



ADVANCE MITIGATION PROGRAM
Six Northern Mojave Sub-basins and the
Owens Lake Sub-basin within California
Regional Advance Mitigation Needs
Assessment
Appendices

Version 1.0

Establishing Caltrans' Need for Advance Mitigation
for Caltrans District 9 and Surroundings
forecast fiscal years 2019/20 to 2028/29

California Department of Transportation – District 9

March 2022

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APPENDICES

Appendix A – GIS Sources

Appendix B – Land Cover Types

Appendix C – Complete SAMNA Species Results

Appendix D – Hydrologic Units

Appendix E – Aquatic Resource Locations

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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 9 RAMNA GIS Sources

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
1	State Highway Network	Caltrans	8/1/2018	10/11/2018	http://www.dot.ca.gov/hq/tsip/gis/data/library/Metadata/NHS.html
2	SHOPP	Caltrans	2019/2020 Q2	3/17/2021	Caltrans System Planning
3	STIP	Caltrans	2019/2020 Q2	3/17/2021	Caltrans System Planning
4	Watershed Boundary Section (GAI)	USGS	9/26/2014	10/19/2018	https://www.usgs.gov/core-science-systems/ngp/national-hydrography
5	Ecological Subsections	USFS	5/1/2017	10/17/2018	https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=Ecomap
6	Calfish Passage Assessment Database ("PAD")	Calfish	10/3/2019	12/15/2019	https://map.dfg.ca.gov/metadata/ds0069.html?5.84.18vo
7	ACE Climate Resilience – ACE [ds2738]	CDFW	2/22/2018	10/17/2018	https://map.dfg.ca.gov/metadata/ds2738.html?5.66.18
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	https://map.dfg.ca.gov/metadata/ds0620.html?5.66.18
10	Natural Landscape Blocks – CEHC	CDFW	10/1/2017	10/17/2018	https://map.dfg.ca.gov/metadata/ds0621.html?5.66.18
11	Potential Riparian Connections – CEHC	CDFW	3/1/2010	10/17/2018	https://map.dfg.ca.gov/metadata/ds0622.html?5.66.18
12	SWAP Terrestrial Targets – 2015	CDFW	2/1/2018	10/29/2018	https://map.dfg.ca.gov/metadata/ds1966.html?5.66.18
13	CalWater Hydrologic Areas	California Department of Forestry and Fire Protection	11/1/2016	10/19/2018	https://frap.fire.ca.gov/mapping/gis-data/

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
14	California Conservation Easements	California Protected Areas Database	12/1/2020	2/2/2021	http://www.calands.org/cced
15	California Protected Areas Holdings	California Protected Areas Database	2/10/2021	2/10/2021	http://www.calands.org/data
16	Tribal Land Boundaries	Bureau of Indian Affairs	5/16/2017	10/11/2018	https://hub.arcgis.com/items/2e915ef3df48422283e5b2c7d89dfcba
17	U.S. Military Installations	U.S. Census Bureau	12/1/2017	10/11/2018	https://www.census.gov/cgi-bin/geo/shapefiles/index.php
18	County Boundaries	U.S. Census Bureau	7/8/2016	10/11/2018	https://data.ca.gov/dataset/ca-geographic-boundaries
19	Farmland Mapping & Monitoring Program	California Department of Conservation	6/7/2016	4/27/2021	https://gis.conservation.ca.gov/portal/home/item.html?id=16689151f4d240d2a16232ea650a6c62
20	USFWS Critical Habitat	FWS	10/1/2018	3/24/2021	https://ecos.fws.gov/ecp/report/table/critical-habitat.html
21	Watershed Boundary Dataset	USGS	9/26/2014	10/19/2018	https://www.usgs.gov/core-science-systems/ngp/national-hydrography
22	Corps Regulatory In-lieu Fee & Bank Information Tracking System	Mitigation Service Banks	Not available	1/28/2019	https://ribits.usace.army.mil/ribits_ape_x/f?p=107:2
23	CDFW Approved Mitigation Service Areas	Mitigation Service Banks	7/23/2018	1/28/2019	https://map.dfg.ca.gov/metadata/ds2782.html?5.76.22
24	Northern Sierra Nevada Foothills ("NSNF") wildlife connectivity project	CDFW	6/20/2014	3/24/2021	https://map.dfg.ca.gov/metadata/ds1004.html?5.94.01
25	Conservation Plan Boundaries, HCP and NCCP	CDFW, FWS	12/12/2017	1/28/2019	https://map.dfg.ca.gov/metadata/ds0760.html?5.80.28
26	Vegetation D06/D07/D08/D09 in Caltrans District 9 Geospatial Data for the Advance Mitigation Needs Assessment for the Second Quarter of FY 2019/2020	SAMNA	1/1/2017	3/24/2021	http://www.dot.ca.gov/env/advancemitigation/

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
27	Waters and Wetlands D06/D07/D08/D09 in Caltrans District 9 Geospatial Data for the Advance Mitigation Needs Assessment for the Second Quarter of FY 2019/2020	SAMNA	1/1/2017	3/24/2021	http://www.dot.ca.gov/env/advancemitigation/
28	National Flood Hazard Layer	Federal Emergency Management Agency	6/29/2018	9/25/2019	https://www.fema.gov/national-flood-hazard-layer-nfhl
29	RCIS Draft Boundaries	CDFW	9/10/2019	9/25/2019	Requested on 9/25/2019; source date is 9/10/2019
30	Terrestrial Connectivity – ACE [ds2734]	CDFW	8/28/2019	9/25/2019	https://map.dfg.ca.gov/metadata/ds2734.html?5.80.28l
31	Terrestrial Biodiversity Summary – ACE [ds2739]	CDFW	2/24/2020	7/3/2019	https://map.dfg.ca.gov/metadata/ds2739.html?5.80.28l
32	Aquatic Biodiversity Summary – ACE [ds2768]	CDFW	2/22/2018	7/3/2019	https://map.dfg.ca.gov/metadata/ds2768.html?5.80.28l
33	National Hydrology Dataset Plus (“NHDPlus”)	EPA	3/13/2019	4/29/2021	https://www.epa.gov/waterdata/get-nhdplus-national-hydrography-dataset-plus-data
34	303(d) List of Impaired Waterbodies	SWRCB	2014–2016	4/7/2020	https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml
35	ZIP Codes	U.S. Postal Service	2/11/2020	3/11/2020	https://www.arcgis.com/home/item.html?id=8d2012a2016e484dafaac0451f9aea24
36	Vernal Pools – ACE [ds2732]	CDFW	2/13/2020	1/29/2021	https://map.dfg.ca.gov/metadata/ds2732.html?5.94.01
37	National Wild and Scenic Rivers	National Wild and Scenic Rivers System	3/2/2016	8/4/2021	https://www.rivers.gov/rivers/

ID	GIS Layer	Source Agency	Source Date	Download Date	Website
38	Landscape Blocks for the California Desert Linkage Network [ds823]	BLM and The Wildlands Conservancy	3/2/2014	3/11/2022	https://map.dfg.ca.gov/metadata/ds0823.html?5.66.18
39	Linkage Design for the California Desert Linkage Network [ds822]	BLM and The Wildlands Conservancy	3/2/2014	3/11/2022	https://map.dfg.ca.gov/metadata/ds0822.html?5.108.39

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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-7). These 92 maps correspond with the aquatic resources maps in Appendix E.

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, coastal oak woodland, desert riparian, Eastside pine, Jeffrey pine, Joshua tree, juniper, Lodgepole pine, montane hardwood, montane hardwood-conifer, montane riparian, pinyon-juniper, ponderosa pine, red fir, Sierran mixed conifer, subalpine conifer, valley foothill riparian, valley oak woodland, and white fir, which are found in all five 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 alkali desert scrub, alpine dwarf-shrub, bitterbrush, chamise-redshank chaparral, coastal scrub, desert scrub, desert succulent scrub, desert wash, low sage, mixed chaparral, montane chaparral, sagebrush, and unknown shrub type, which are found in all five 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 four 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, riverine, and water, which are found in four 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 agriculture, cropland, deciduous orchard, irrigated hayfield, irrigated row and field crops, urban, and vineyard, which are found in all five ecoregion sections.

Non-vegetated Habitats: Non-vegetated habitats include barren areas, characterized by less than 2 percent cover by herbaceous species. In the GAI, non-vegetated habitats consist of barren areas, which are found in all five ecoregion sections.

References

- Caltrans (California Department of Transportation). 2021a.
“Vegetation_D06/D07/D08/D09 in Caltrans District 9 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 2, 2021. <https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.

Table B-1. Land Cover Types in the Ecoregion Sections within the GAI

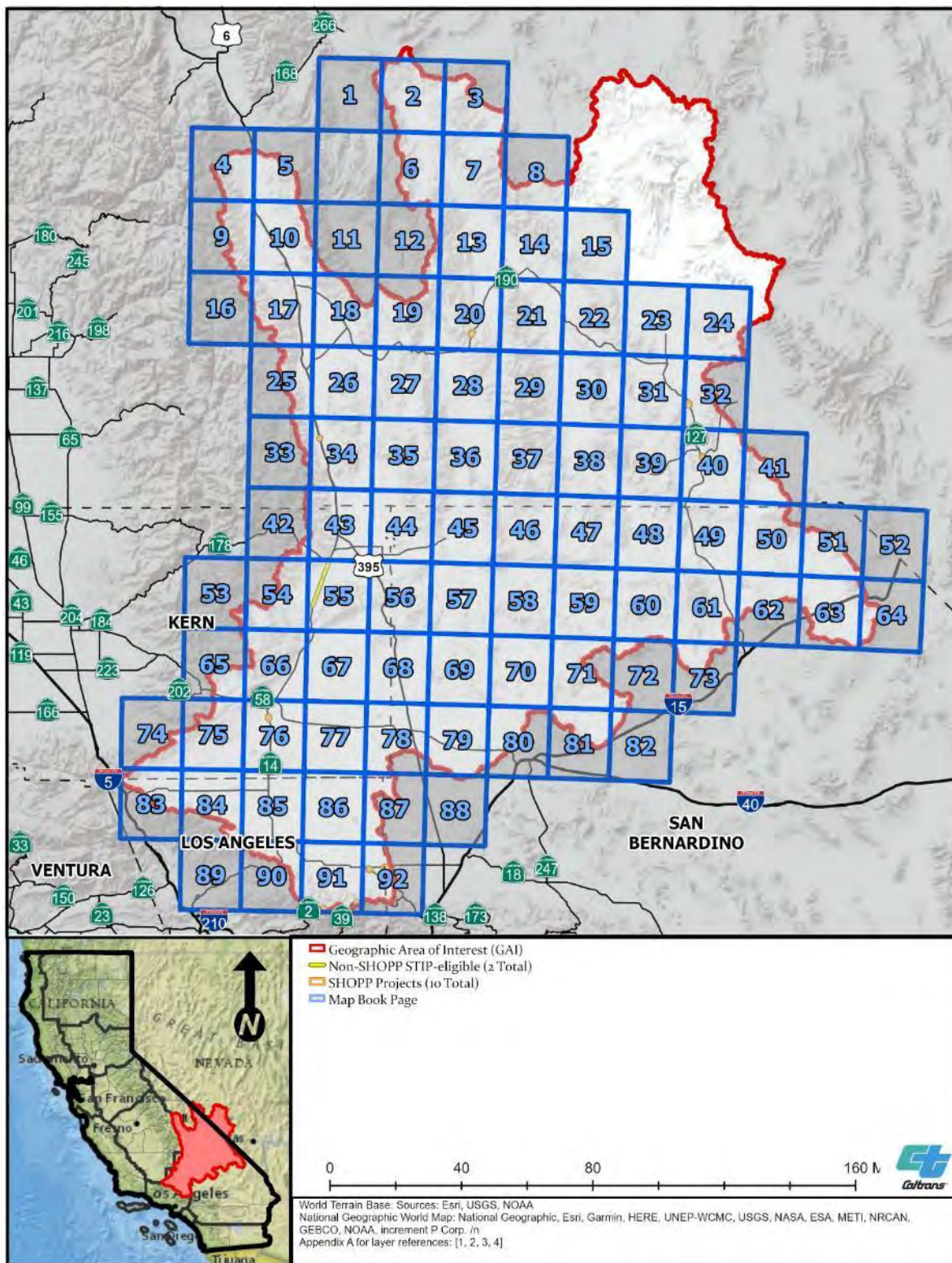
Land Cover Type	Mojave Desert Ecoregion Section	Southeastern Great Basin Ecoregion Section	Sierra Nevada Ecoregion Section	Sierra Nevada Foothills Ecoregion Section	Southern California Mountains and Valleys Ecoregion Section
Tree-dominated Habitats	See below	See below	See below	See below	See below
Aspen	Present	Not mapped	Present	Not mapped	Not mapped
Blue Oak Woodland	Present	Not mapped	Present	Present	Present
Blue Oak-Foothill Pine	Present	Not mapped	Present	Present	Present
Coastal Oak Woodland	Present	Not mapped	Present	Not mapped	Present
Desert Riparian	Present	Present	Present	Not mapped	Present
Eastside Pine	Present	Not mapped	Present	Not mapped	Present
Jeffrey Pine	Not mapped	Not mapped	Present	Not mapped	Present
Joshua Tree	Present	Present	Present	Not mapped	Present
Juniper	Present	Present	Present	Present	Present
Lodgepole Pine	Not mapped	Not mapped	Present	Not mapped	Not mapped
Montane Hardwood	Present	Not mapped	Present	Present	Present
Montane Hardwood-Conifer	Present	Present	Present	Present	Present
Montane Riparian	Present	Present	Present	Not mapped	Present
Pinyon-Juniper	Present	Present	Present	Present	Present
Ponderosa Pine	Not mapped	Not mapped	Not mapped	Not mapped	Not mapped
Red Fir	Not mapped	Not mapped	Present	Not mapped	Not mapped
Sierran Mixed Conifer	Not mapped	Not mapped	Present	Not mapped	Present
Subalpine Conifer	Not mapped	Present	Present	Not mapped	Not mapped
Valley Foothill Riparian	Present	Not mapped	Present	Present	Present
Valley Oak Woodland	Present	Not mapped	Present	Not mapped	Present
White Fir	Not mapped	Not mapped	Present	Present	Present
Shrub-dominated Habitats	See below	See below	See below	See below	See below
Alkali Desert Scrub	Present	Present	Present	Not mapped	Present
Alpine Dwarf-Shrub	Not mapped	Present	Present	Not mapped	Not mapped

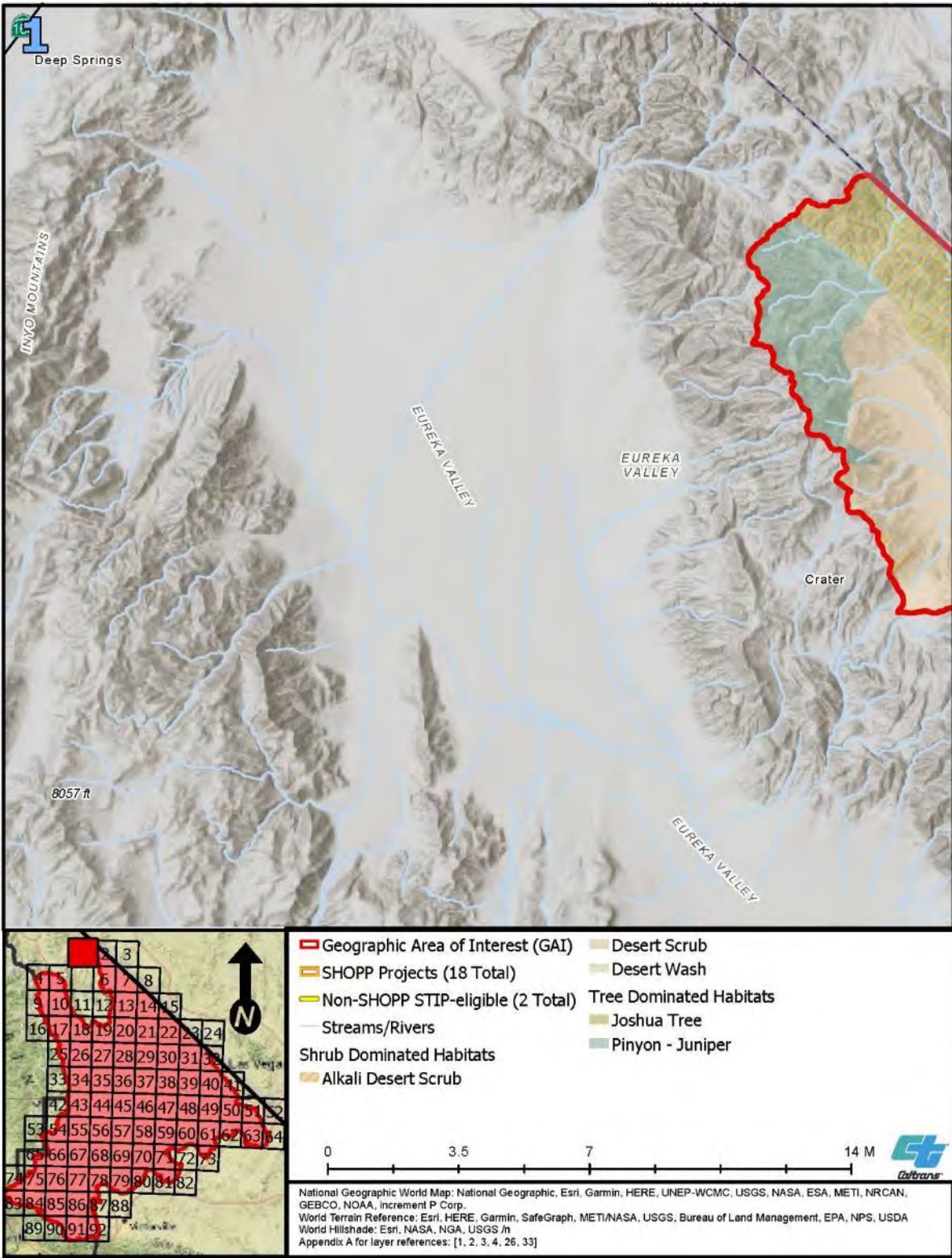
Land Cover Type	Mojave Desert Ecoregion Section	Southeastern Great Basin Ecoregion Section	Sierra Nevada Ecoregion Section	Sierra Nevada Foothills Ecoregion Section	Southern California Mountains and Valleys Ecoregion Section
Bitterbrush	Present	Not mapped	Present	Not mapped	Present
Chamise - Redshank Chaparral	Not mapped	Not mapped	Not mapped	Not mapped	Present
Chamise-Redshank Chaparral; Mixed Chaparral	Not mapped	Not mapped	Not mapped	Not mapped	Present
Coastal Scrub	Not mapped	Not mapped	Not mapped	Not mapped	Present
Desert Scrub	Present	Present	Present	Not mapped	Present
Desert Scrub; Desert Wash	Present	Not mapped	Present	Not mapped	Not mapped
Desert Scrub; Perennial Grassland	Present	Not mapped	Not mapped	Not mapped	Not mapped
Desert Succulent Shrub	Present	Not mapped	Not mapped	Not mapped	Not mapped
Desert Succulent Shrub; Desert Wash	Present	Not mapped	Not mapped	Not mapped	Not mapped
Desert Wash	Present	Present	Present	Not mapped	Present
Low Sage	Present	Present	Present	Not mapped	Not mapped
Mixed Chaparral	Present	Not mapped	Present	Present	Present
Montane Chaparral	Present	Not mapped	Present	Present	Present
Sagebrush	Present	Present	Present	Present	Present
Unknown Shrub Type	Present	Not mapped	Present	Not mapped	Not mapped
Alkali Desert Scrub	Present	Present	Present	Not mapped	Present
Alpine Dwarf-Shrub	Not mapped	Present	Present	Not mapped	Not mapped
Bitterbrush	Present	Not mapped	Present	Not mapped	Present
Chamise - Redshank Chaparral	Not mapped	Not mapped	Not mapped	Not mapped	Present
Chamise-Redshank Chaparral; Mixed Chaparral	Not mapped	Not mapped	Not mapped	Not mapped	Present
Coastal Scrub	Not mapped	Not mapped	Not mapped	Not mapped	Present
Desert Scrub	Present	Present	Present	Not mapped	Present
Desert Scrub; Desert Wash	Present	Not mapped	Present	Not mapped	Not mapped

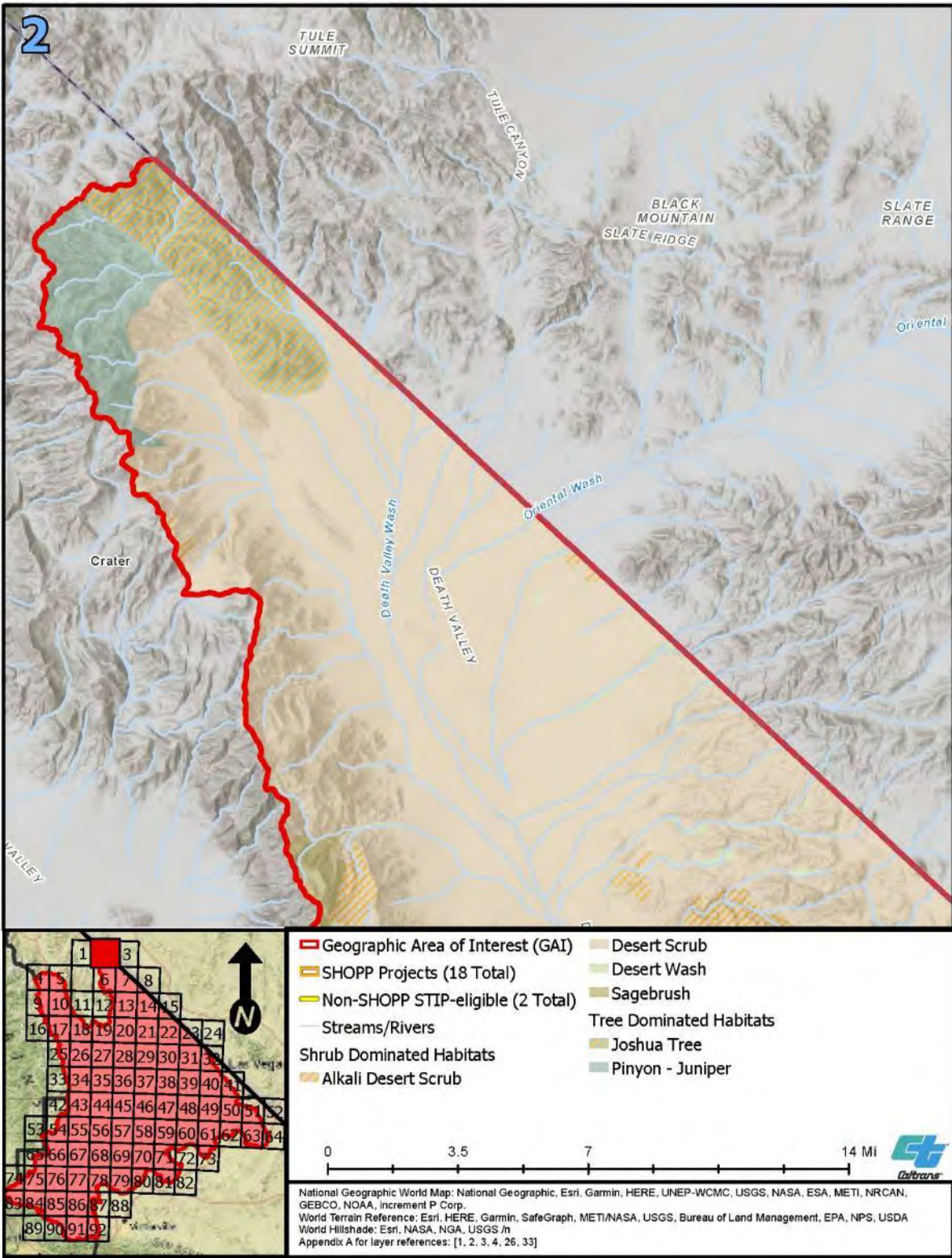
Land Cover Type	Mojave Desert Ecoregion Section	Southeastern Great Basin Ecoregion Section	Sierra Nevada Ecoregion Section	Sierra Nevada Foothills Ecoregion Section	Southern California Mountains and Valleys Ecoregion Section
Desert Scrub; Perennial Grassland	Present	Not mapped	Not mapped	Not mapped	Not mapped
Desert Succulent Shrub	Present	Not mapped	Not mapped	Not mapped	Not mapped
Desert Succulent Shrub; Desert Wash	Present	Not mapped	Not mapped	Not mapped	Not mapped
Desert Wash	Present	Present	Present	Not mapped	Present
Low Sage	Present	Present	Present	Not mapped	Not mapped
Mixed Chaparral	Present	Not mapped	Present	Present	Present
Montane Chaparral	Present	Not mapped	Present	Present	Present
Sagebrush	Present	Present	Present	Present	Present
Unknown Shrub Type	Present	Not mapped	Present	Not mapped	Not mapped
Herbaceous-dominated Habitats	See below	See below	See below	See below	See below
Annual Grassland	Present	Not mapped	Present	Present	Present
Fresh Emergent Wetland	Present	Not mapped	Not mapped	Not mapped	Not mapped
Pasture	Present	Not mapped	Present	Not mapped	Present
Perennial Grassland	Present	Not mapped	Present	Present	Present
Saline Emergent Wetland	Present	Not mapped	Not mapped	Not mapped	Not mapped
Wet Meadow	Present	Not mapped	Present	Not mapped	Present
Aquatic Habitats	See below	See below	See below	See below	See below
Lacustrine	Present	Present	Present	Not mapped	Present
Riverine	Present	Not mapped	Present	Not mapped	Not mapped
Water	Present	Present	Not mapped	Not mapped	Not mapped
Developed Habitats	See below	See below	See below	See below	See below
Agriculture	Present	Not mapped	Not mapped	Not mapped	Not mapped
Cropland	Present	Not mapped	Present	Not mapped	Not mapped
Deciduous Orchard	Not mapped	Not mapped	Present	Not mapped	Present
Deciduous Orchard; Vineyard	Present	Not mapped	Not mapped	Not mapped	Not mapped

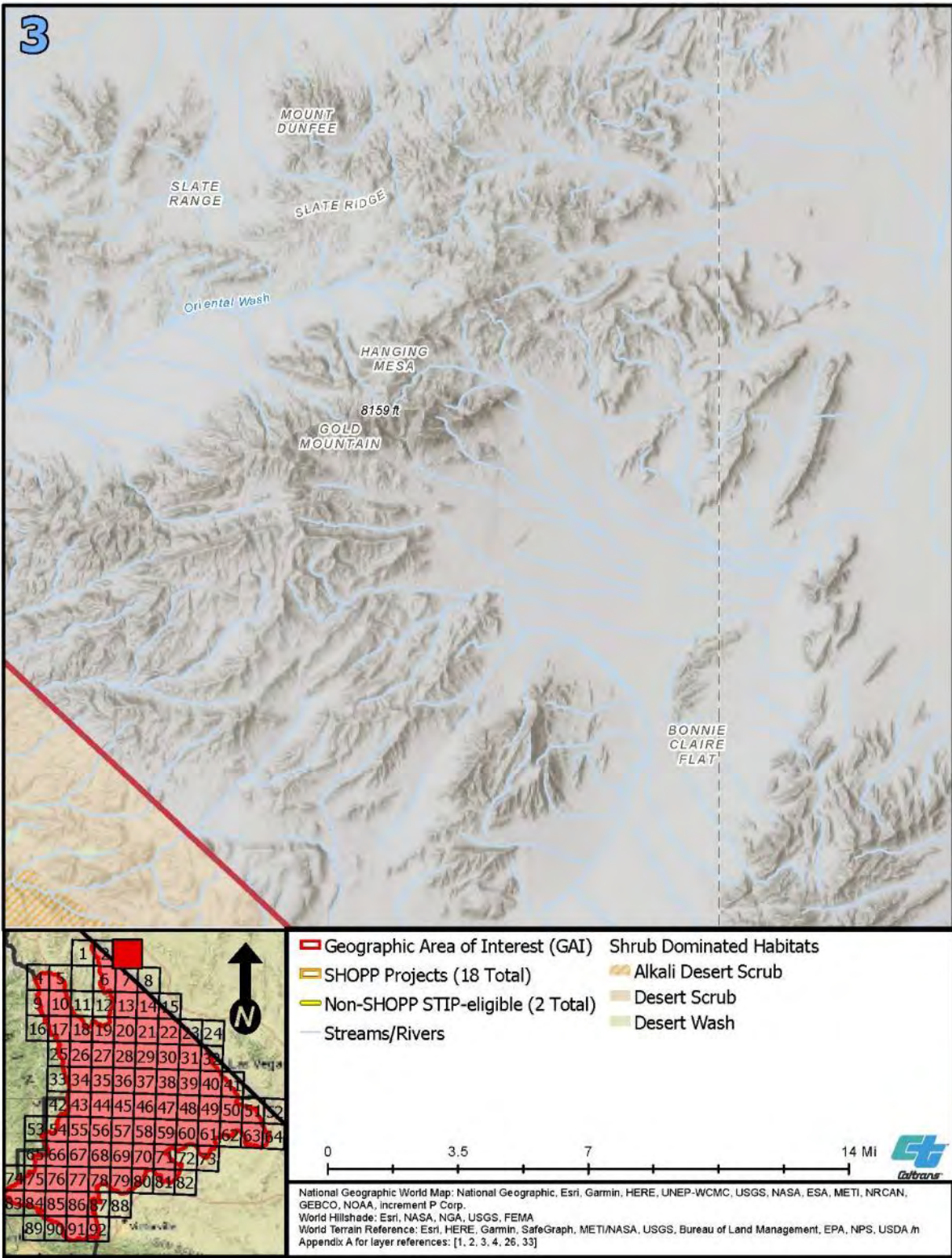
Land Cover Type	Mojave Desert Ecoregion Section	Southeastern Great Basin Ecoregion Section	Sierra Nevada Ecoregion Section	Sierra Nevada Foothills Ecoregion Section	Southern California Mountains and Valleys Ecoregion Section
Irrigated Hayfield	Not mapped	Not mapped	Present	Not mapped	Not mapped
Irrigated Row and Field Crops	Present	Not mapped	Present	Not mapped	Not mapped
Urban	Present	Present	Present	Present	Present
Non-vegetated Habitats	See below	See below	See below	See below	See below
Barren	Present	Present	Present	Present	Present

