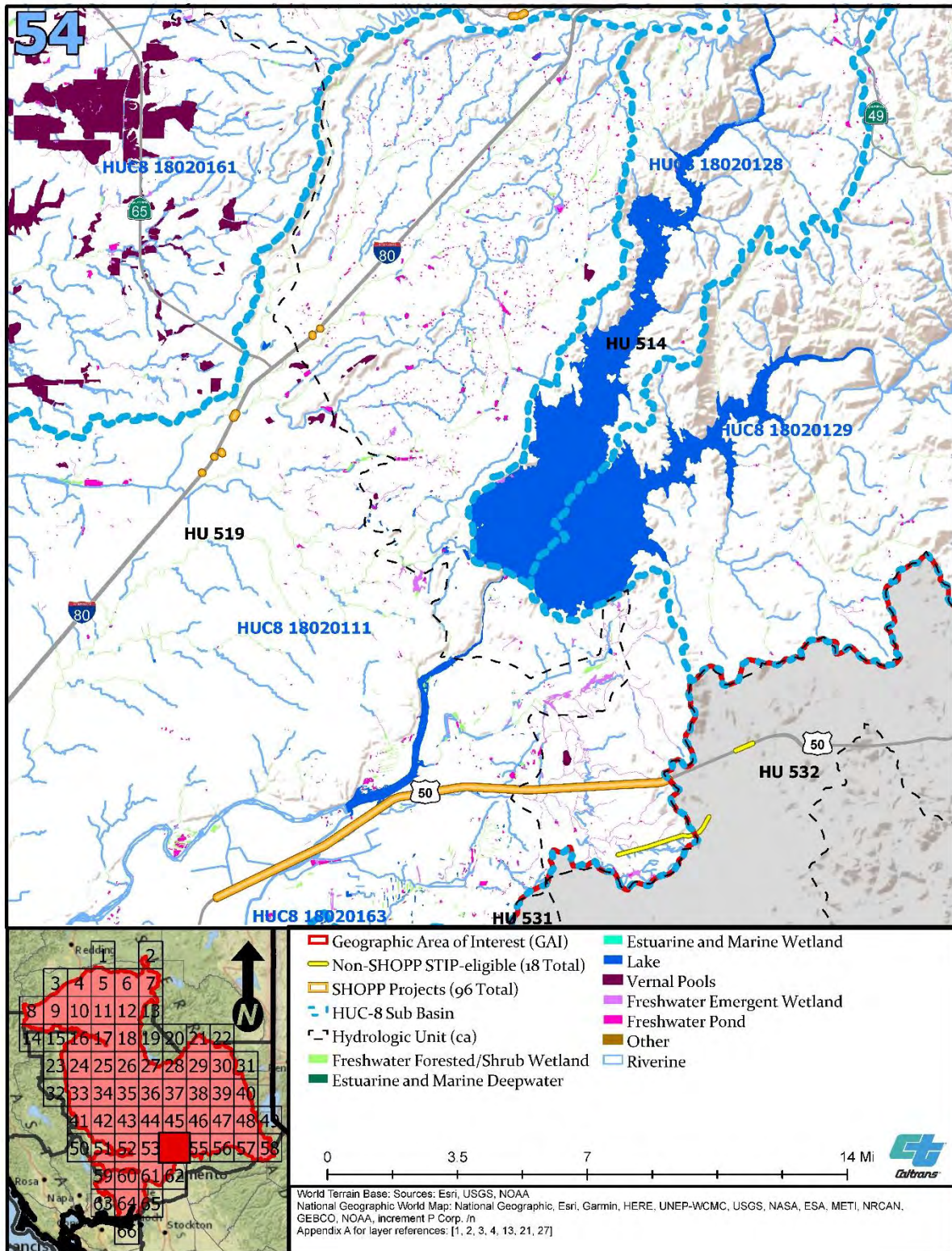




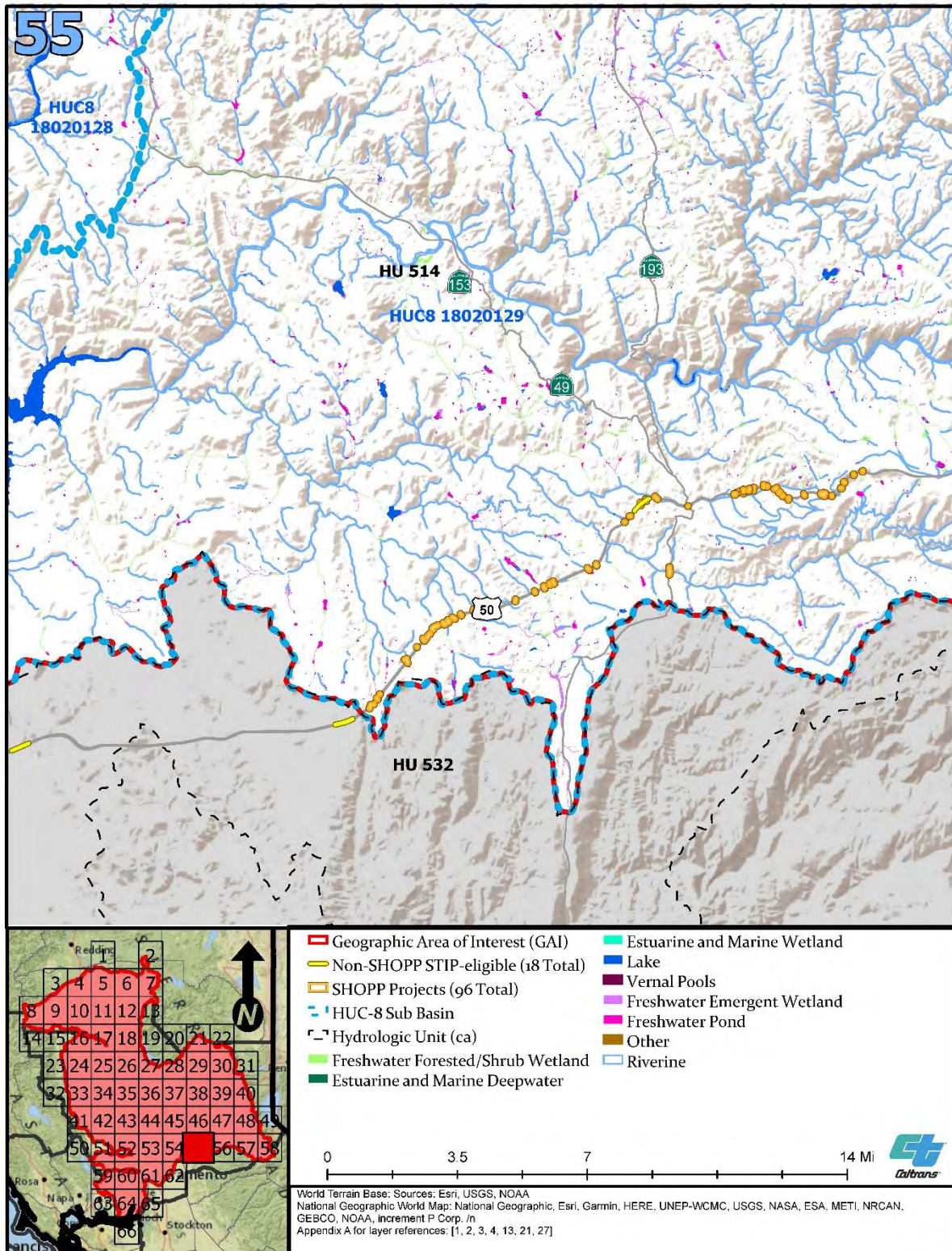




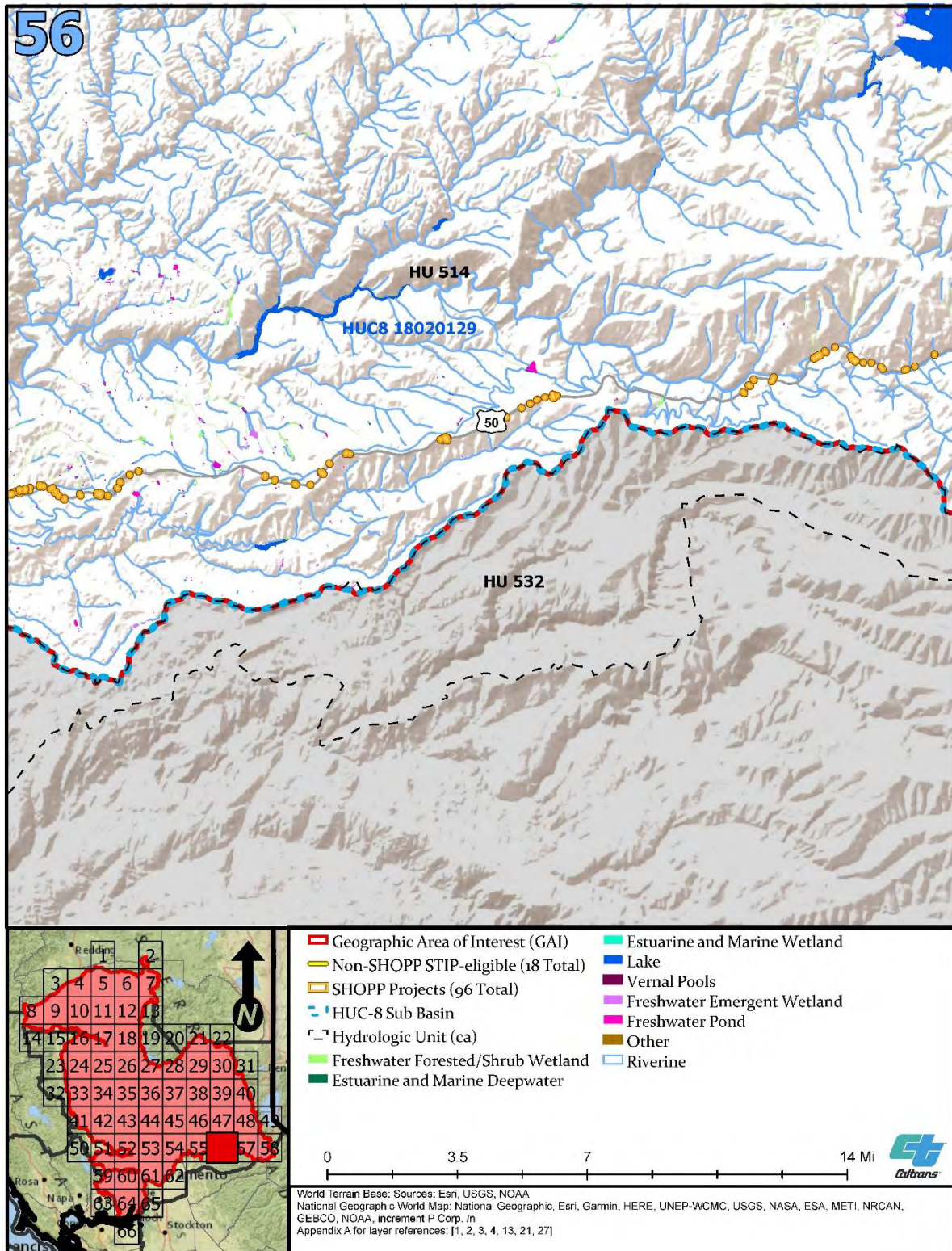




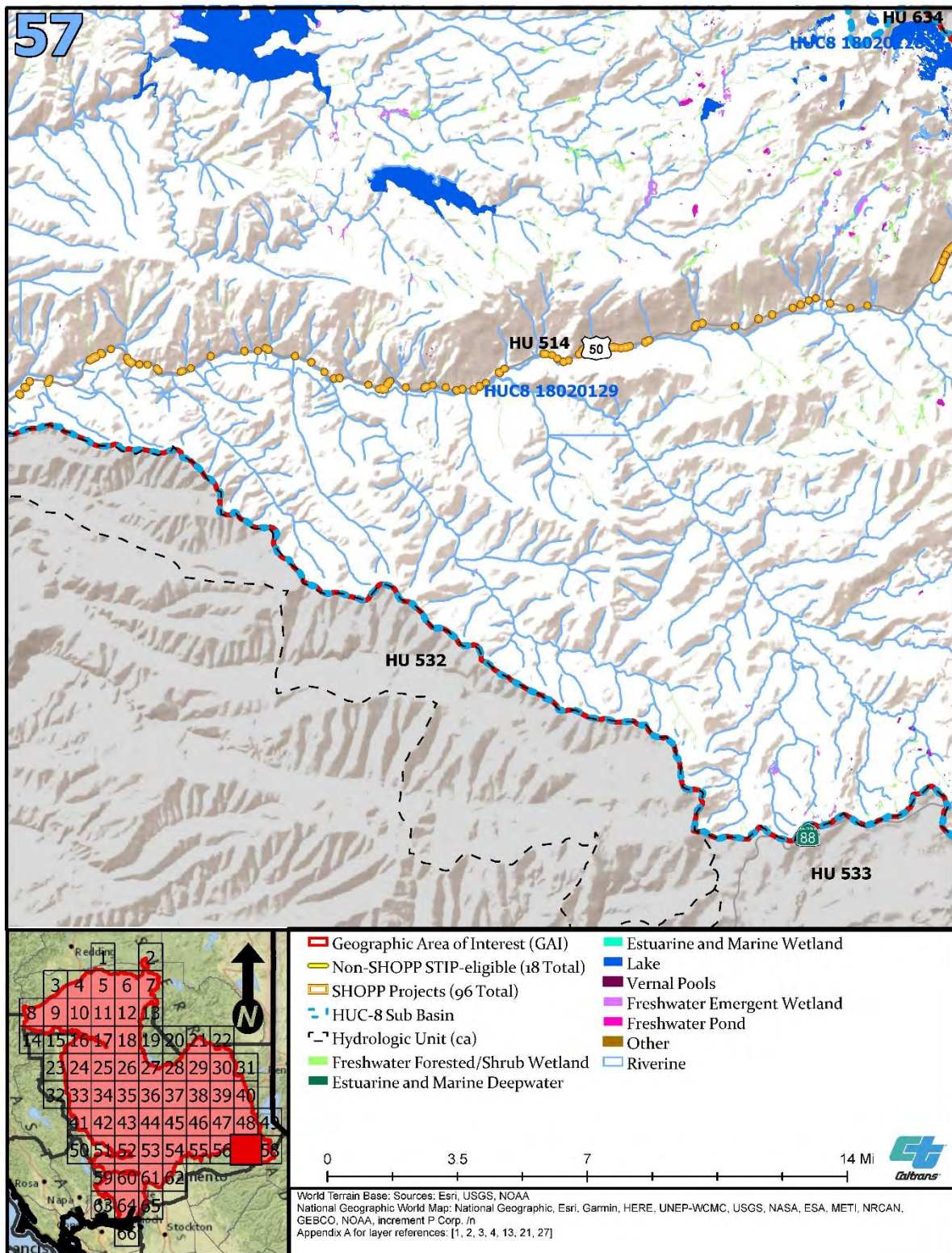




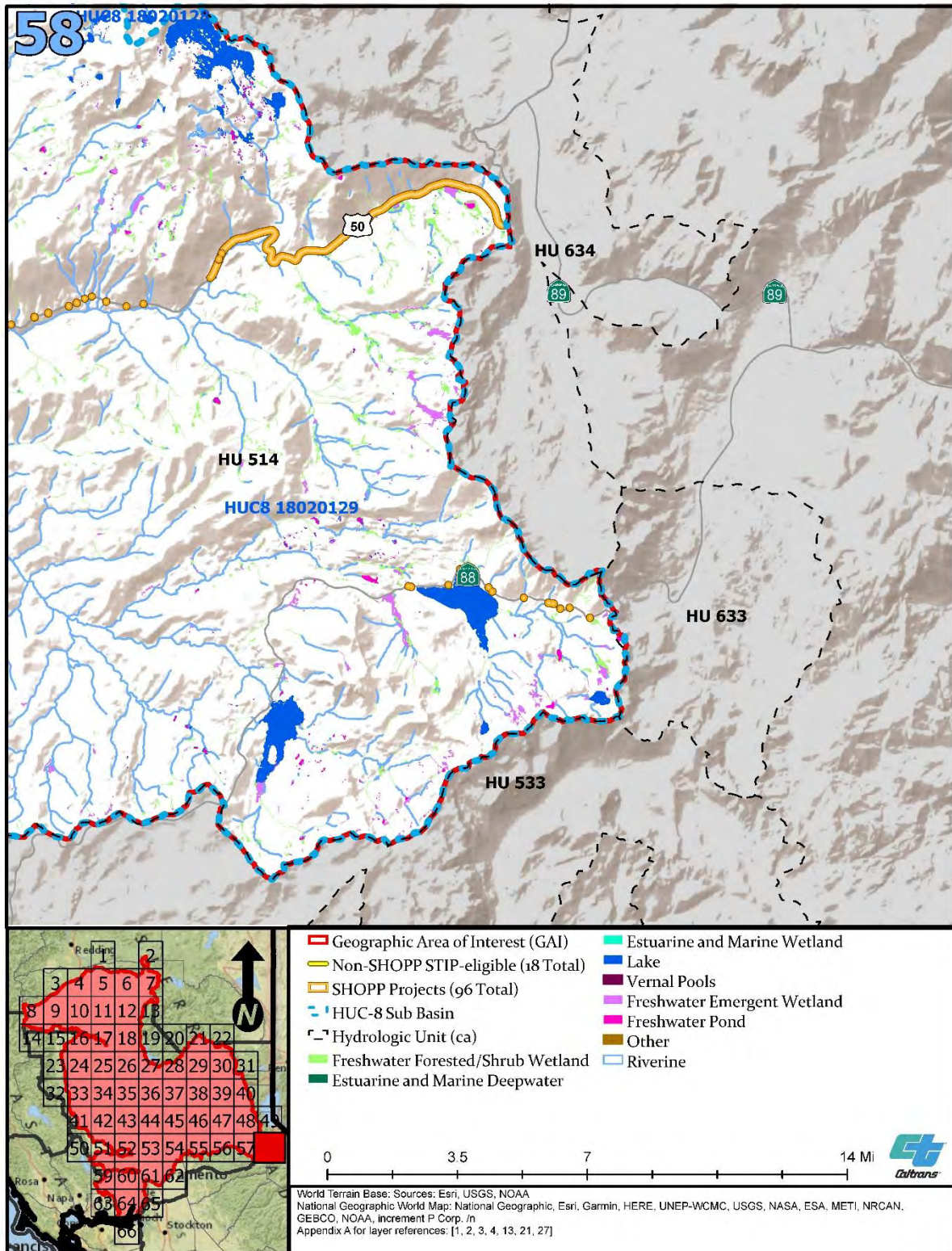




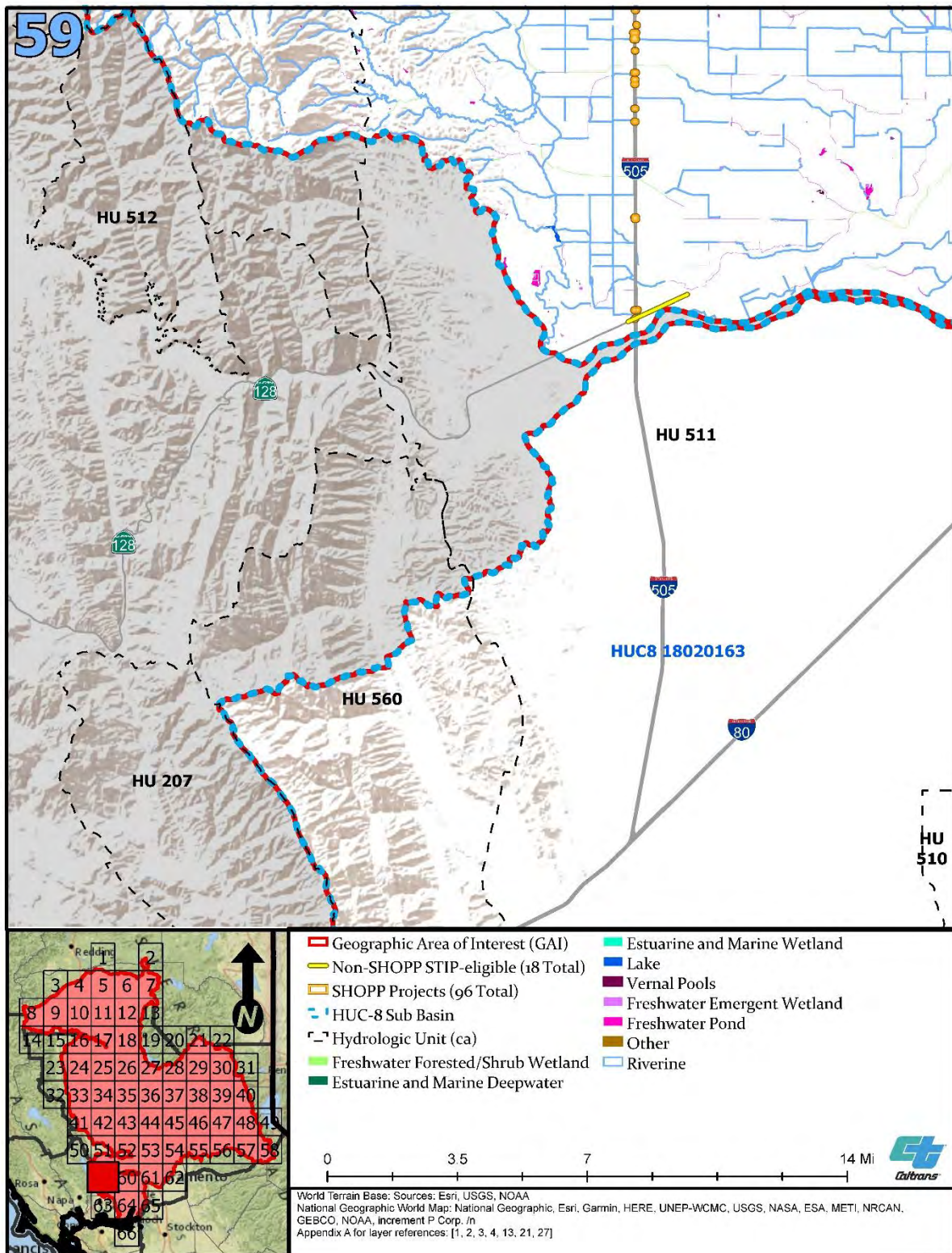




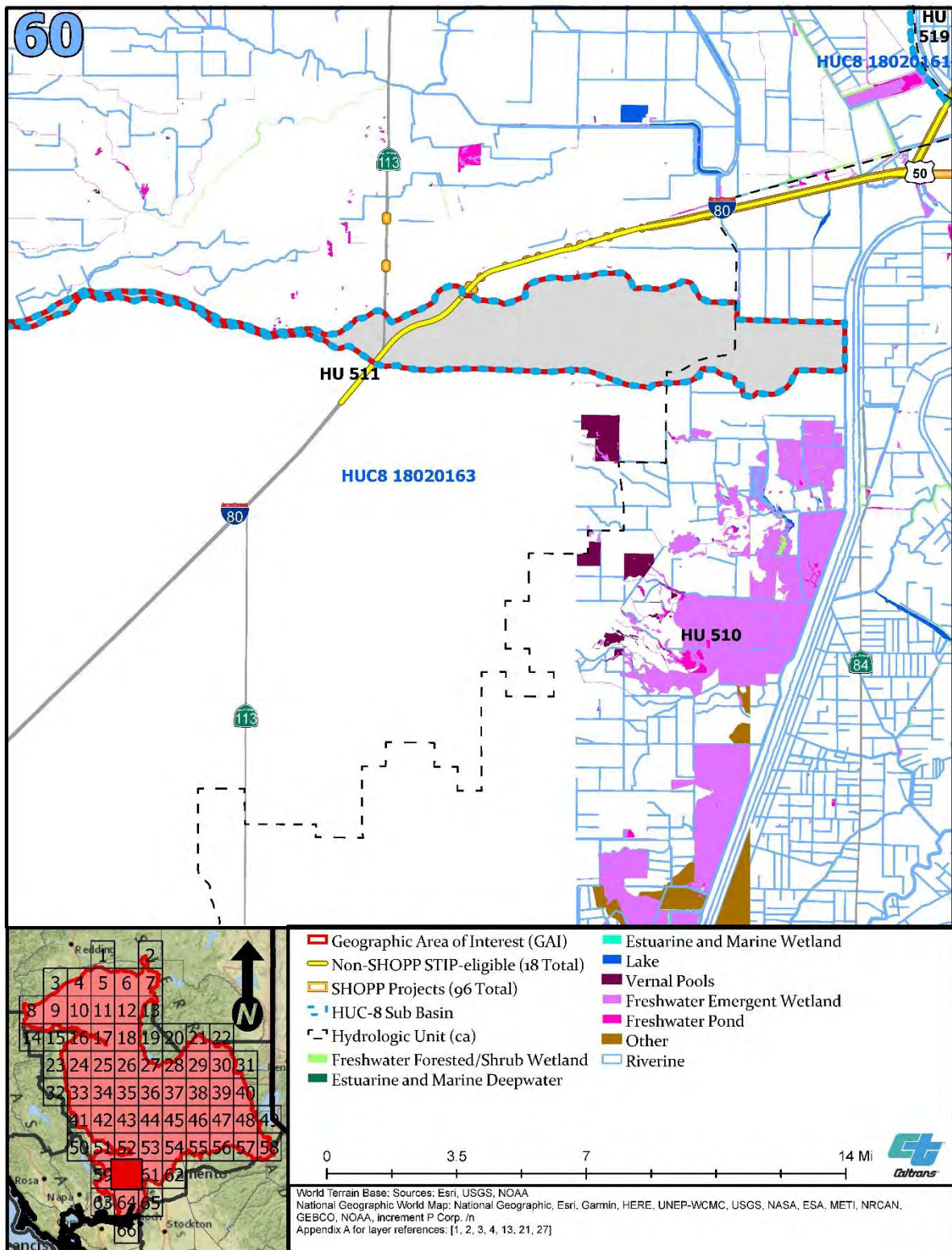