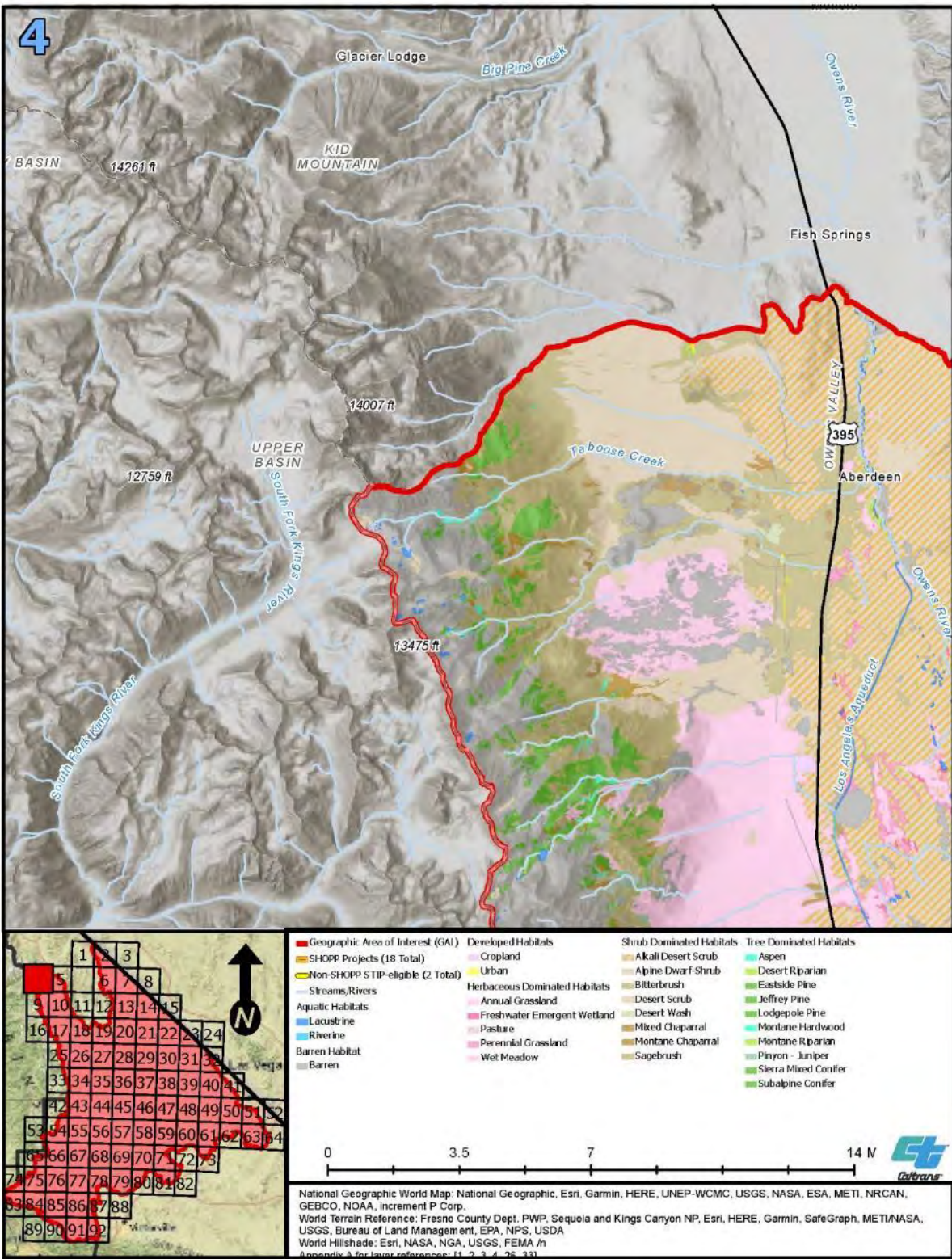
Sources: Caltrans 2021a, 2021b

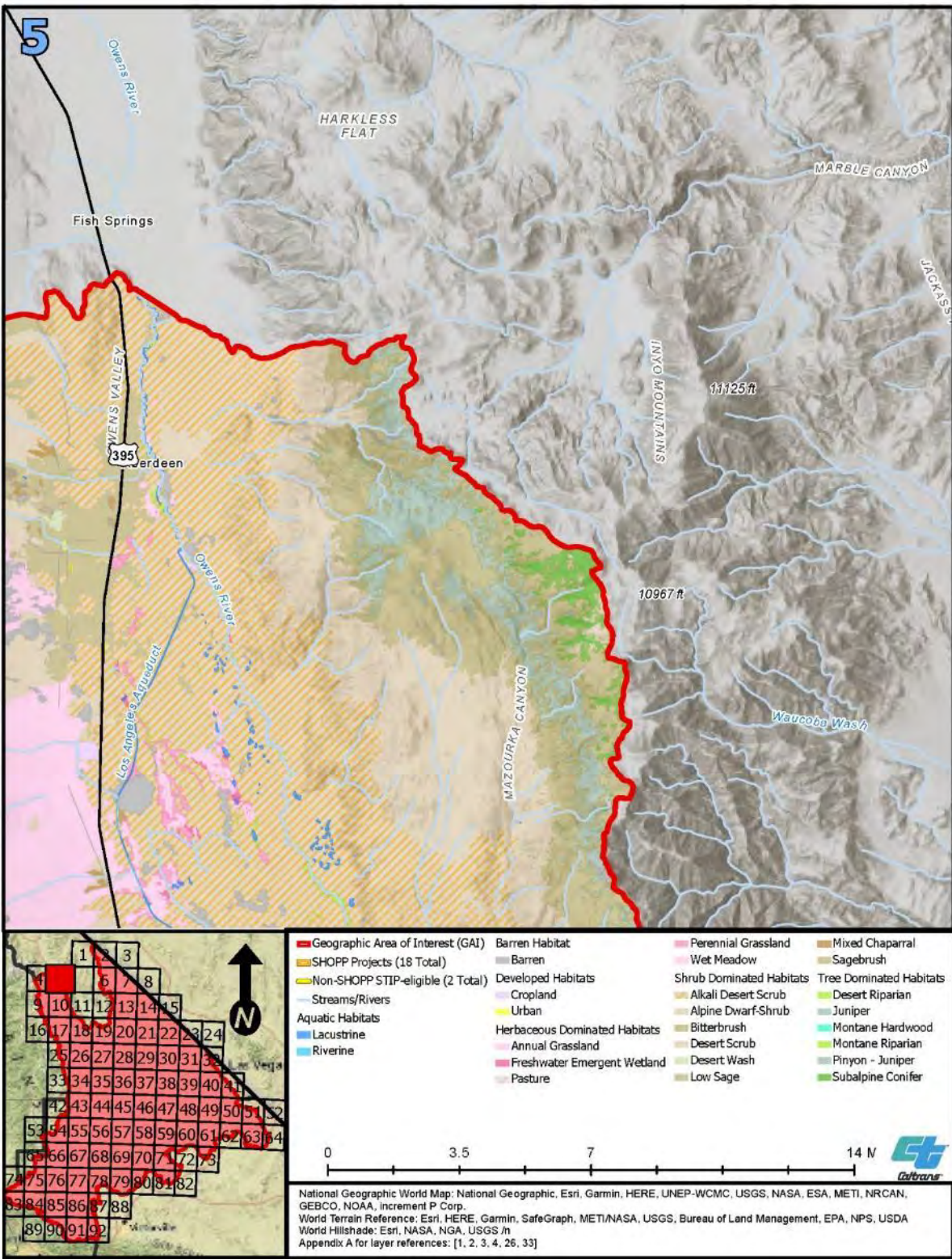


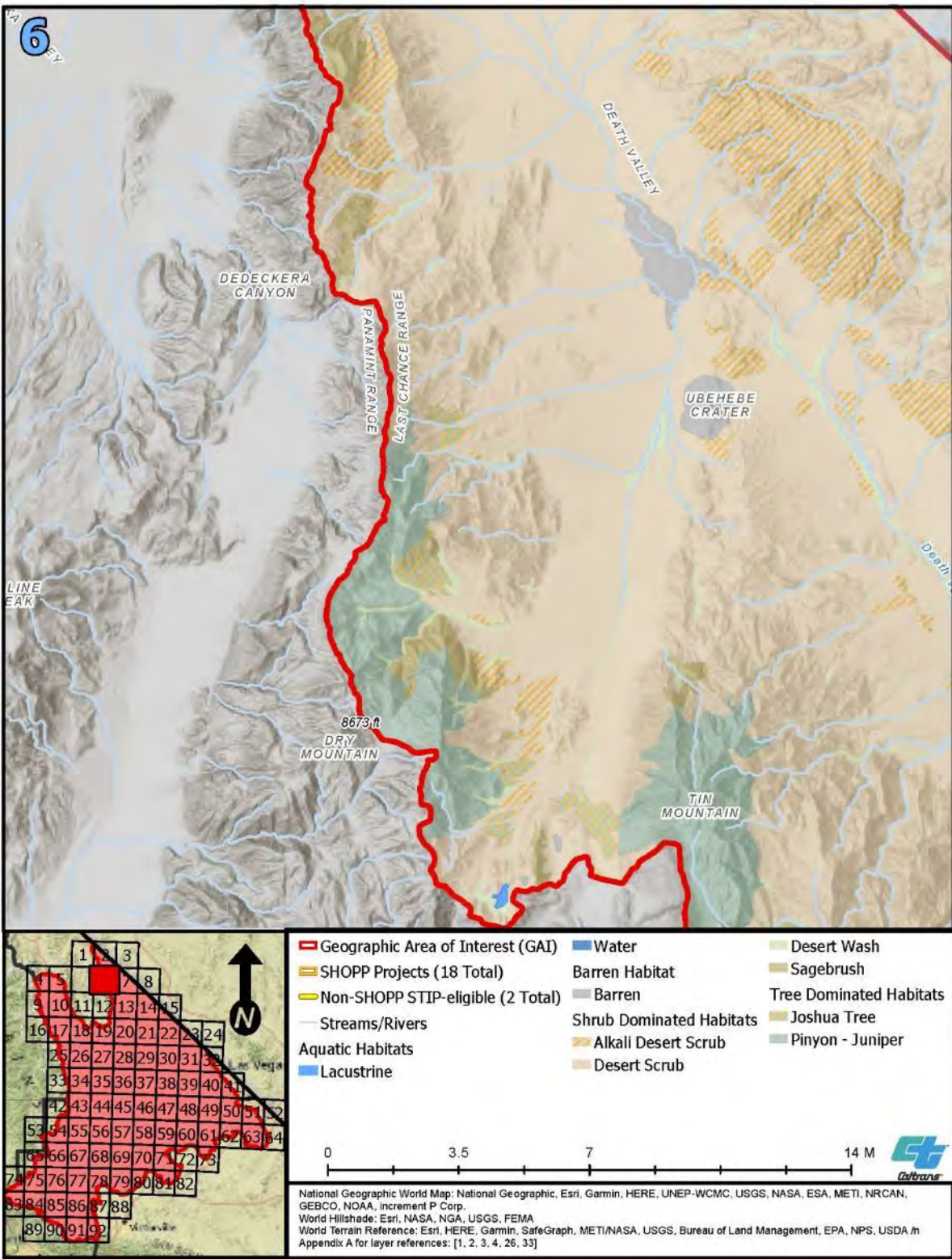


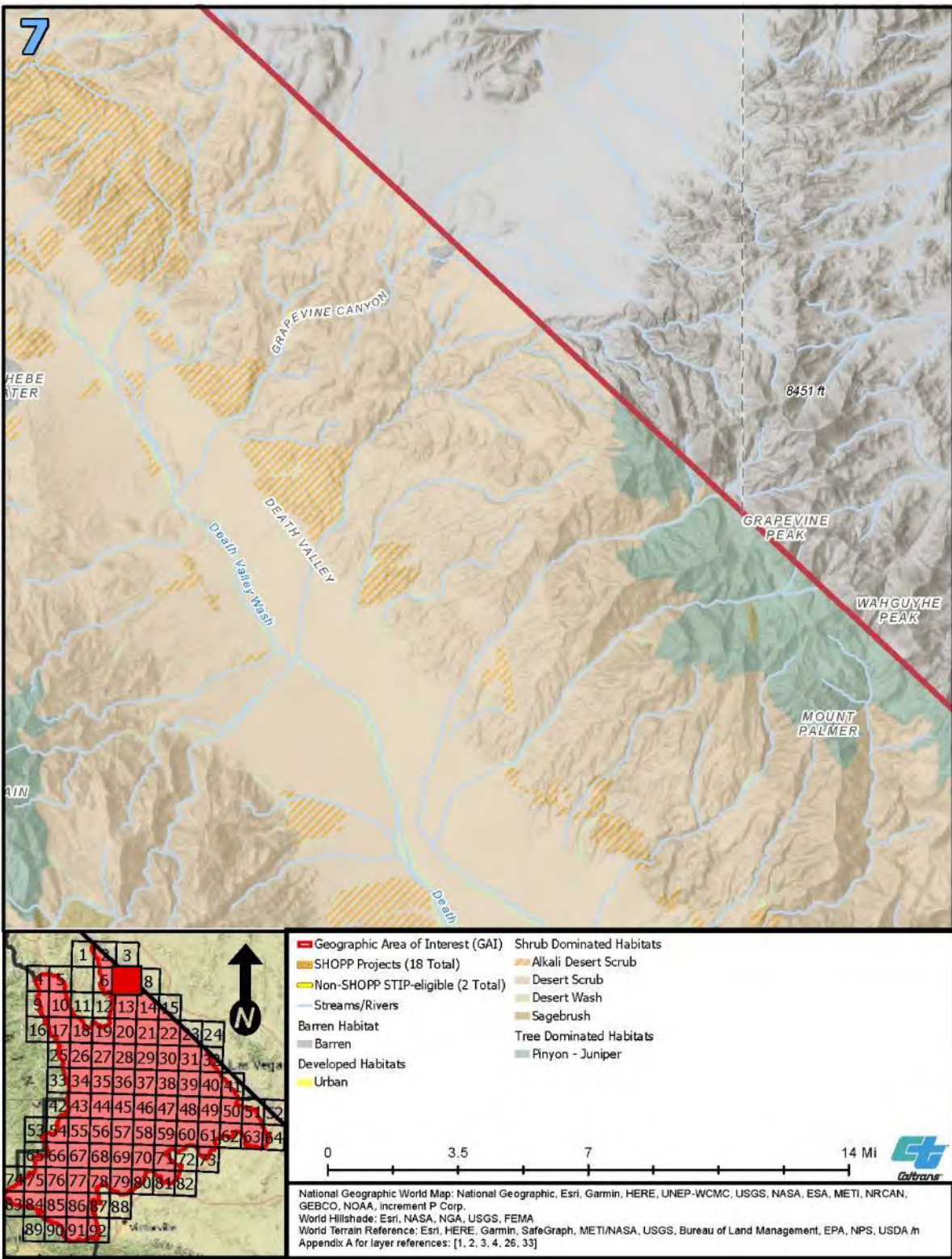


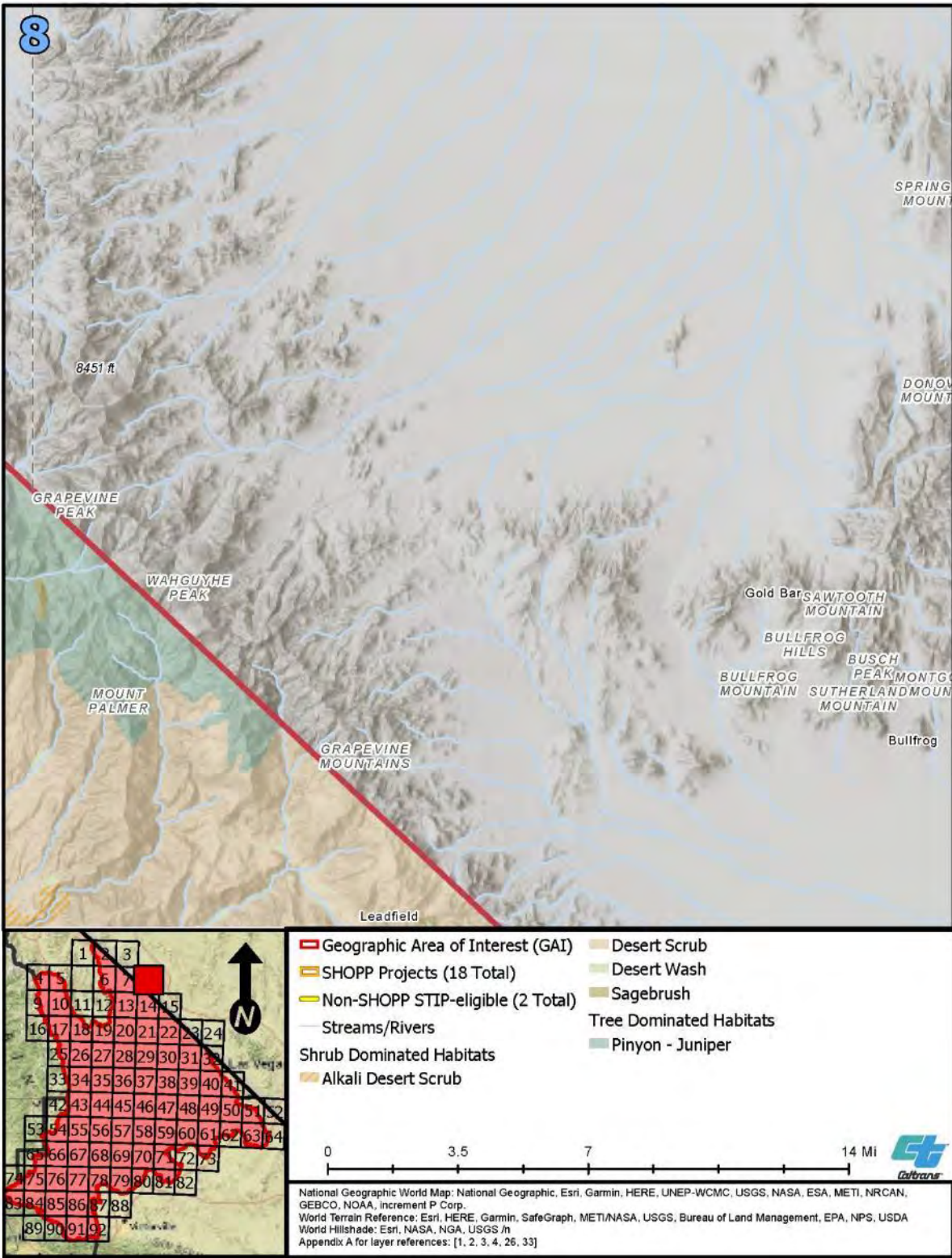


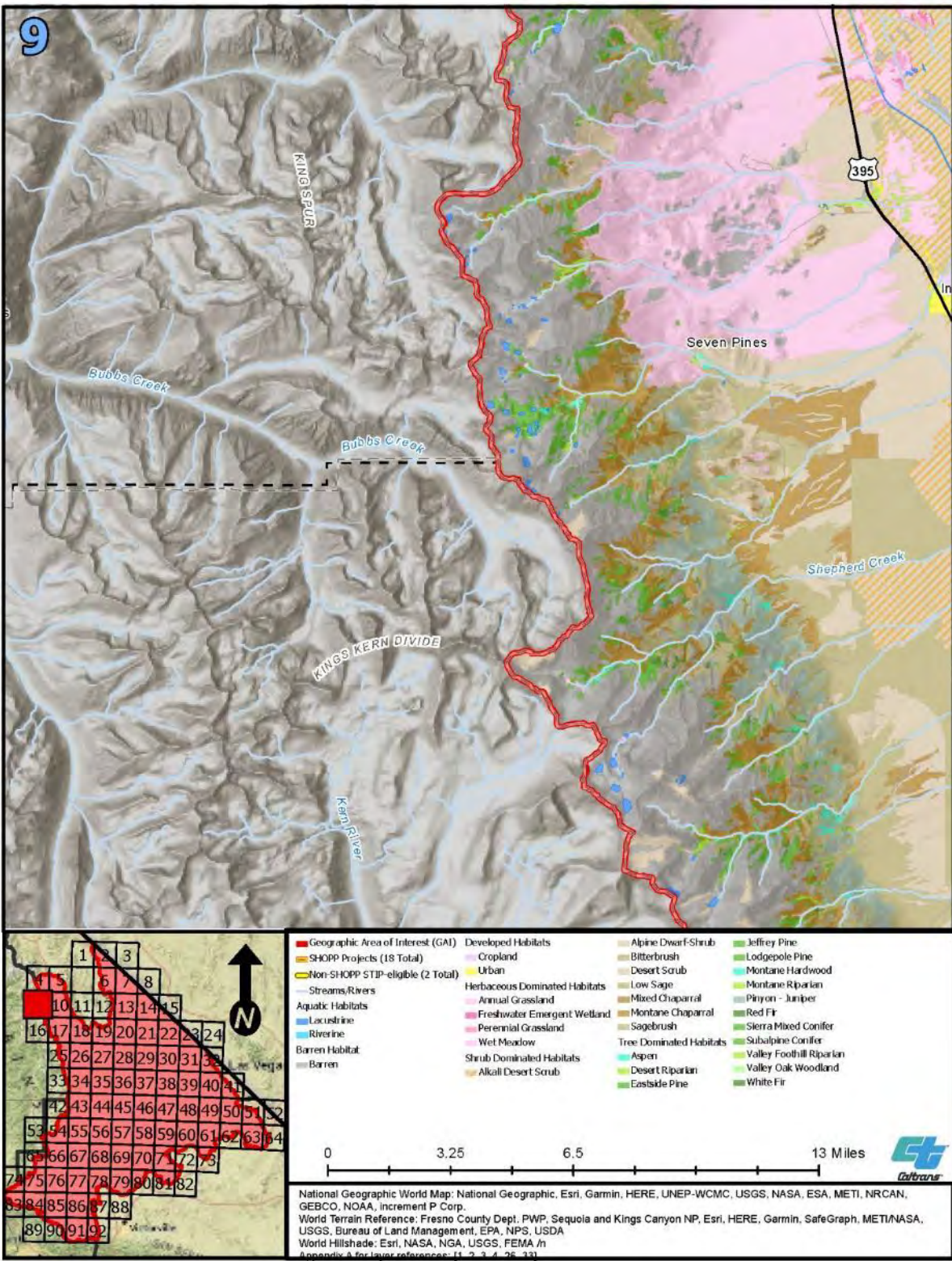


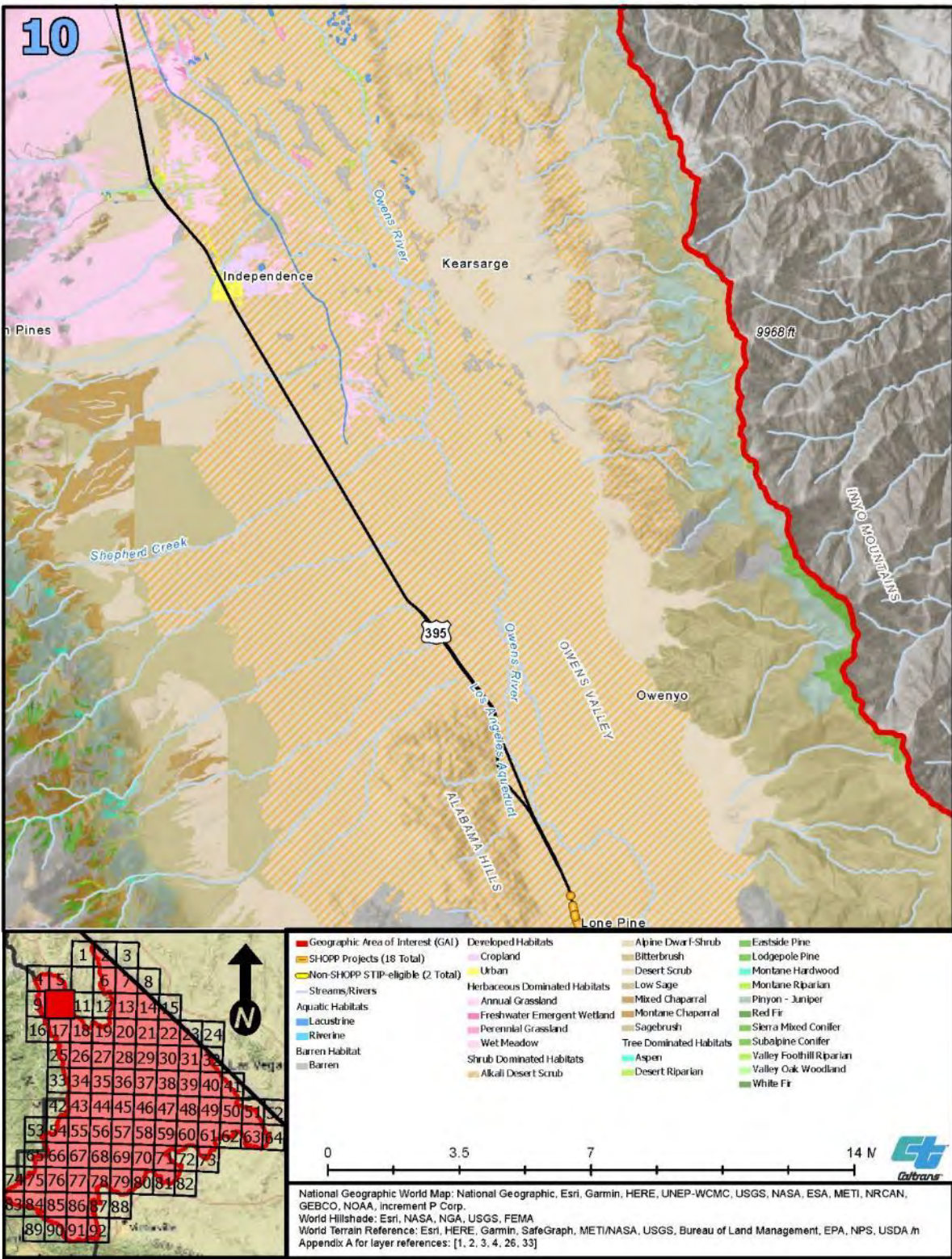


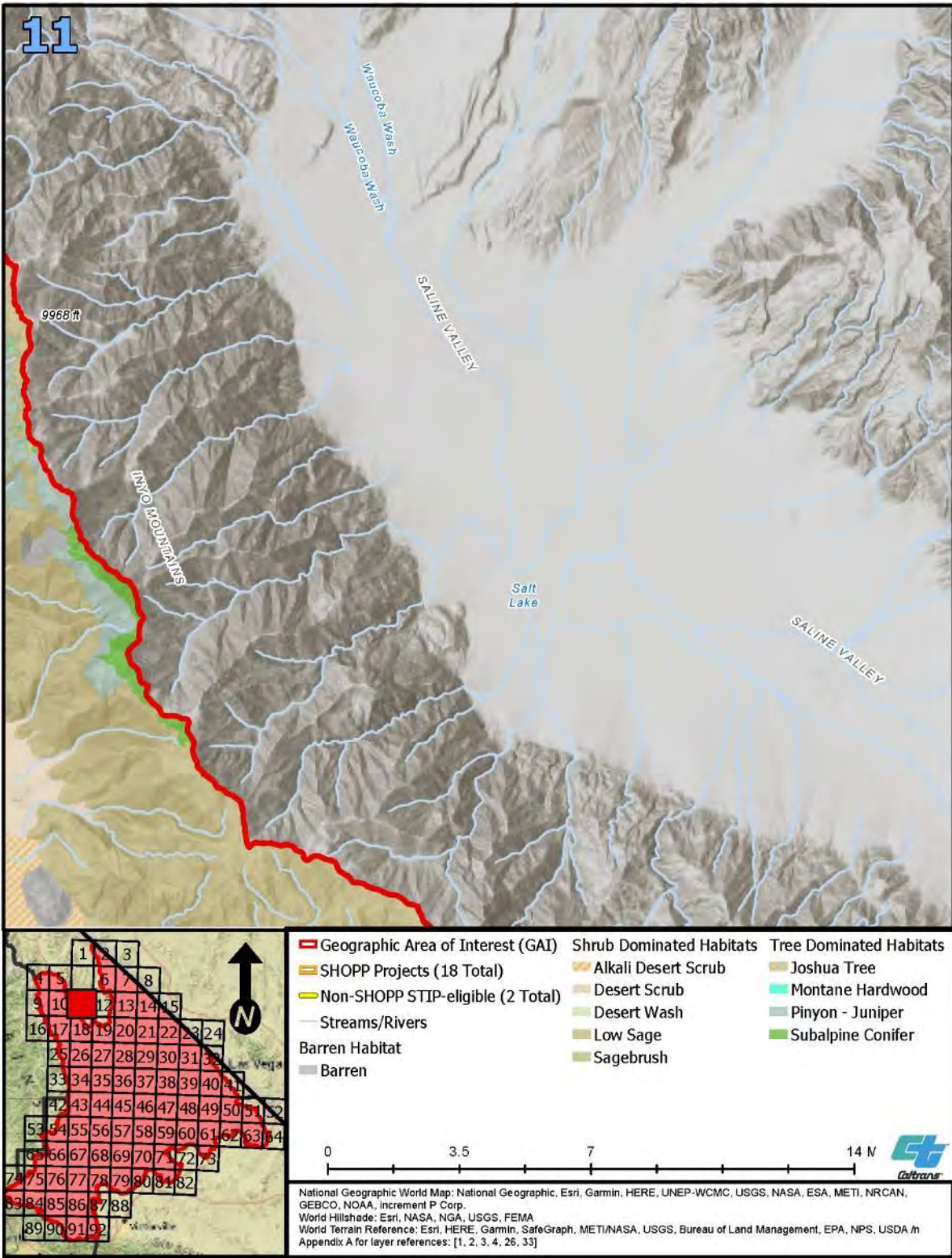


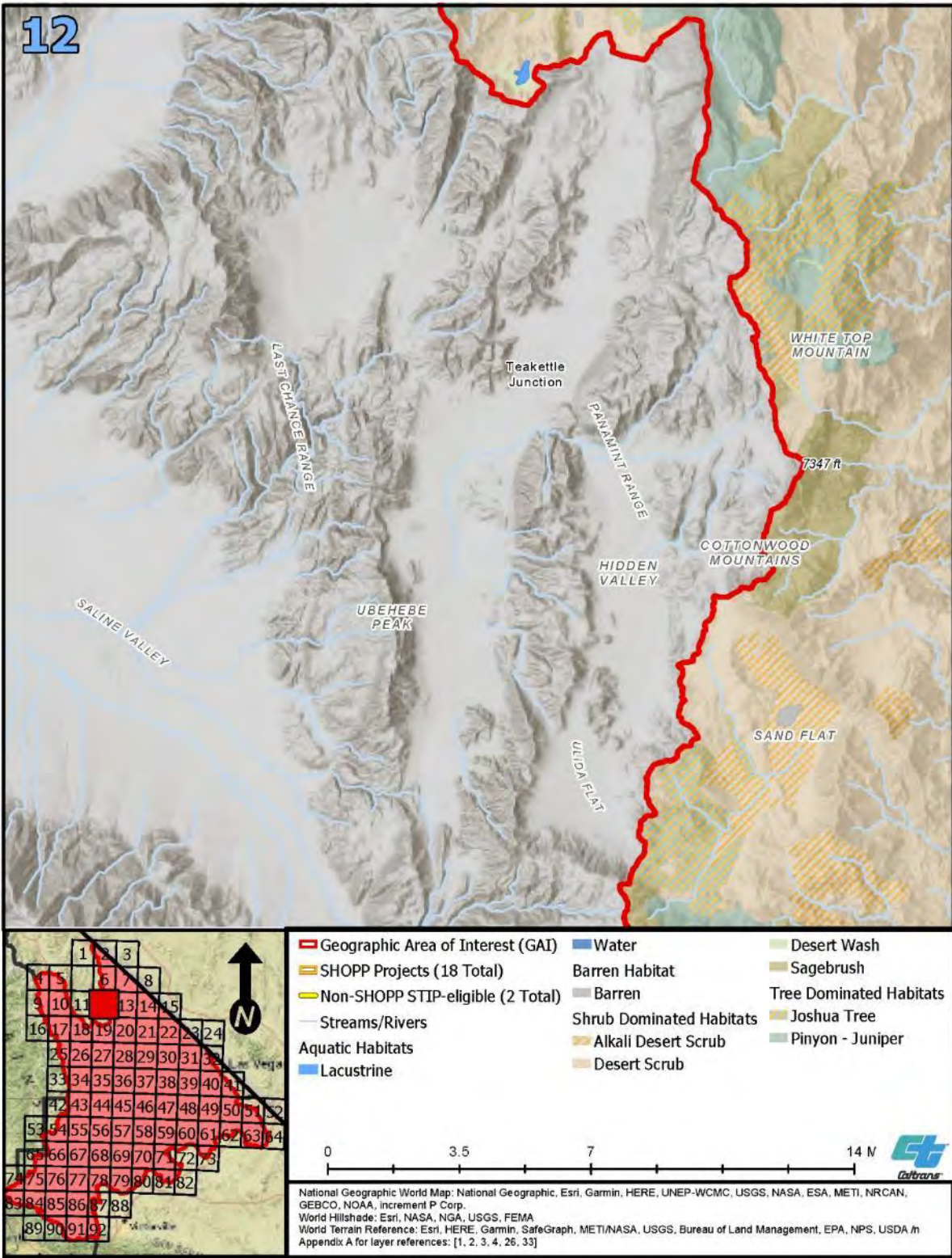


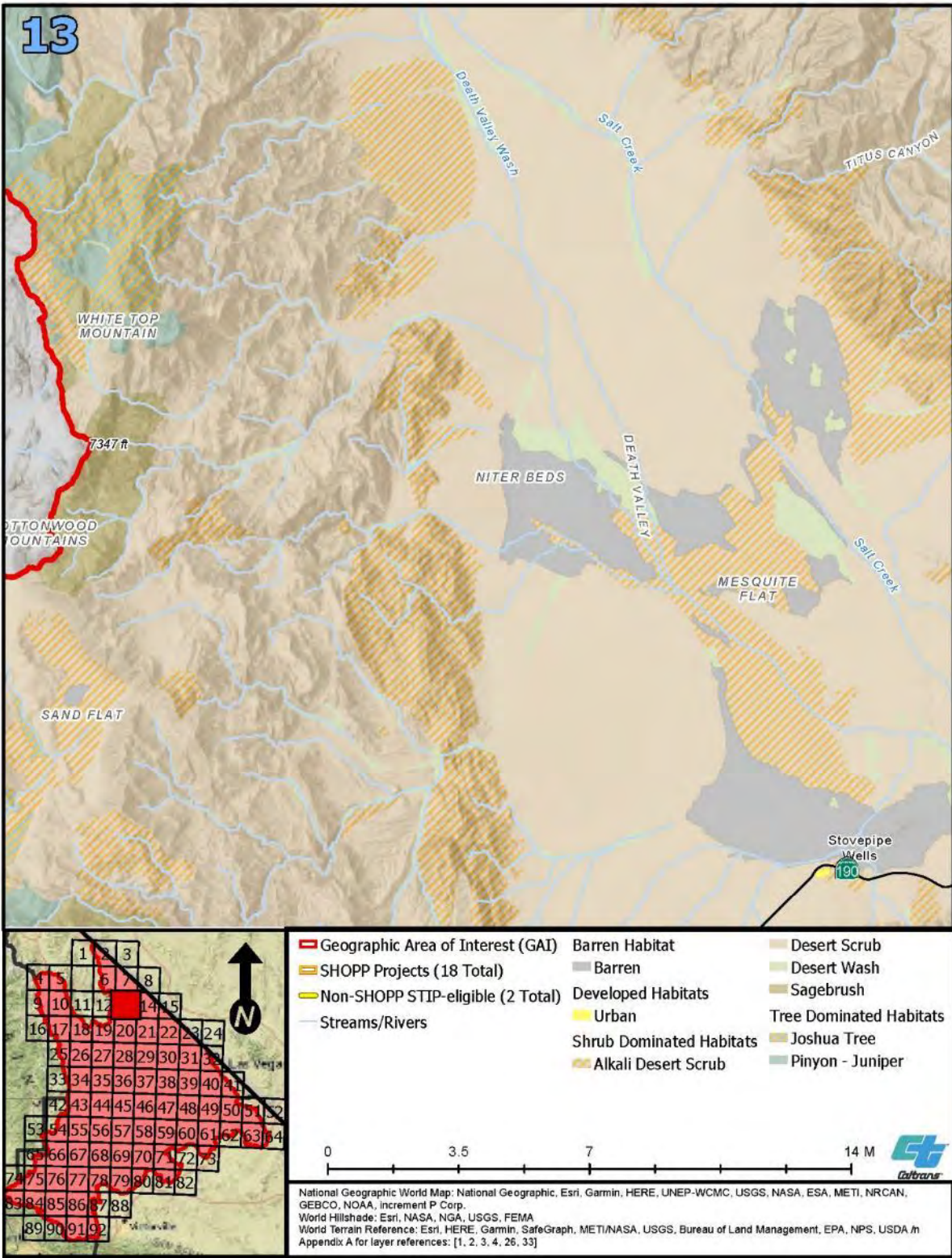


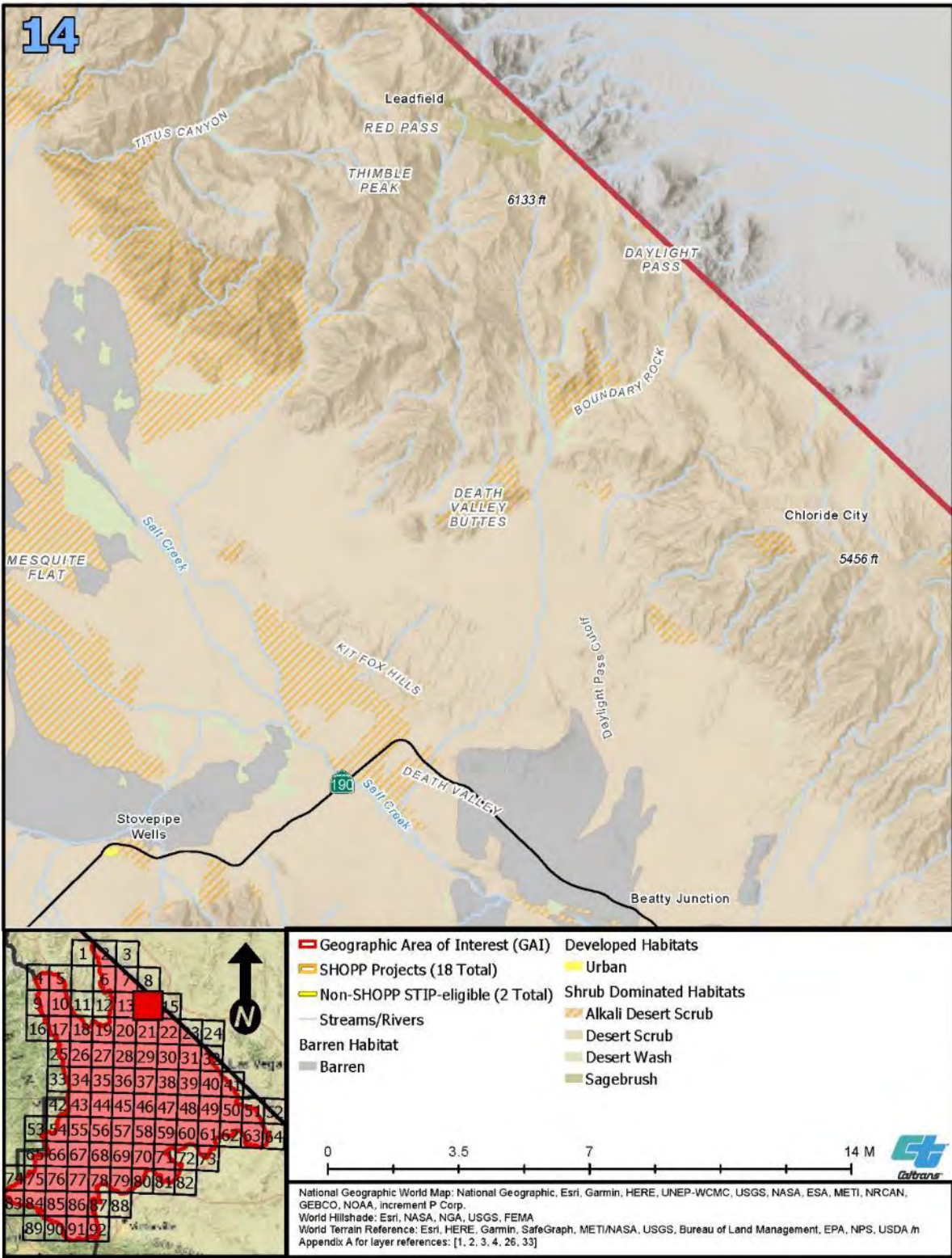


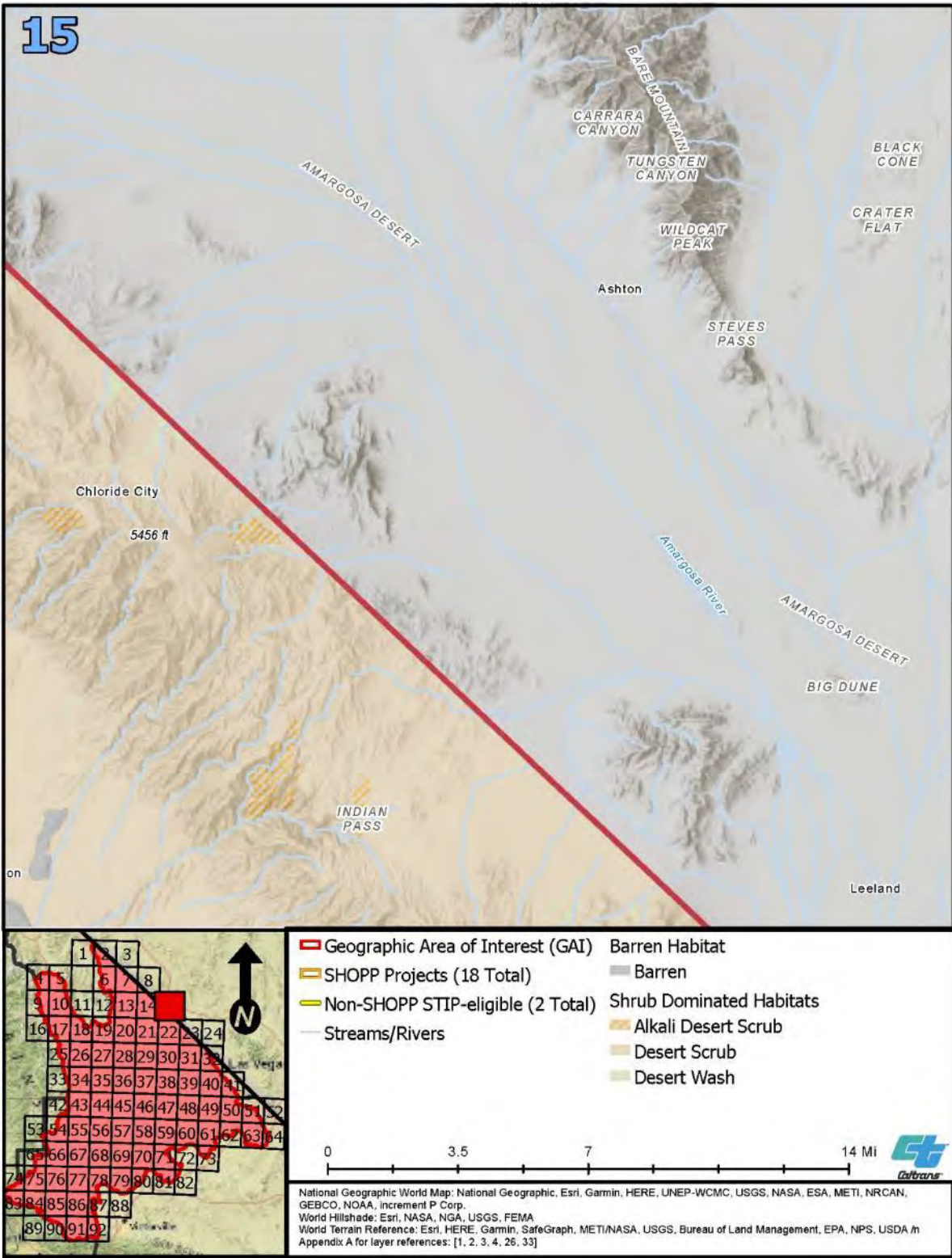


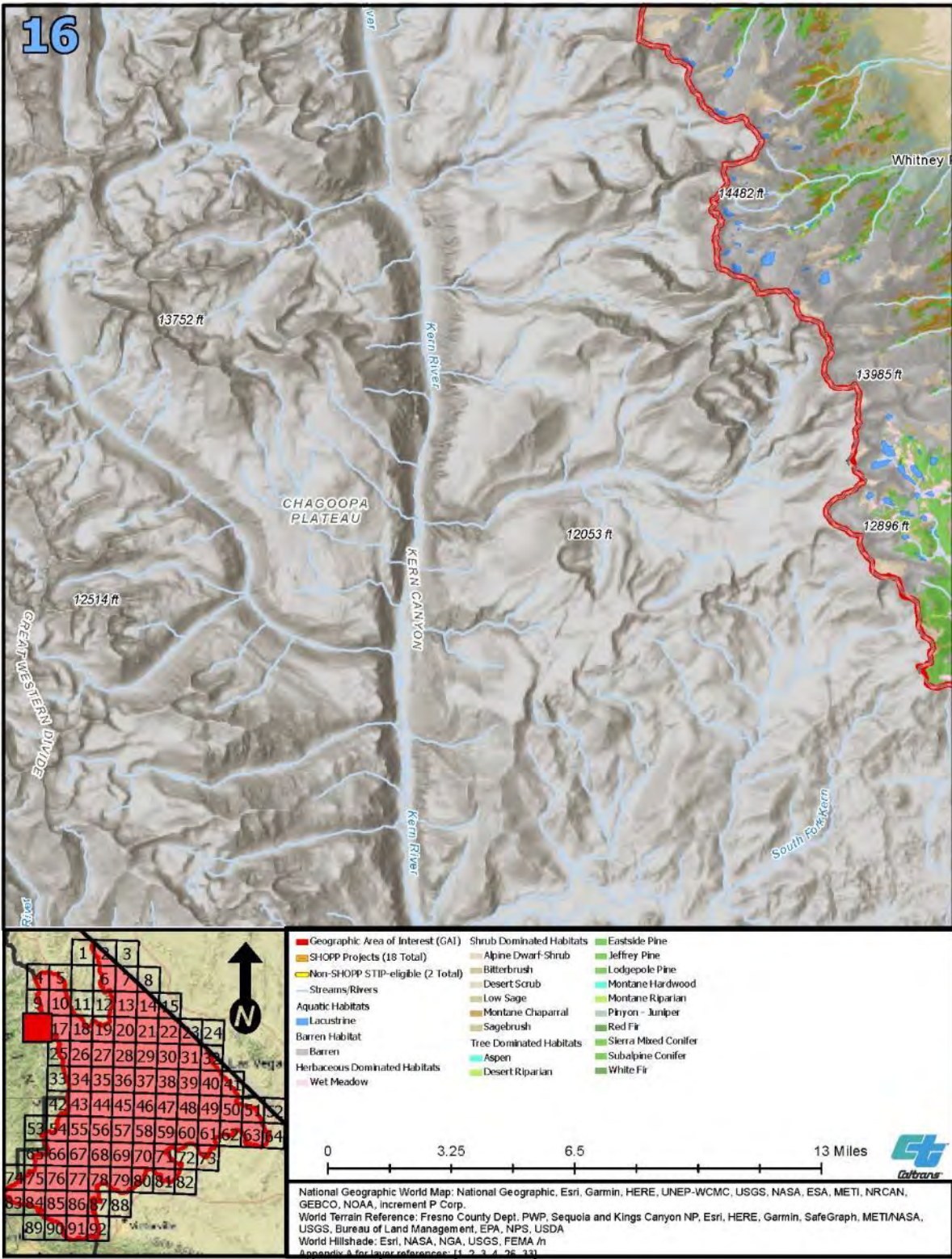


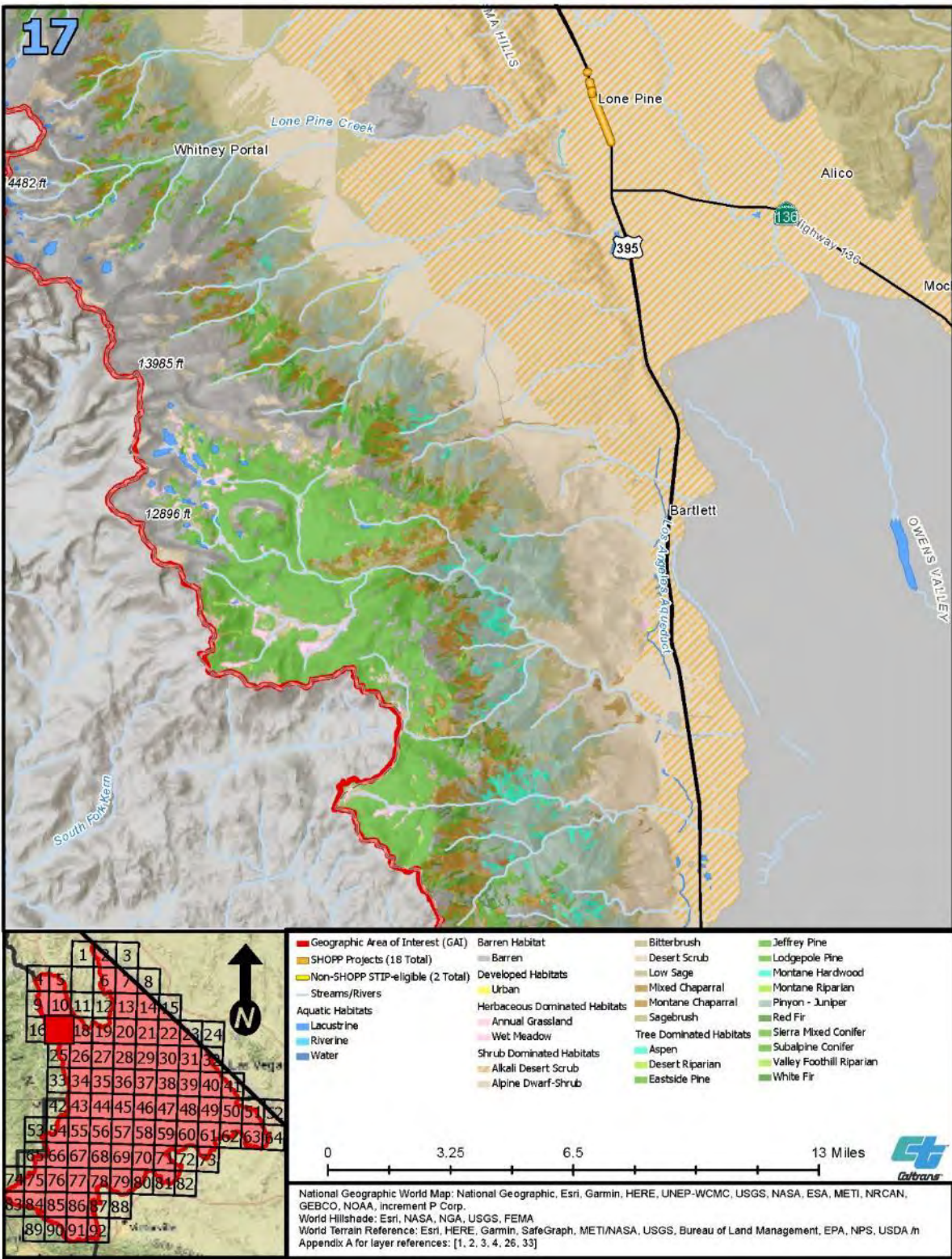


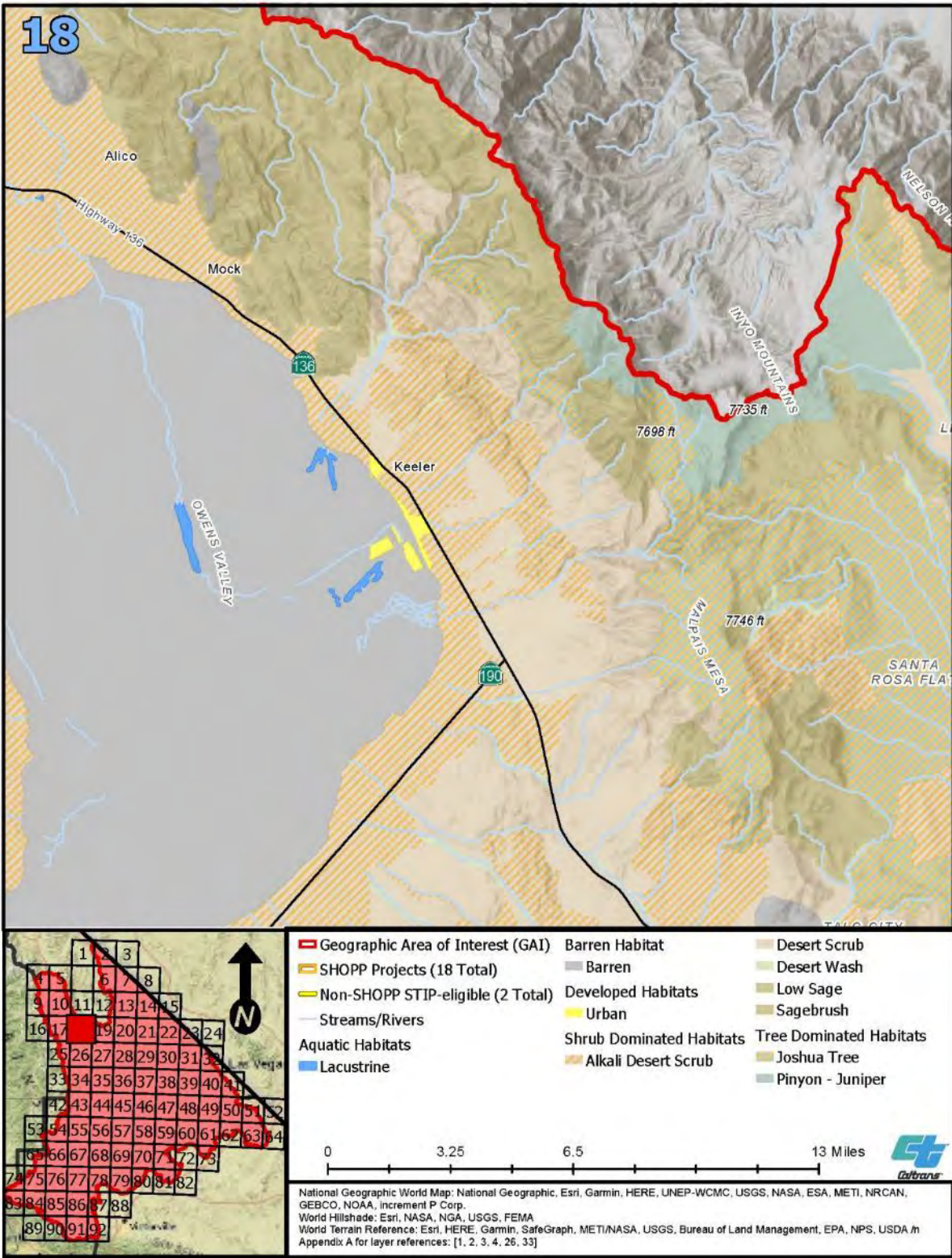


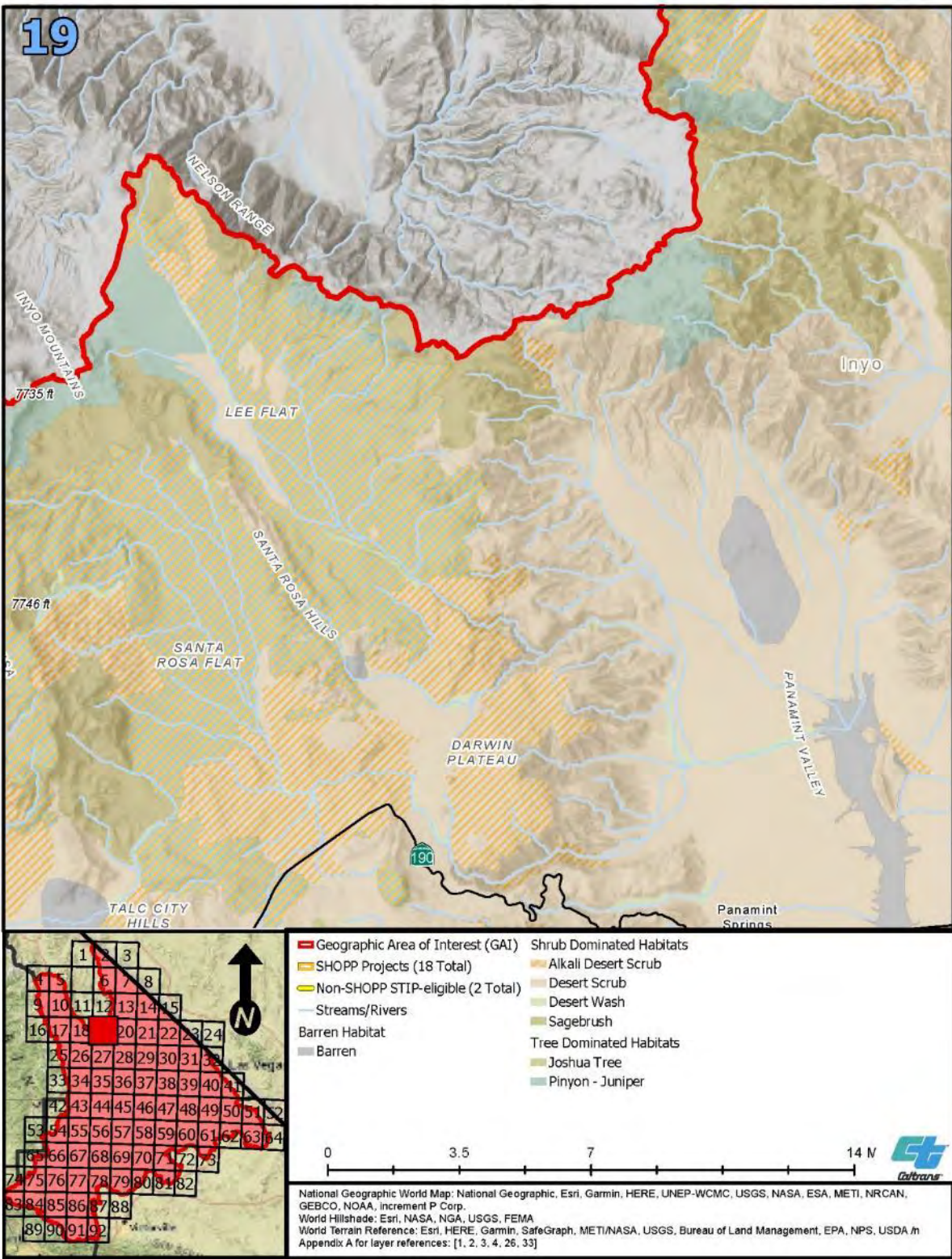


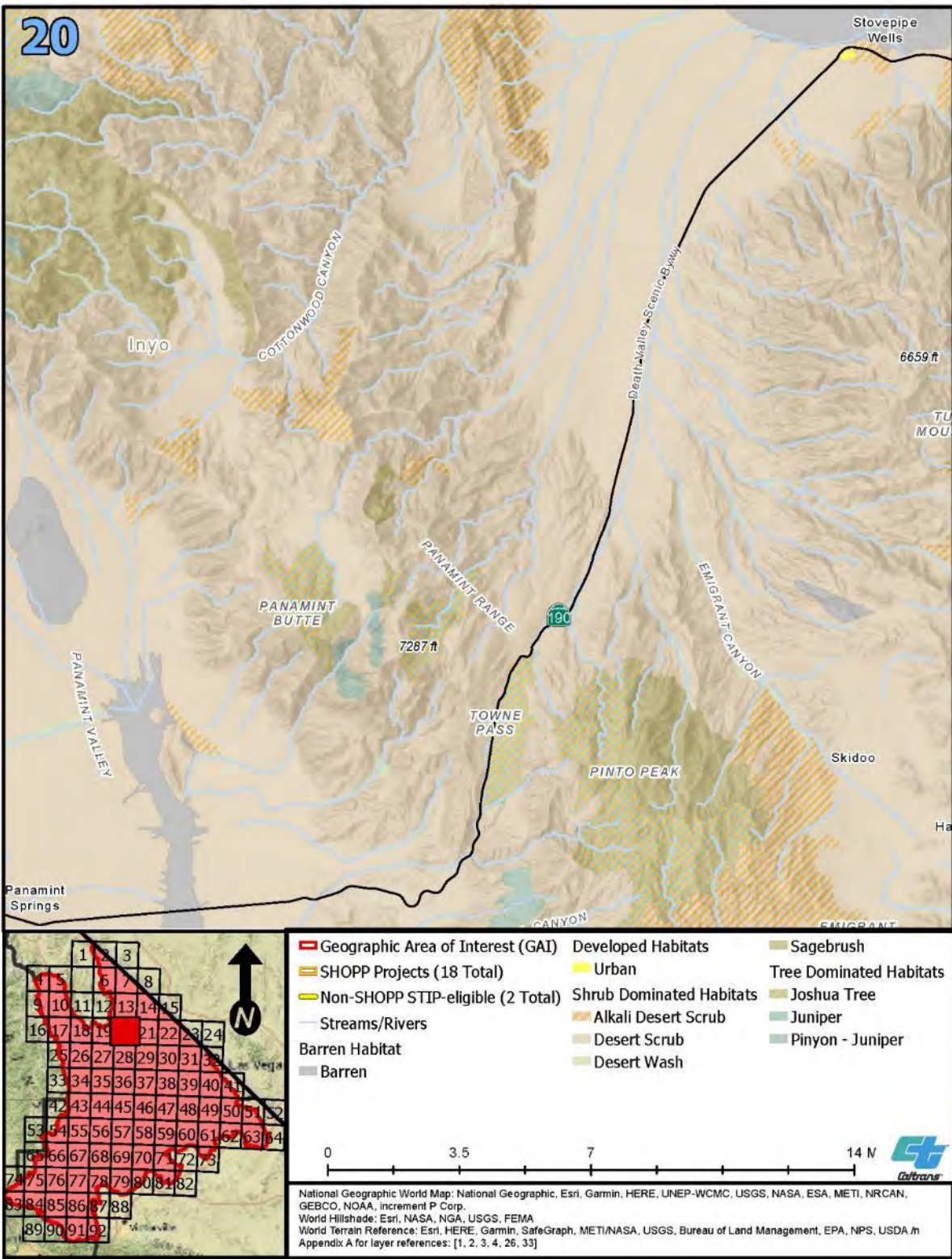


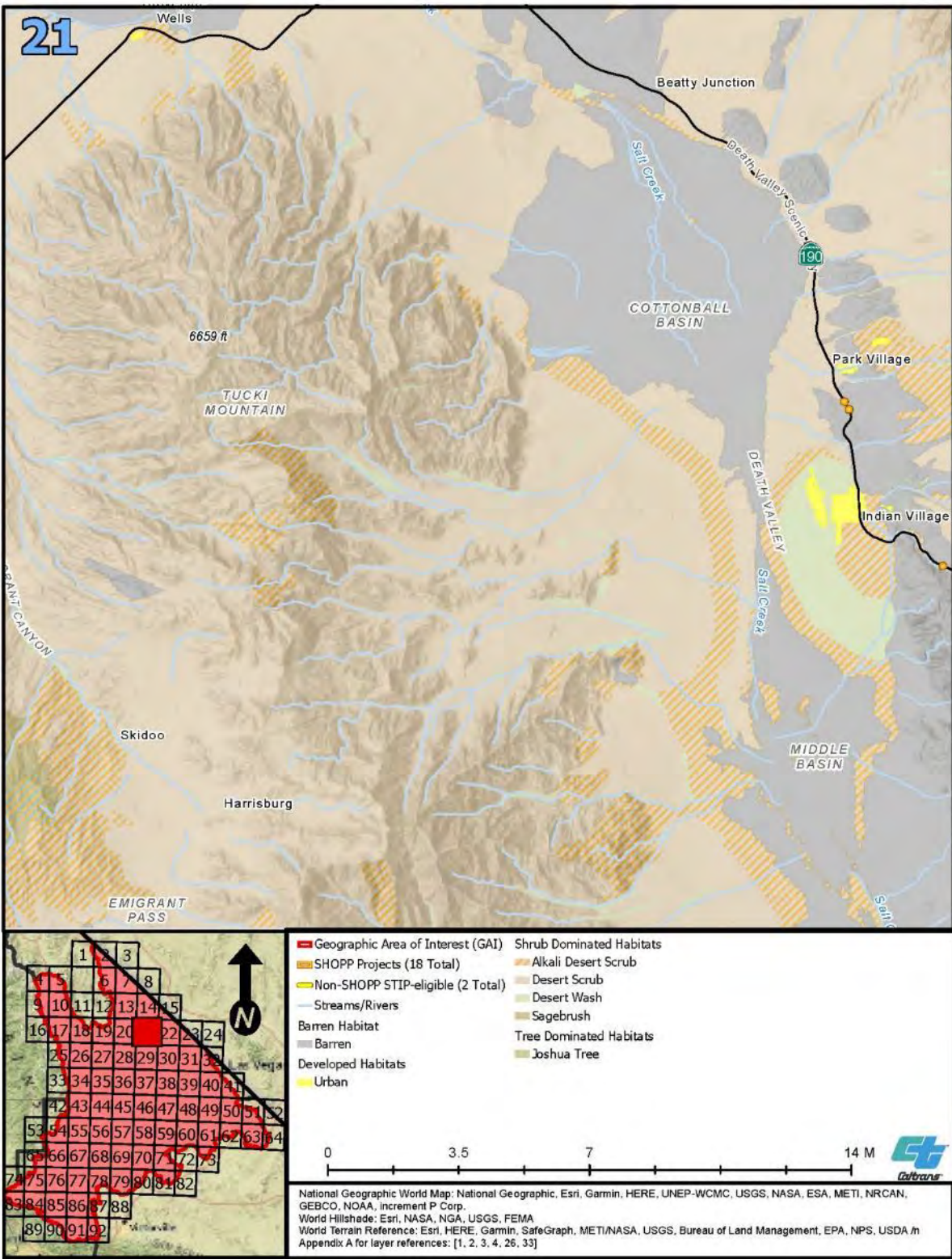


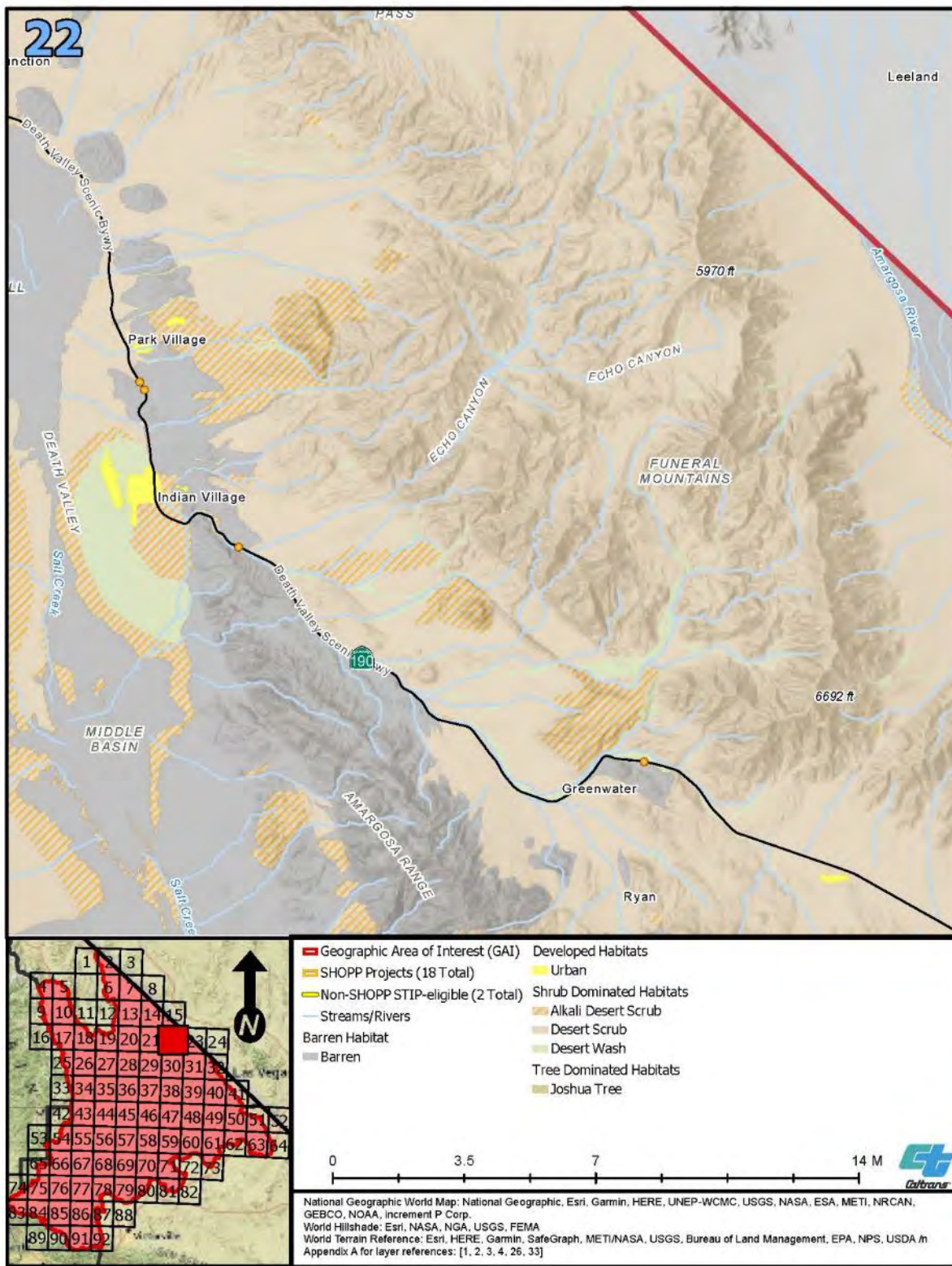


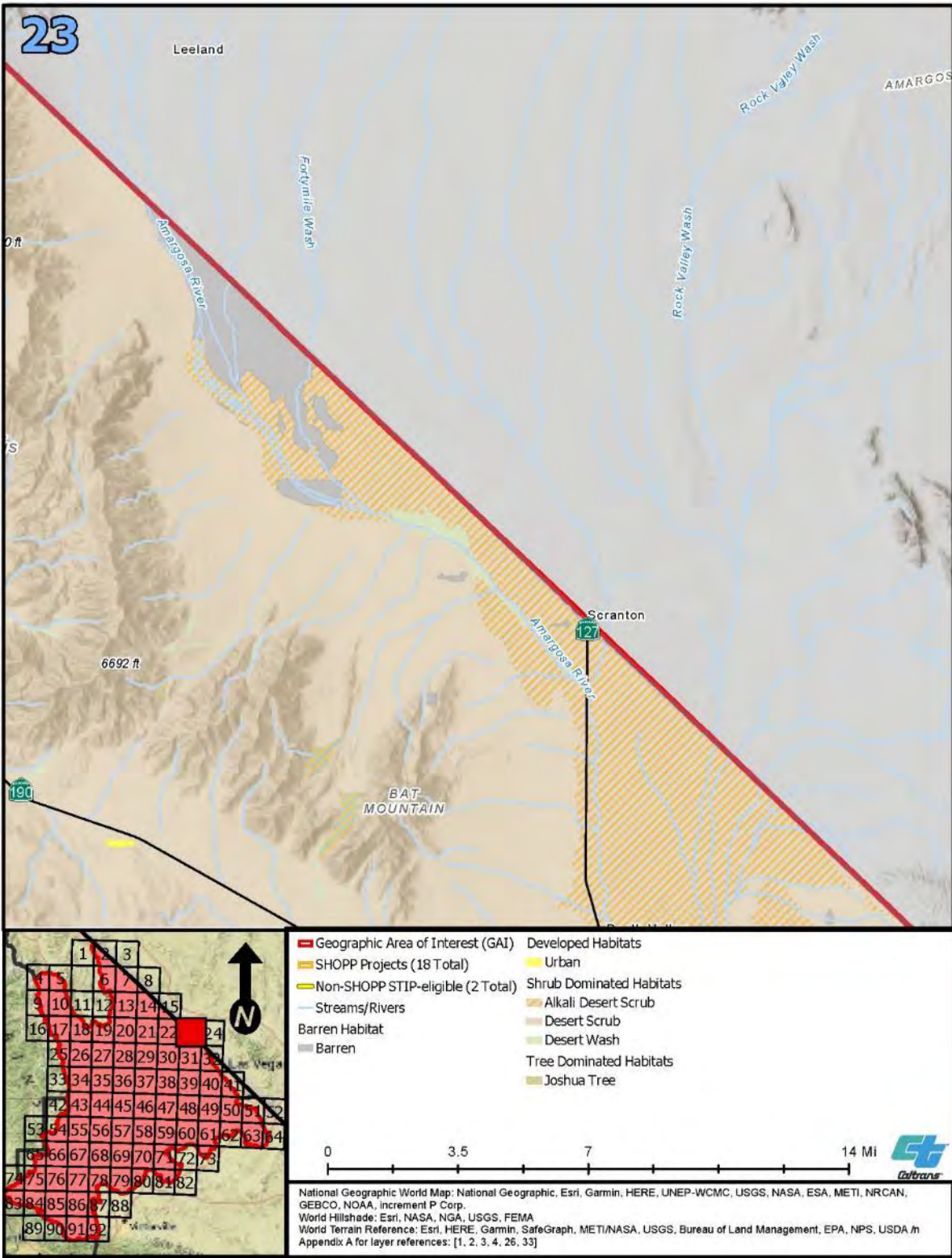


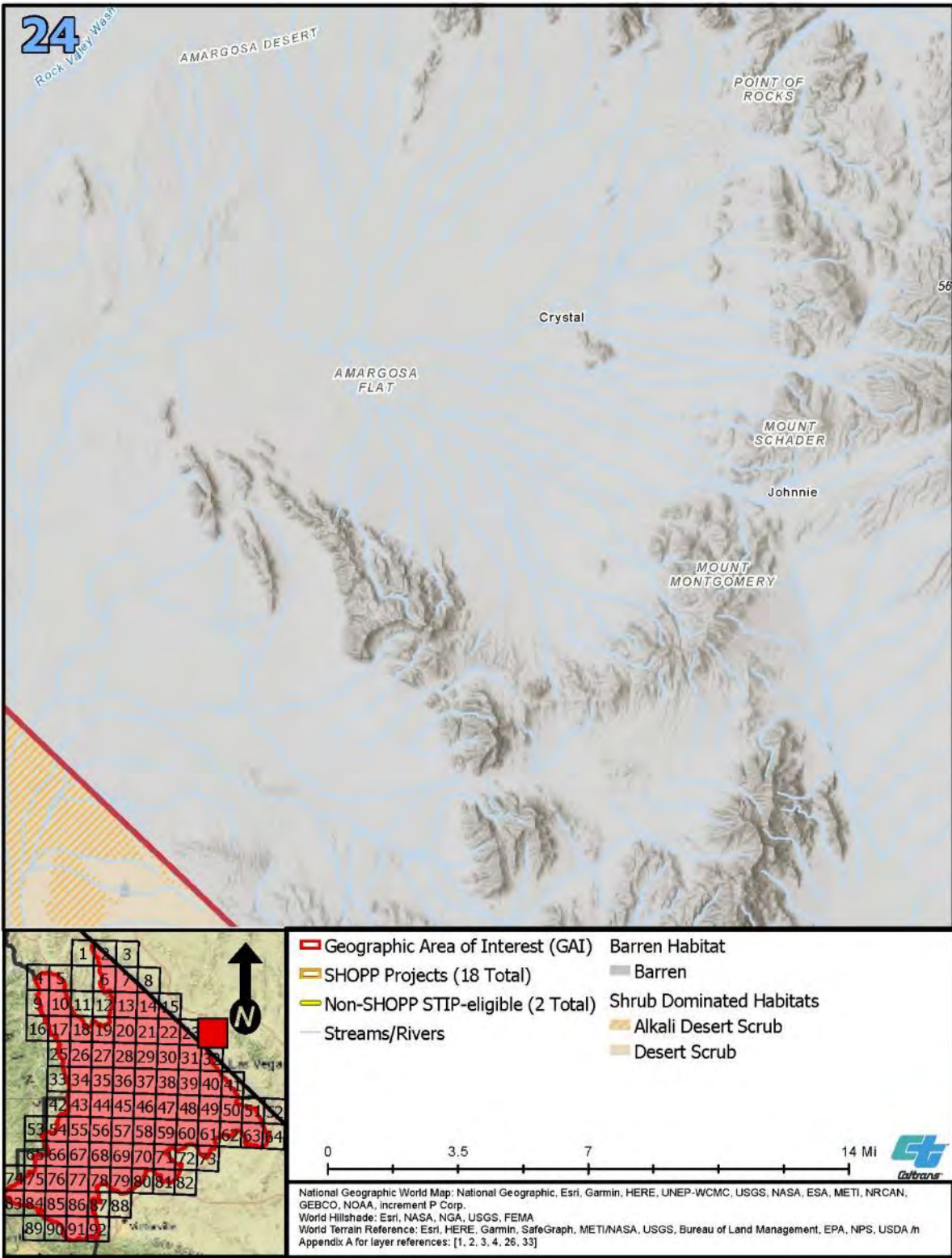


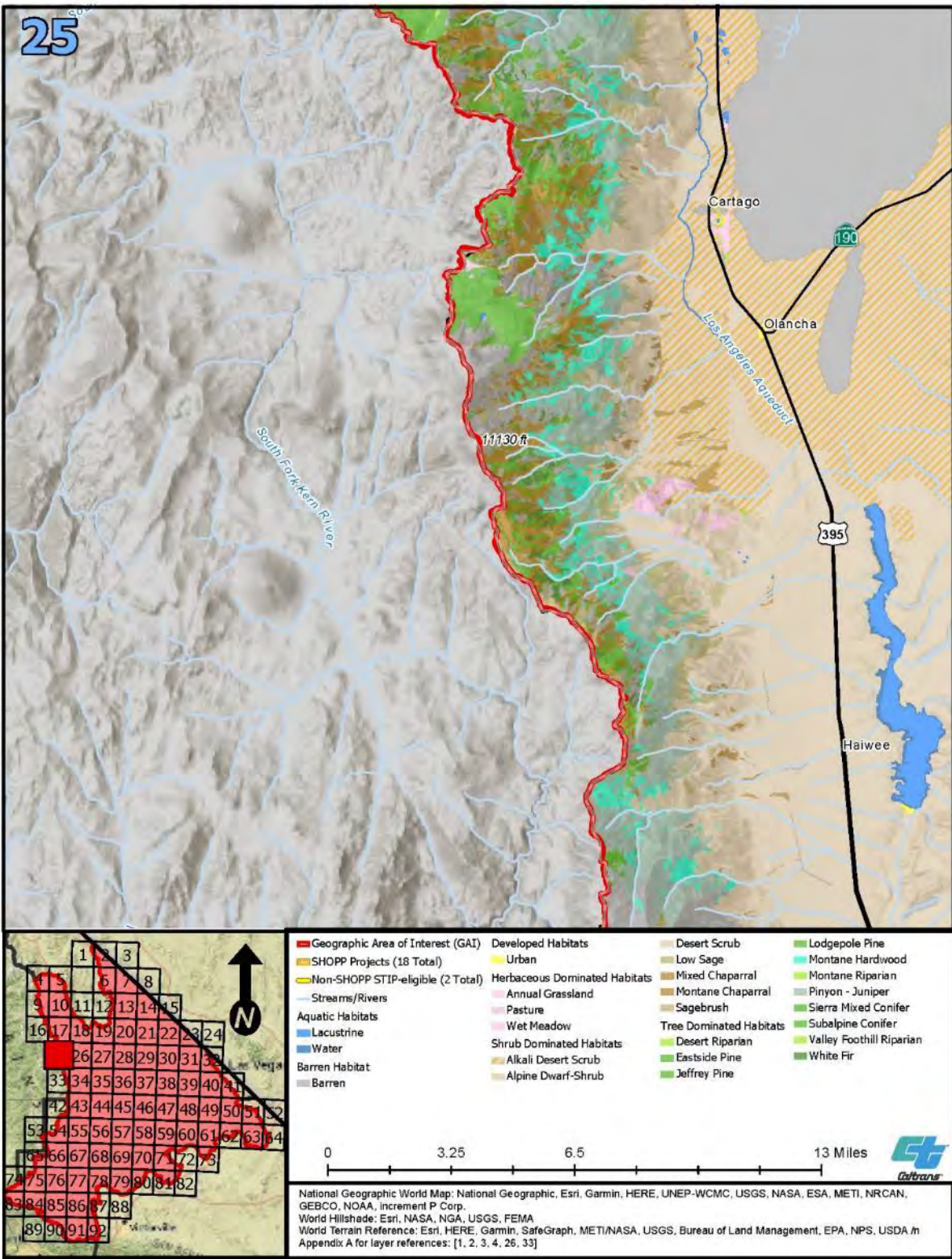


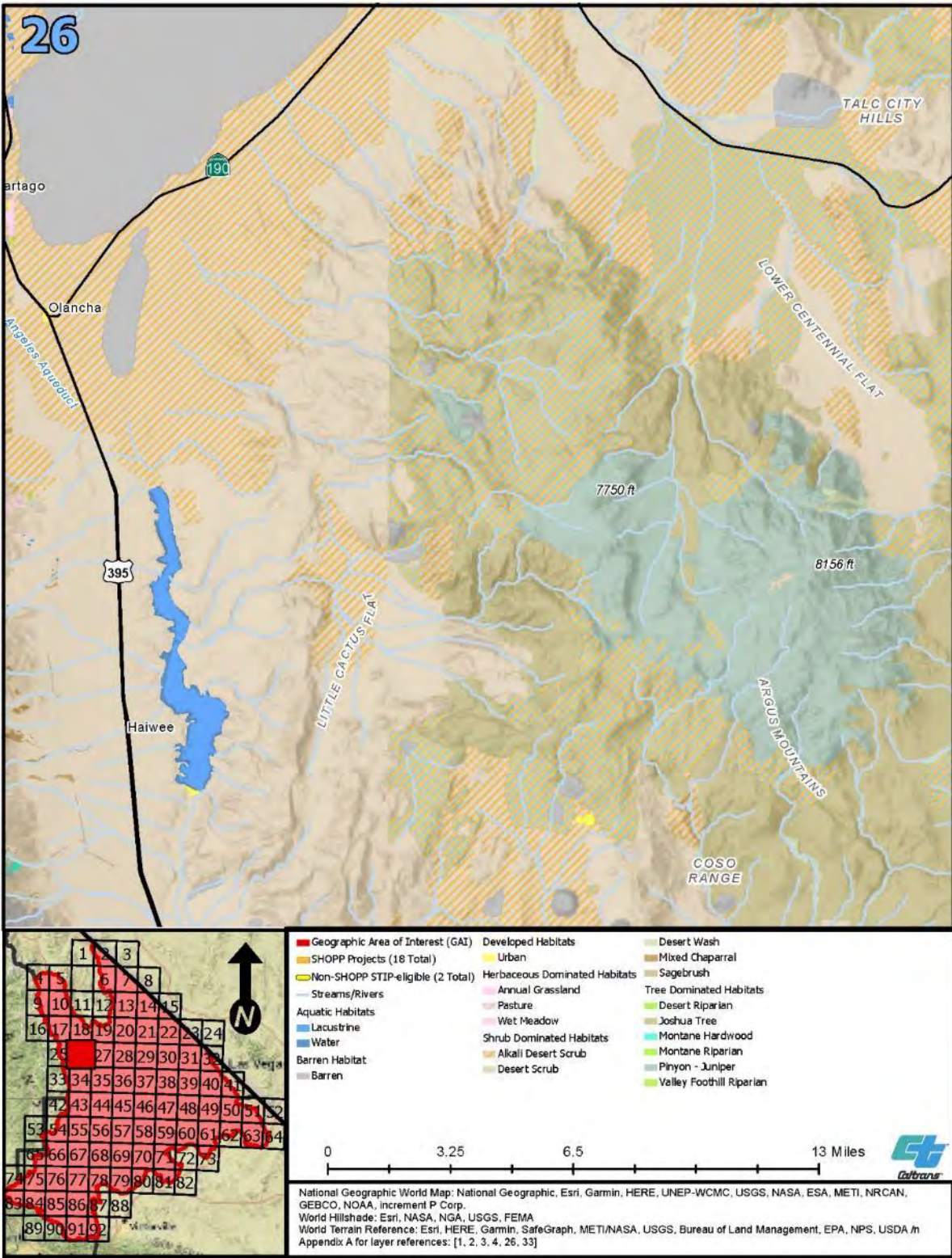