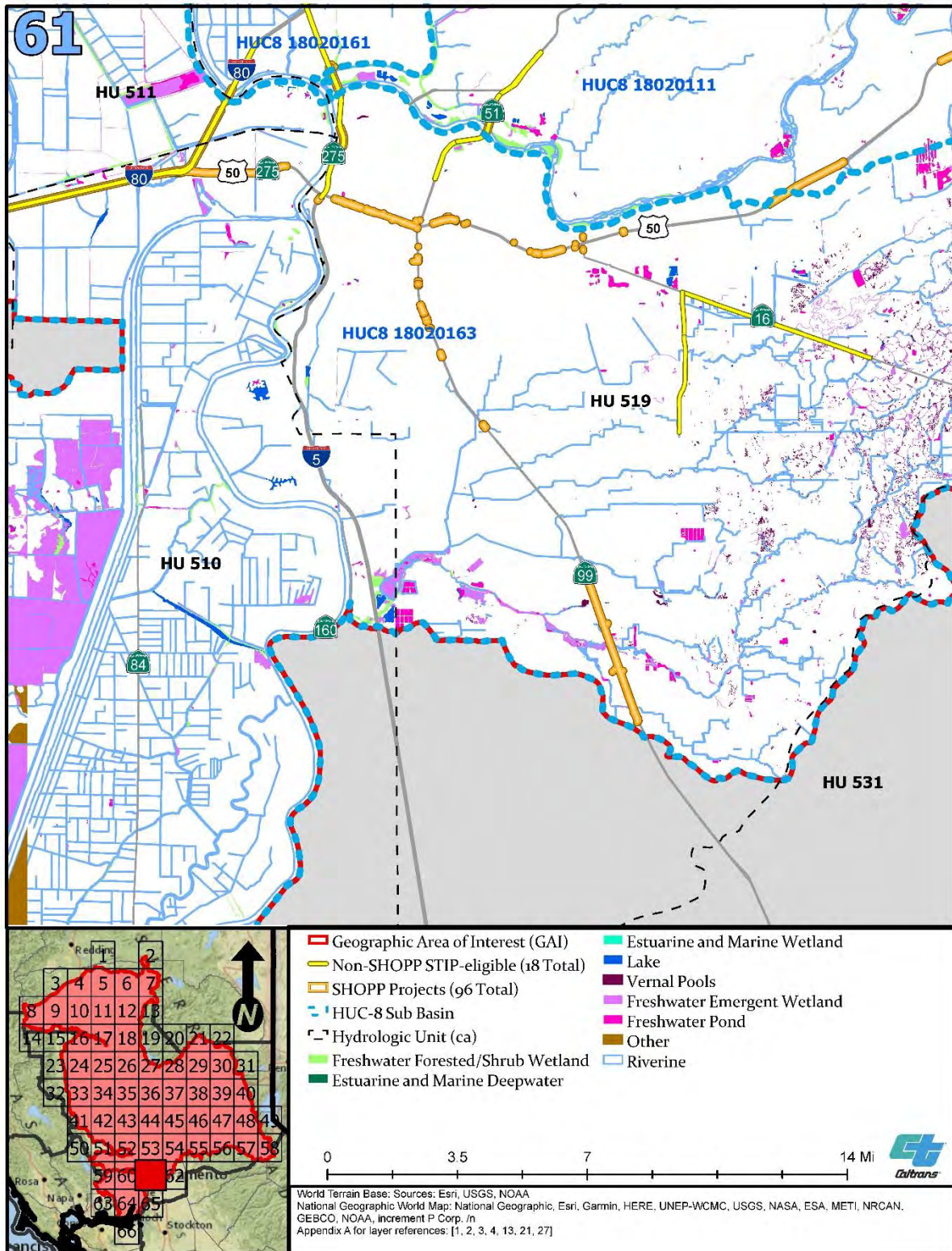




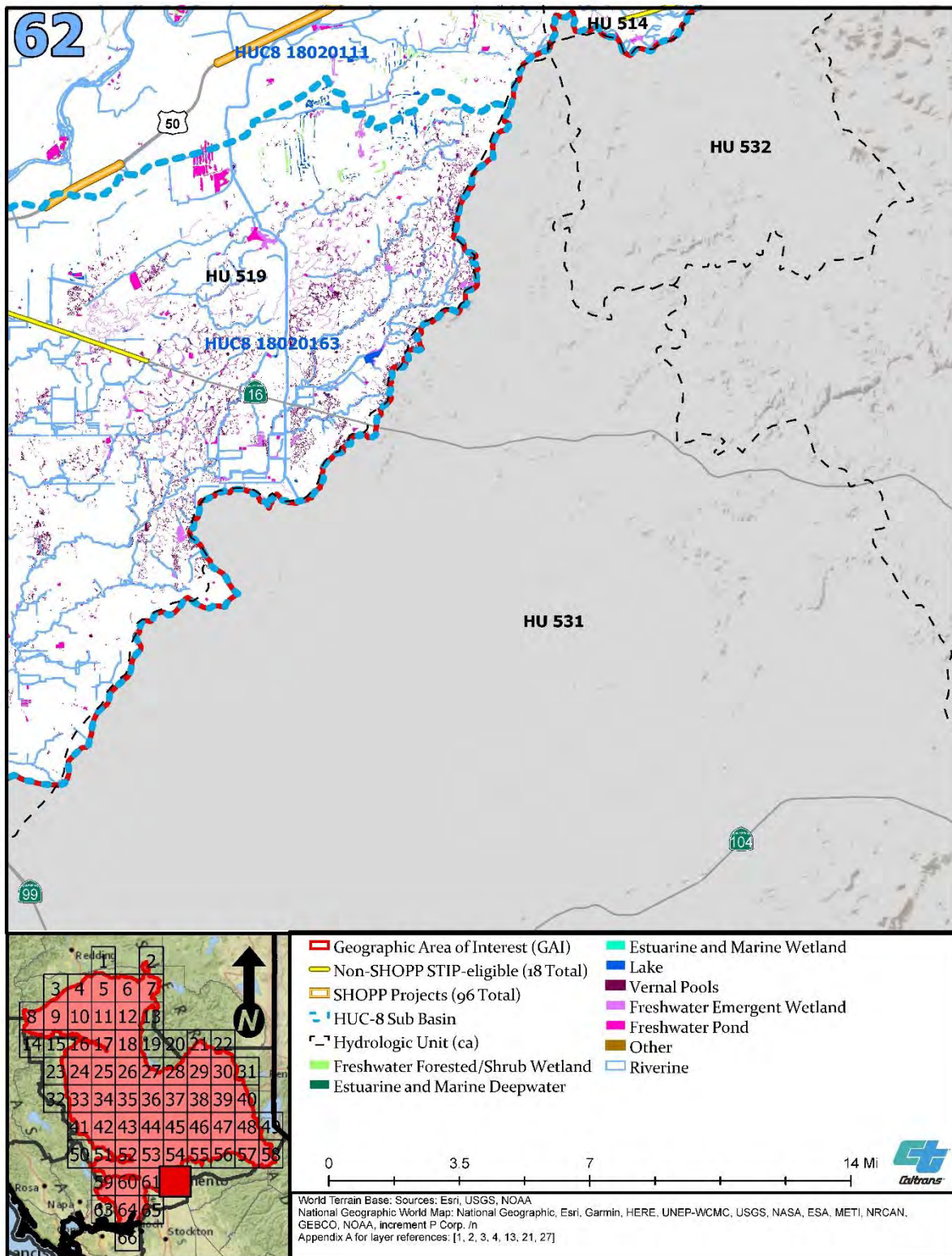


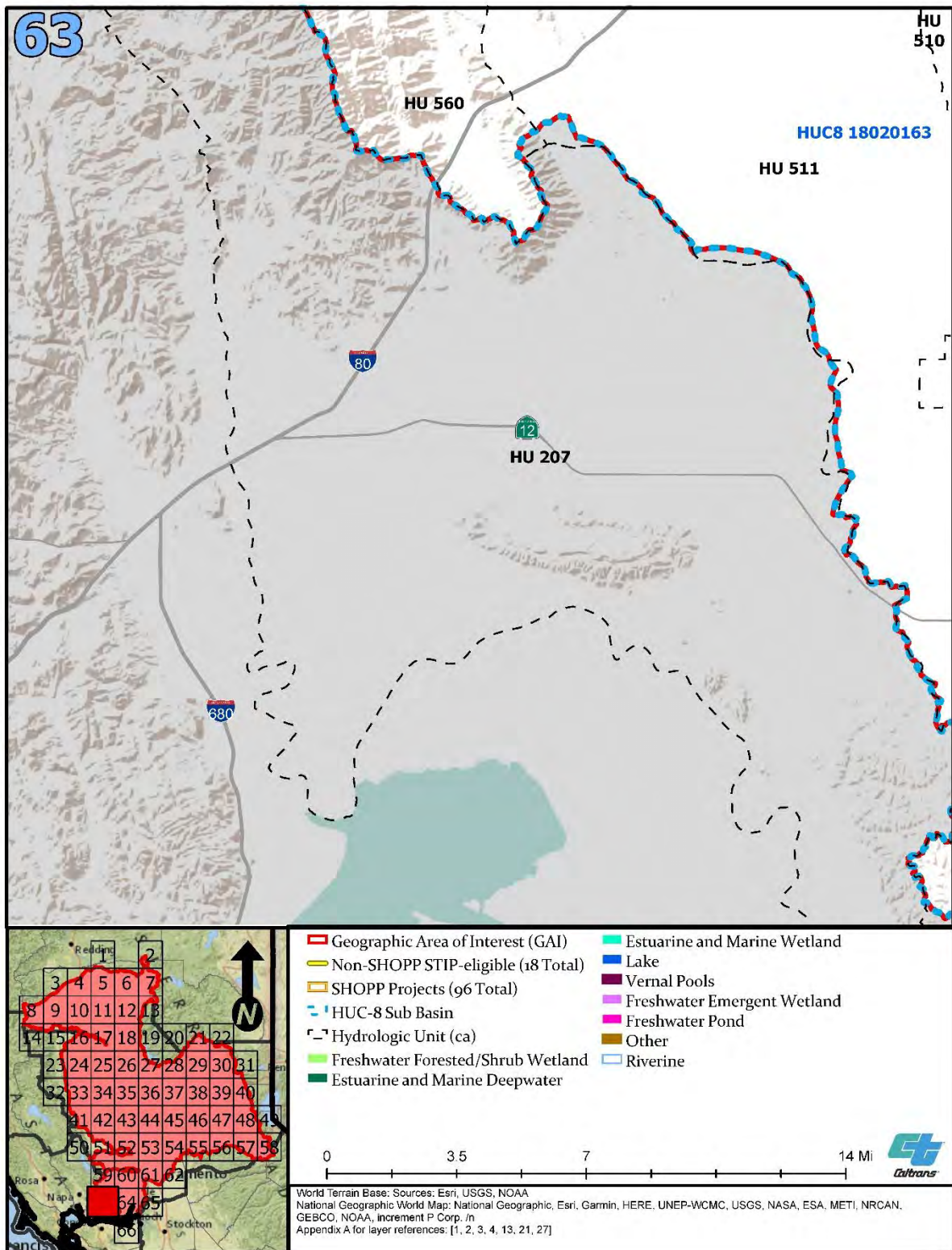




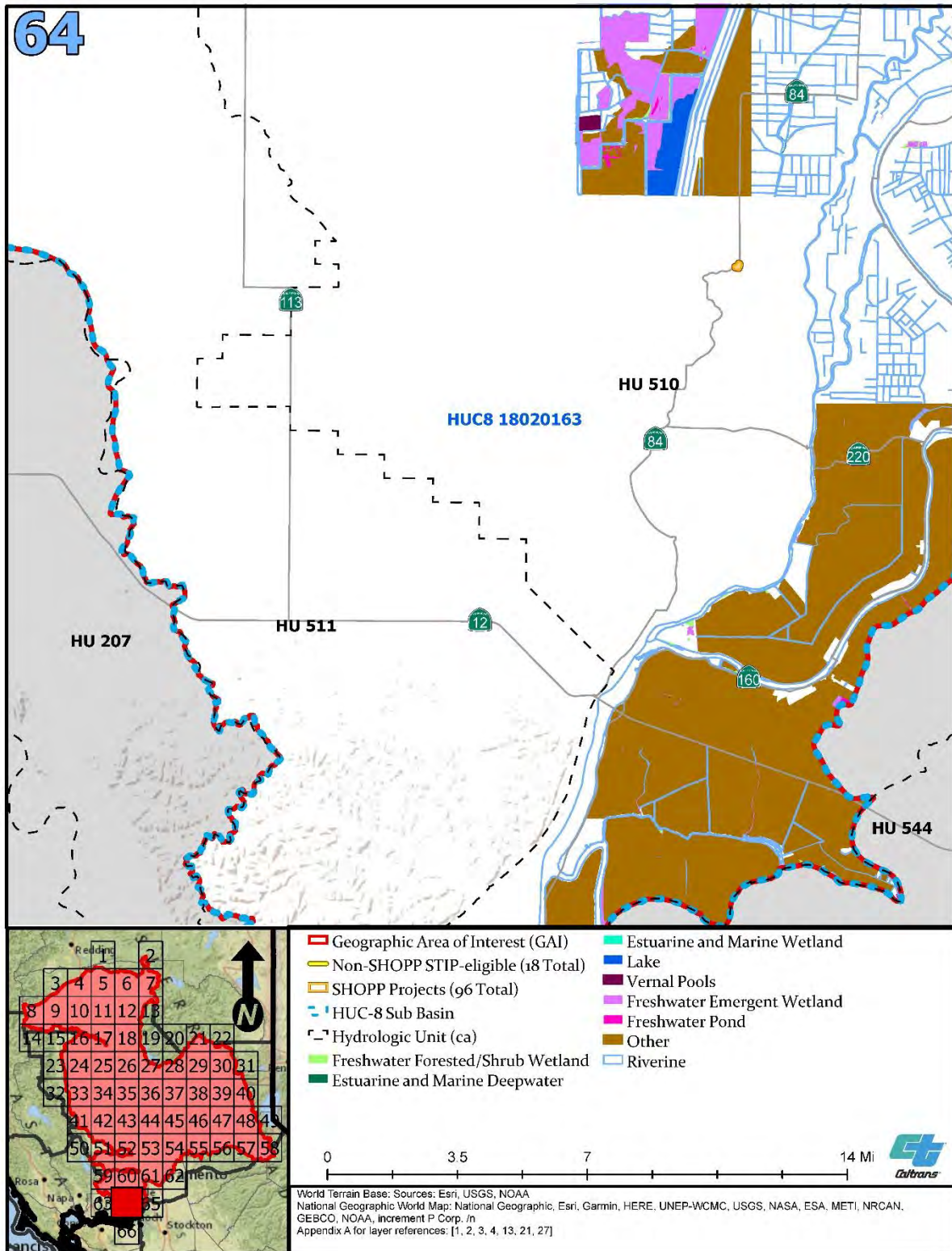


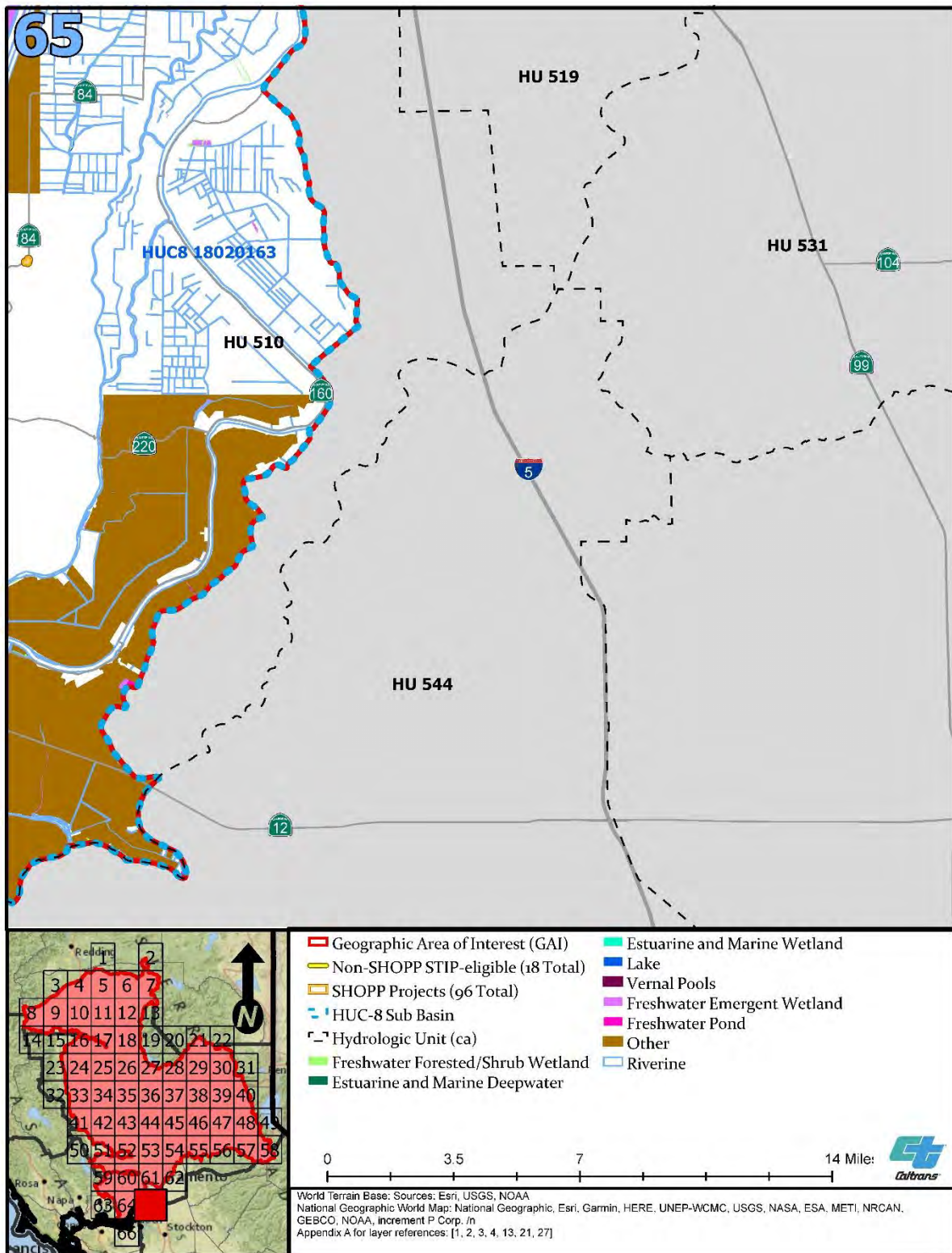




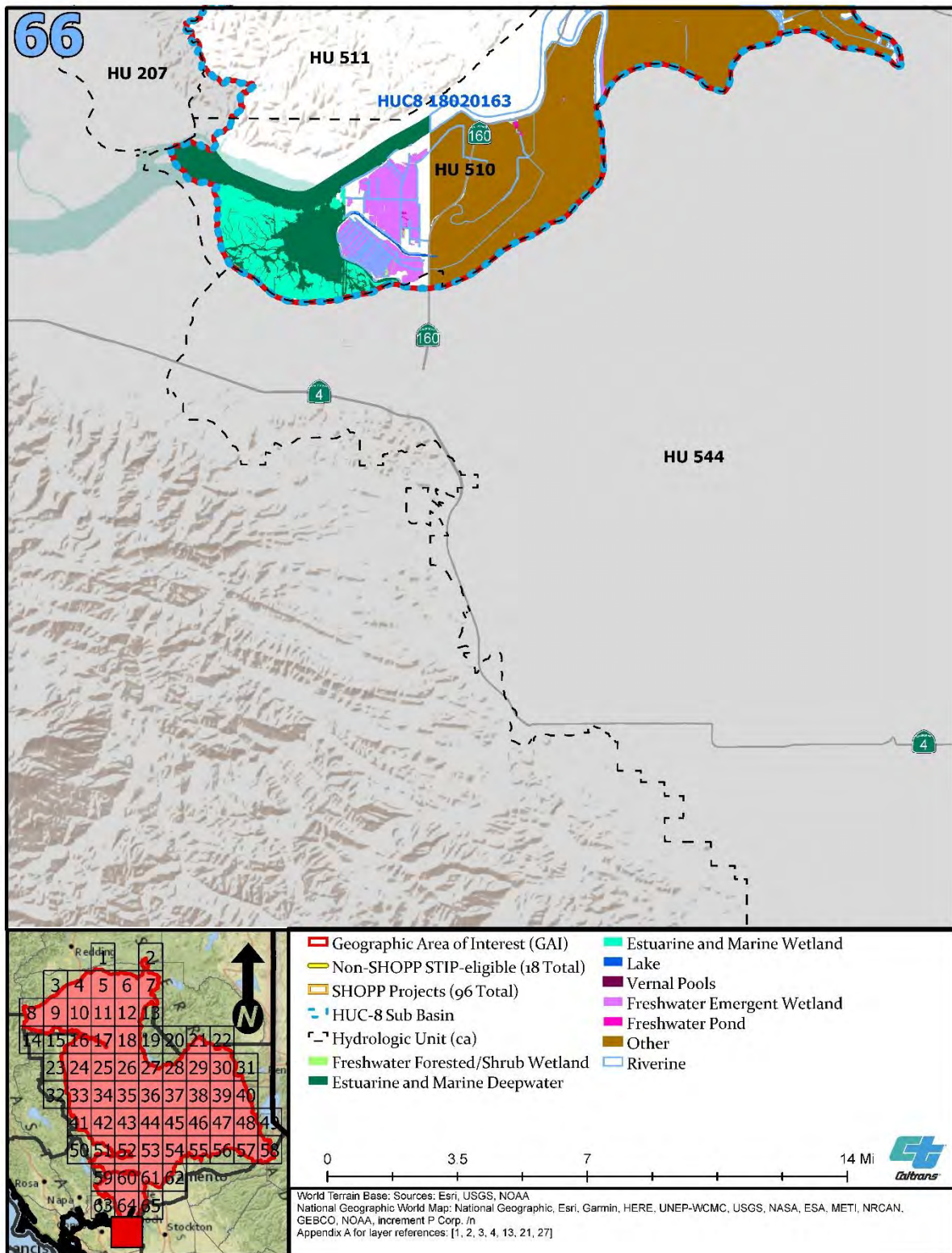