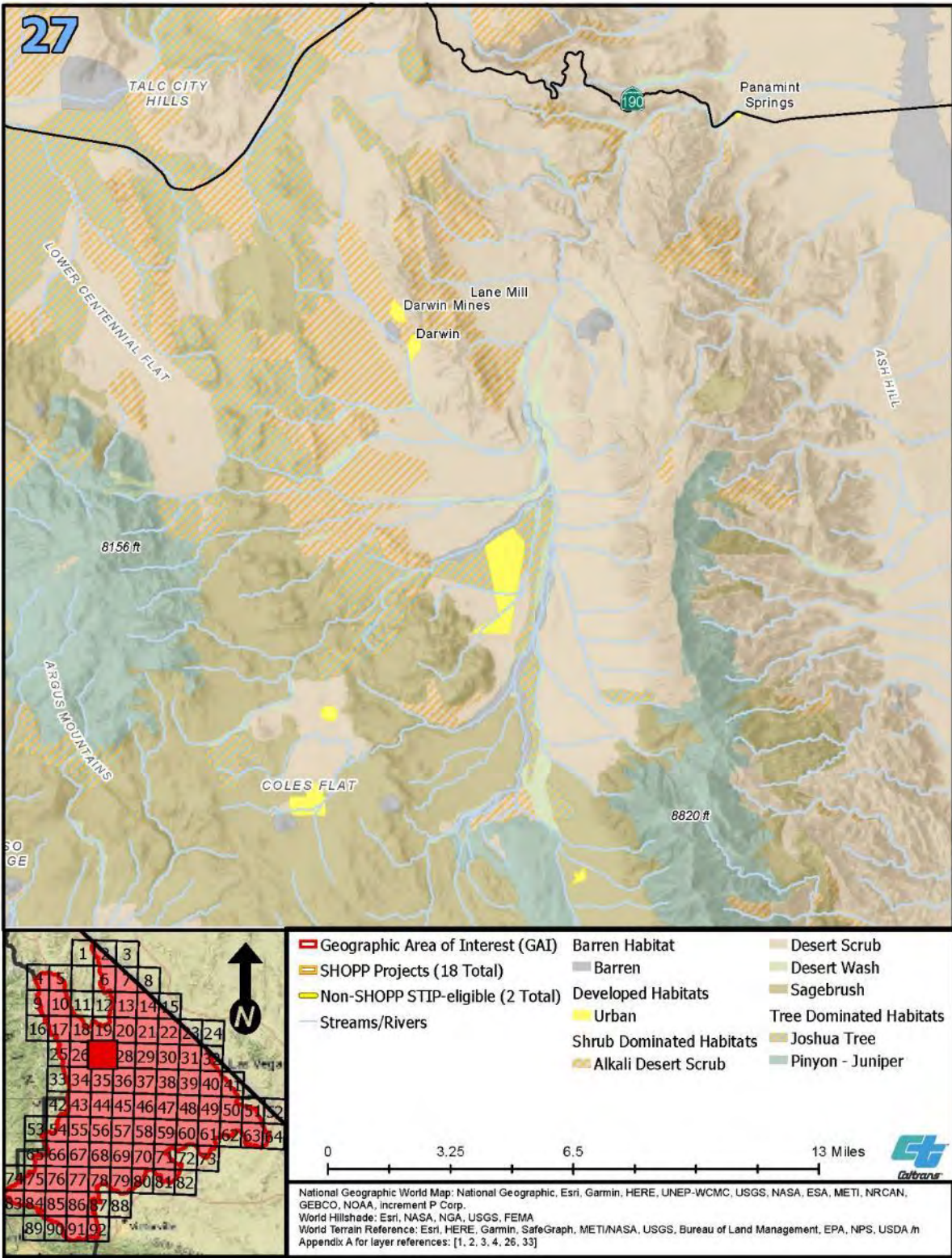


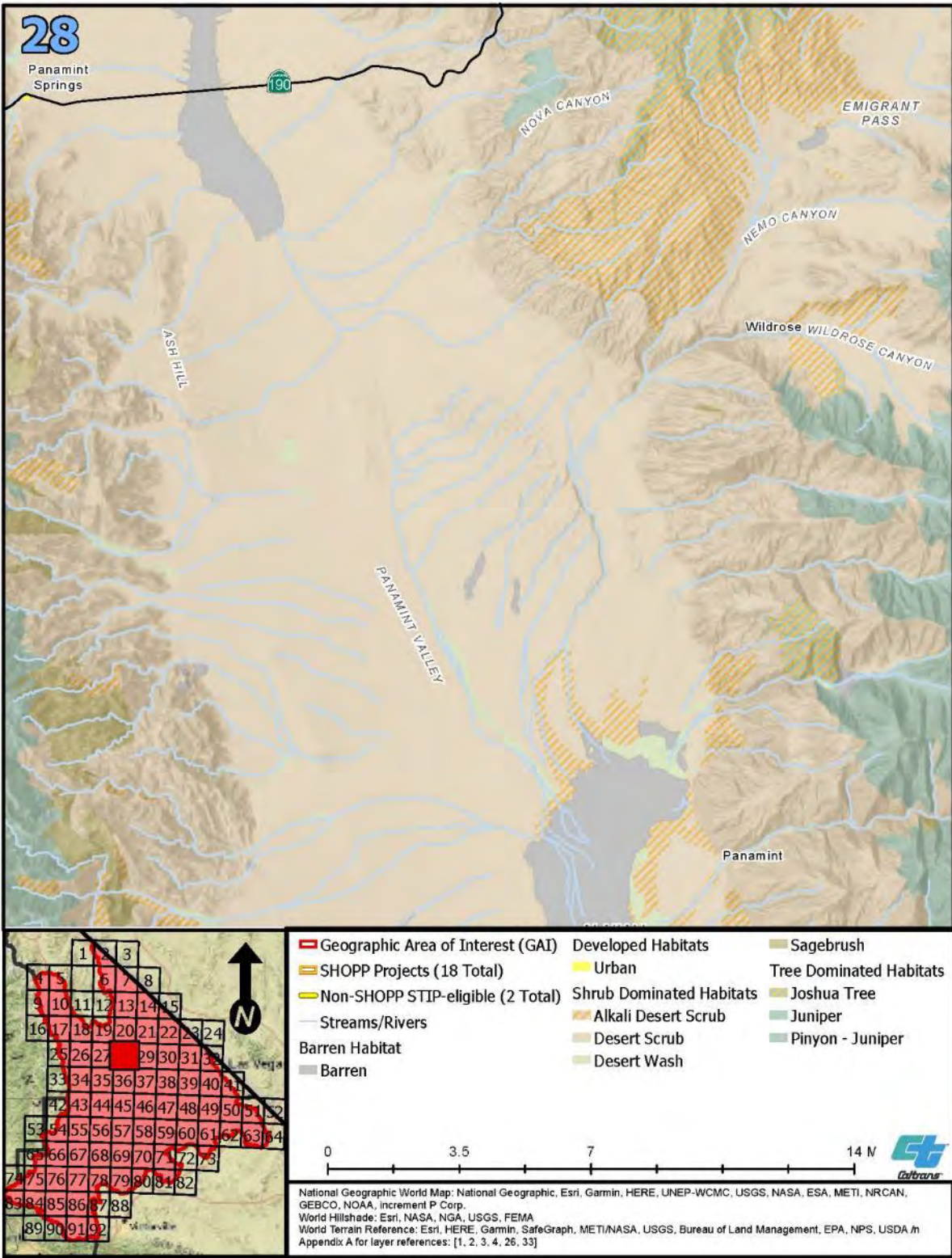


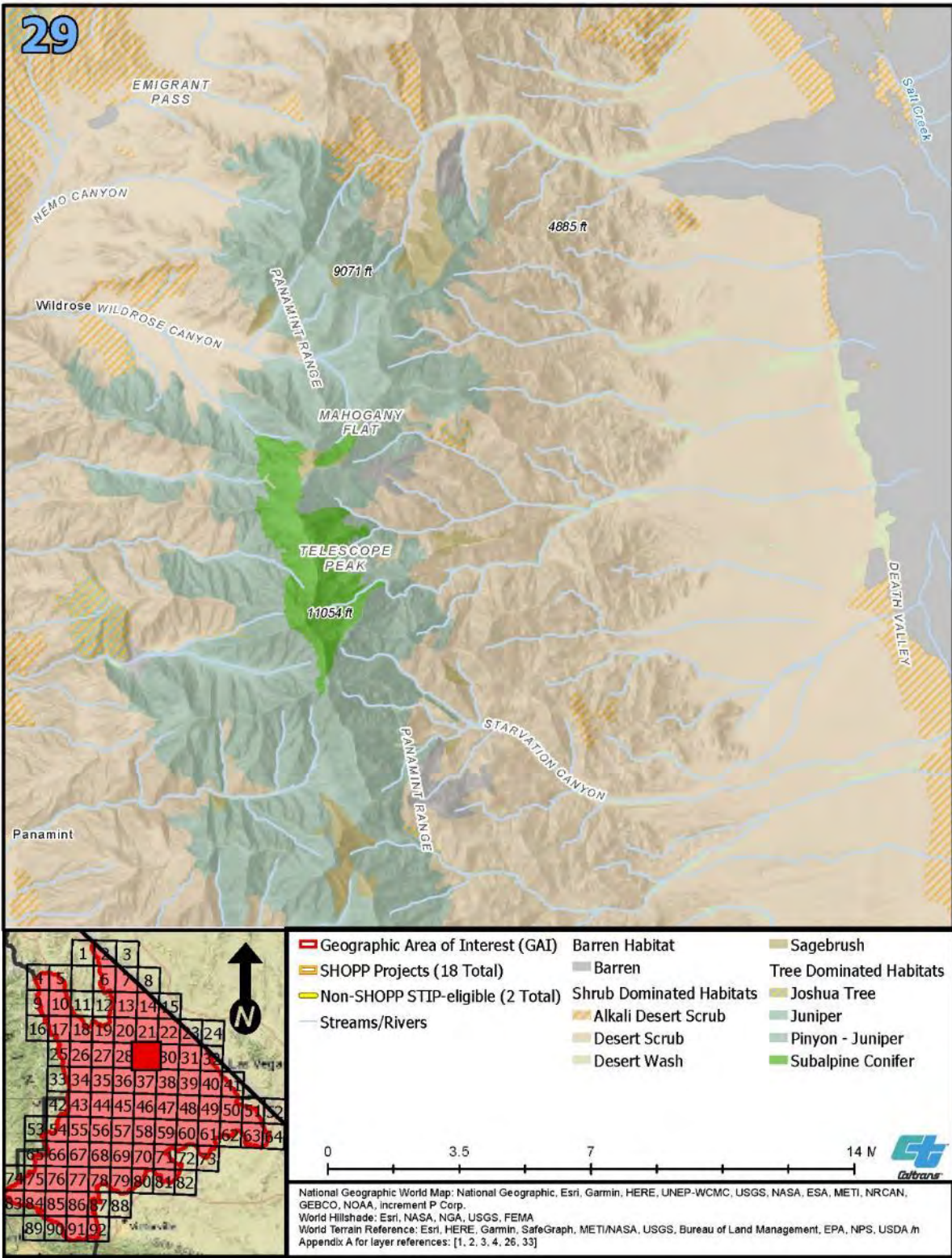


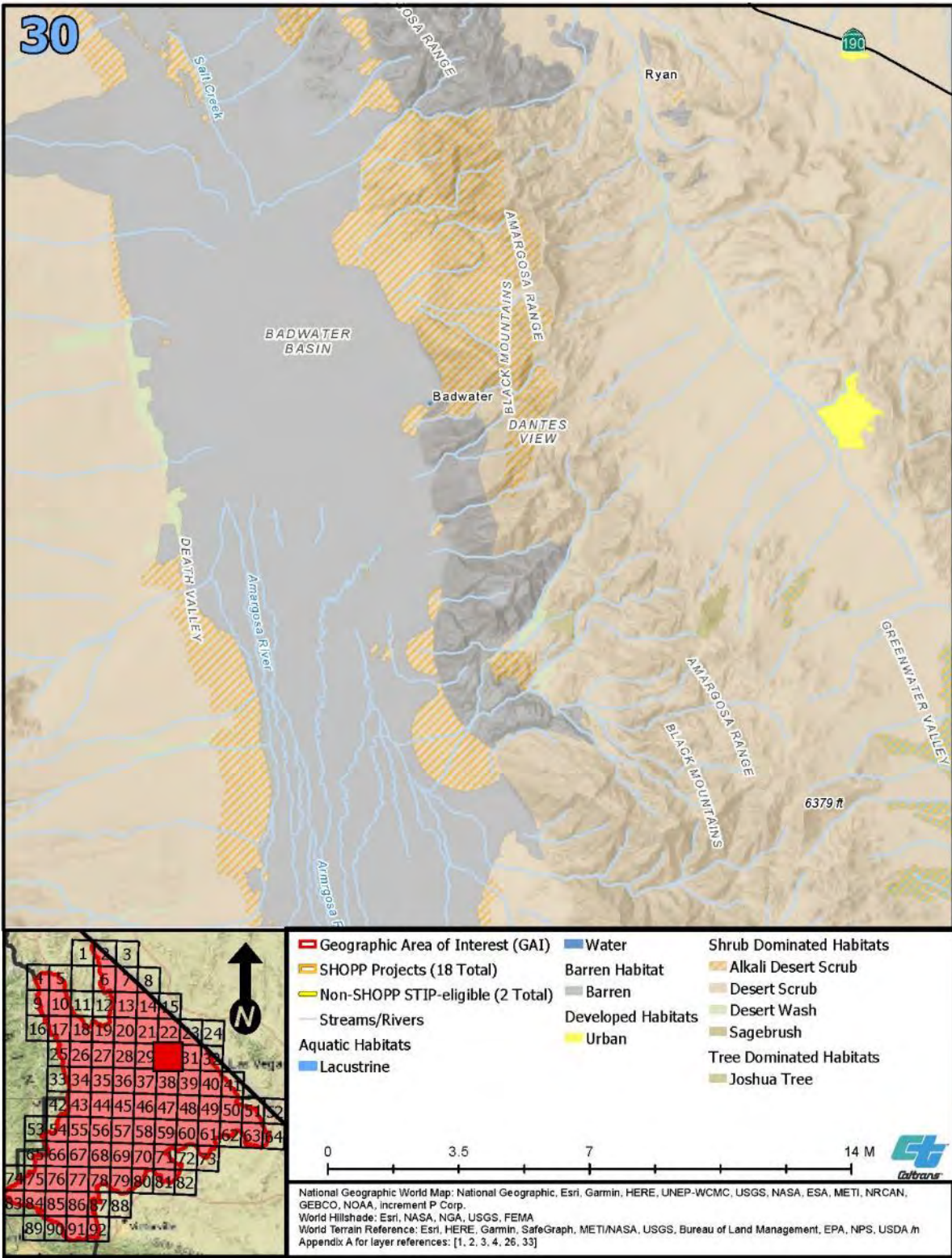


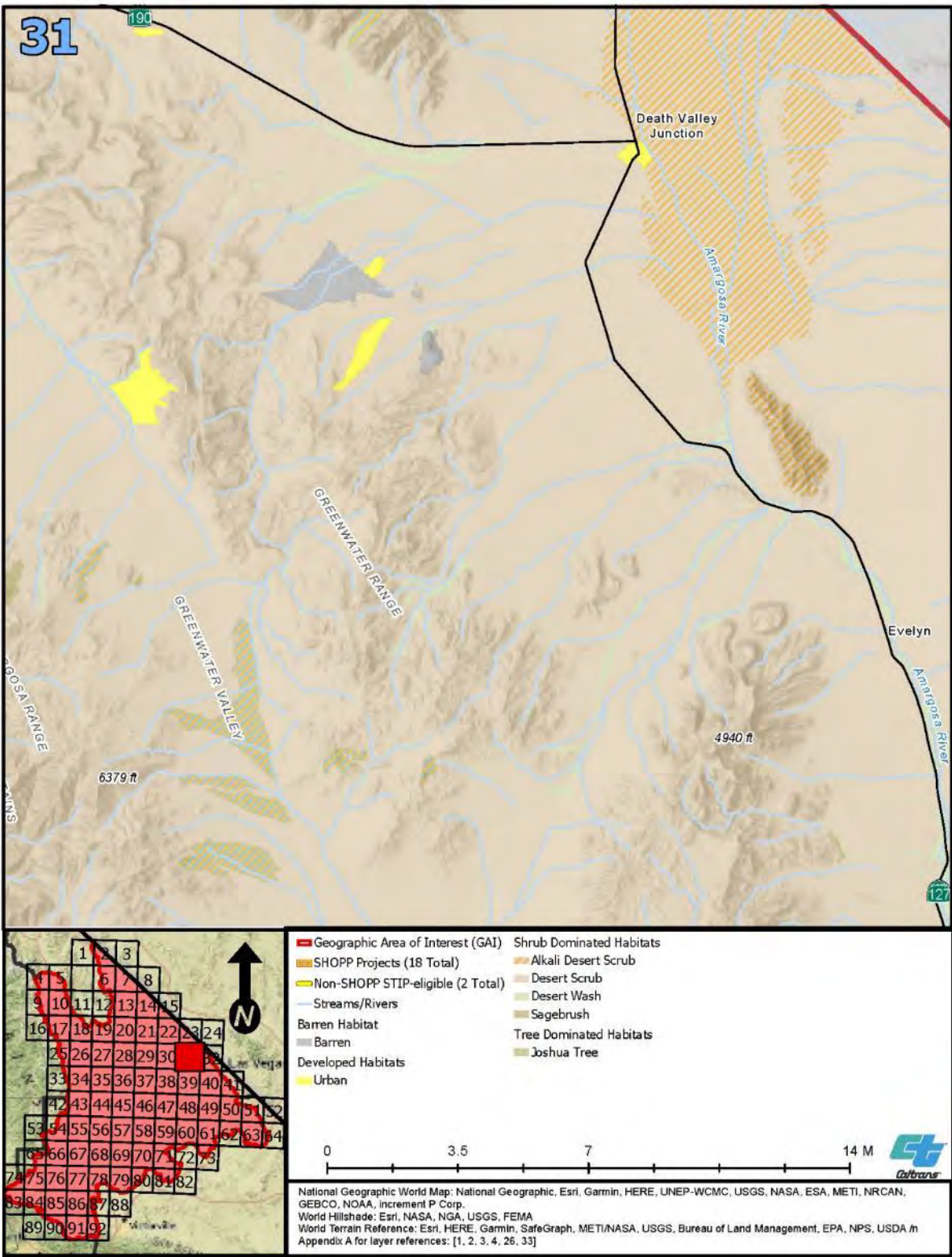


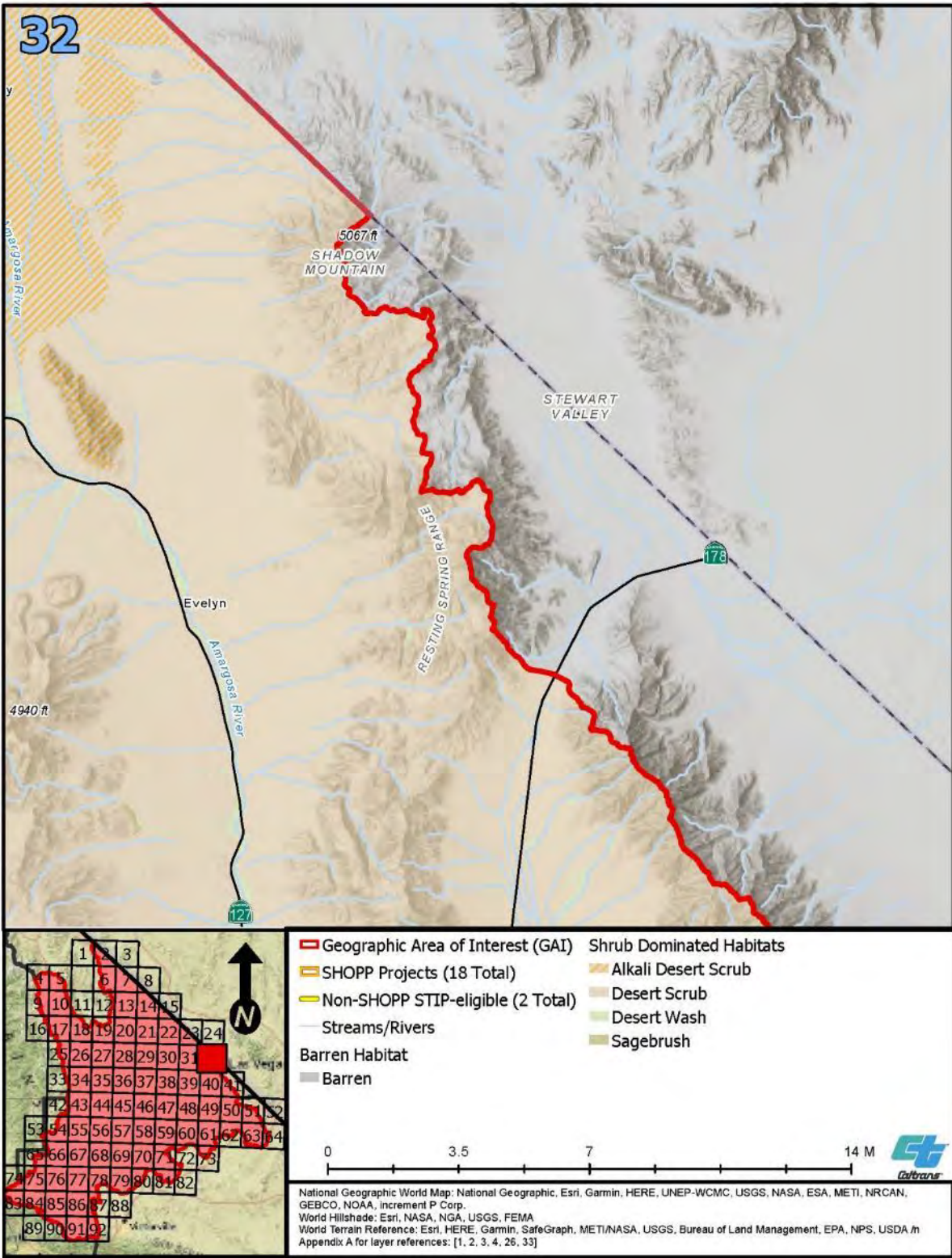


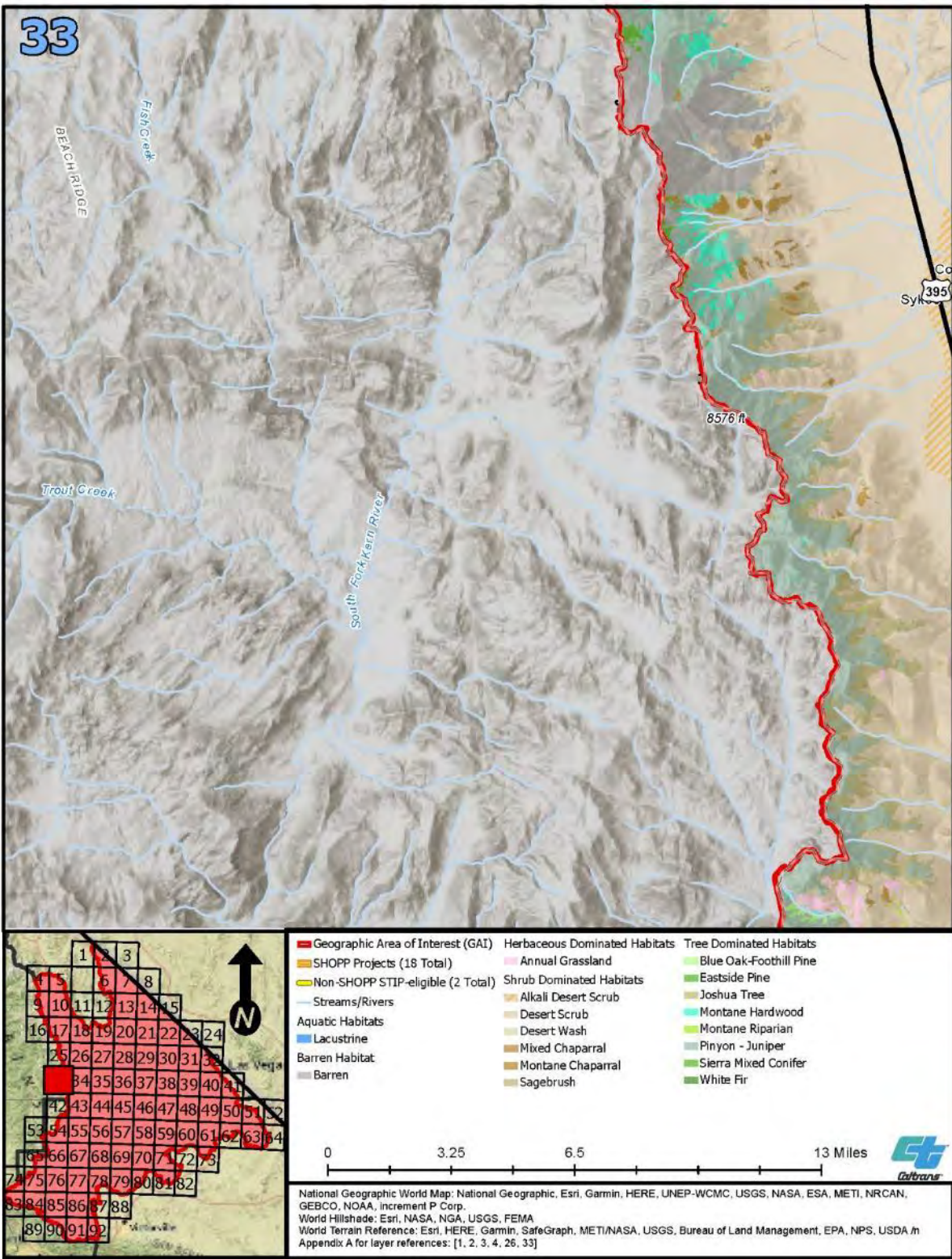


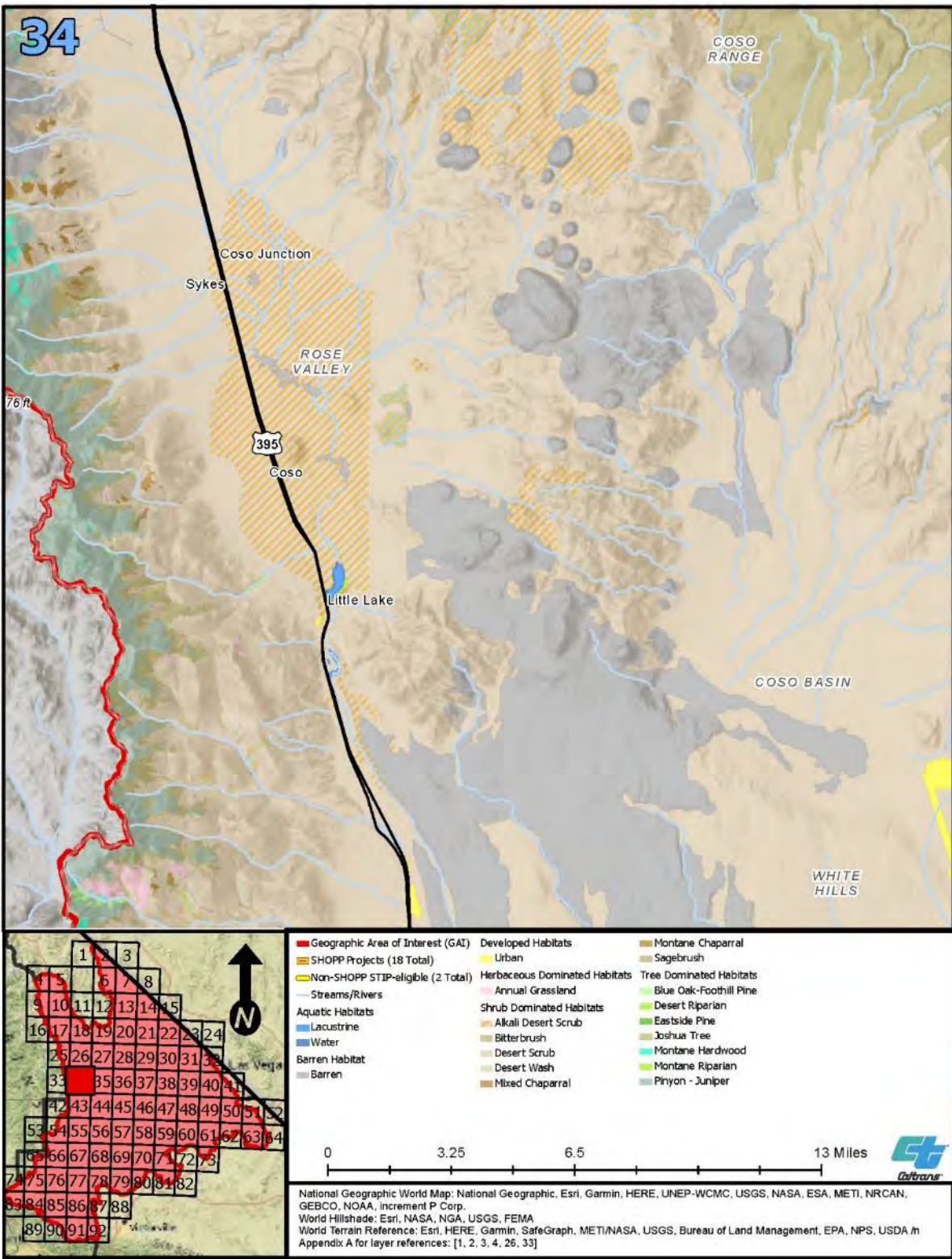


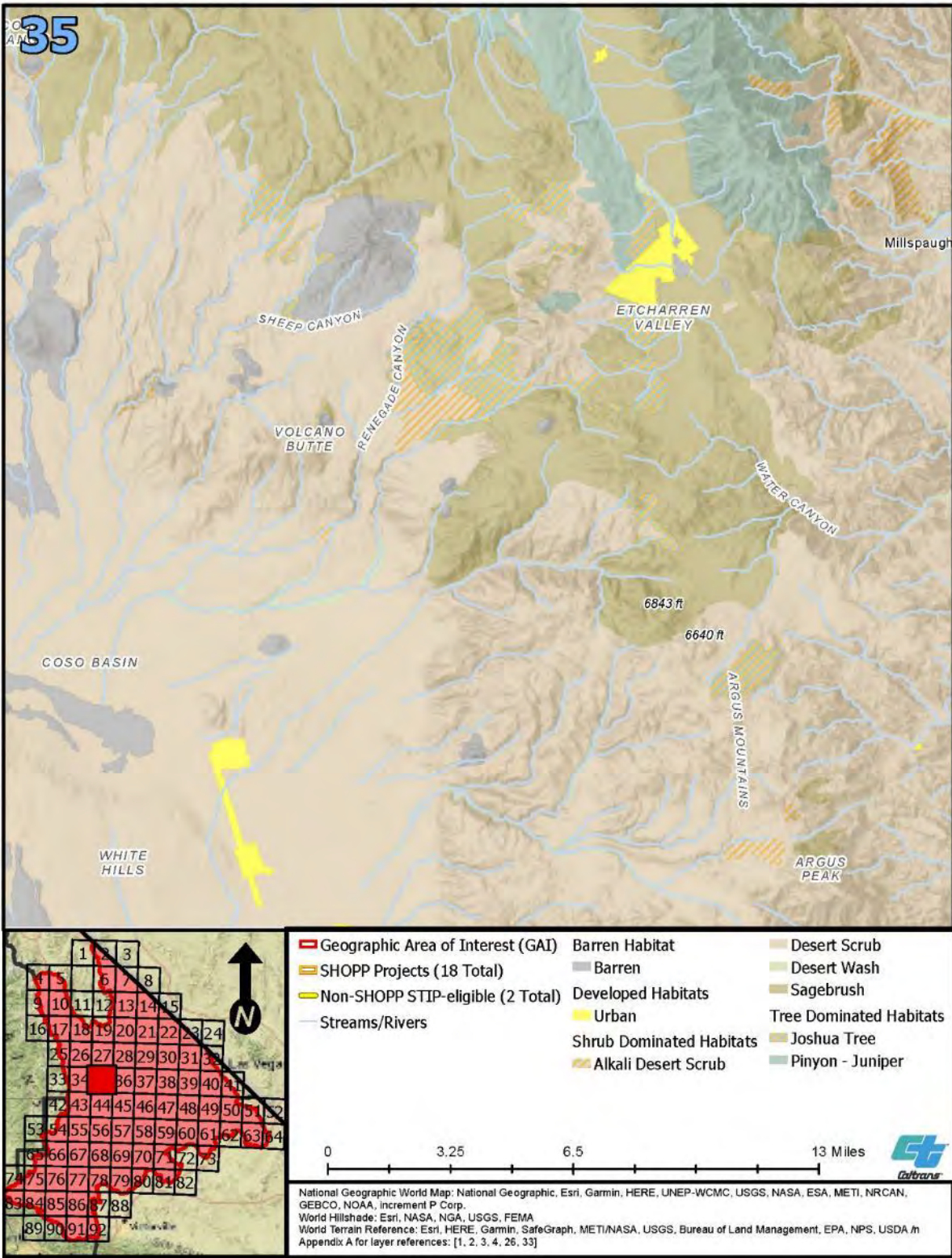


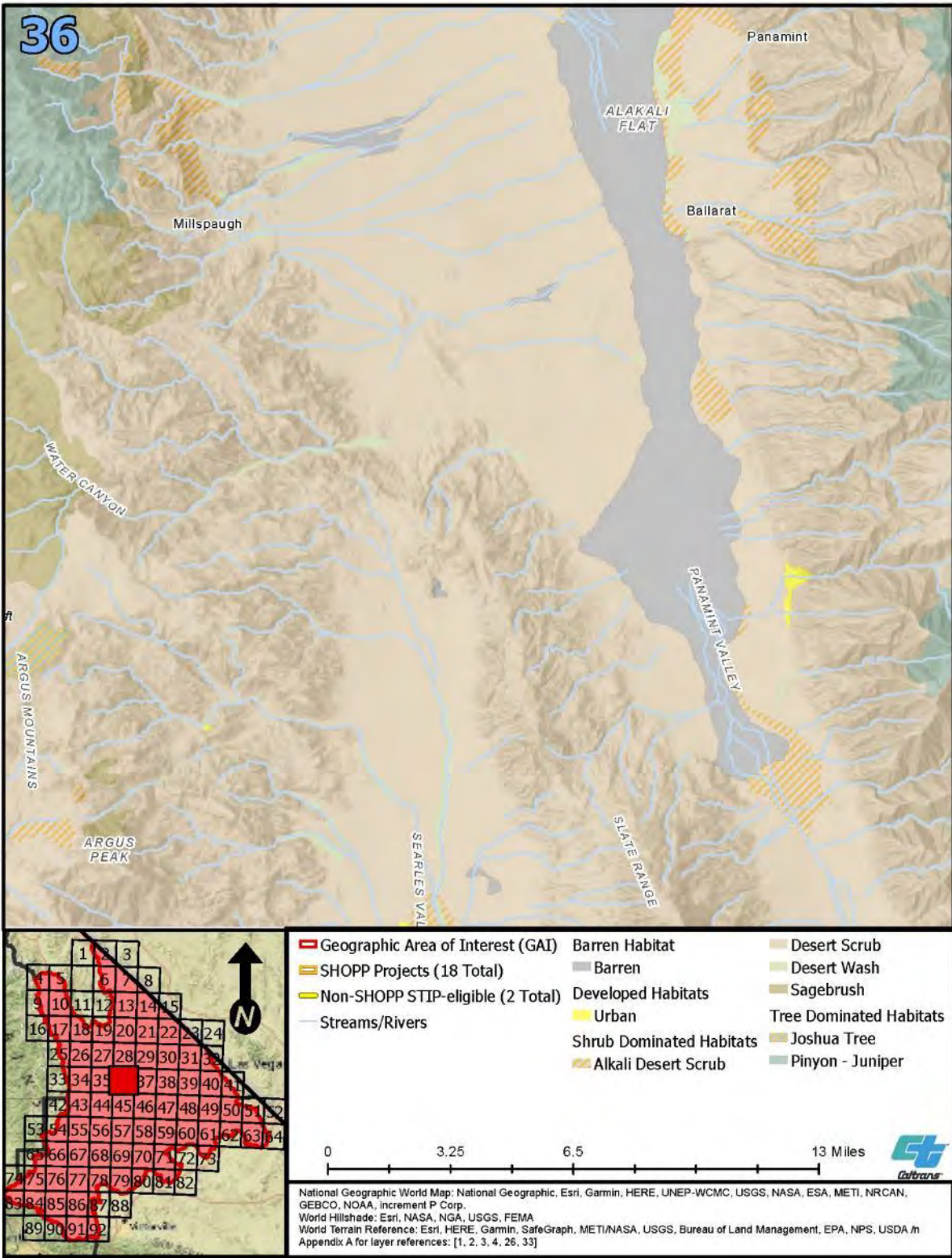


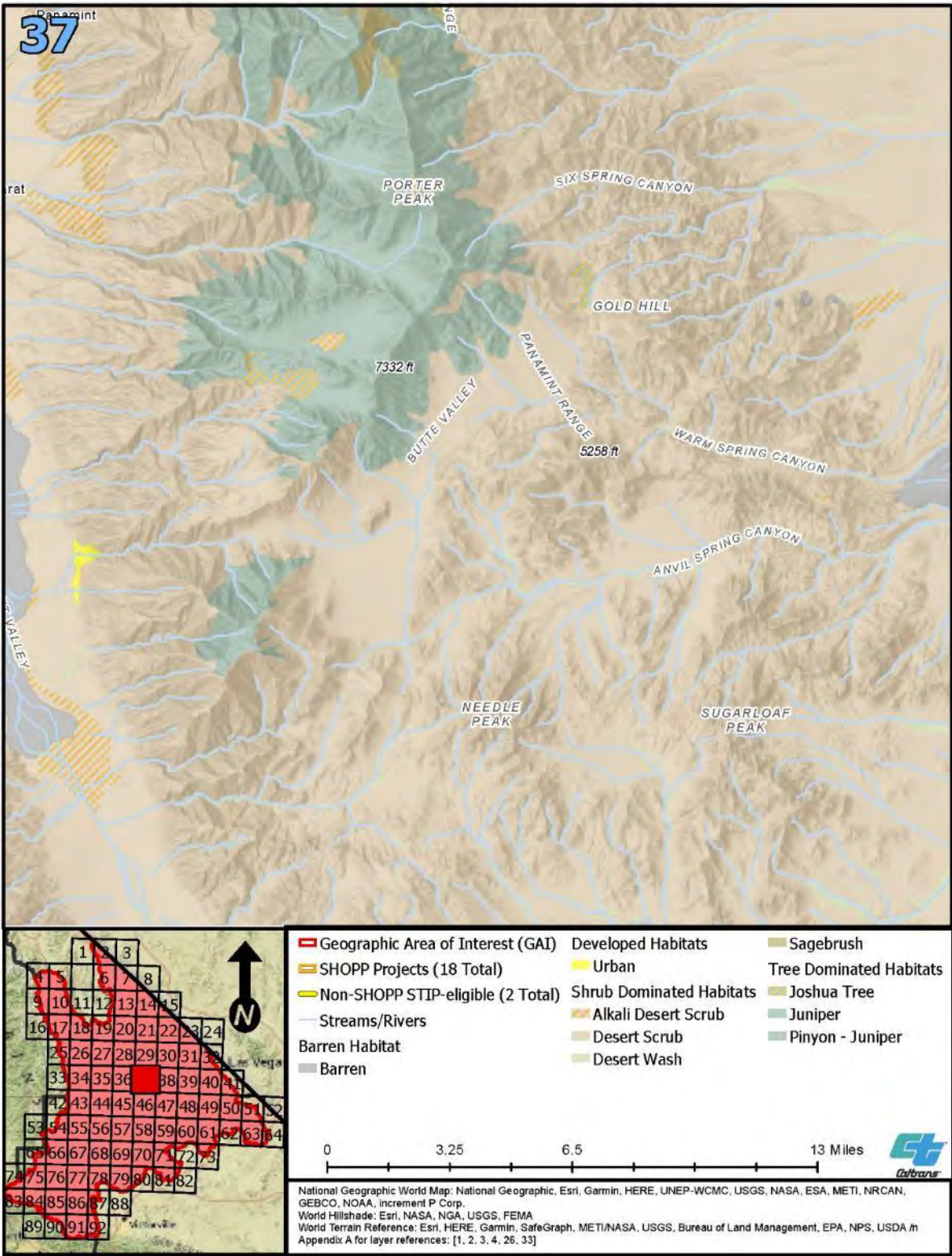


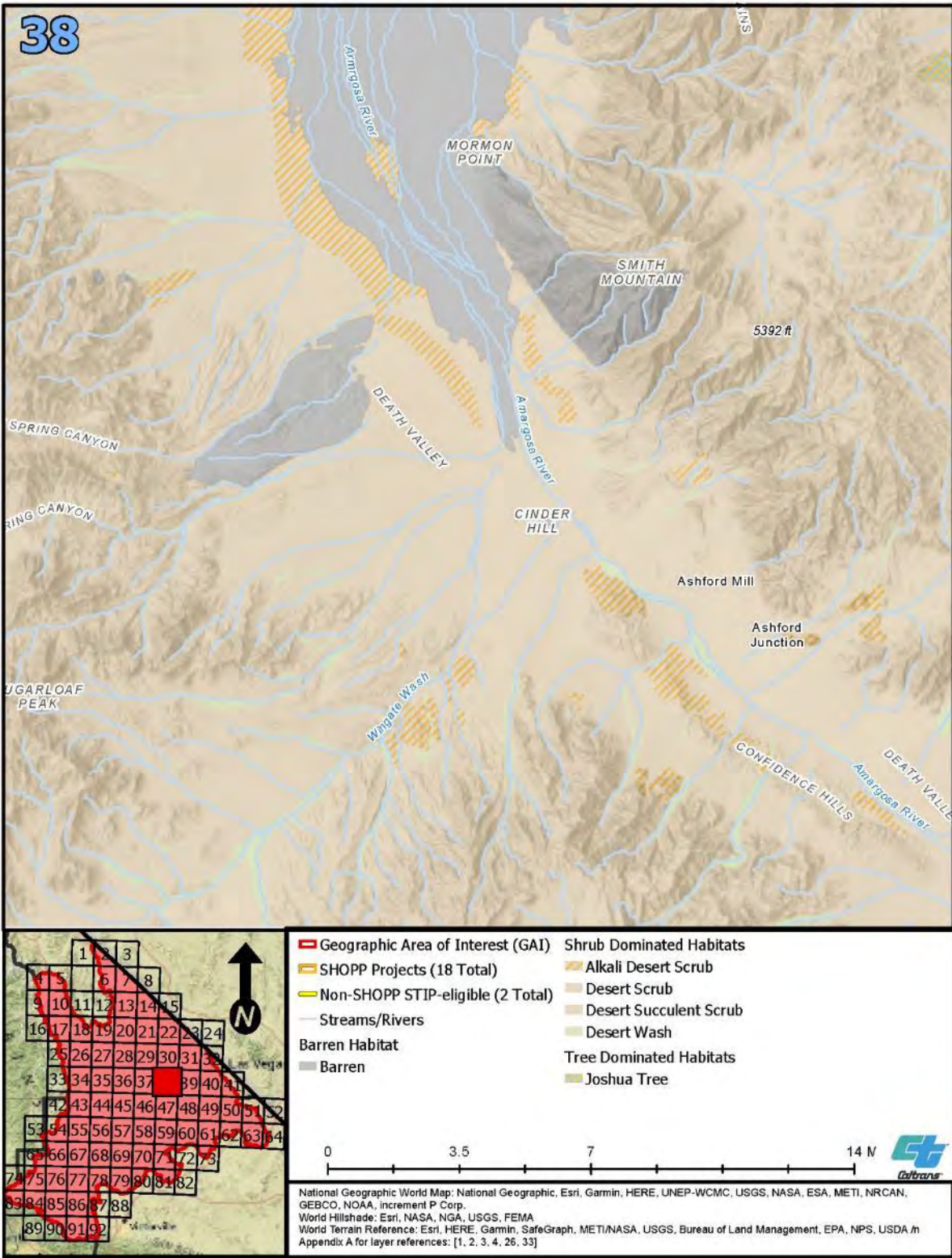


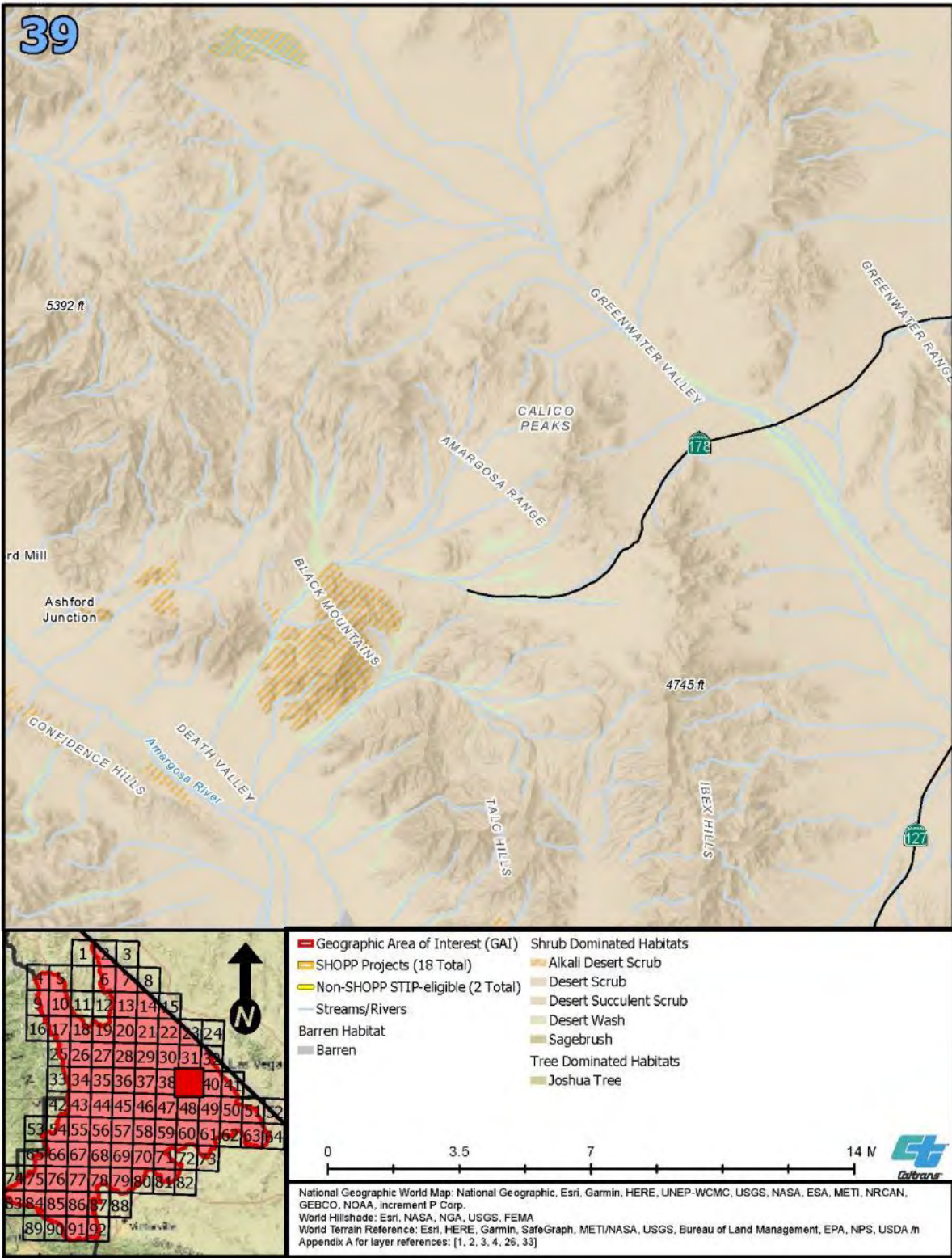


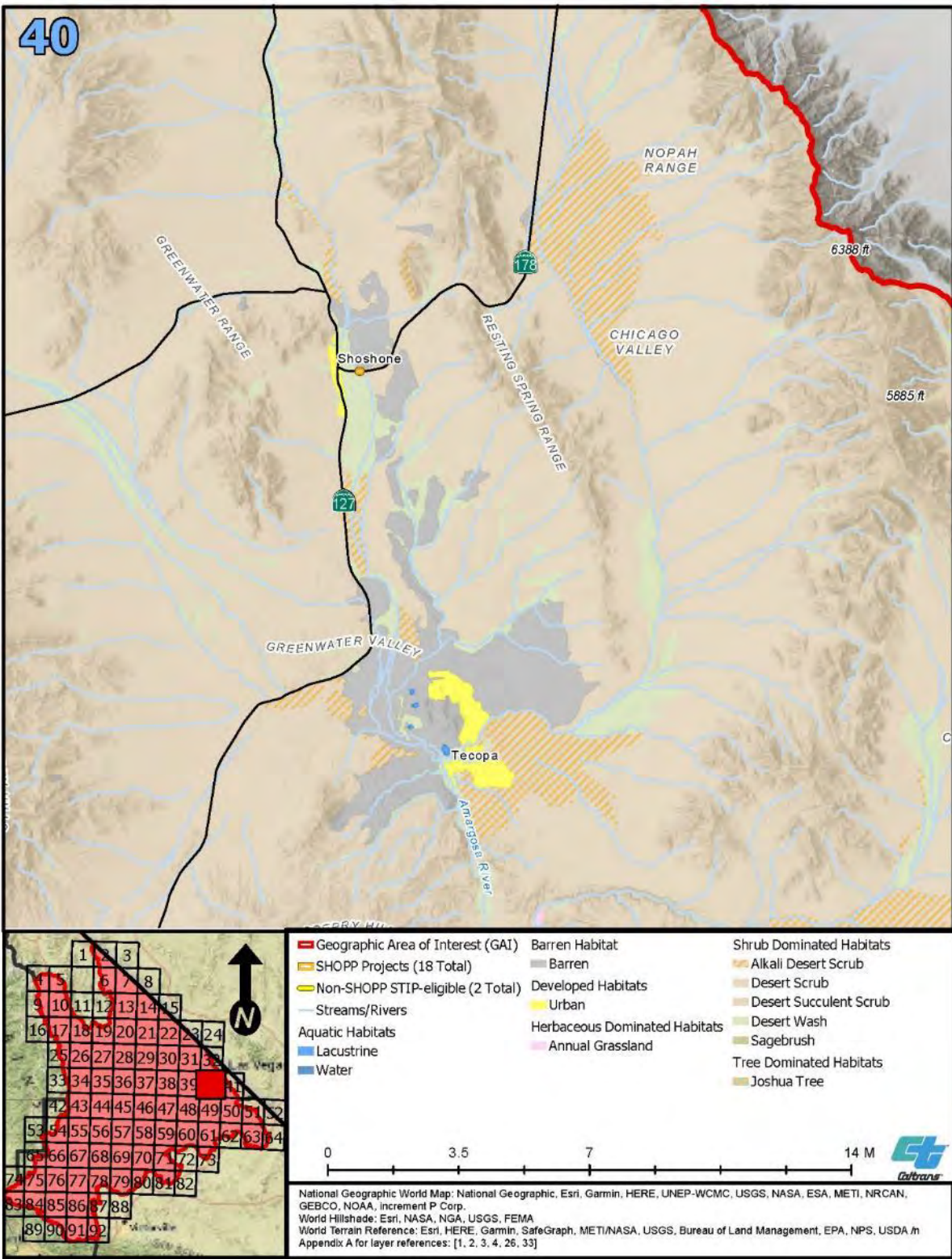


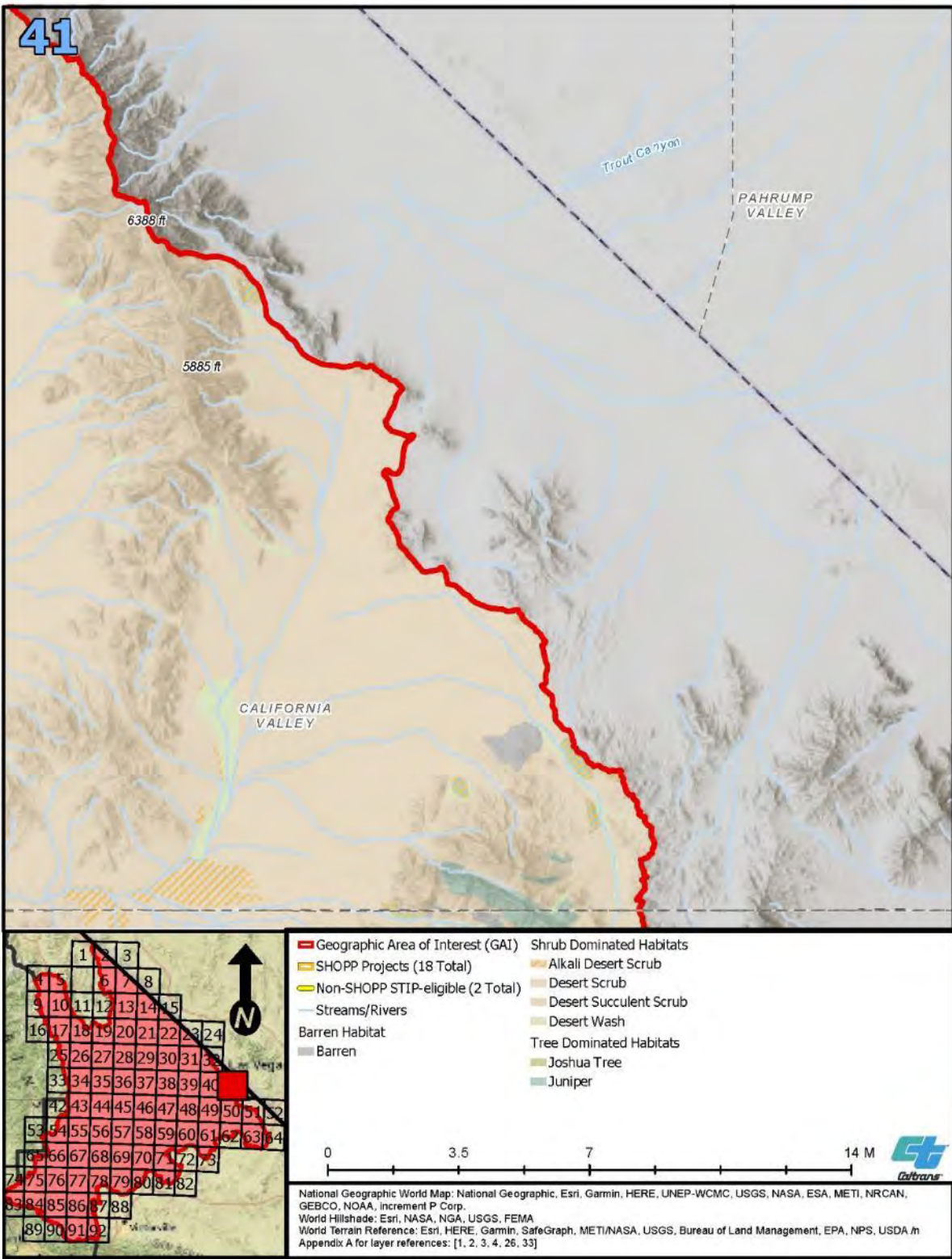


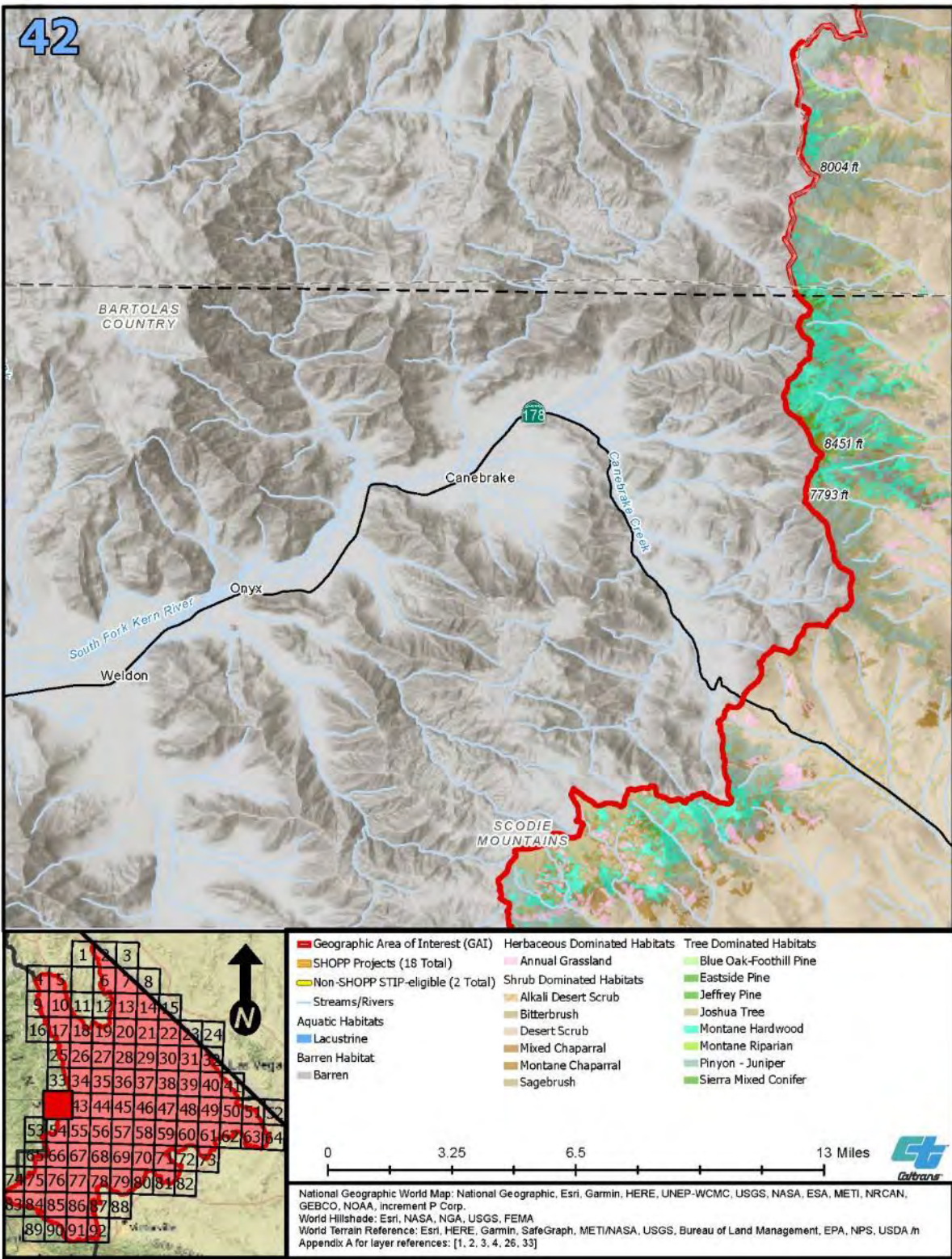


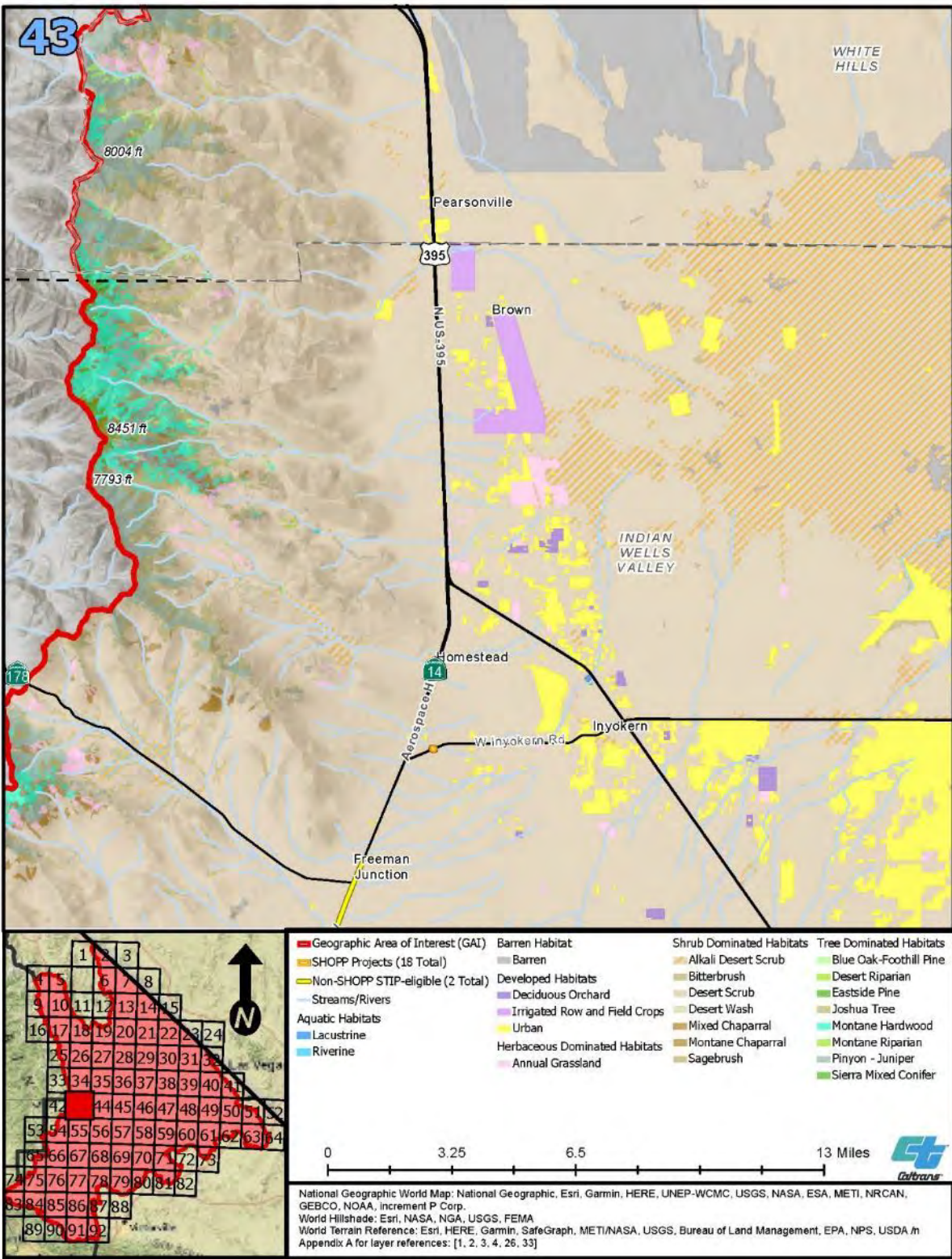


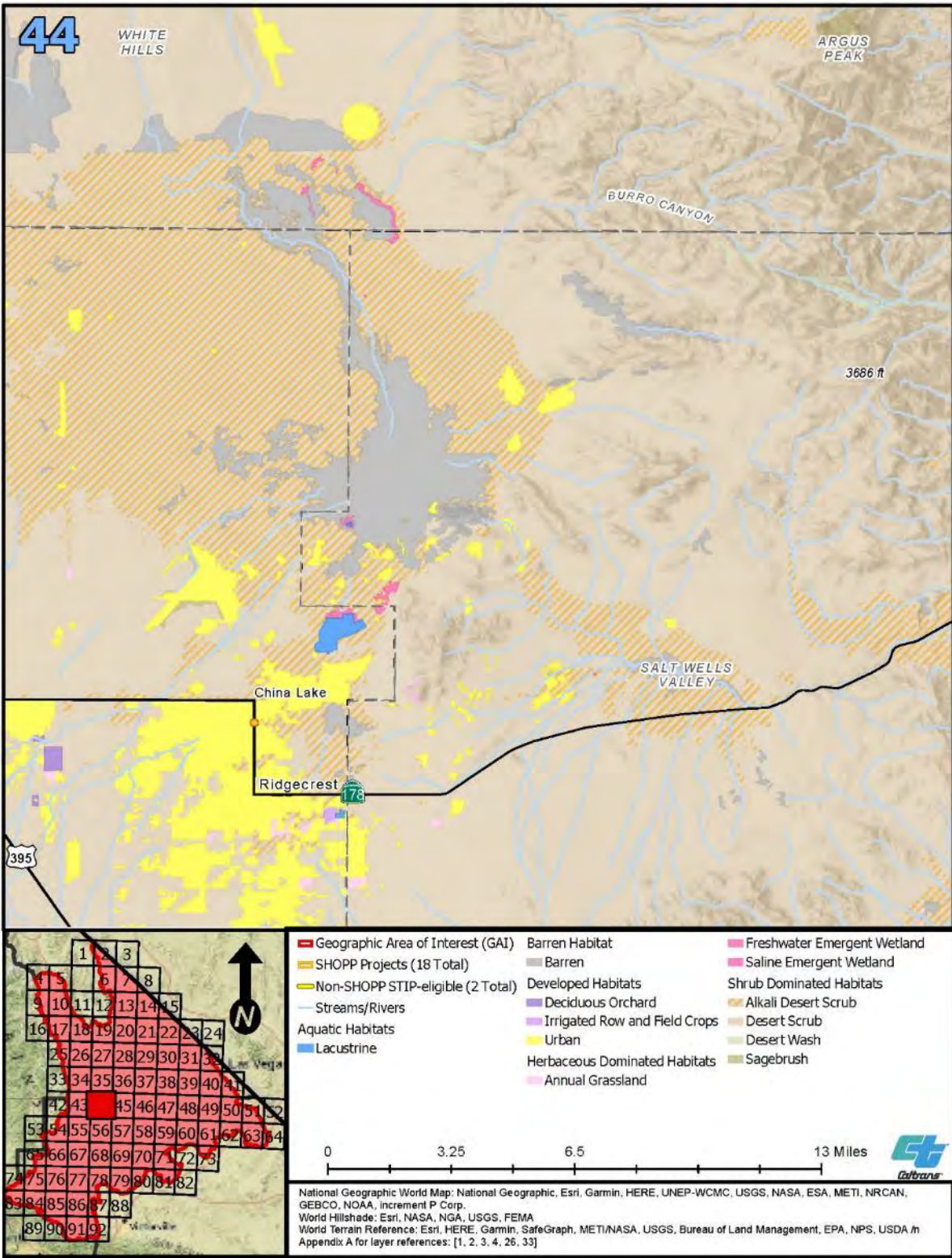


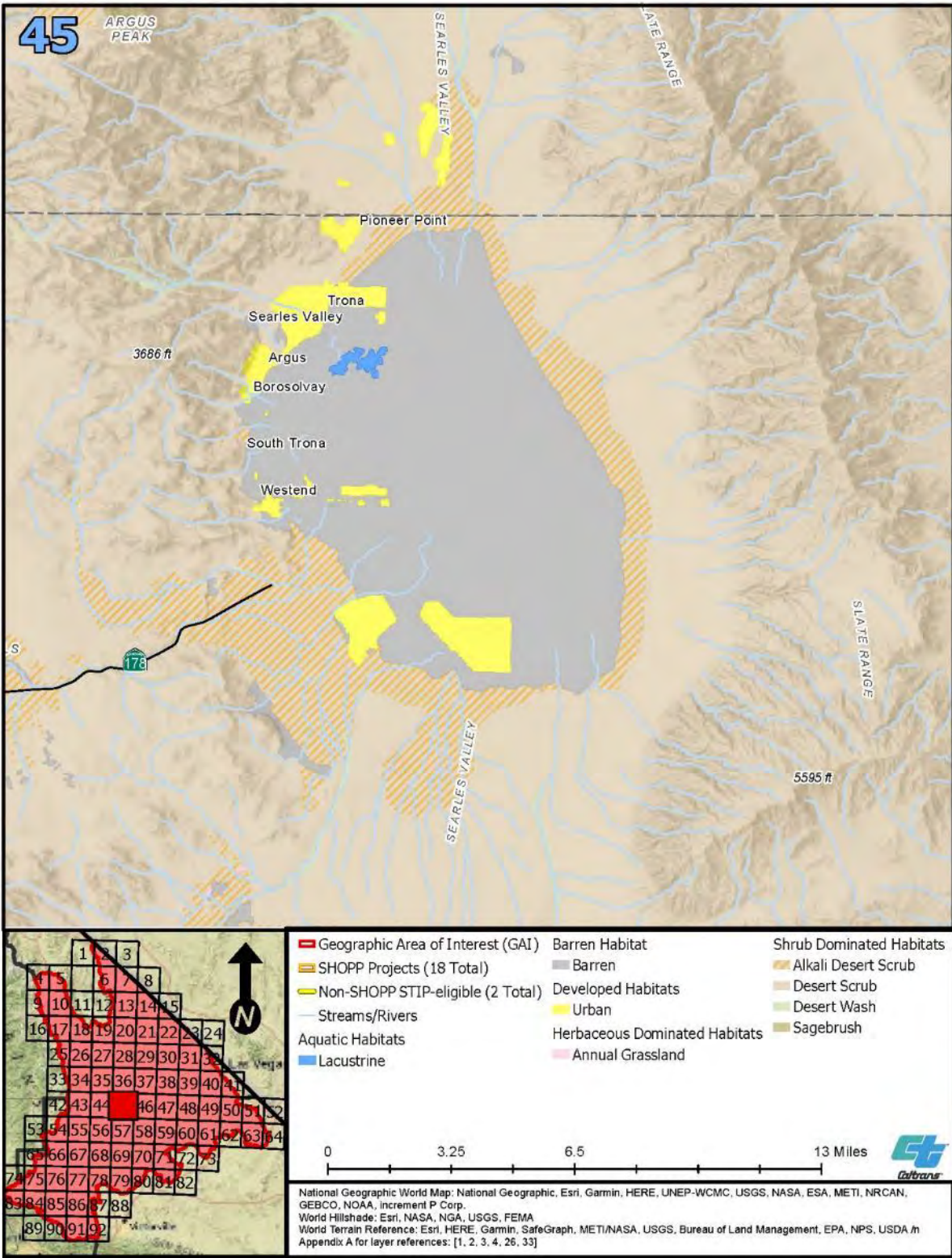


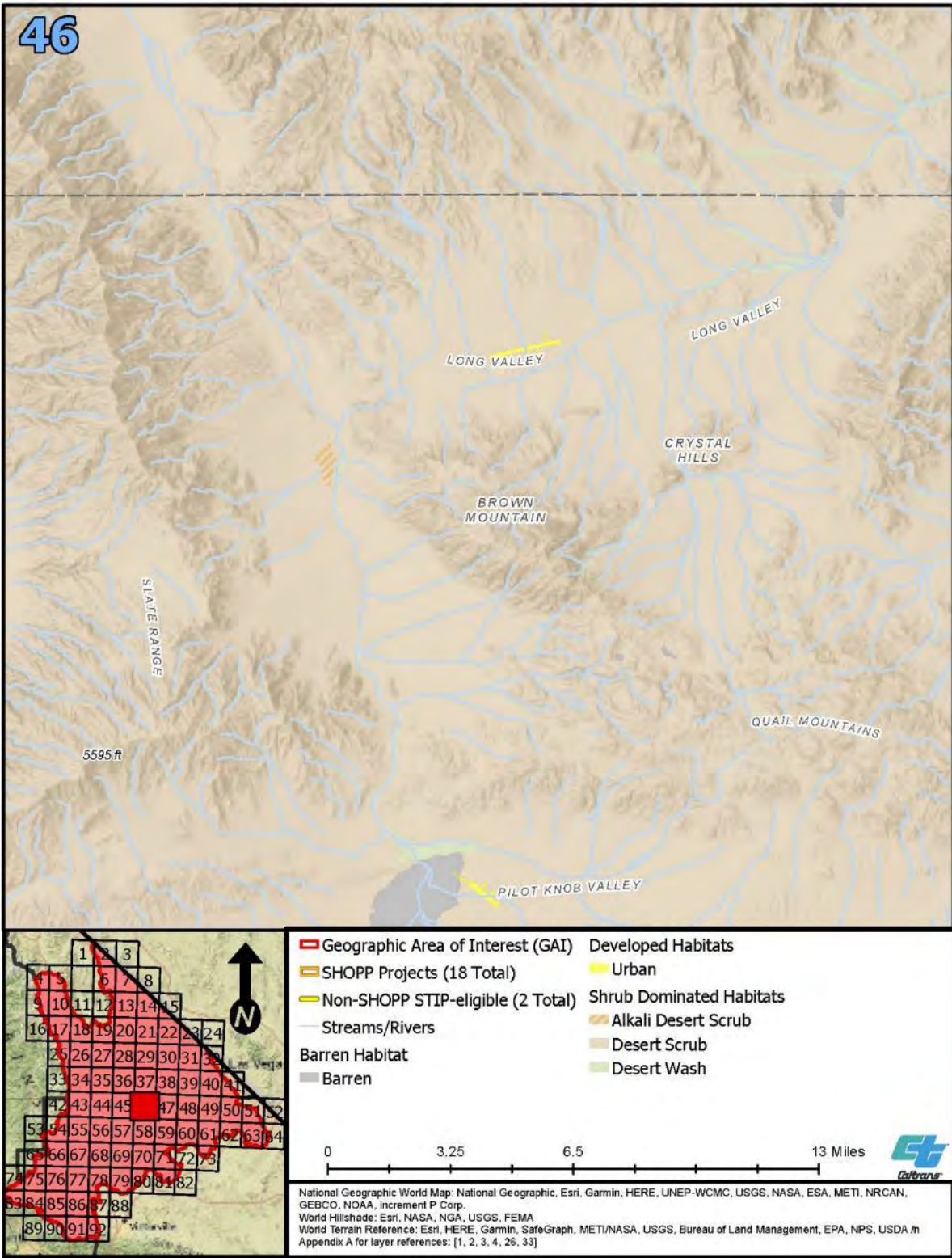


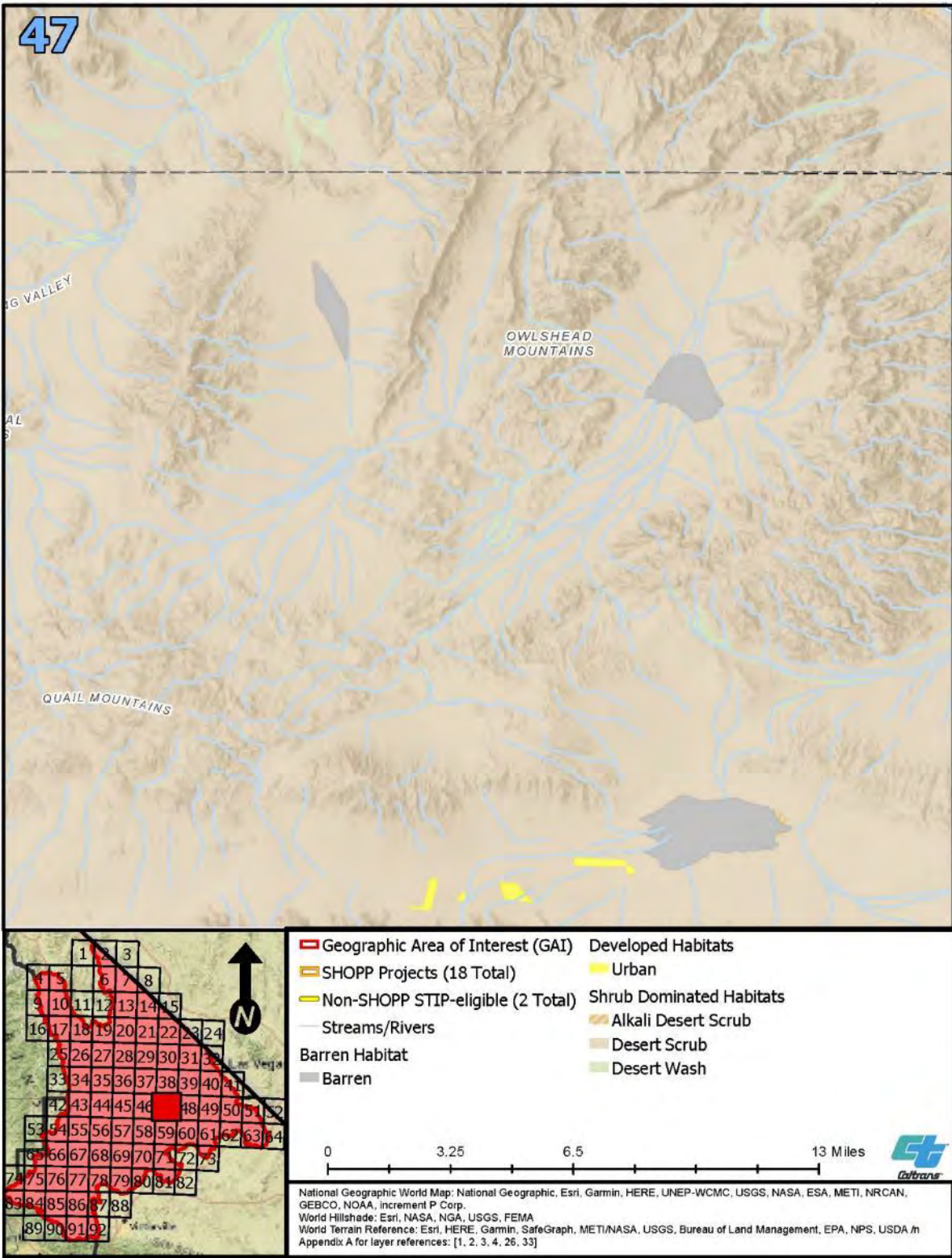


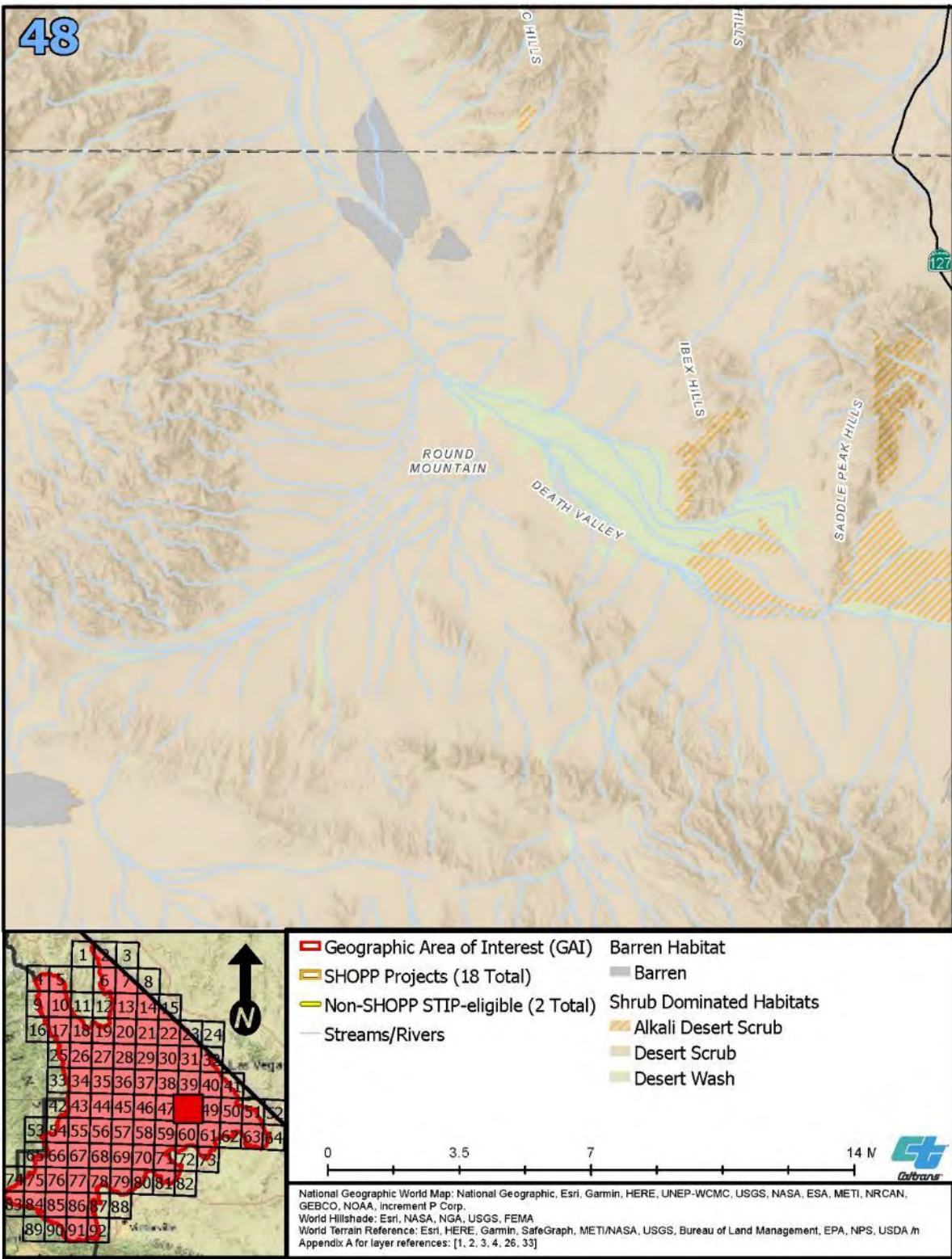


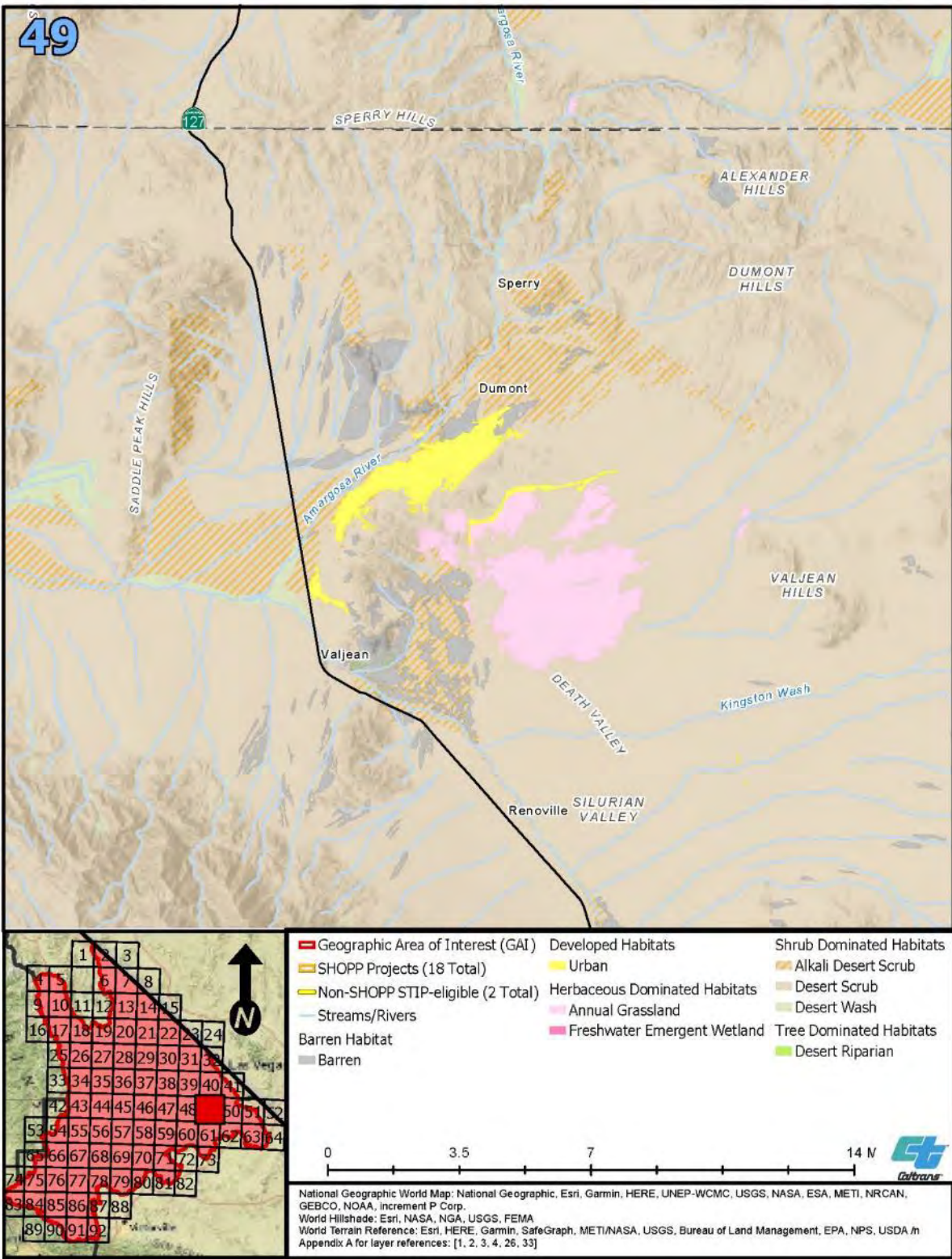


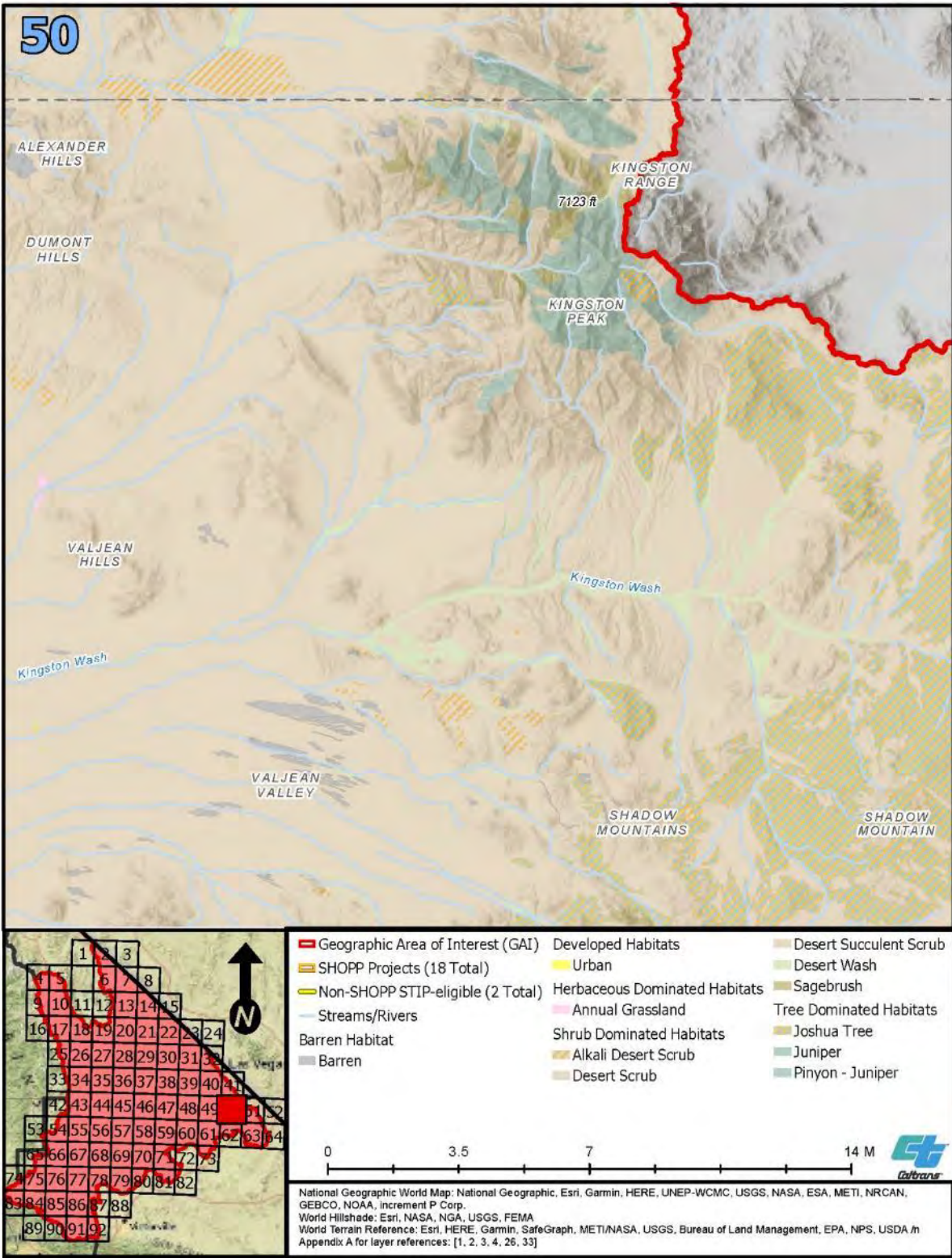