## **APPENDIX G: CONSERVATION AND MITIGATION BANK SERVICE AREAS**

Conservation and mitigation bank service areas for aquatic resources and the species of mitigation need that overlap the GAI are shown on the following figures. These figures are organized by the resource for which credits are available, and are presented in the following order:

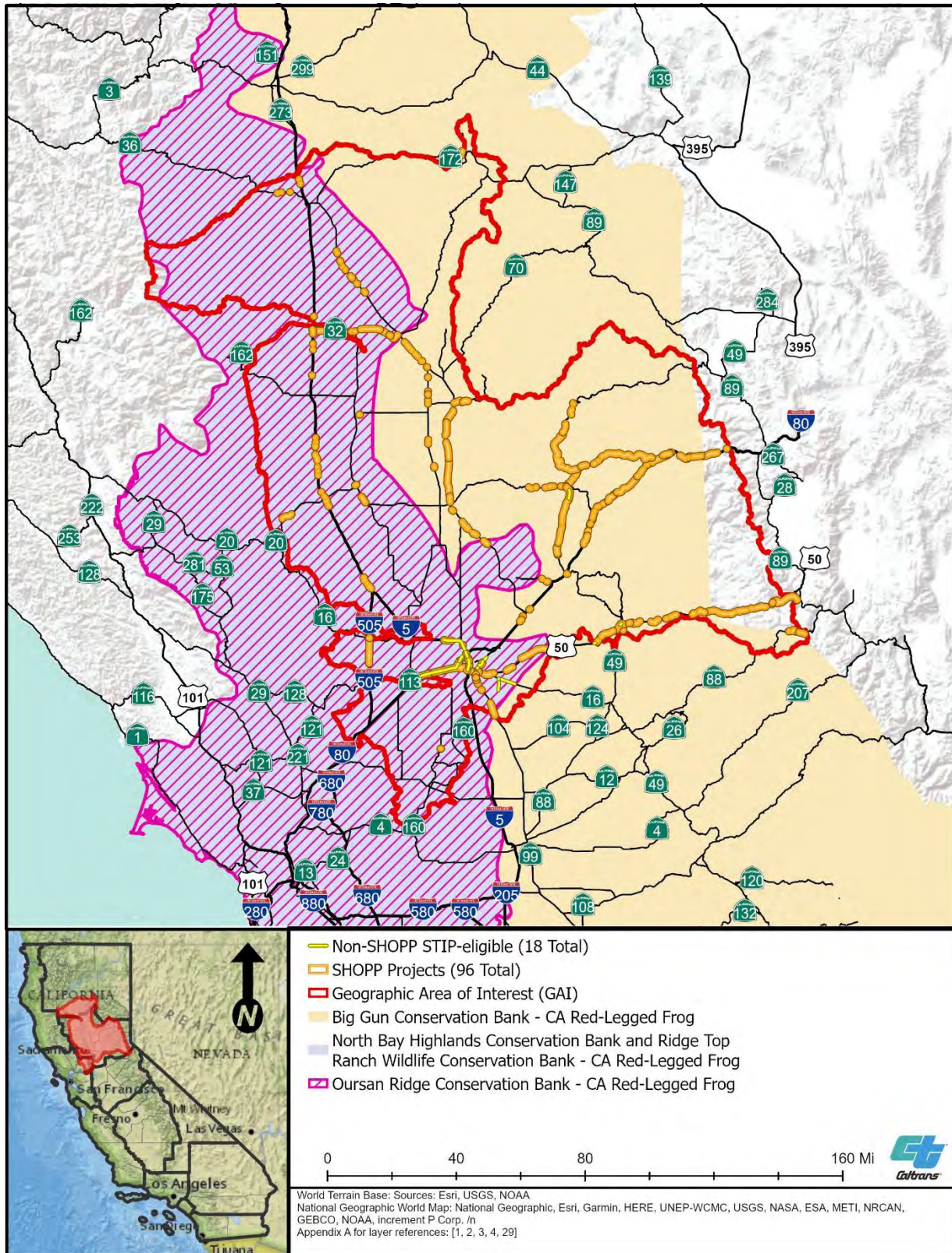
- Figure G-1. California Red-legged Frog Bank Service Areas
- Figure G-2. Giant Garter Snake Bank Service Areas
- Figure G-3. Swainson's Hawk Bank Service Areas (Map 1)
- Figure G-4. Swainson's Hawk Bank Service Areas (Map 2)
- Figure G-5. Valley Elderberry Longhorn Beetle Bank Service Areas
- Figure G-6. Wetland and Aquatic Resources Bank Service Areas (Map 1)
- Figure G-7. Wetland and Aquatic Resources Bank Service Areas (Map 2)

Because individual conservation and mitigation banks often offer credits for more than one species or resource, each with a separate service area, banks may be listed on multiple maps.

Refer to Table 4-3 in Chapter 4 for a full list of conservation and mitigation banks within the GAI, including others not shown in these figures, that offer credits for resources other than the species of mitigation need.