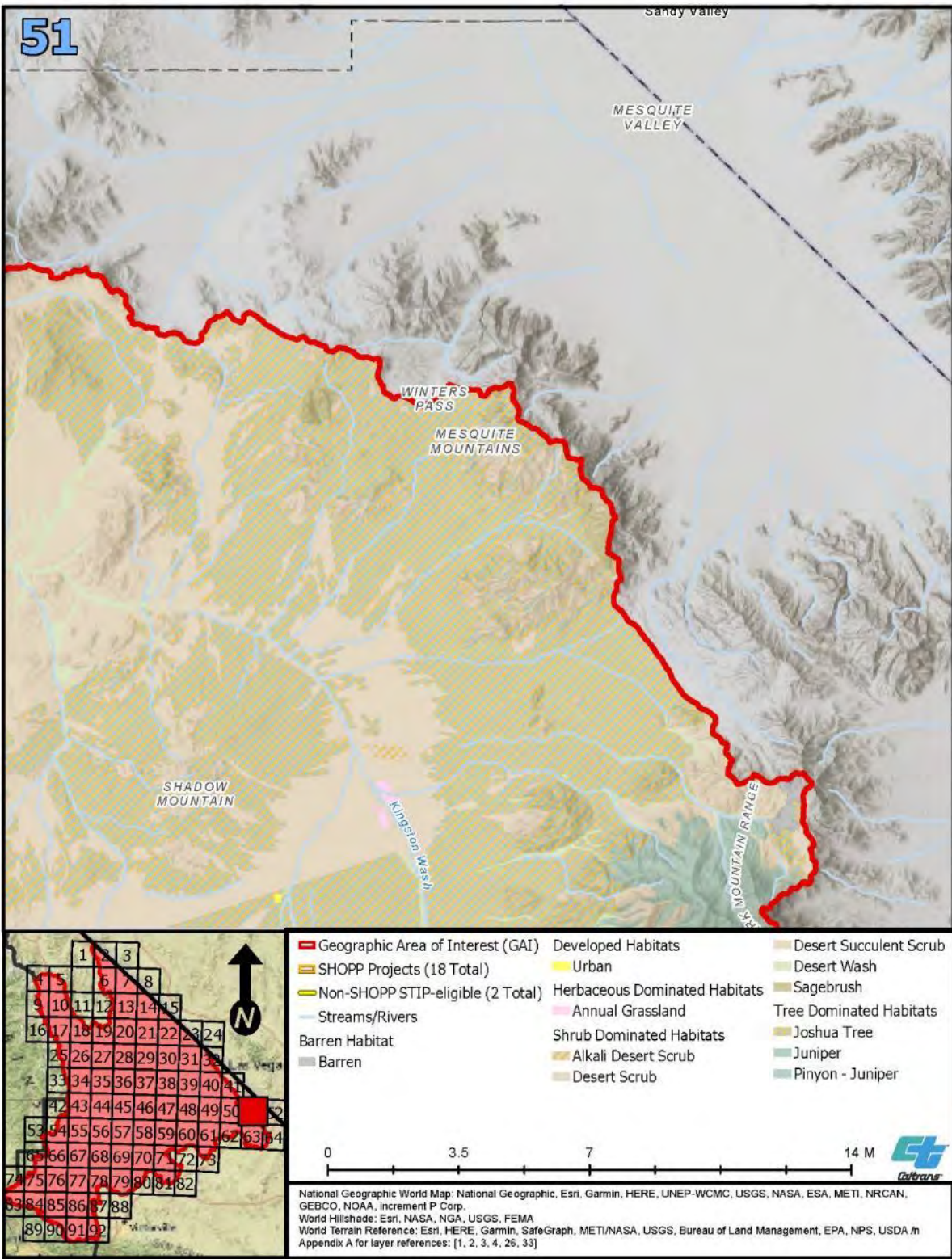


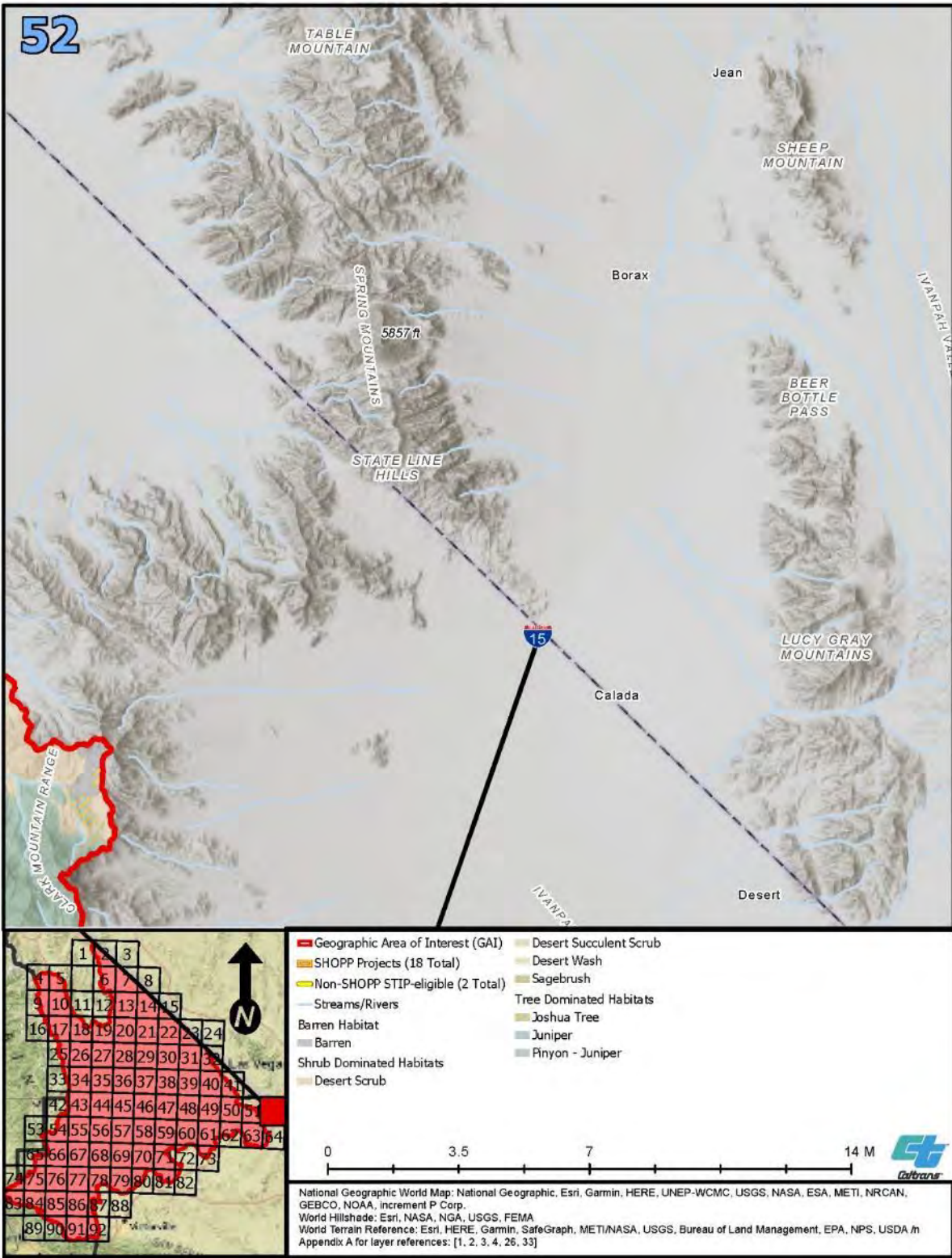


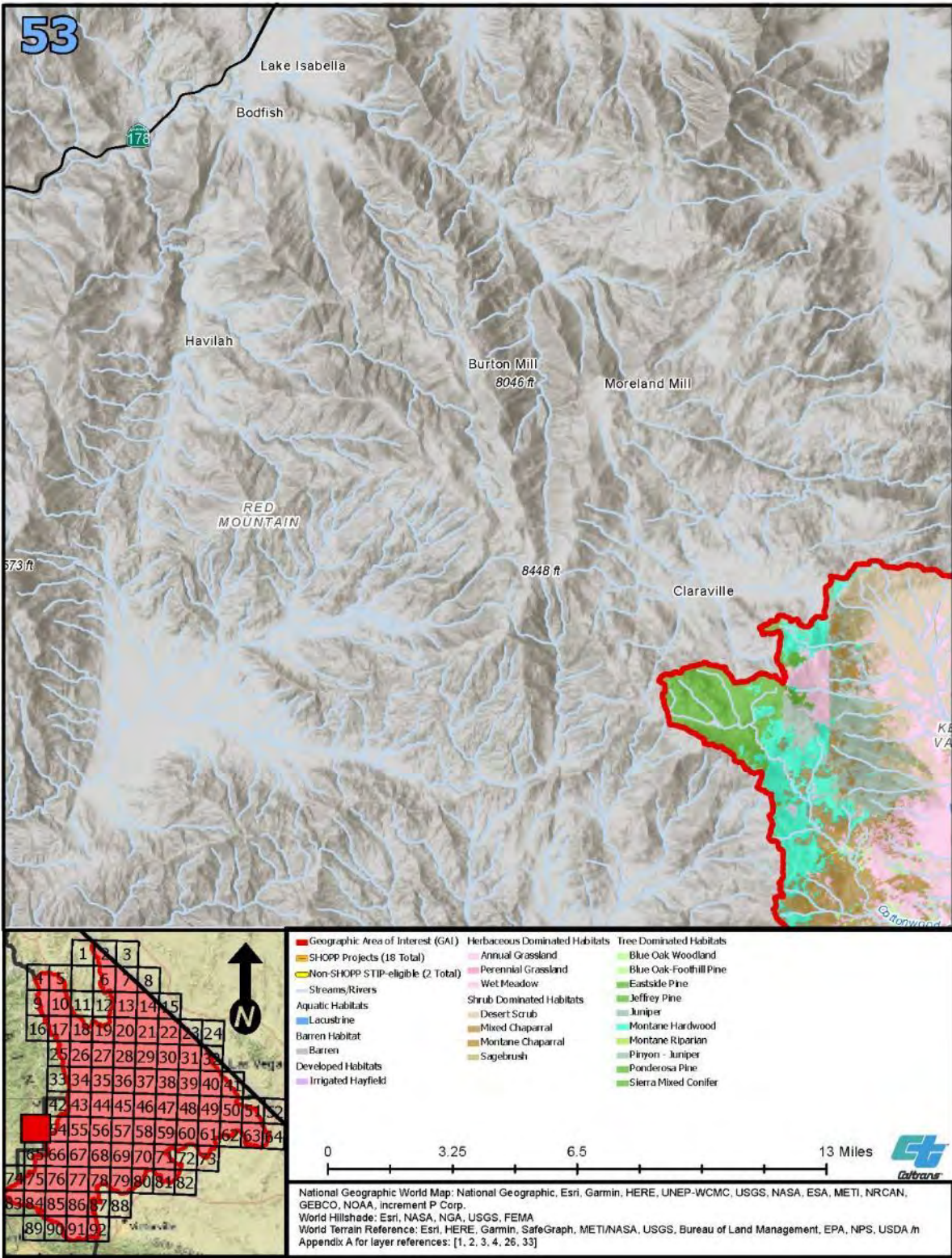


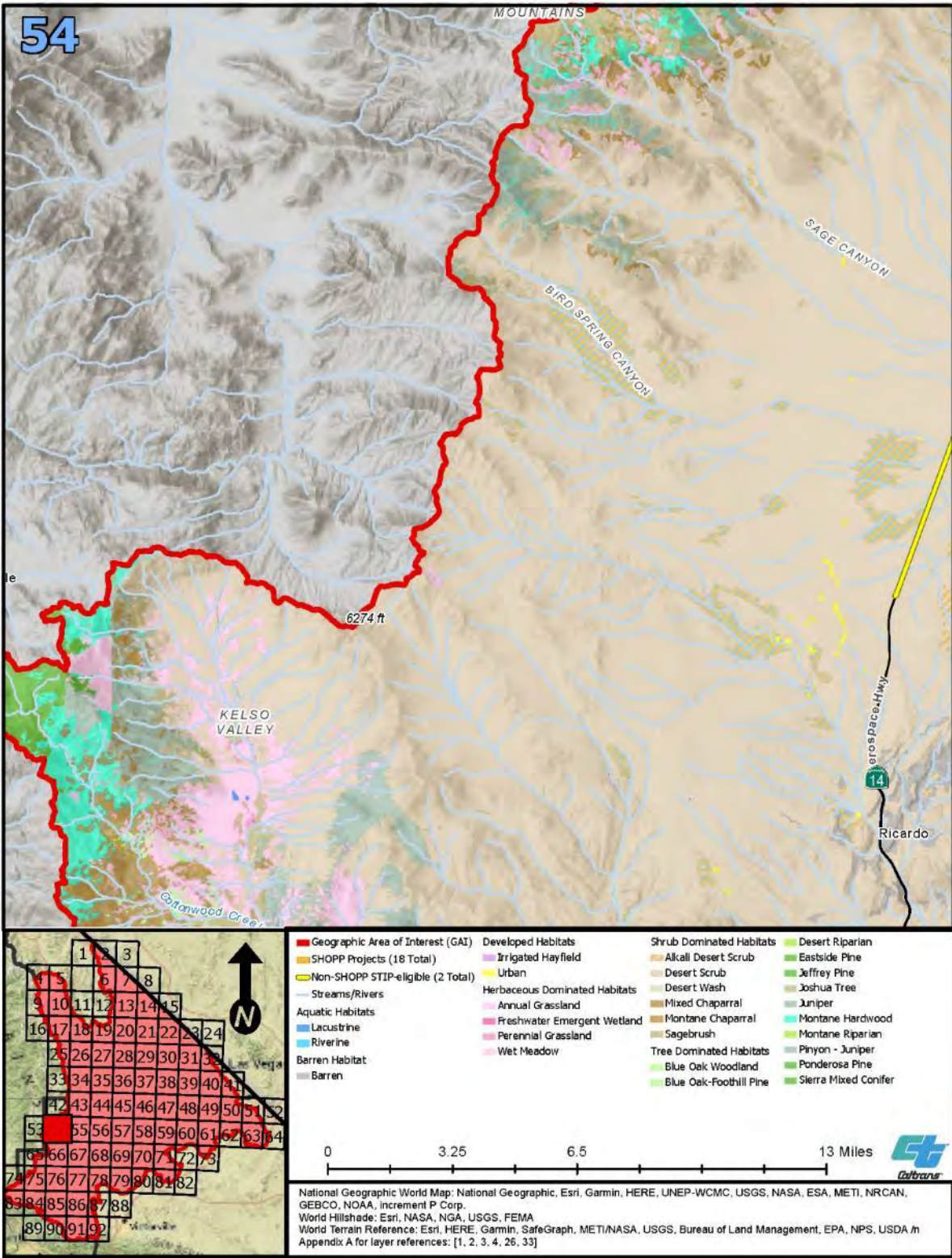


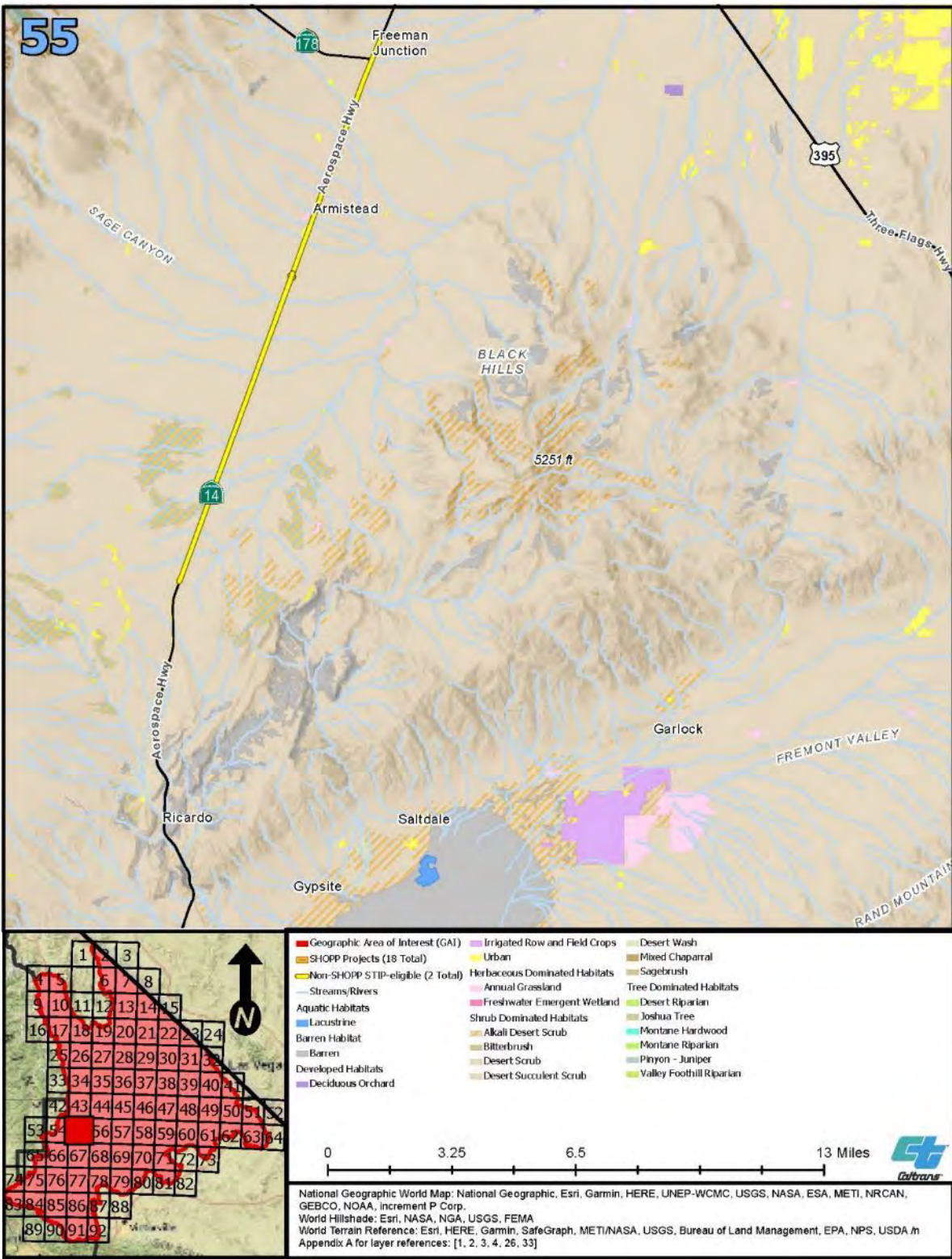


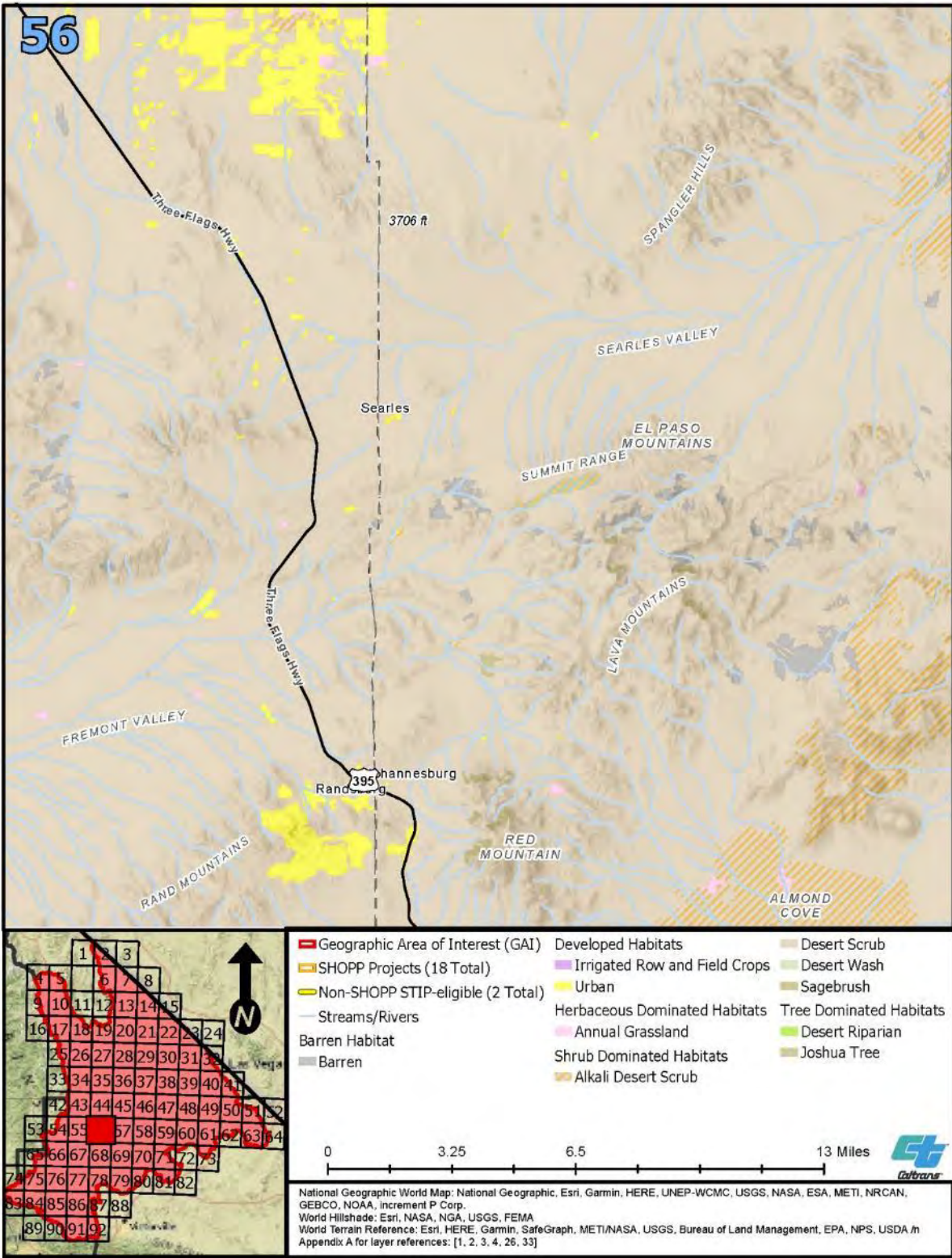


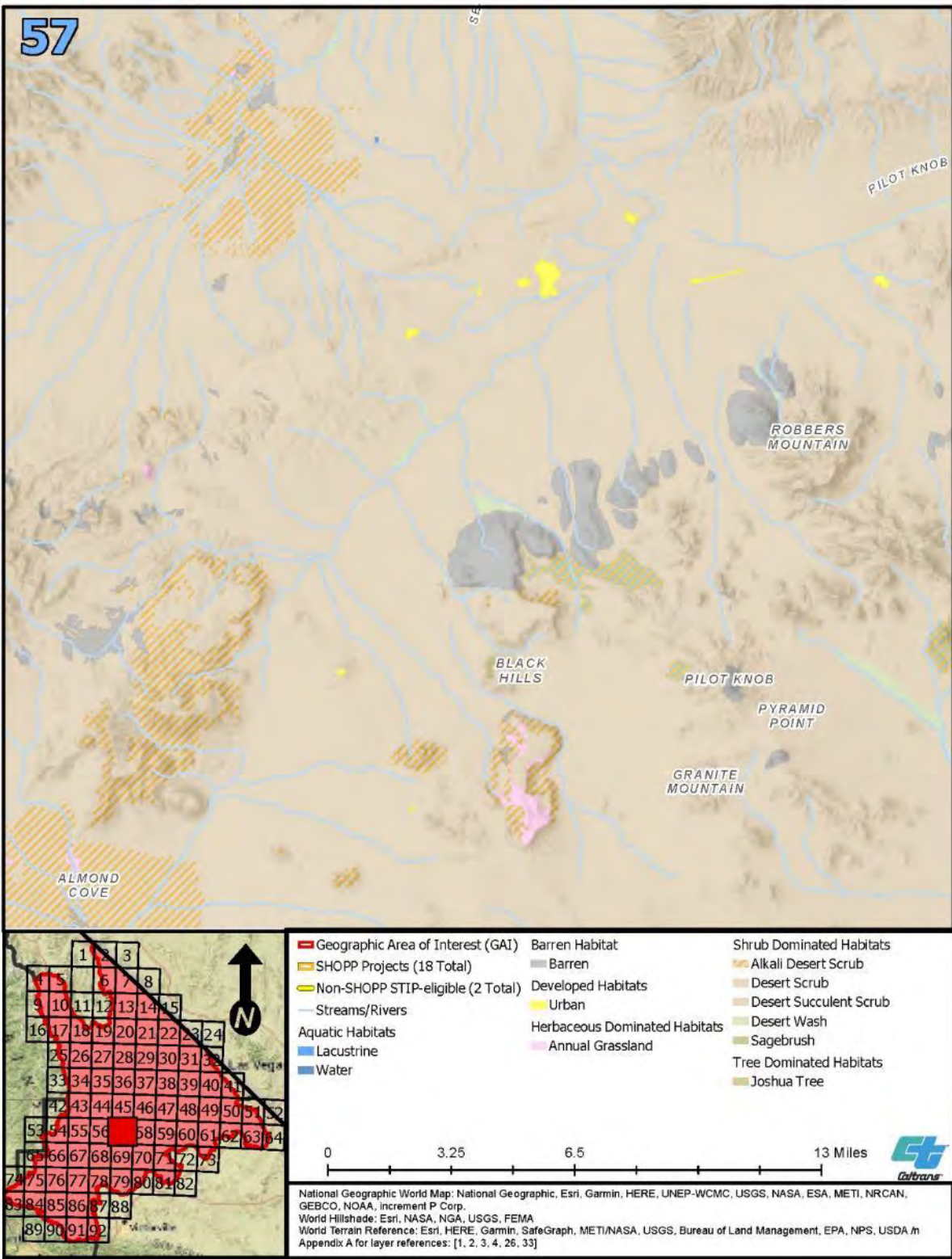


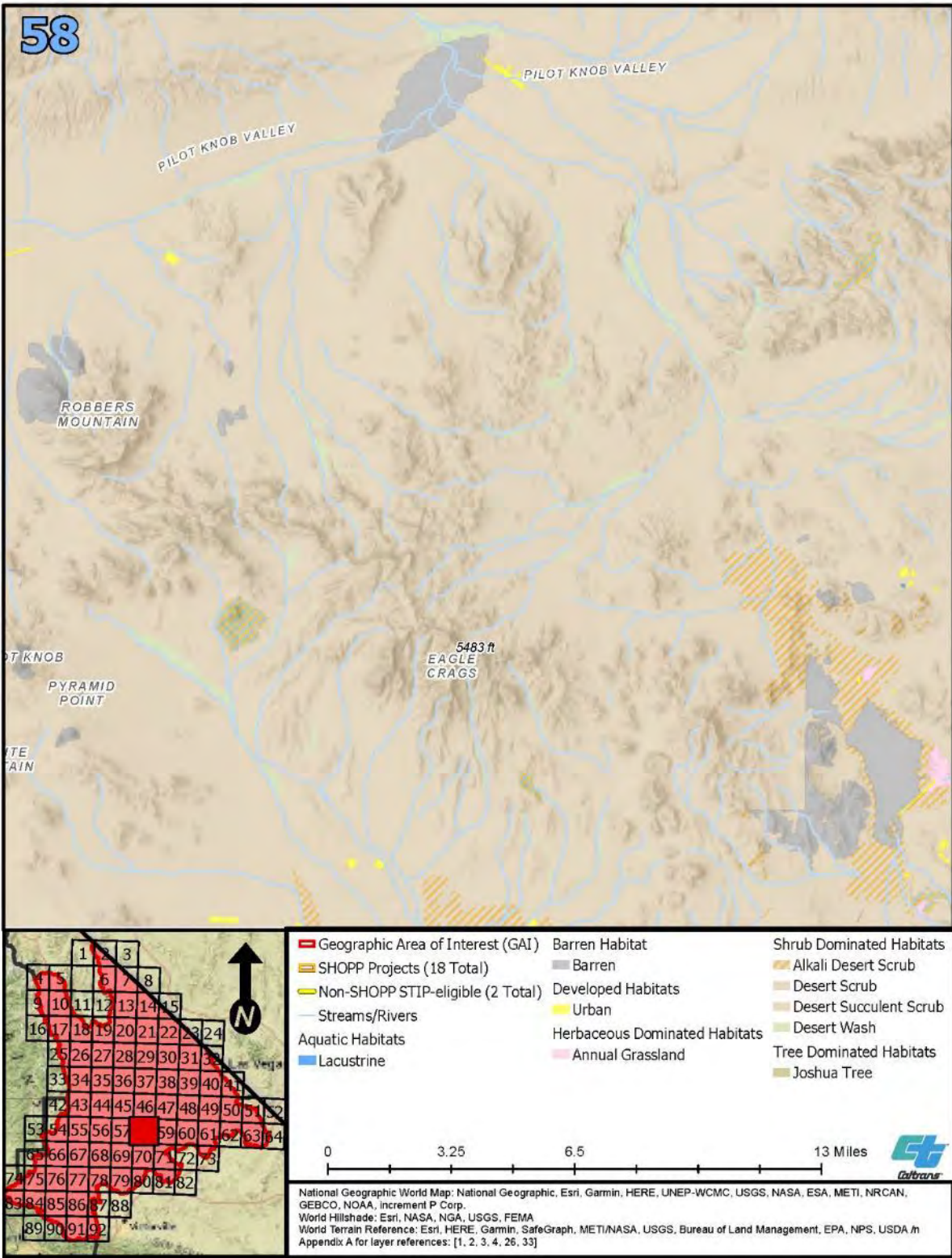


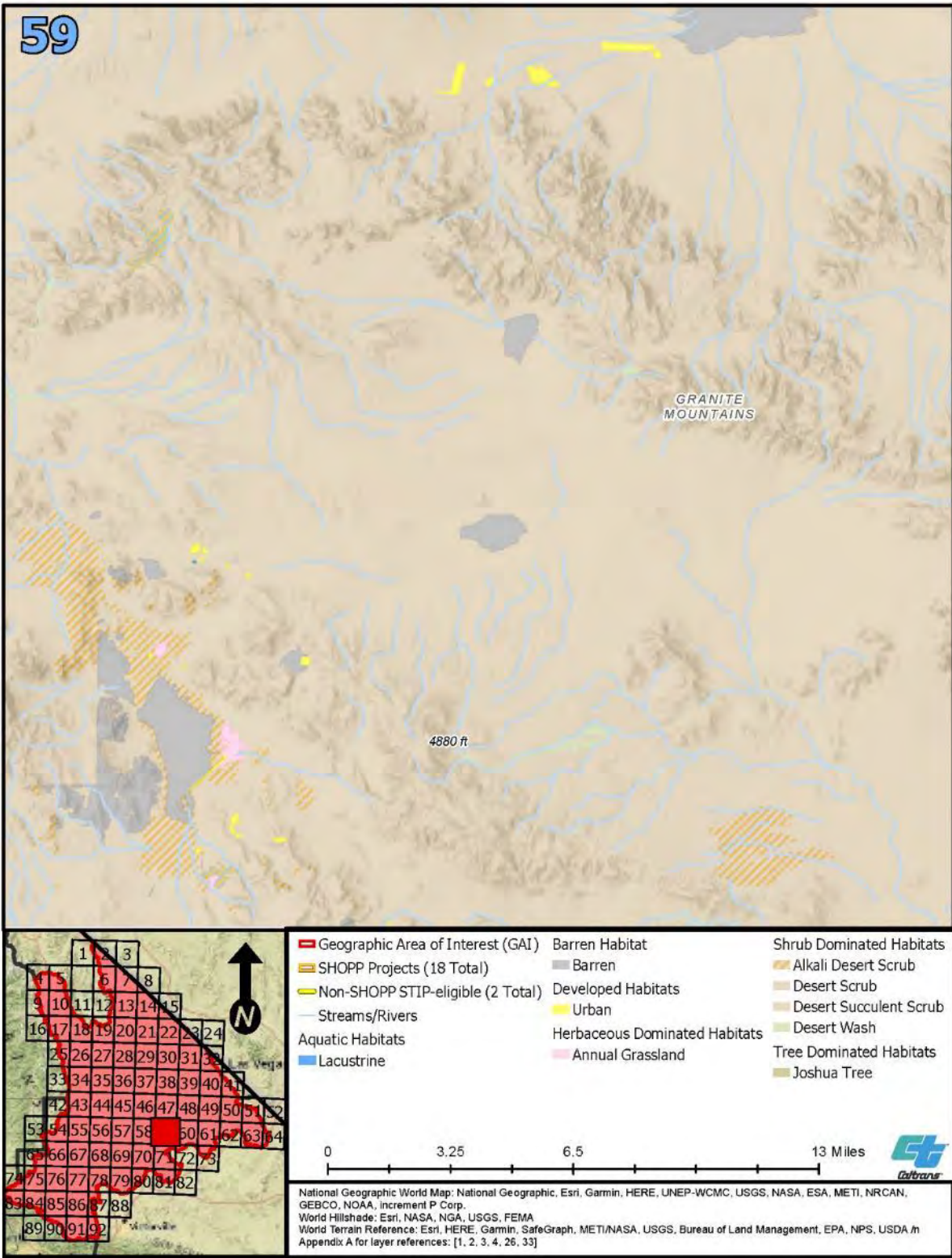


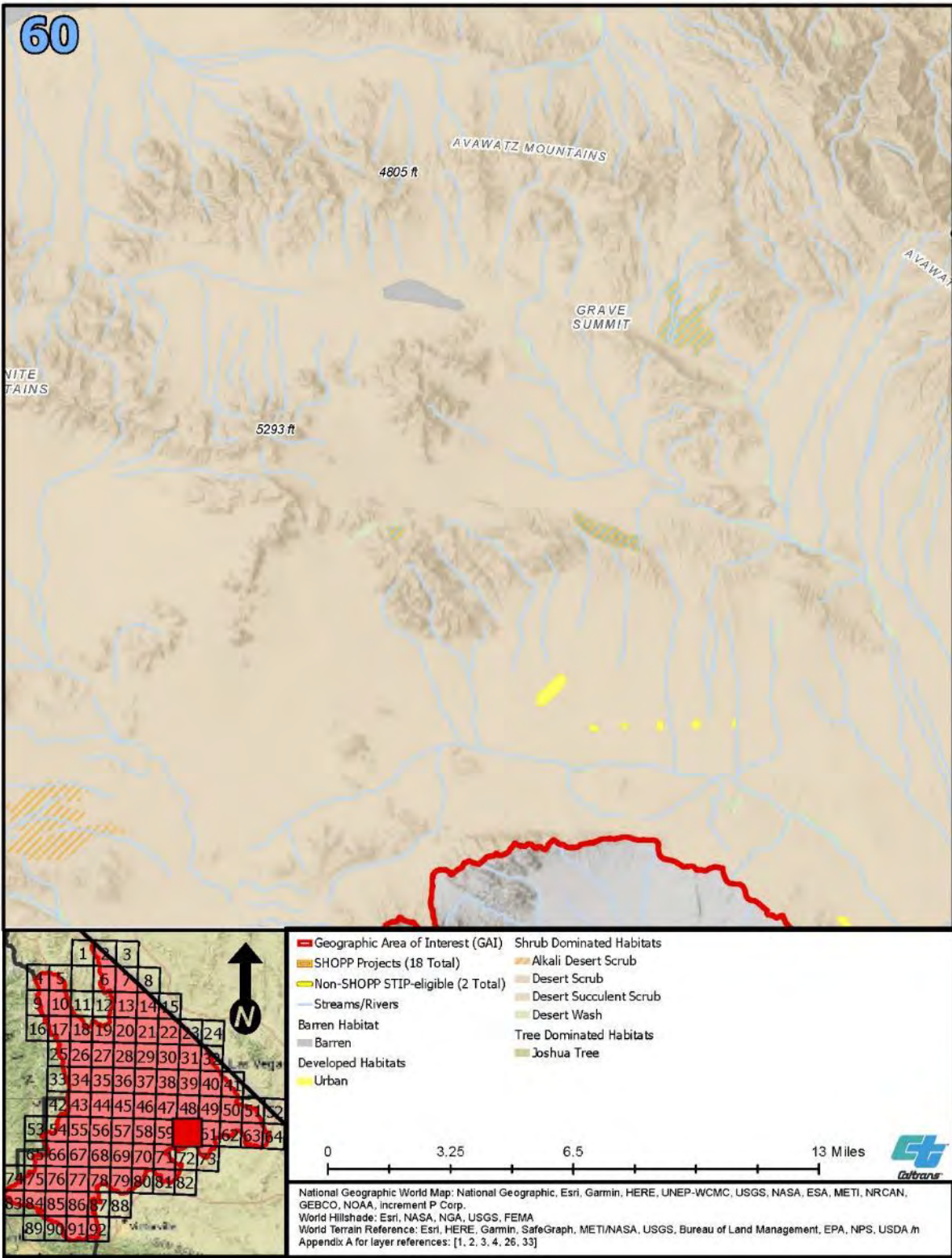


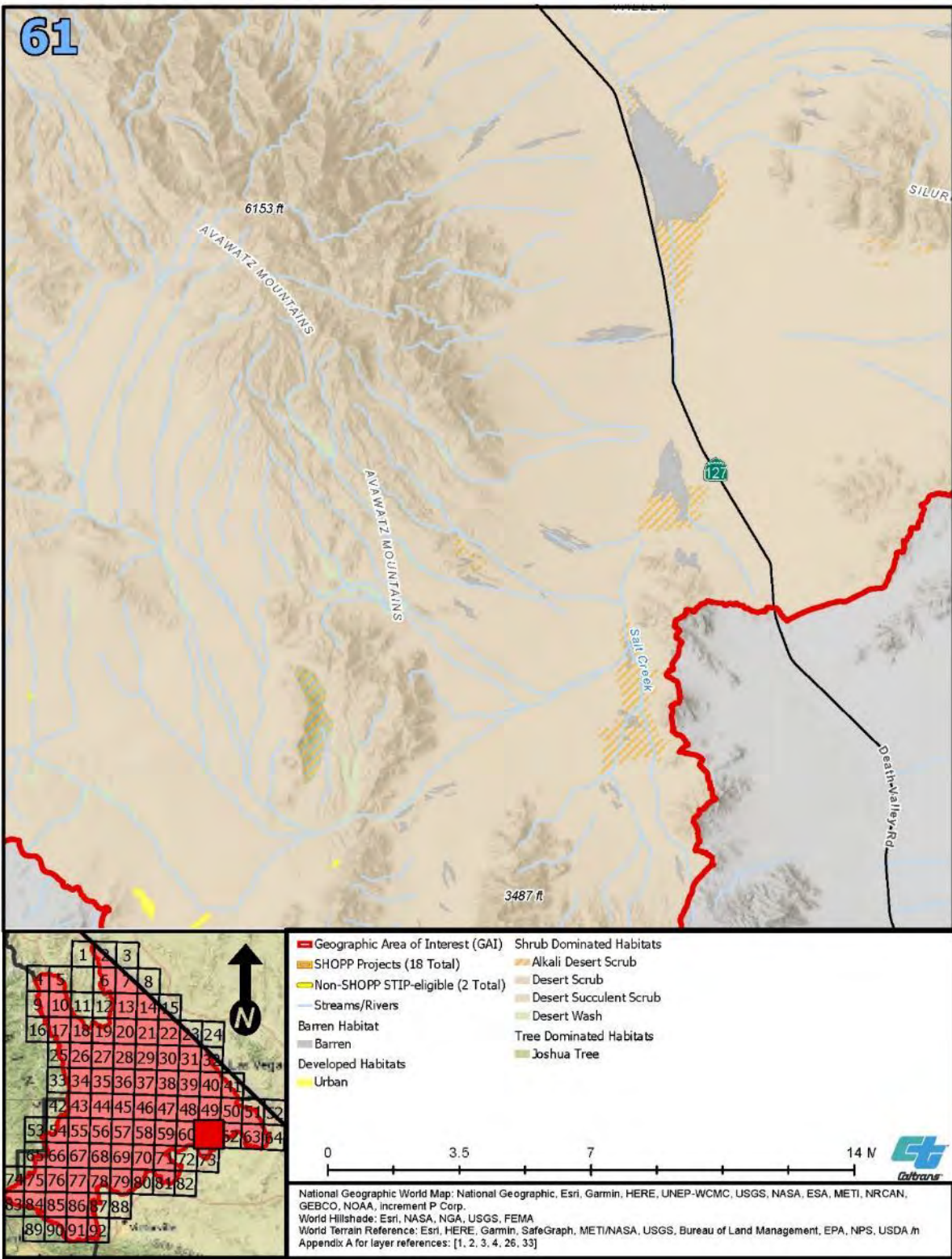


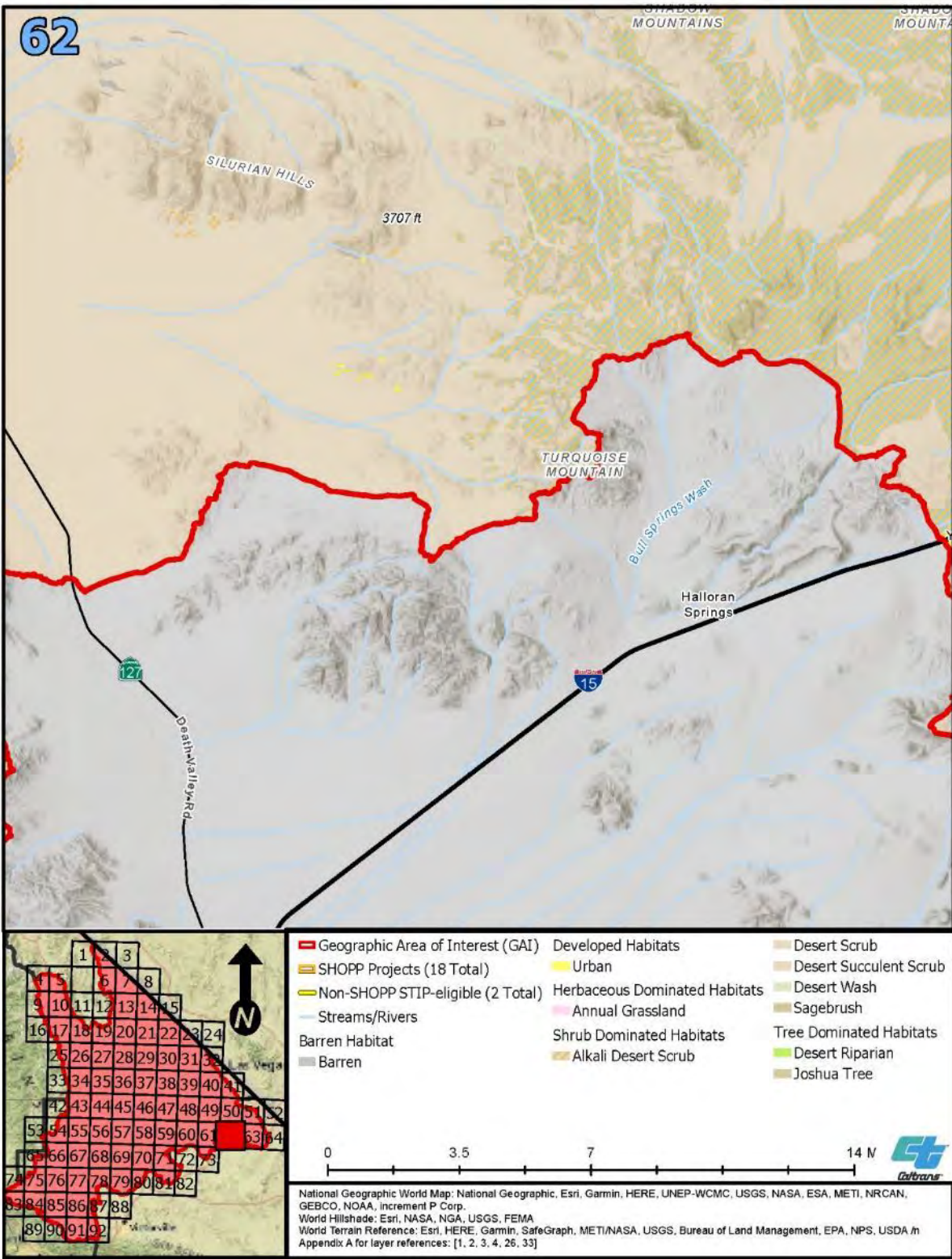