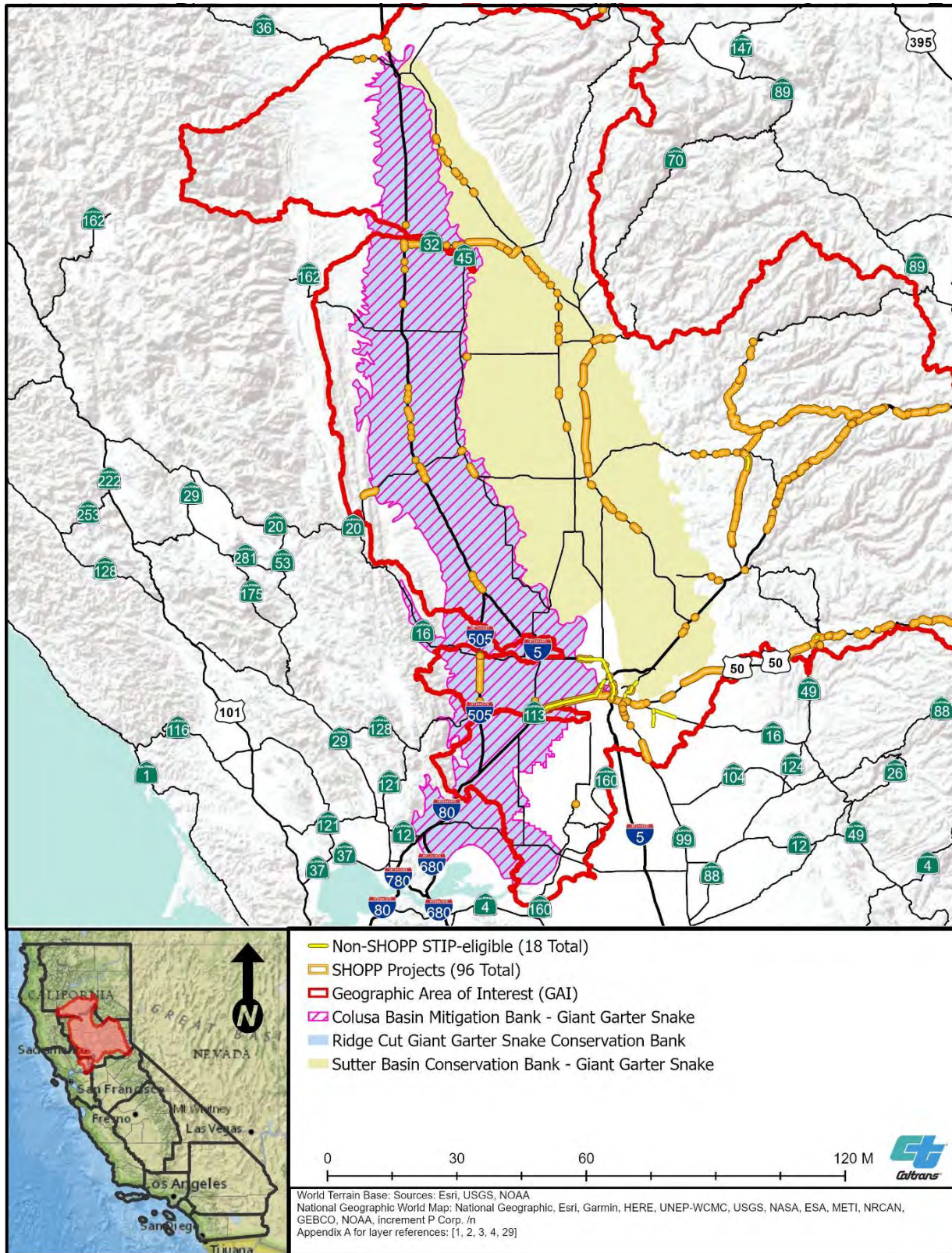


**Figure G-1. California Red-legged Frog Bank Service Areas**



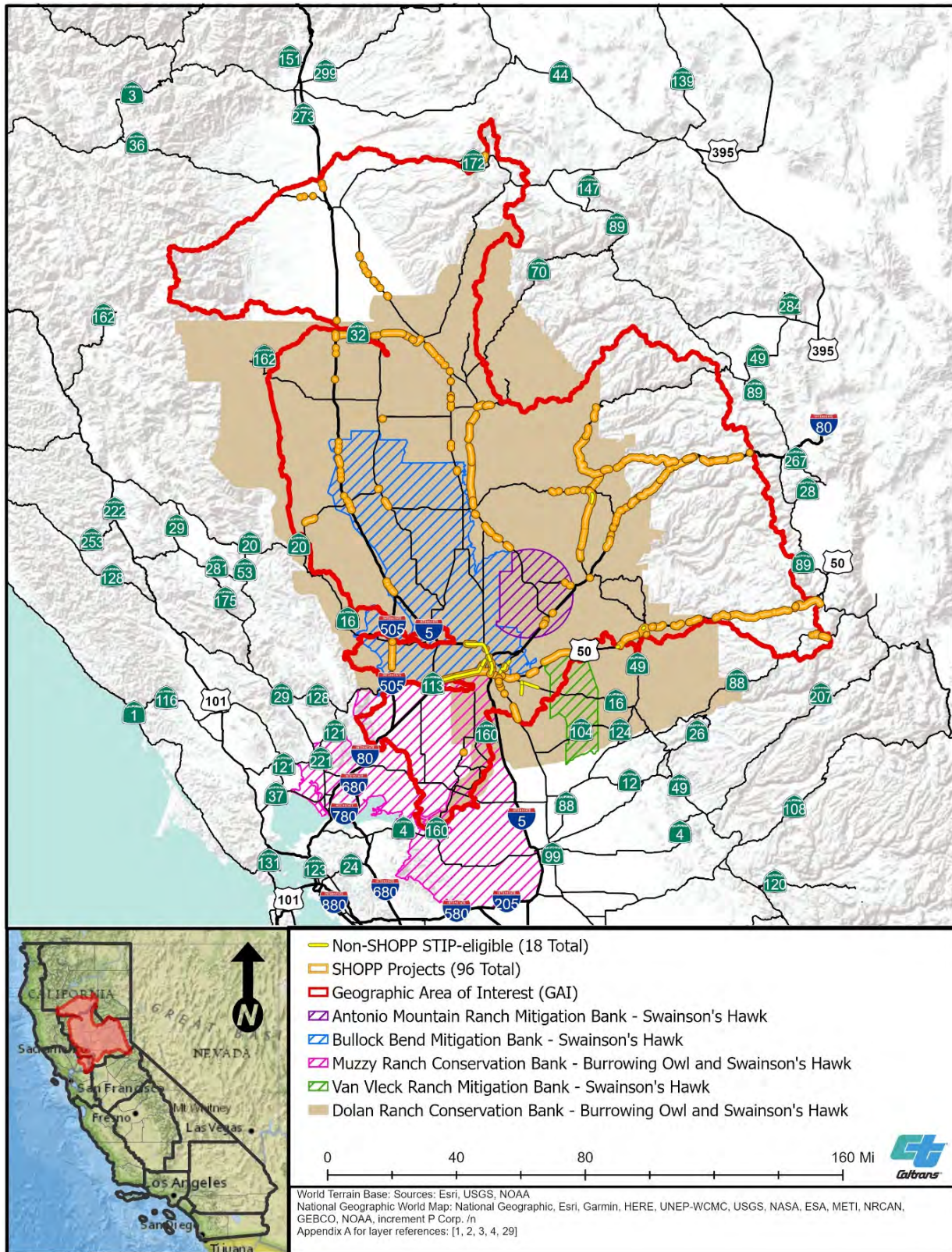


**Figure G-2. Giant Garter Snake Bank Service Areas**



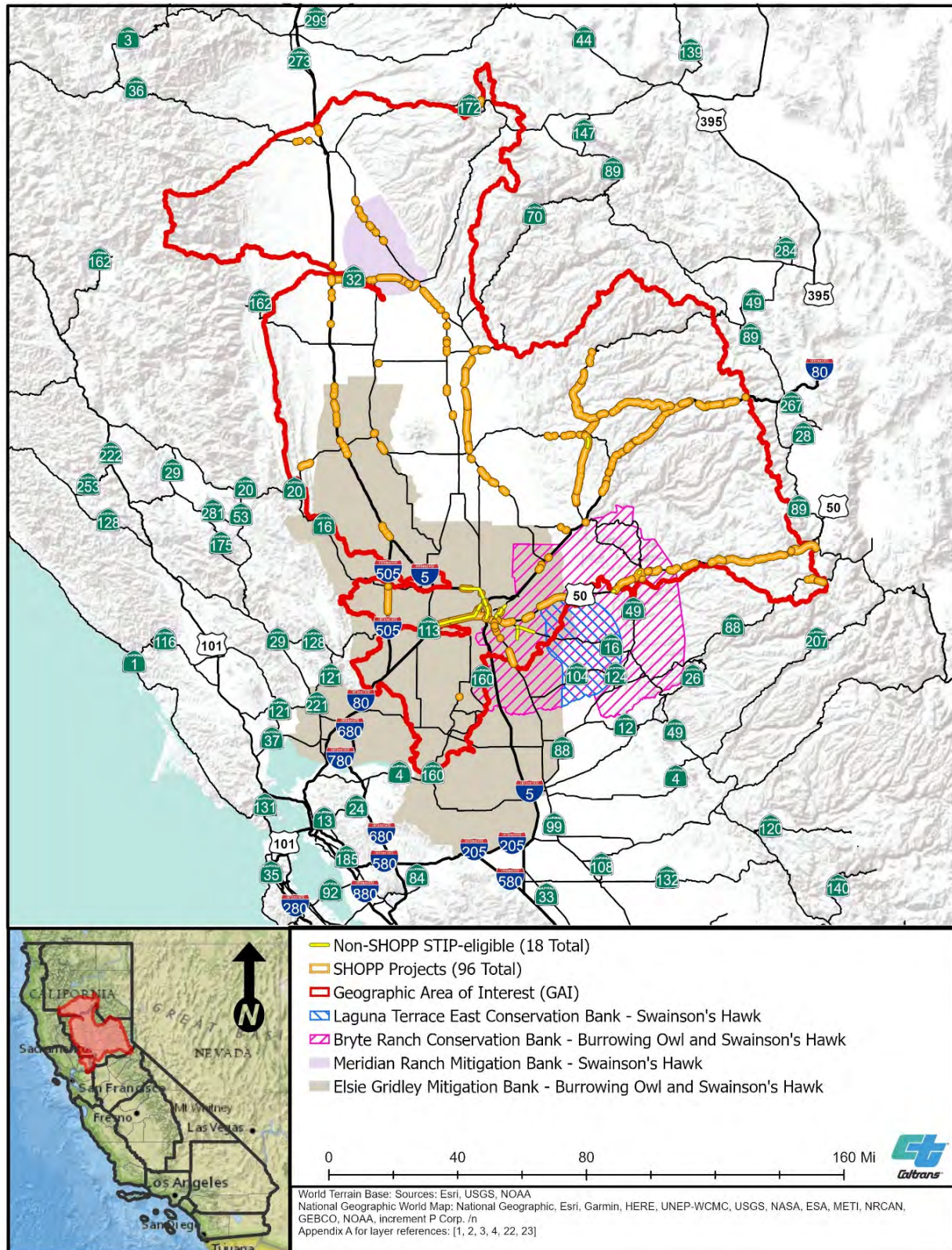


**Figure G-3. Swainson's Hawk Bank Service Areas (Map 1)**



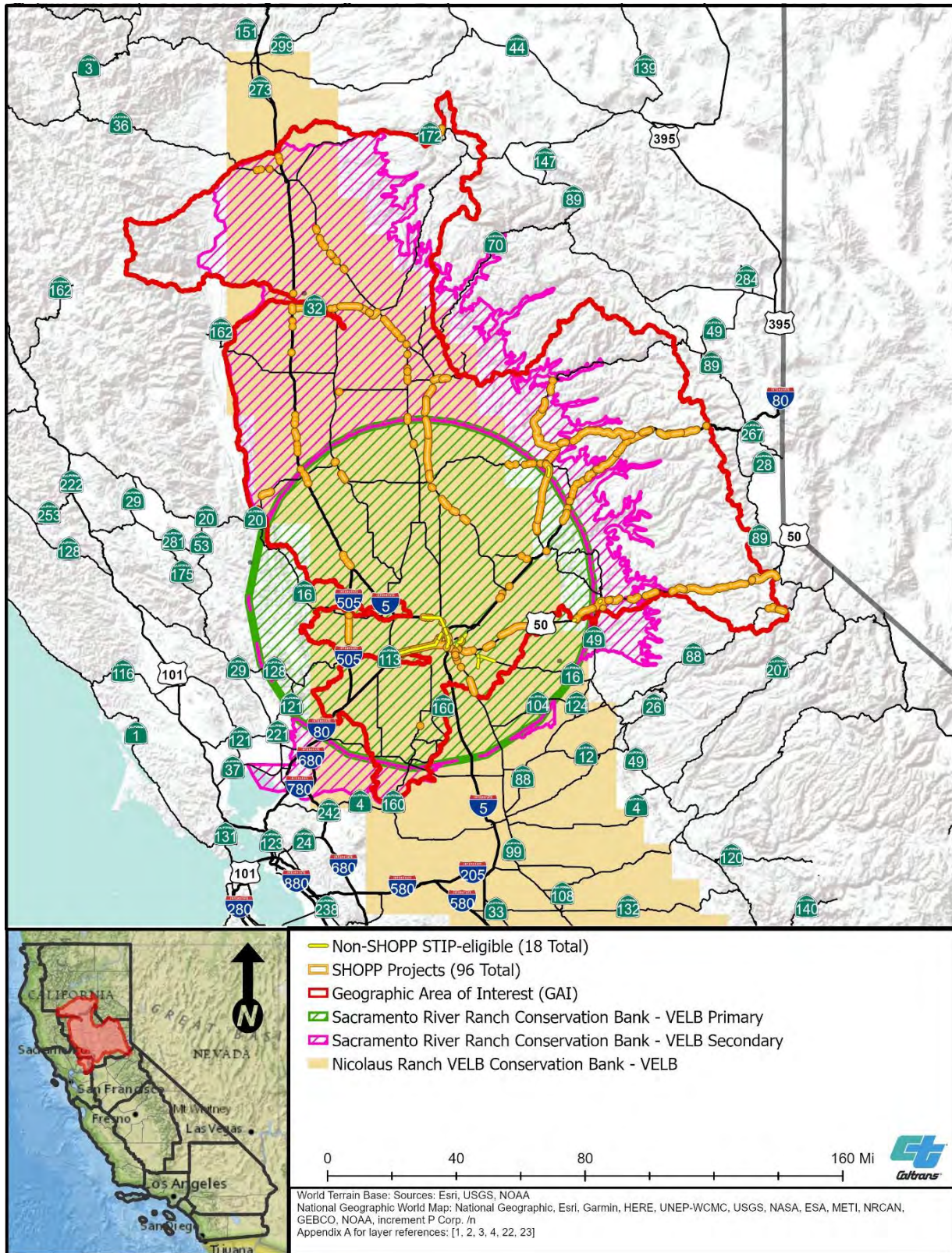