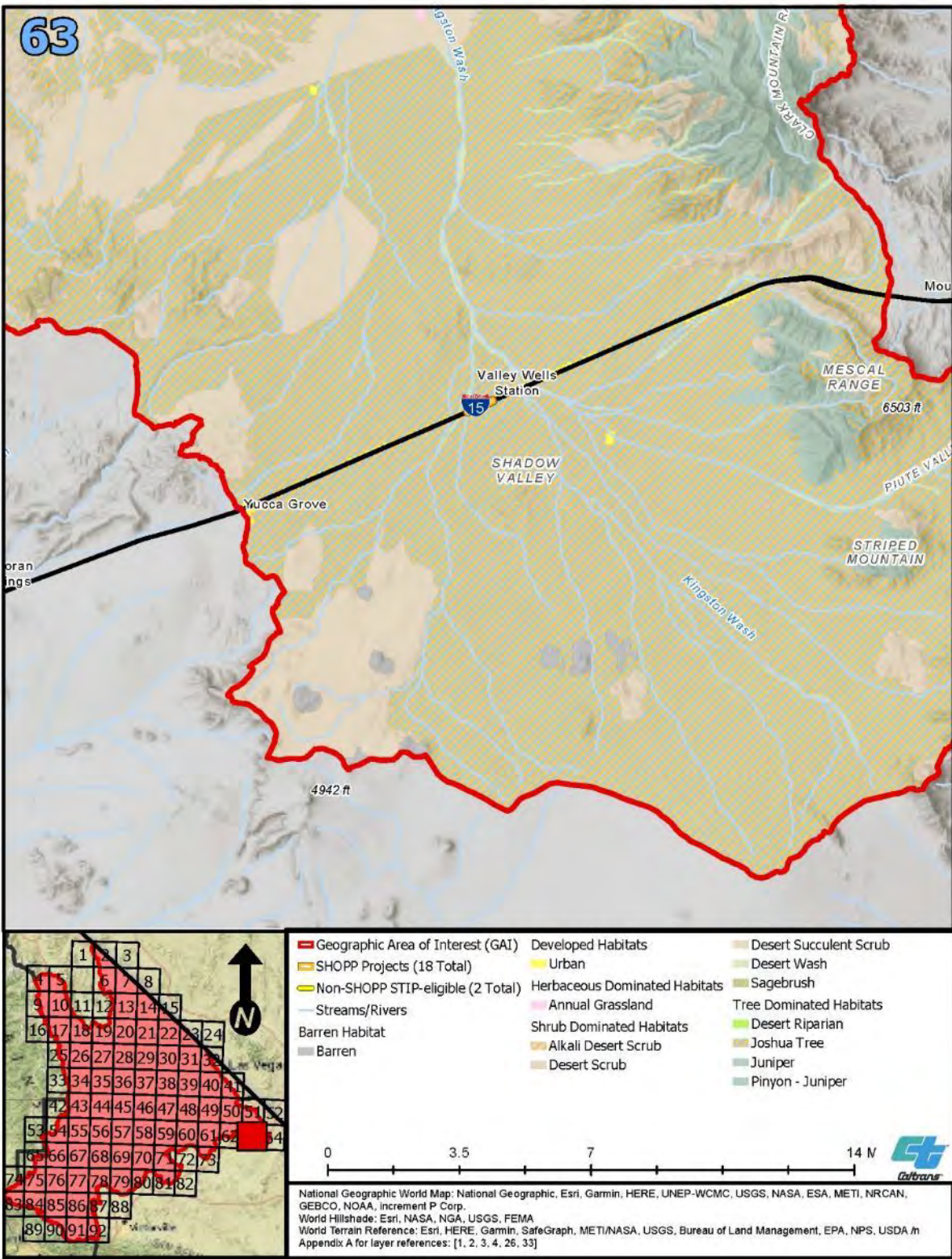


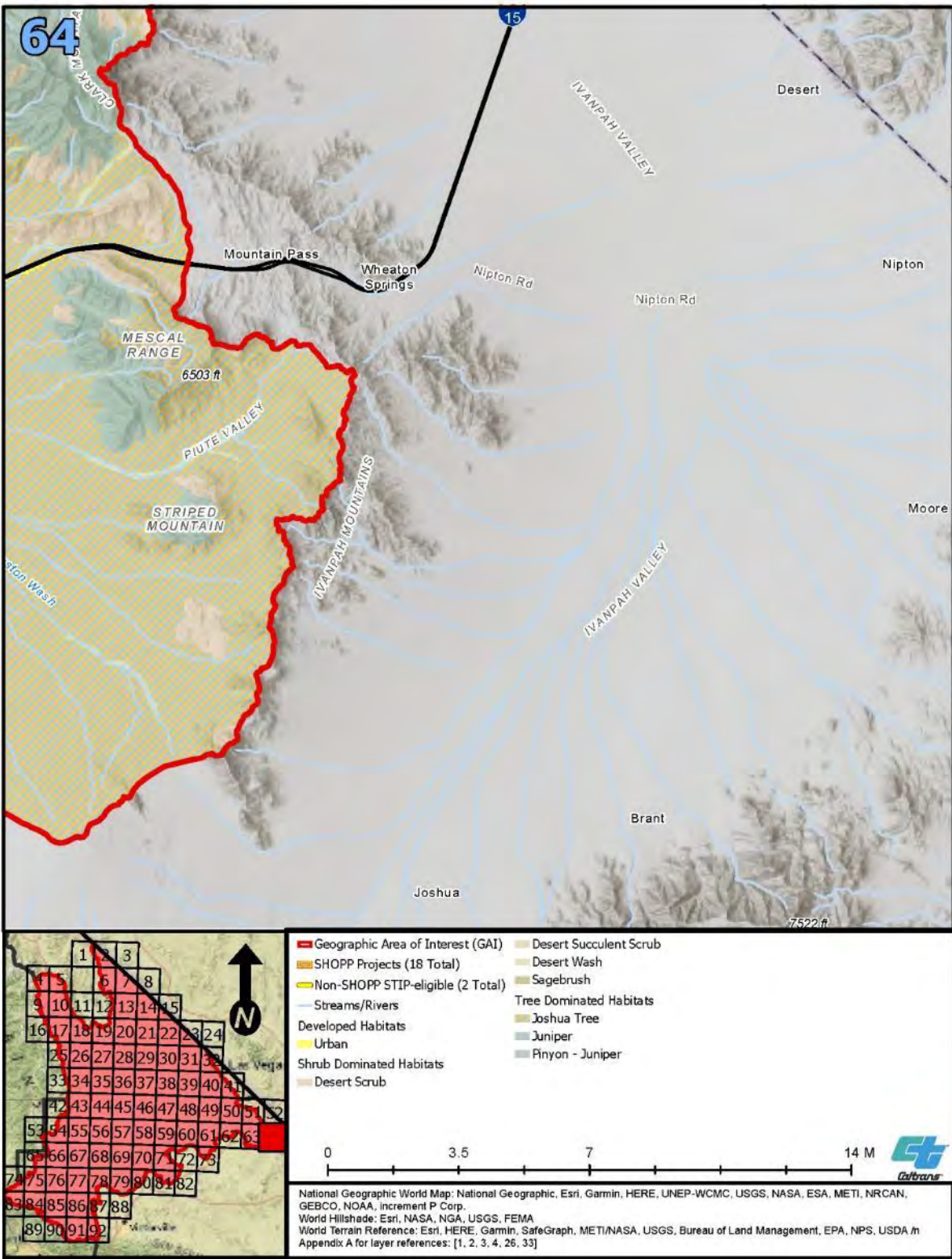


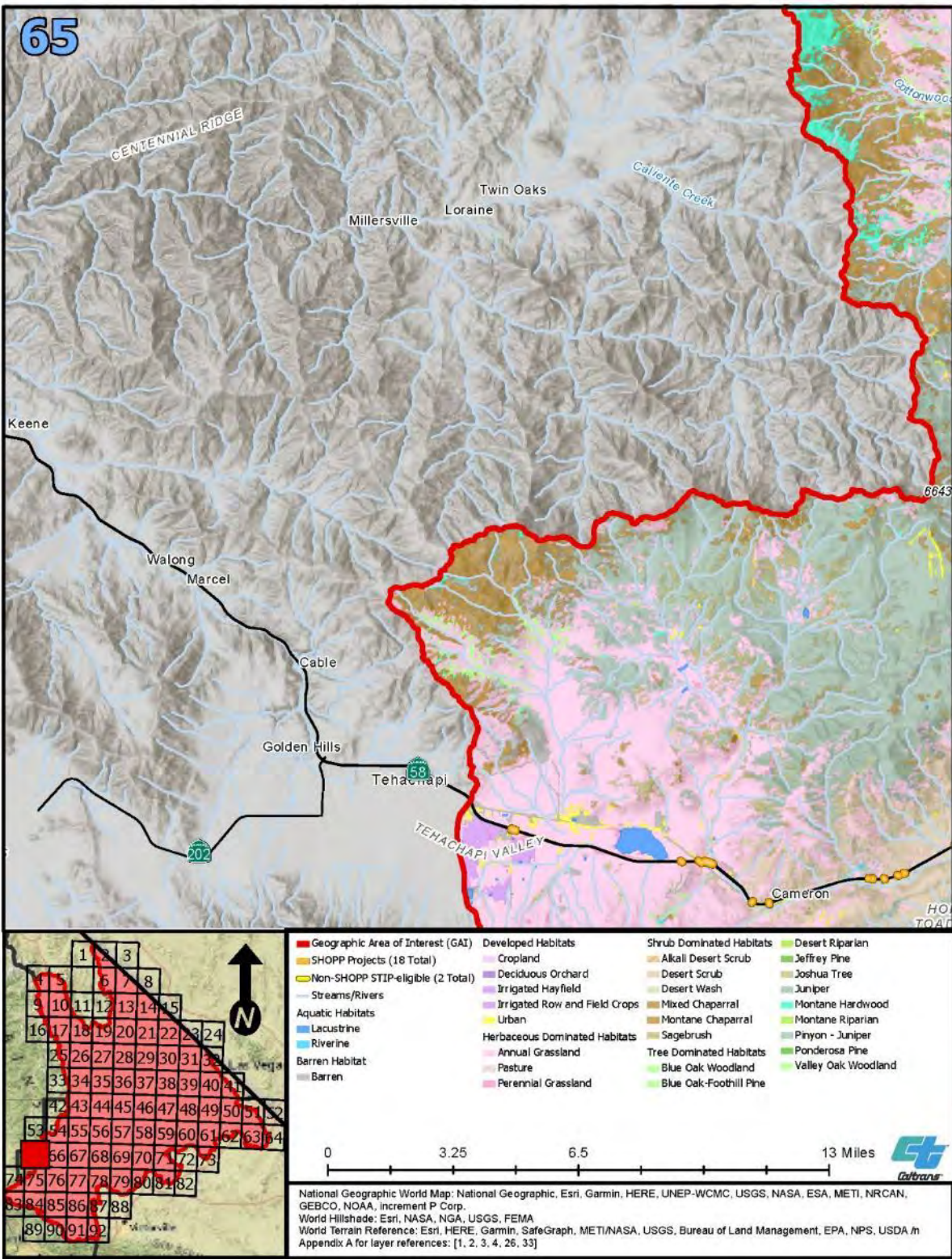


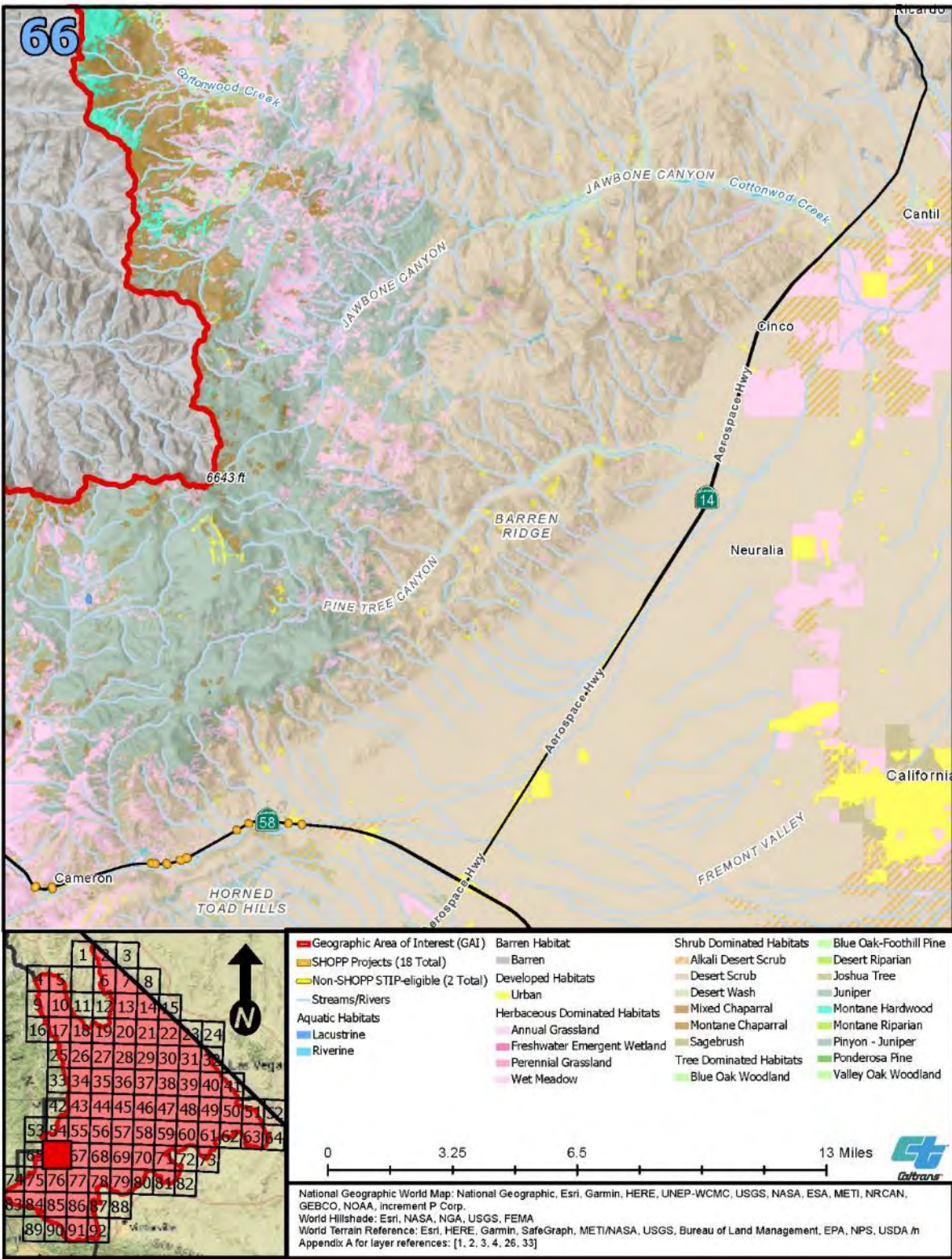


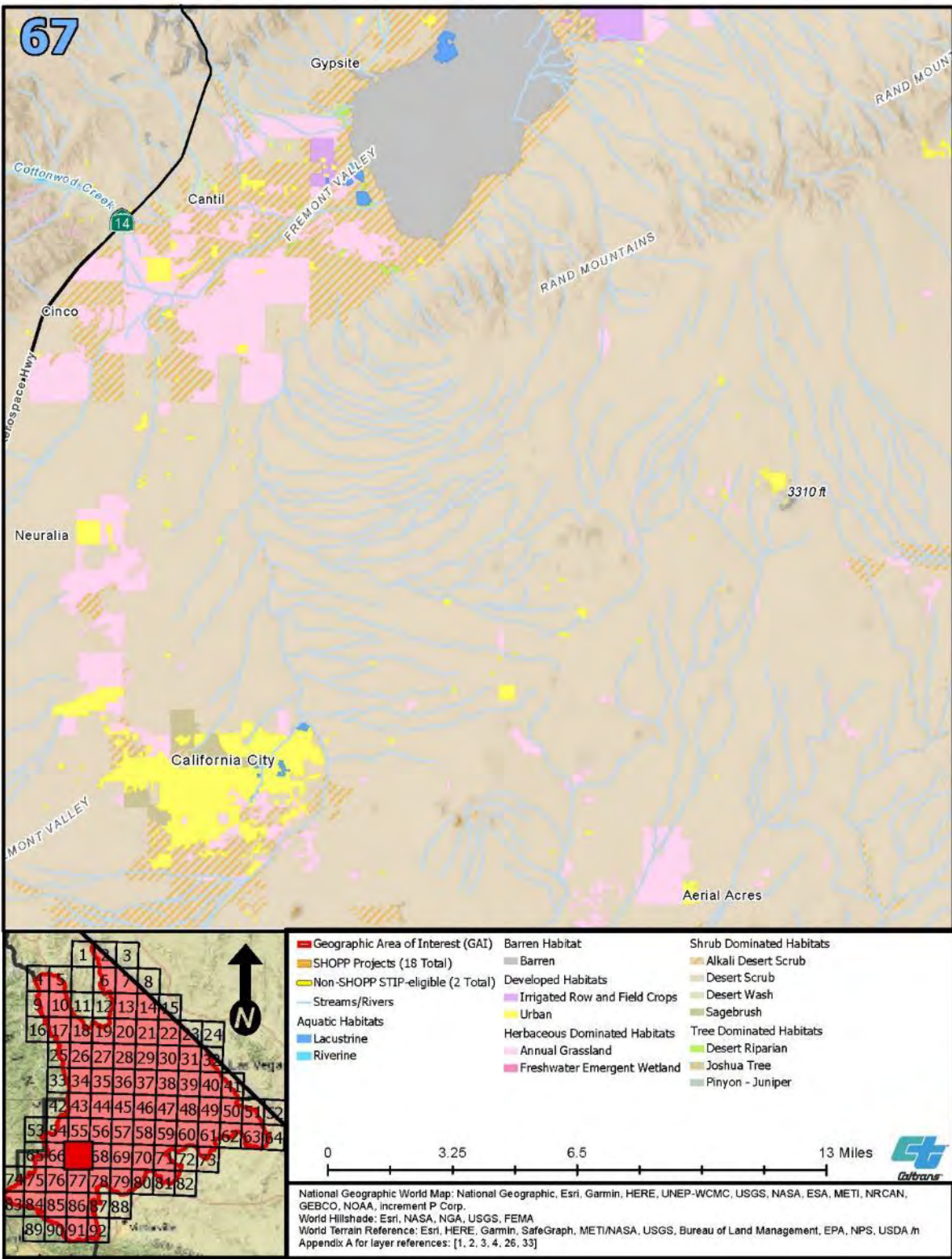


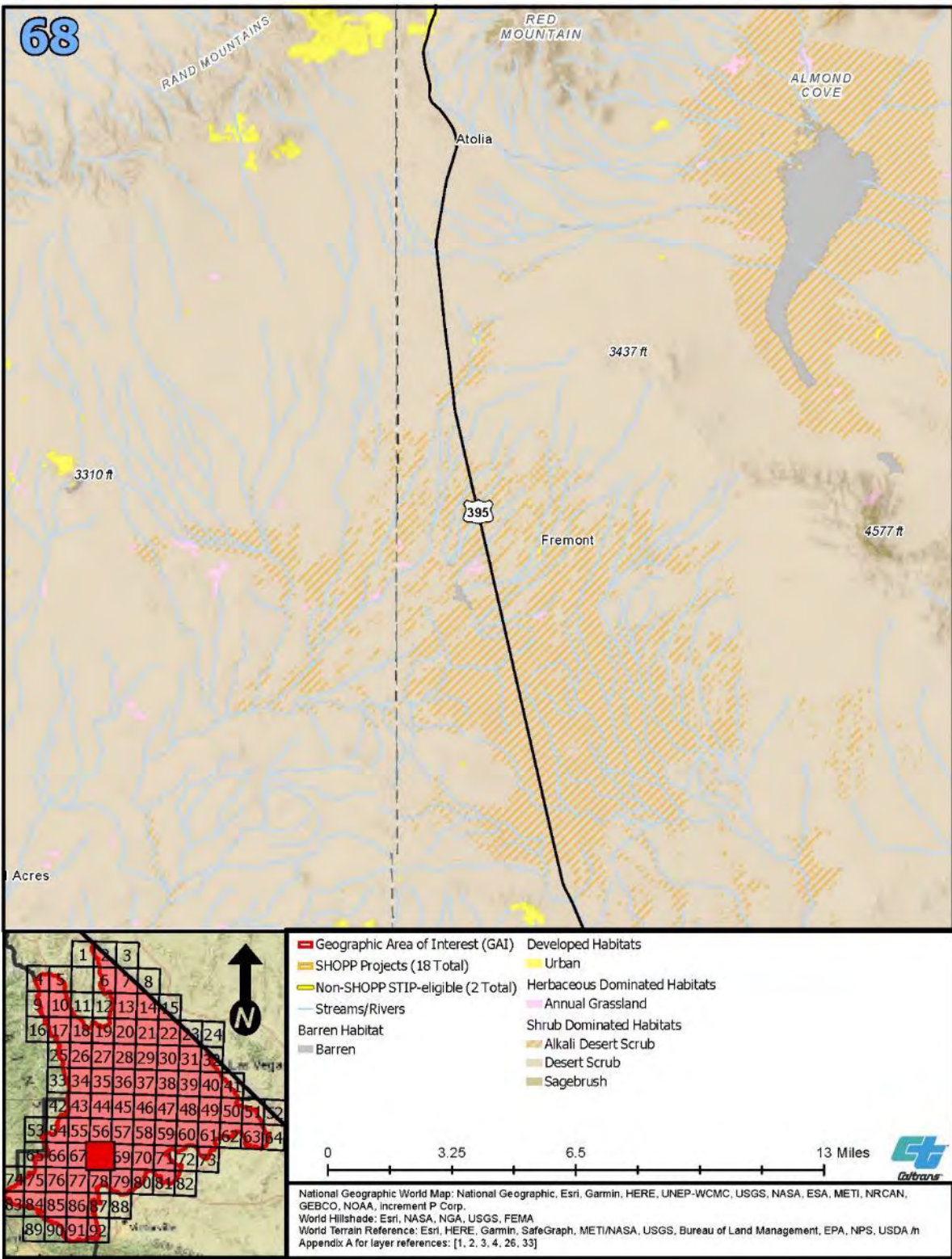


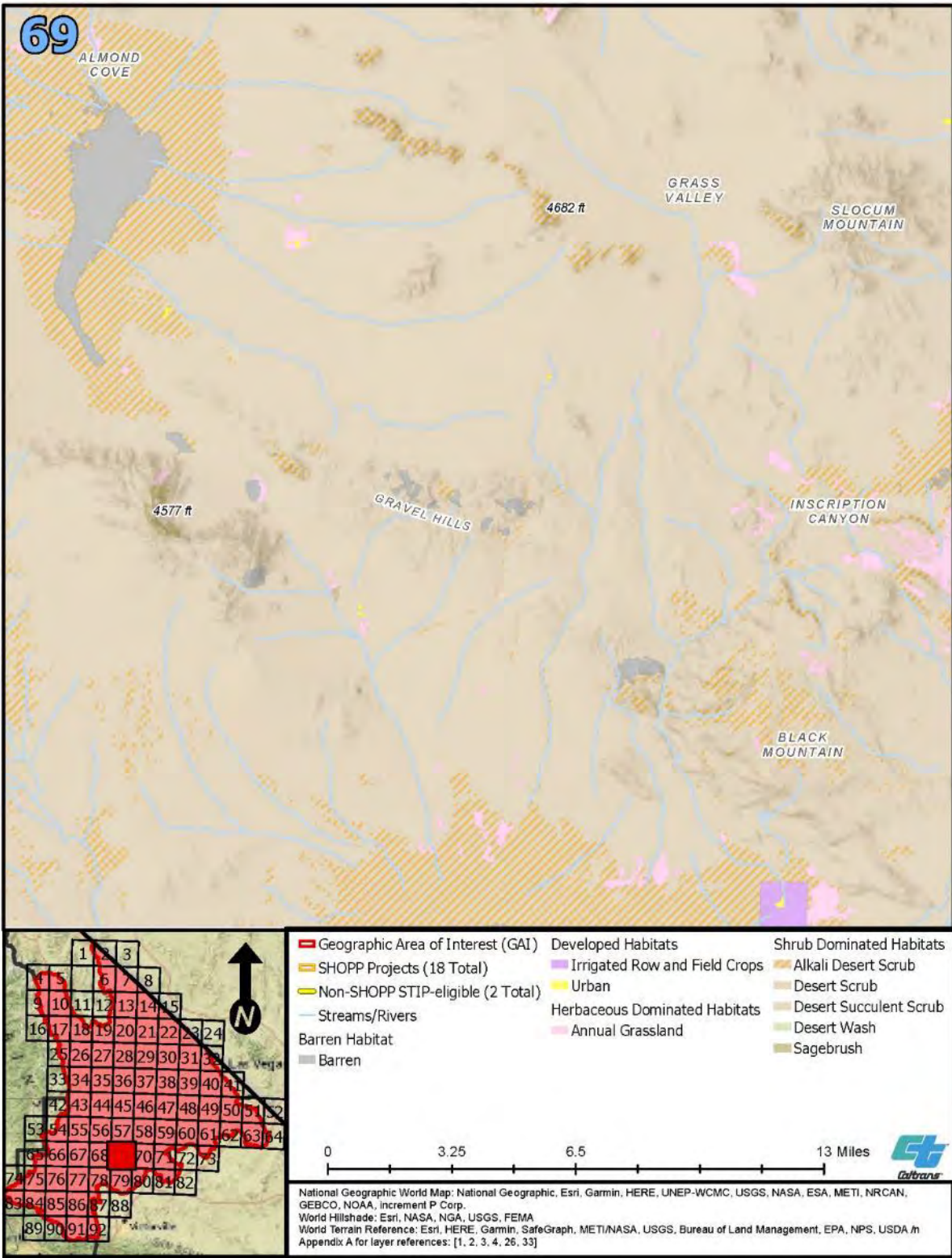


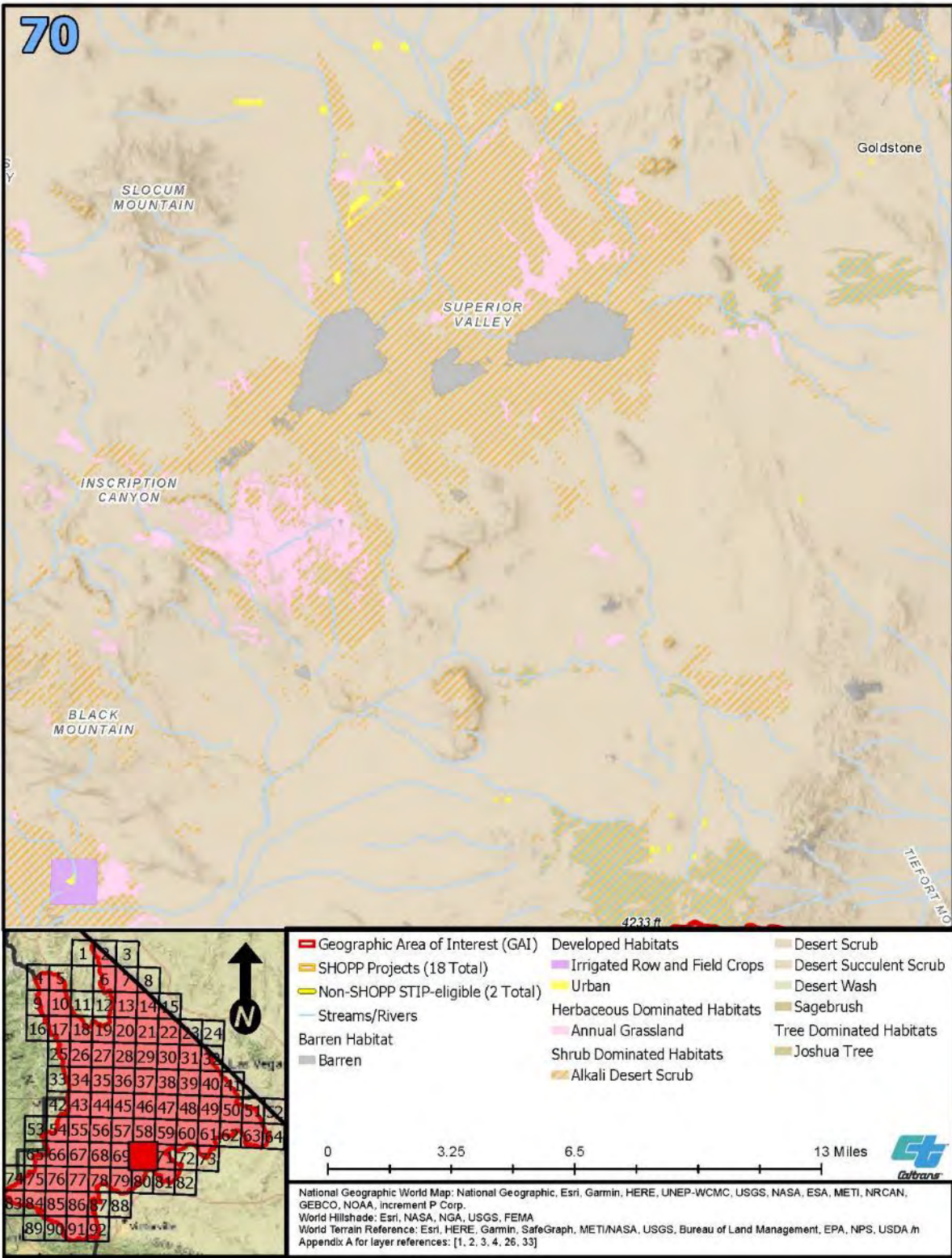


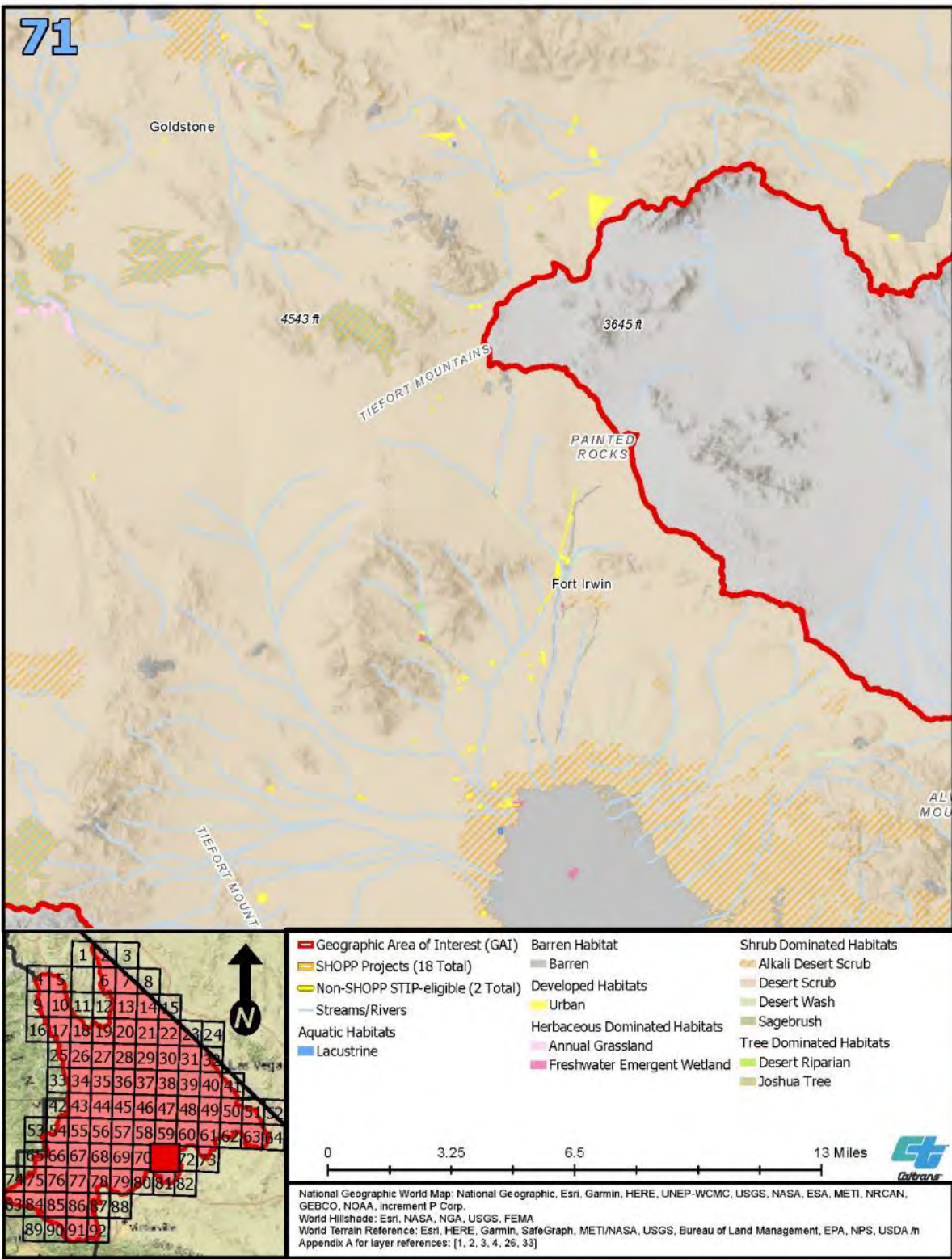


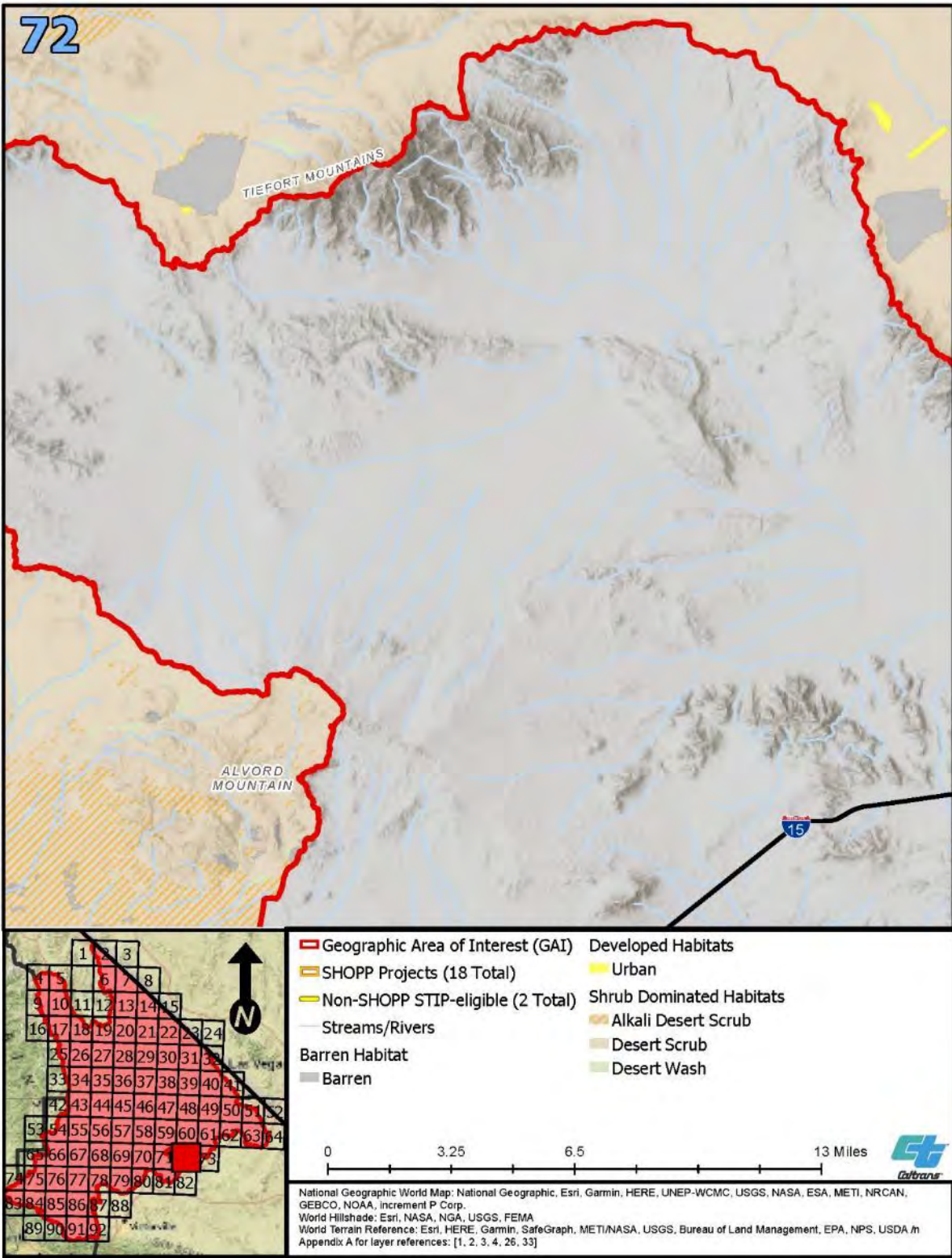


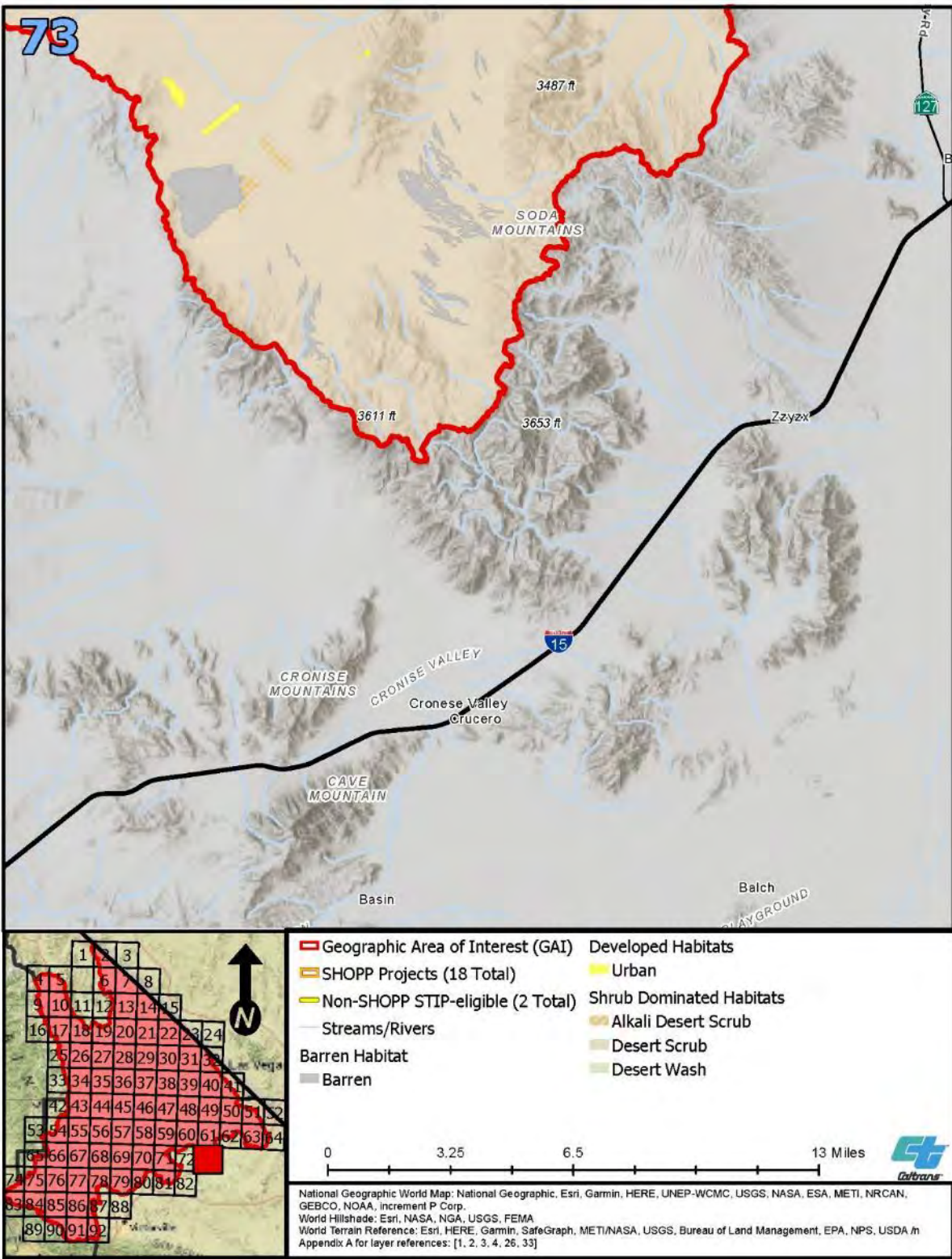


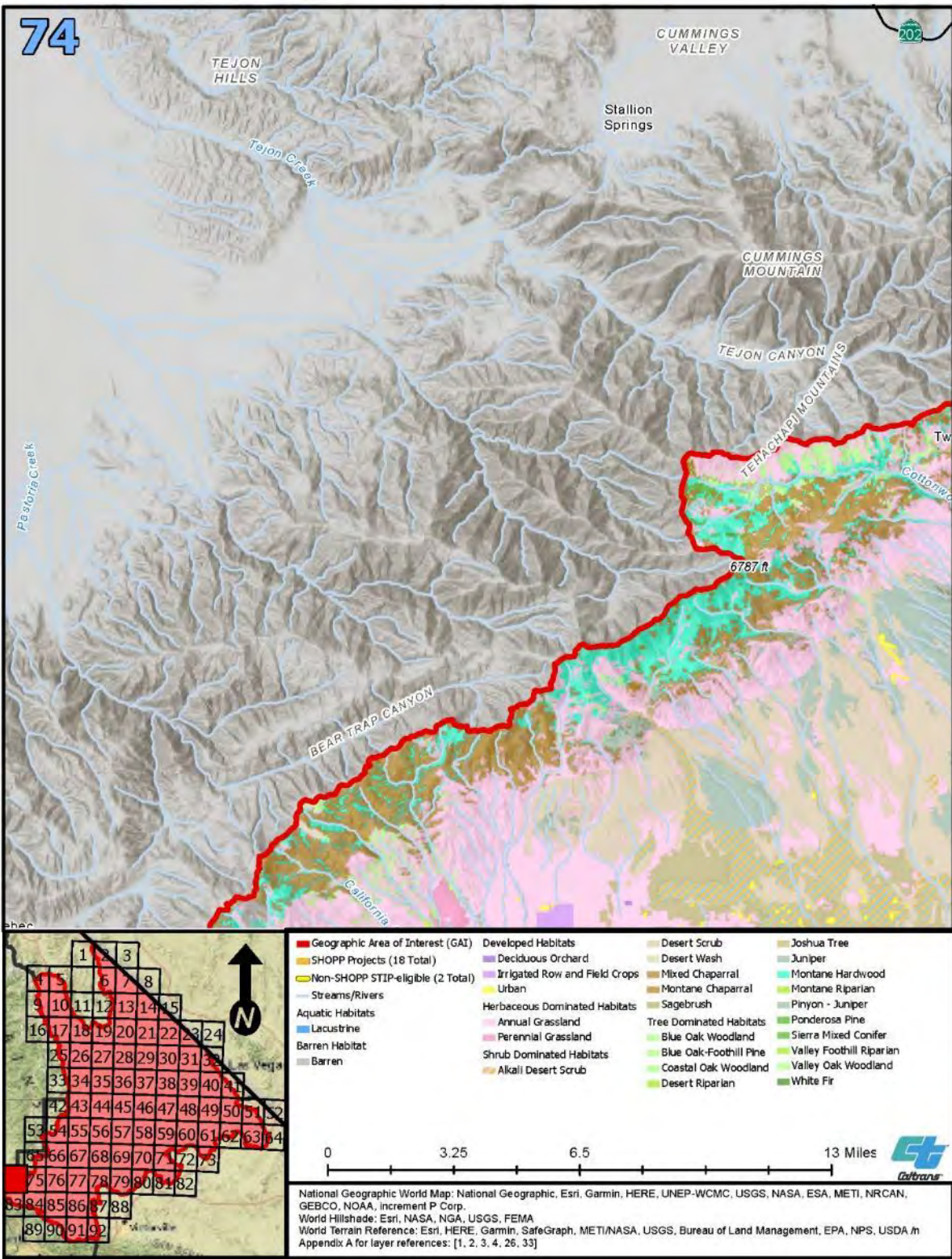