**Figure G-4. Swainson's Hawk Bank Service Areas (Map 2)**



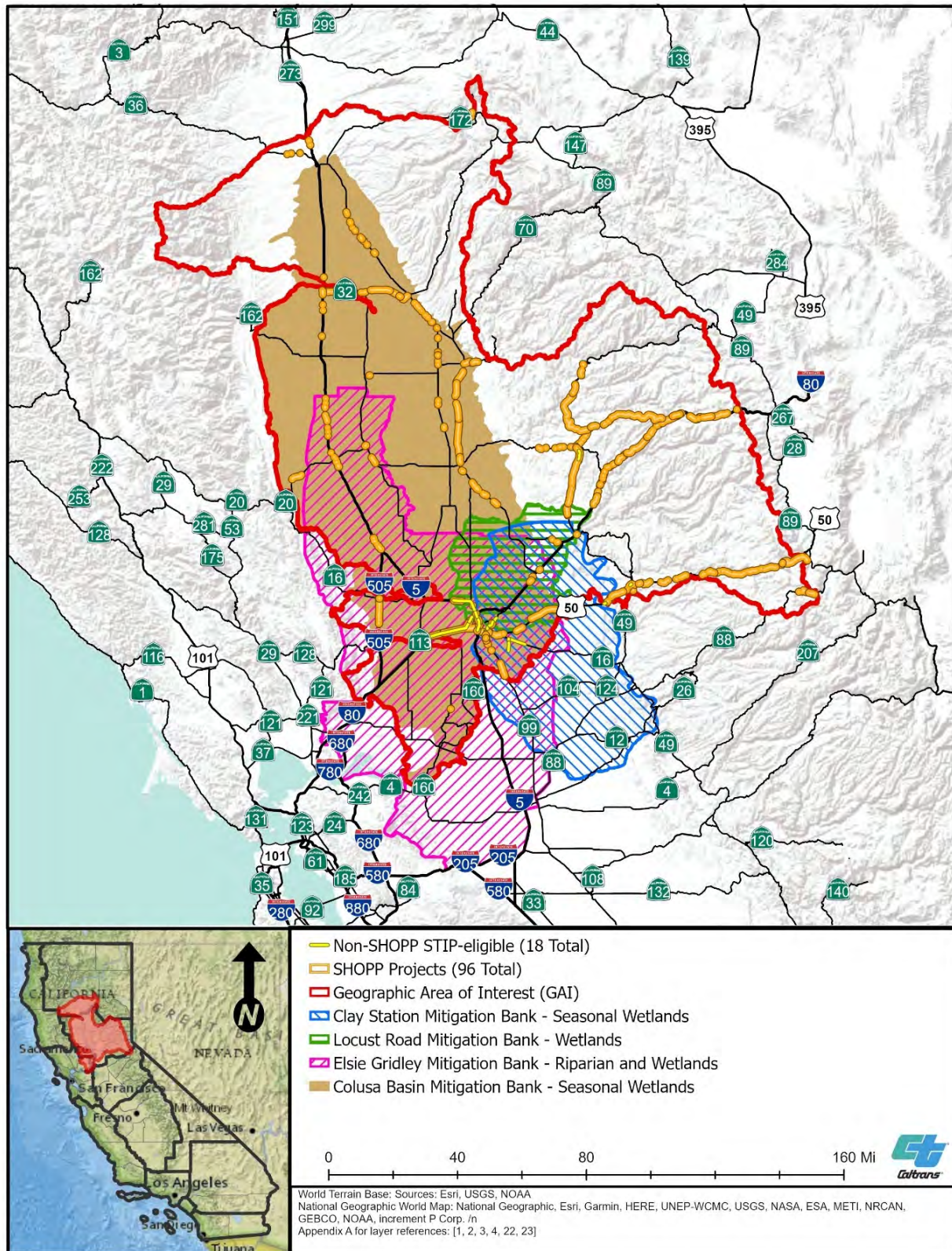


**Figure G-5. Valley Elderberry Longhorn Beetle Bank Service Areas**





**Figure G-6. Wetland and Aquatic Resources Bank Service Areas (Map 1)**





**Figure G-7. Wetland and Aquatic Resources Bank Service Areas (Map 2)**