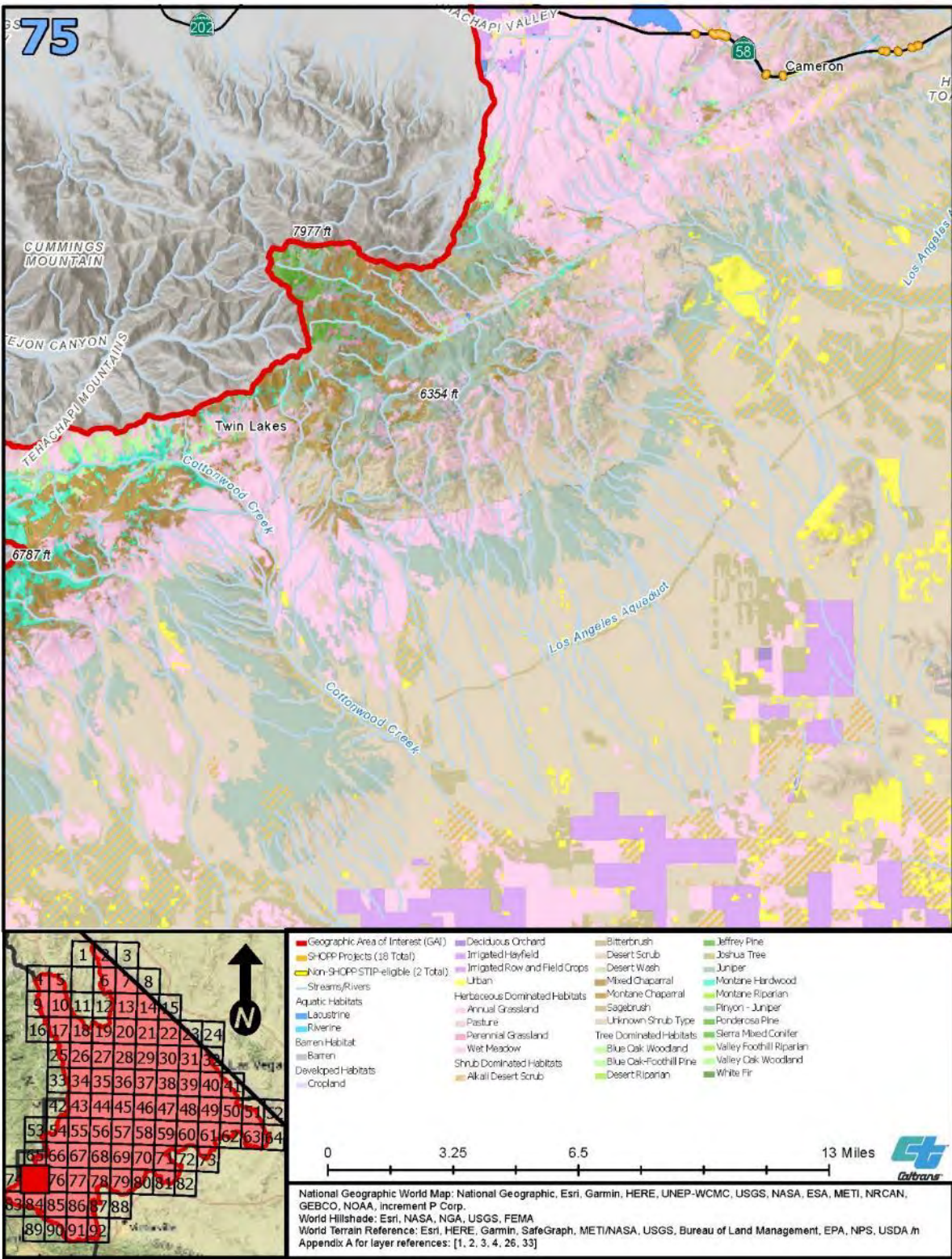


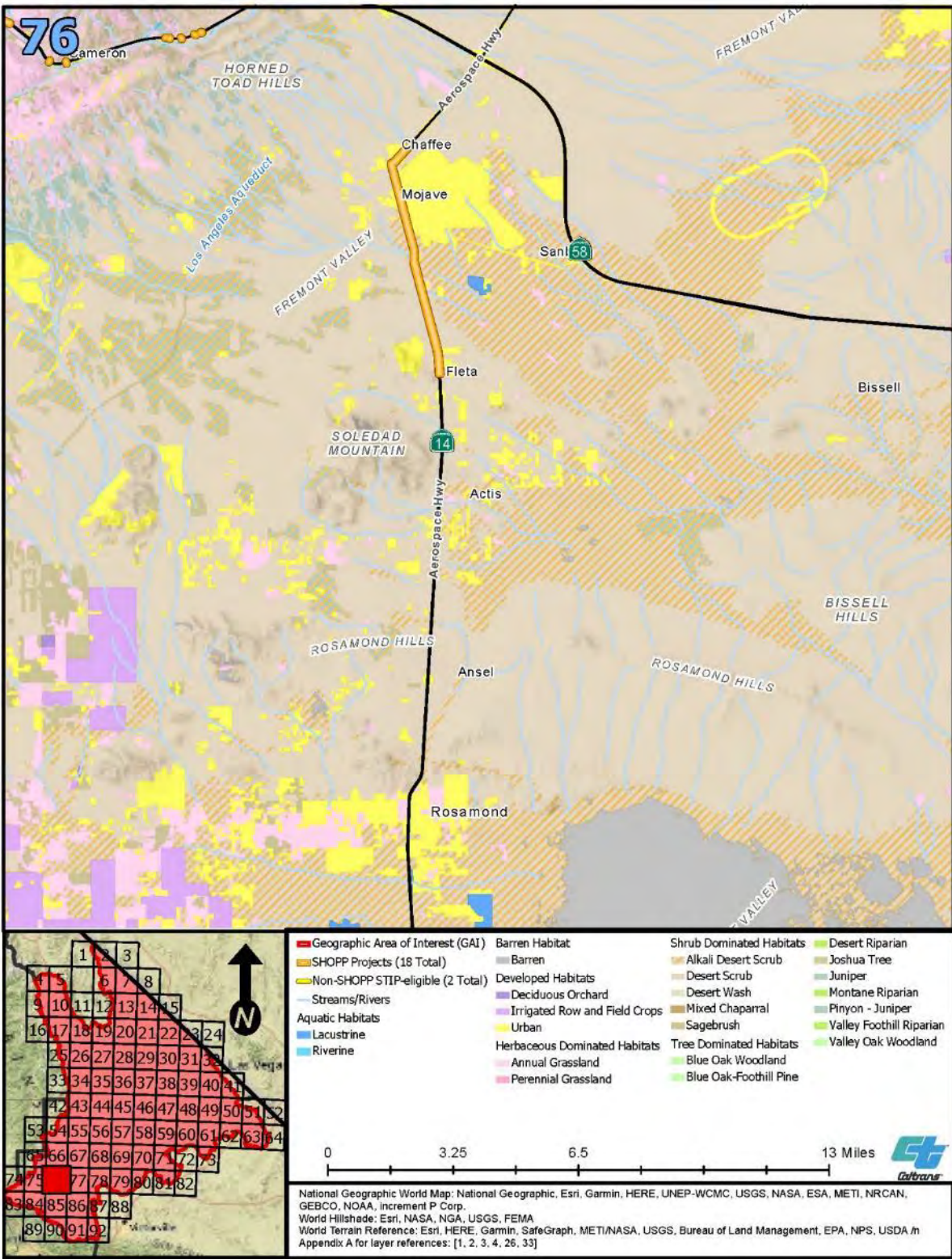


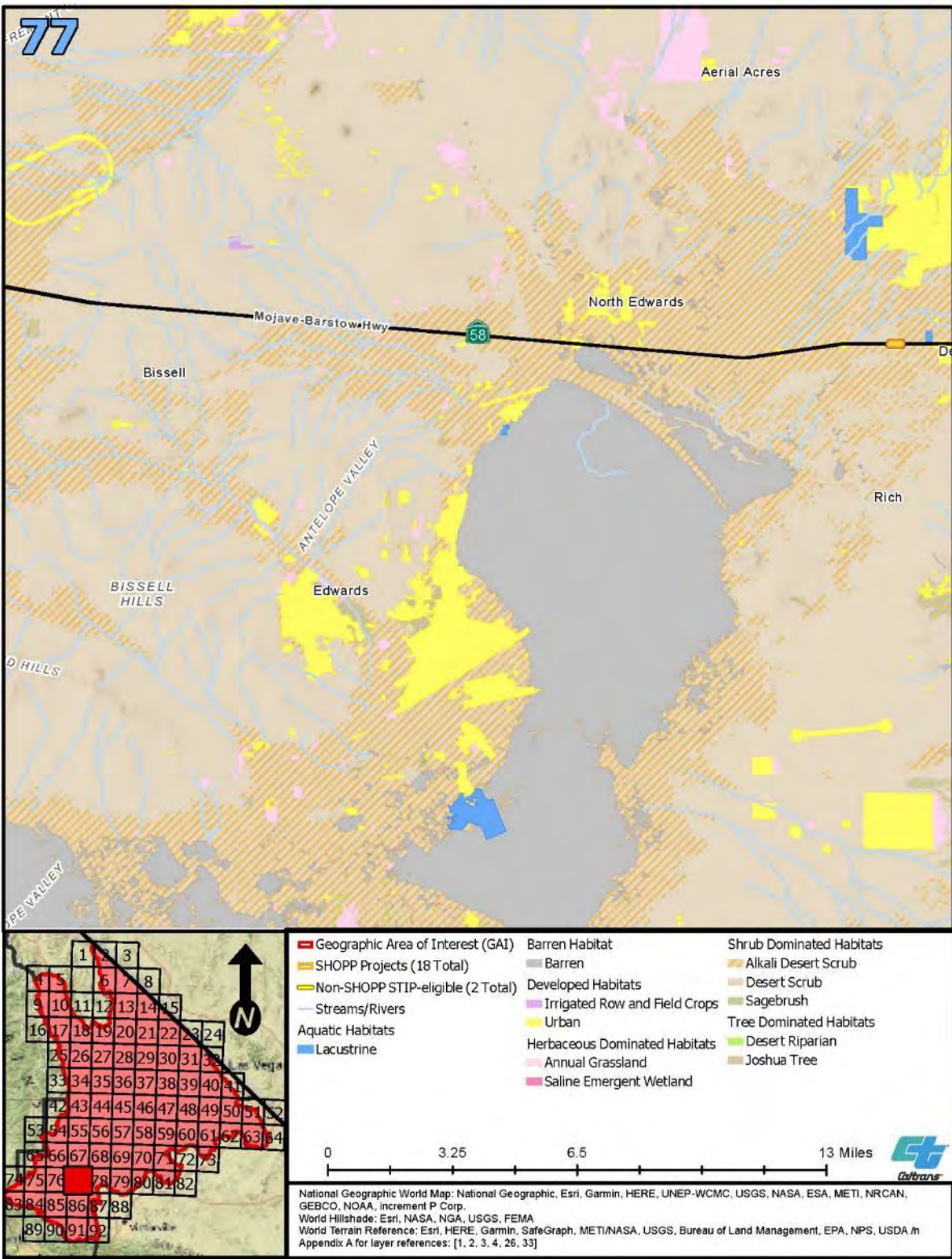


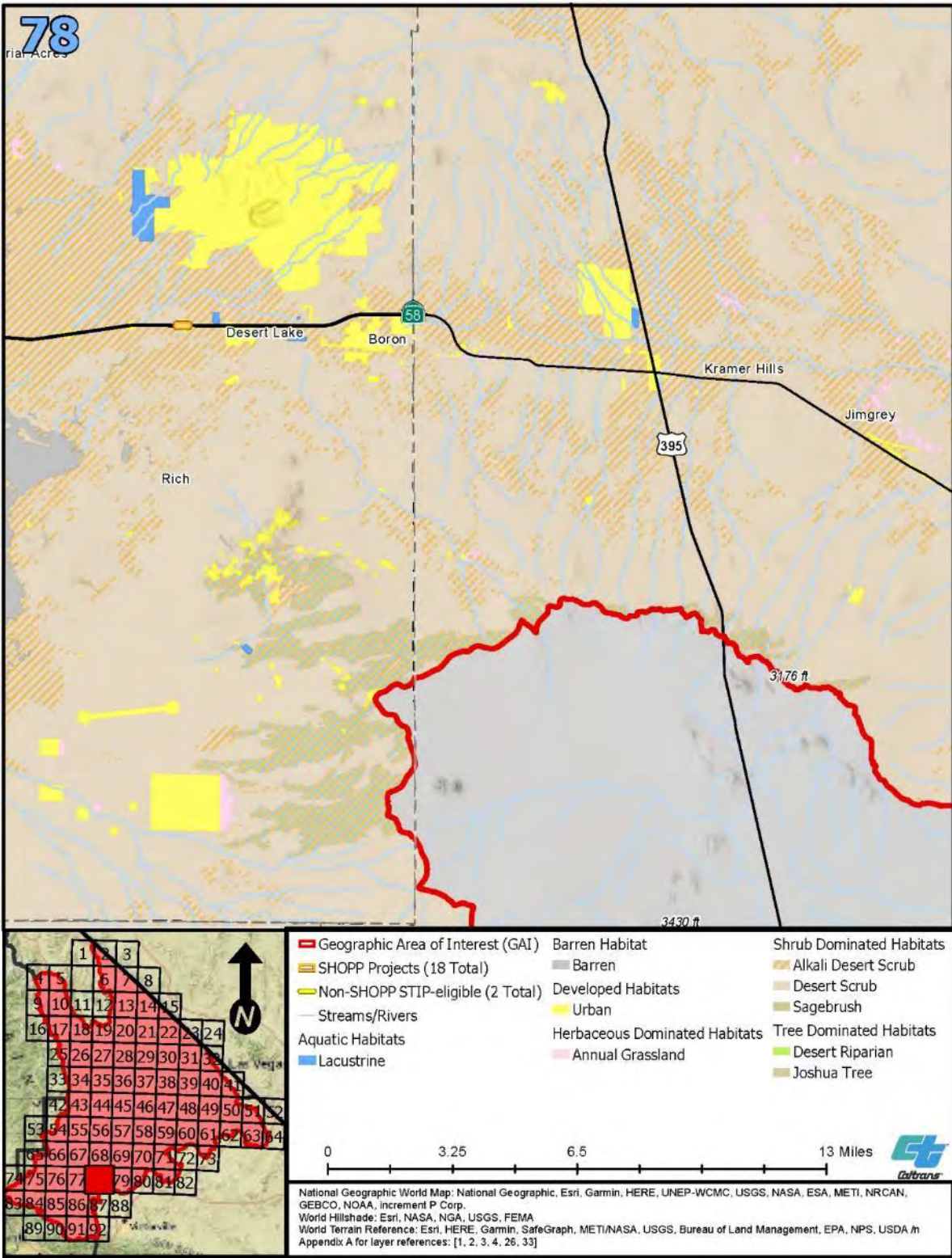


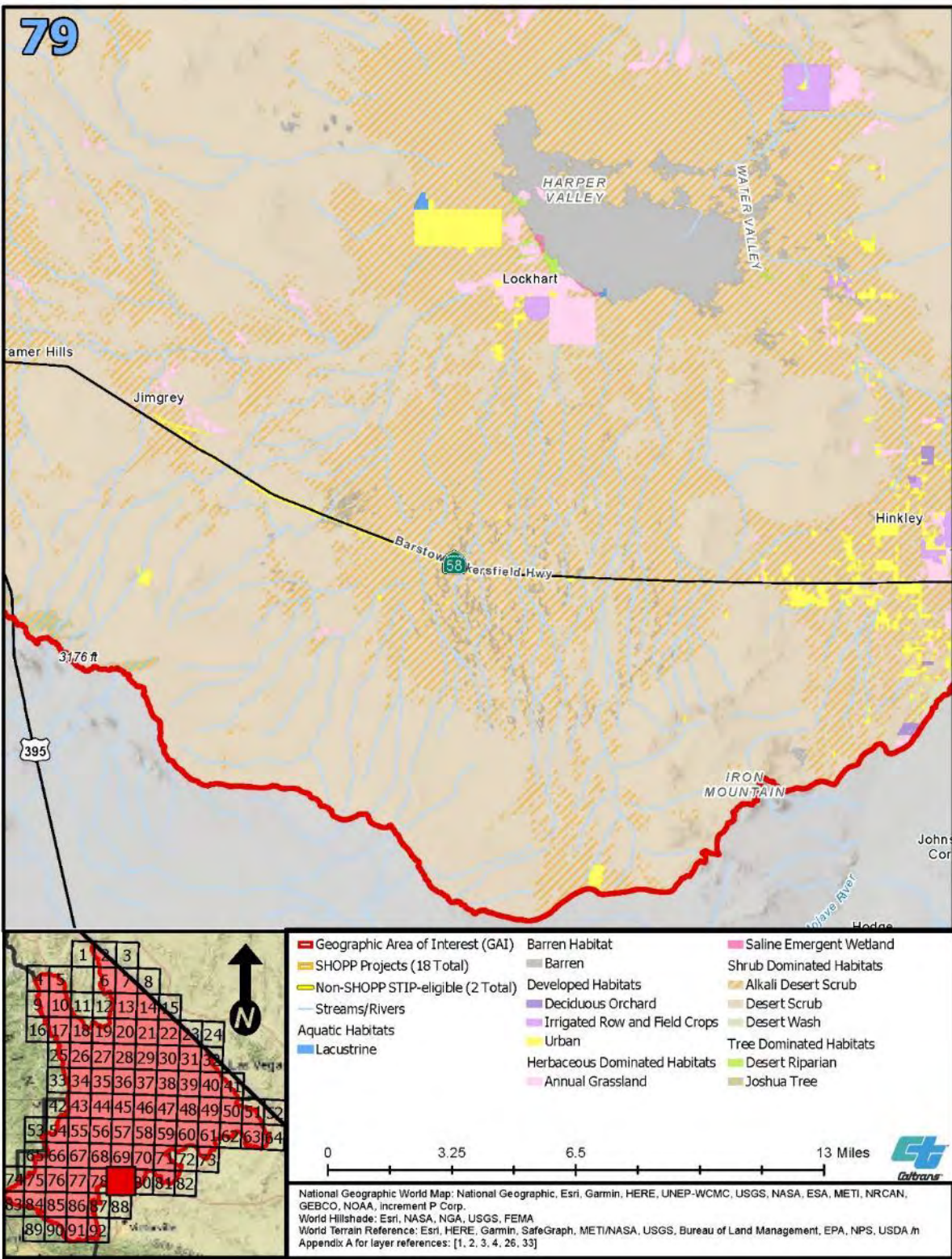


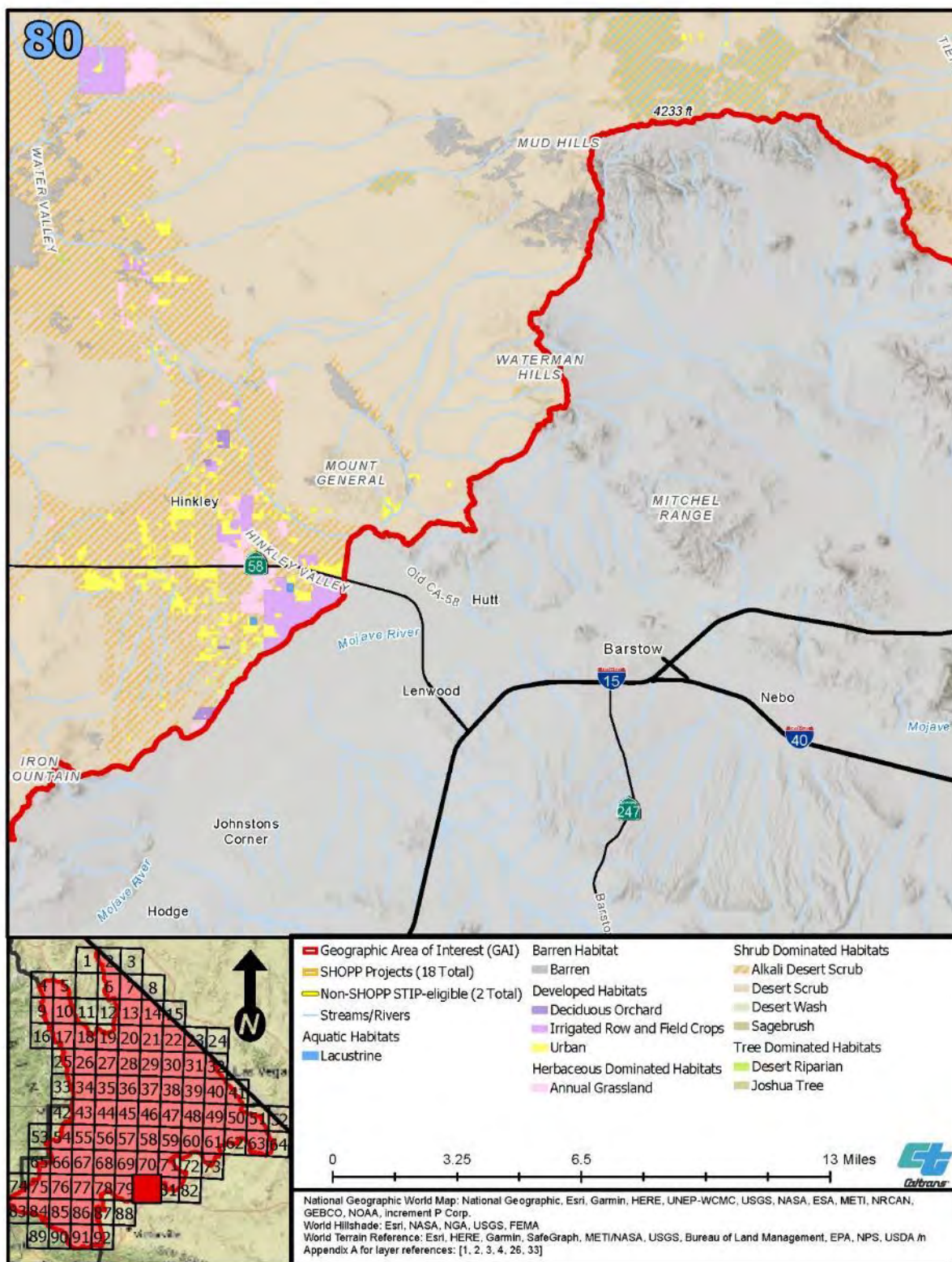


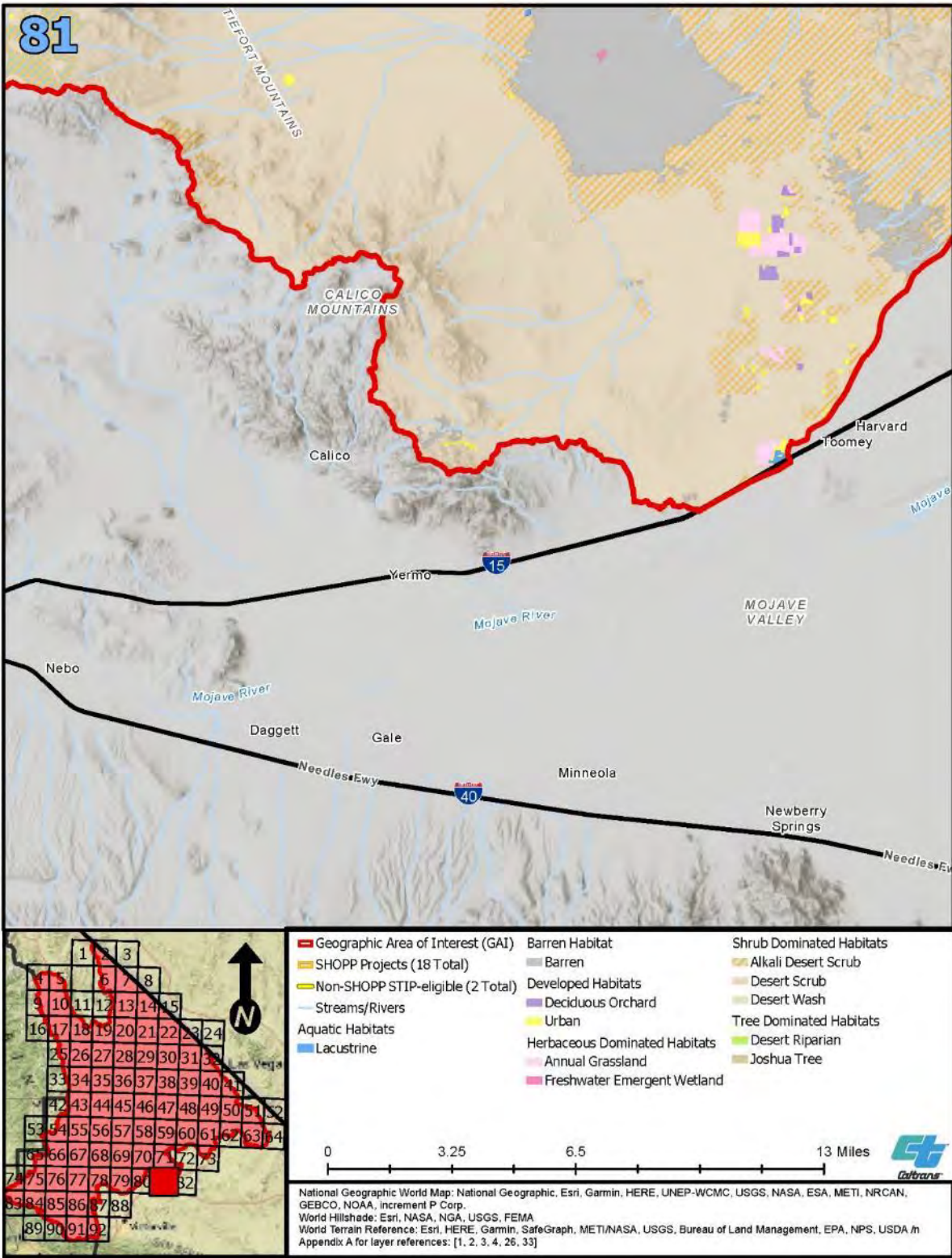


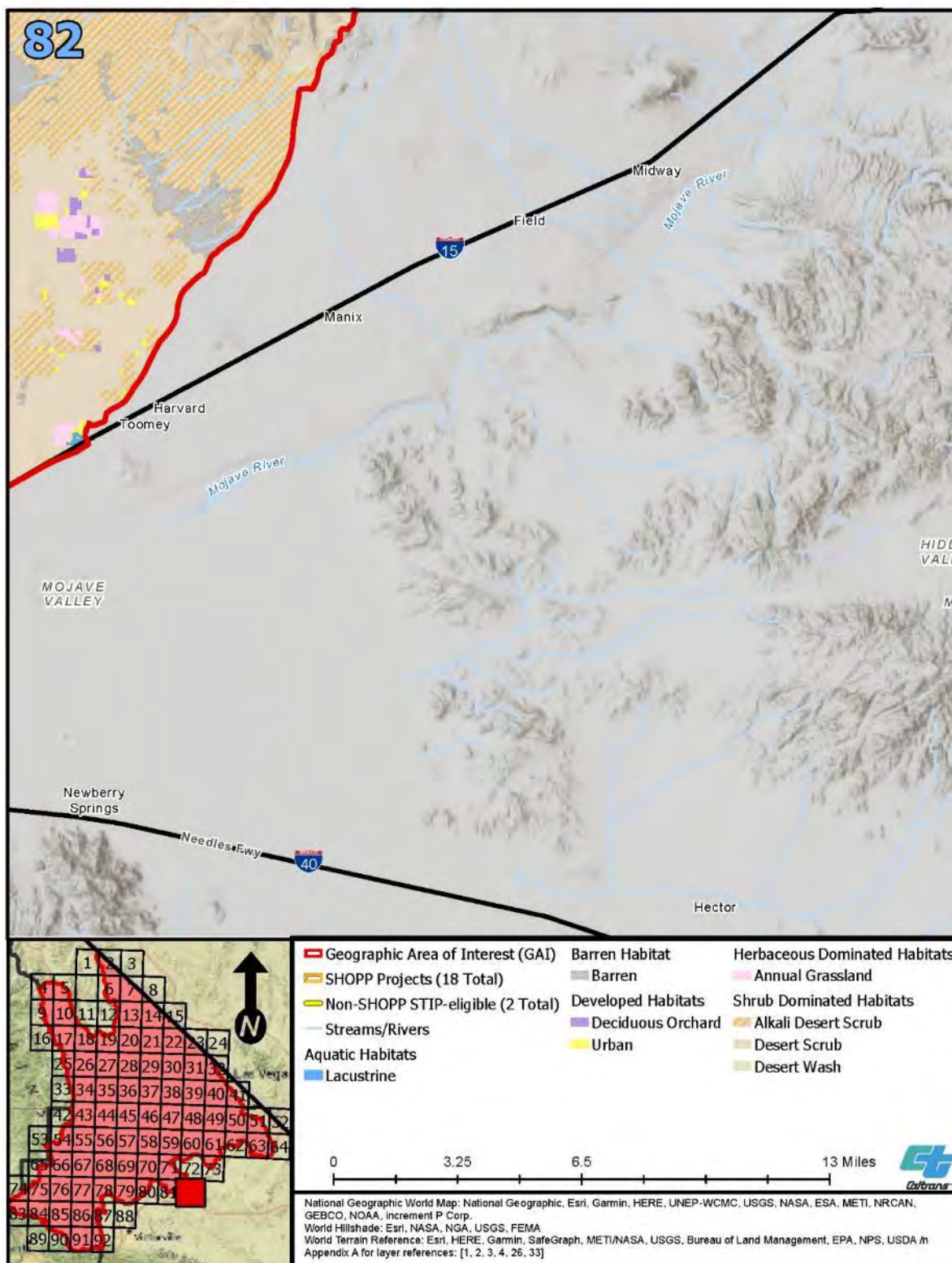


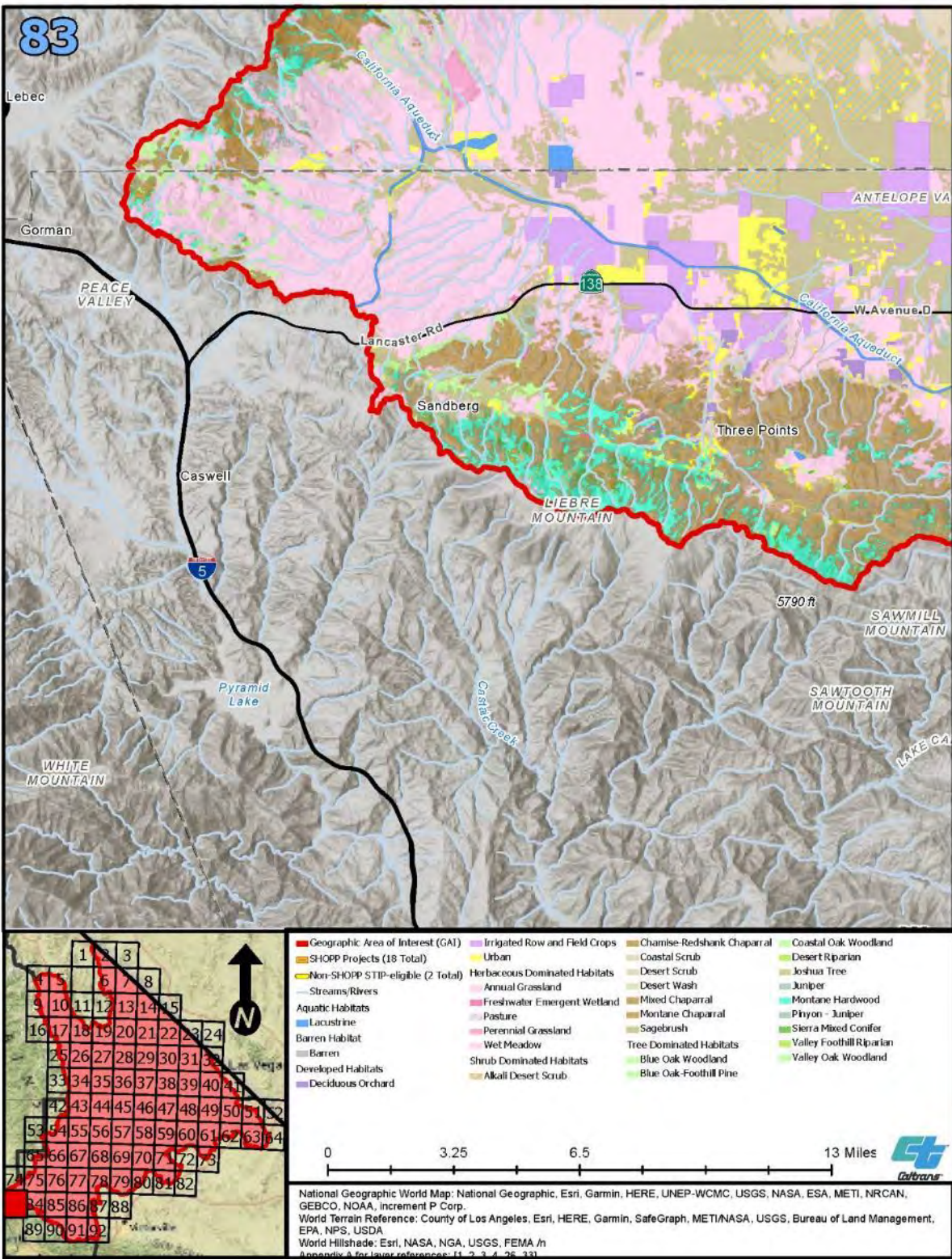


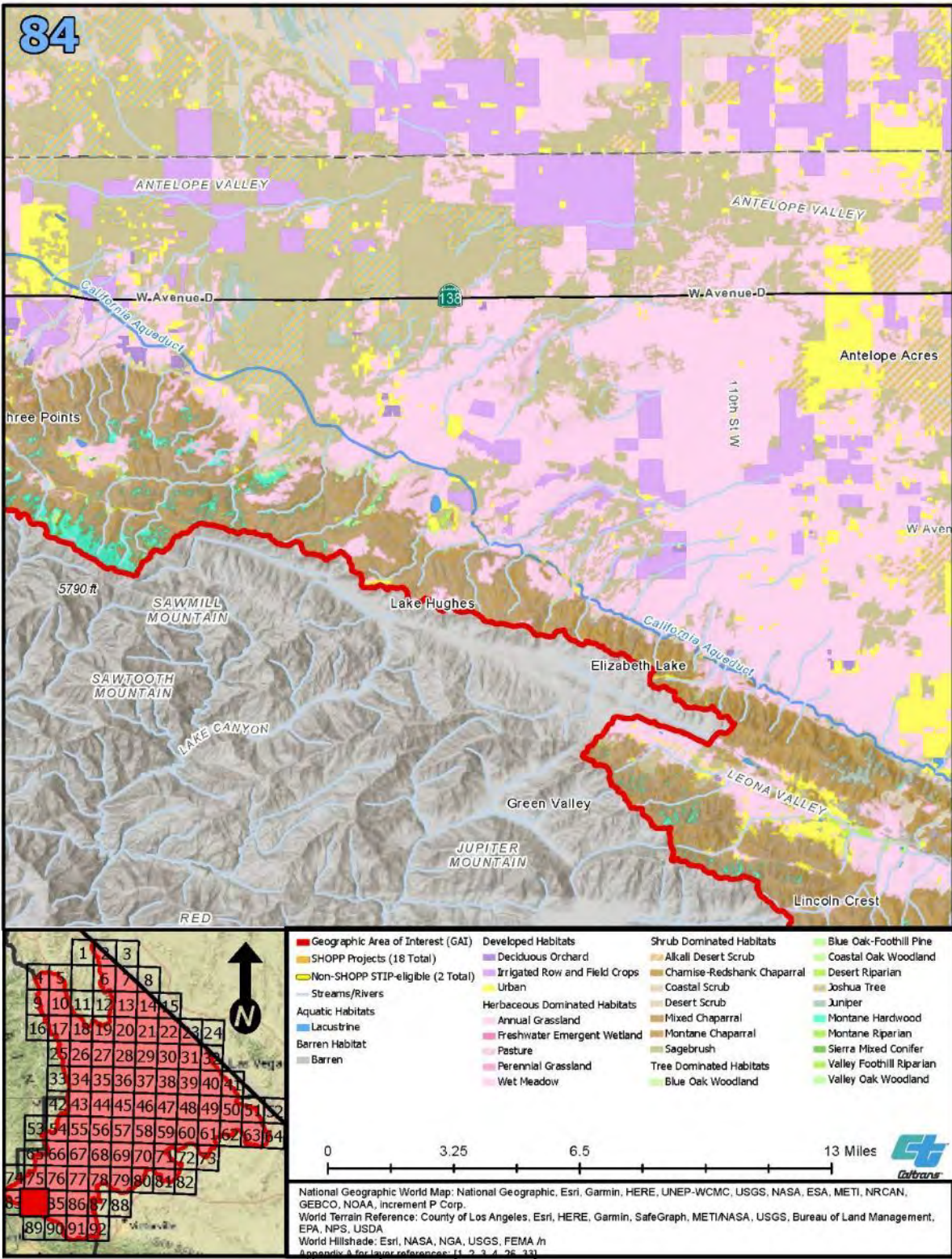


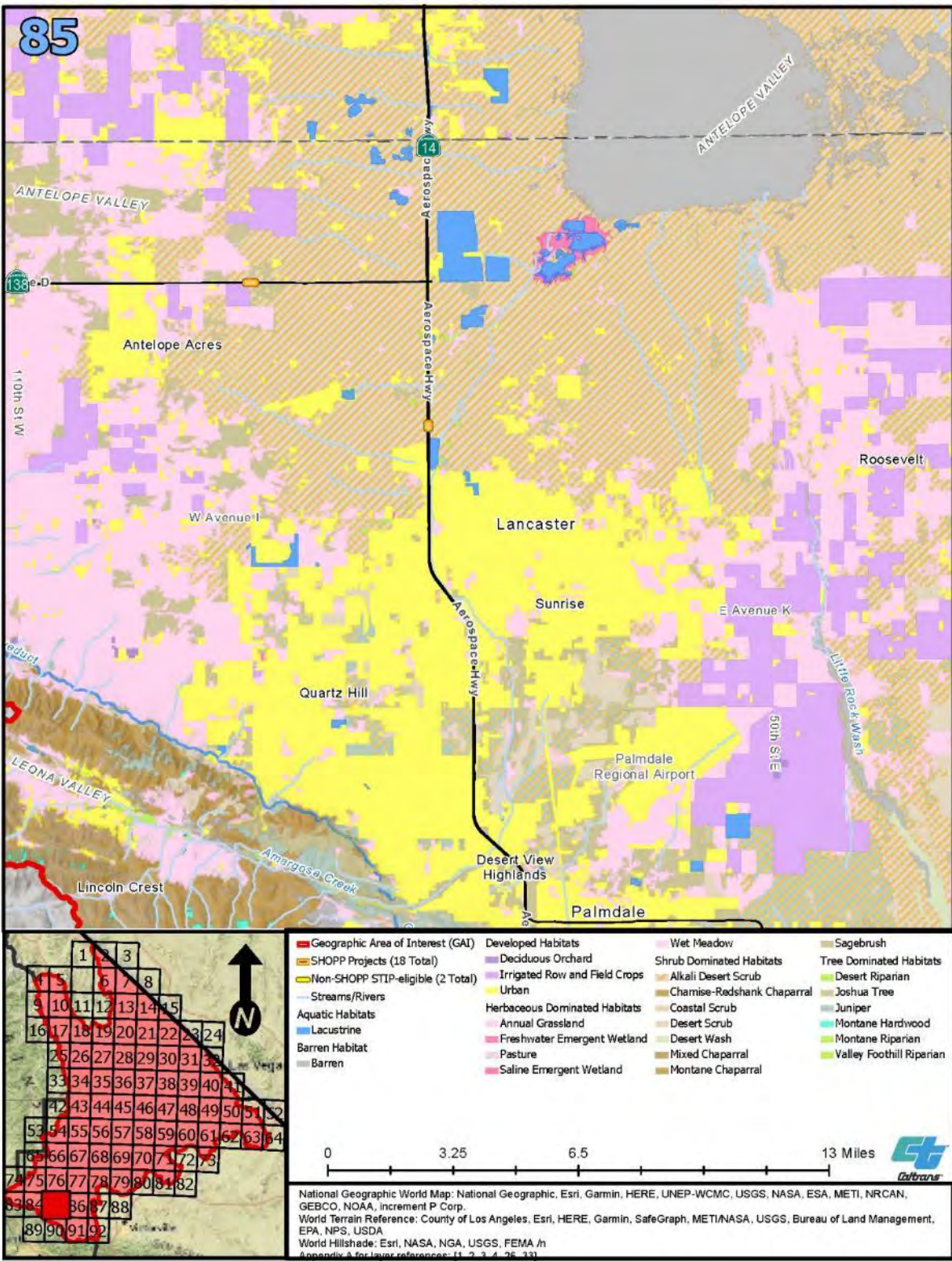


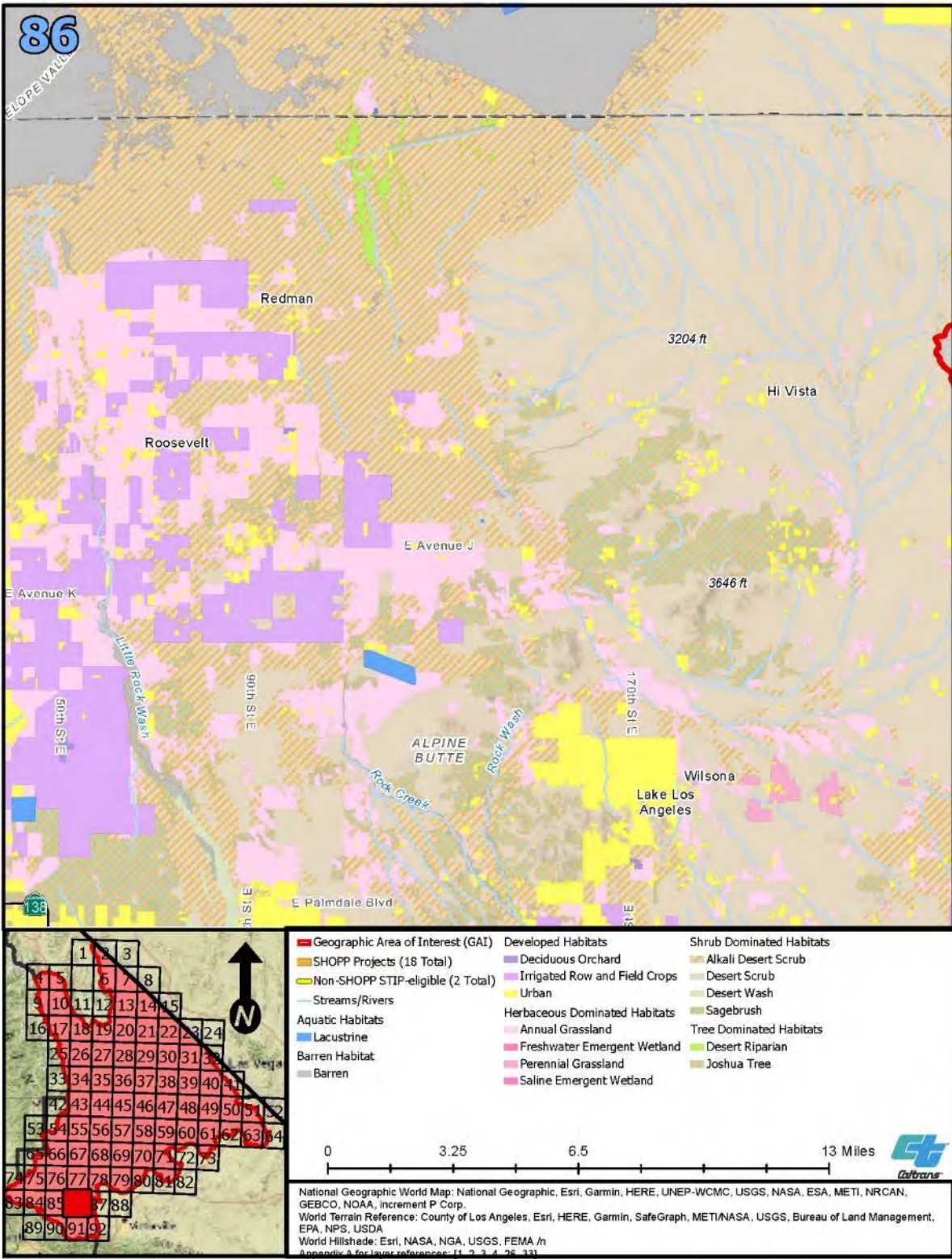


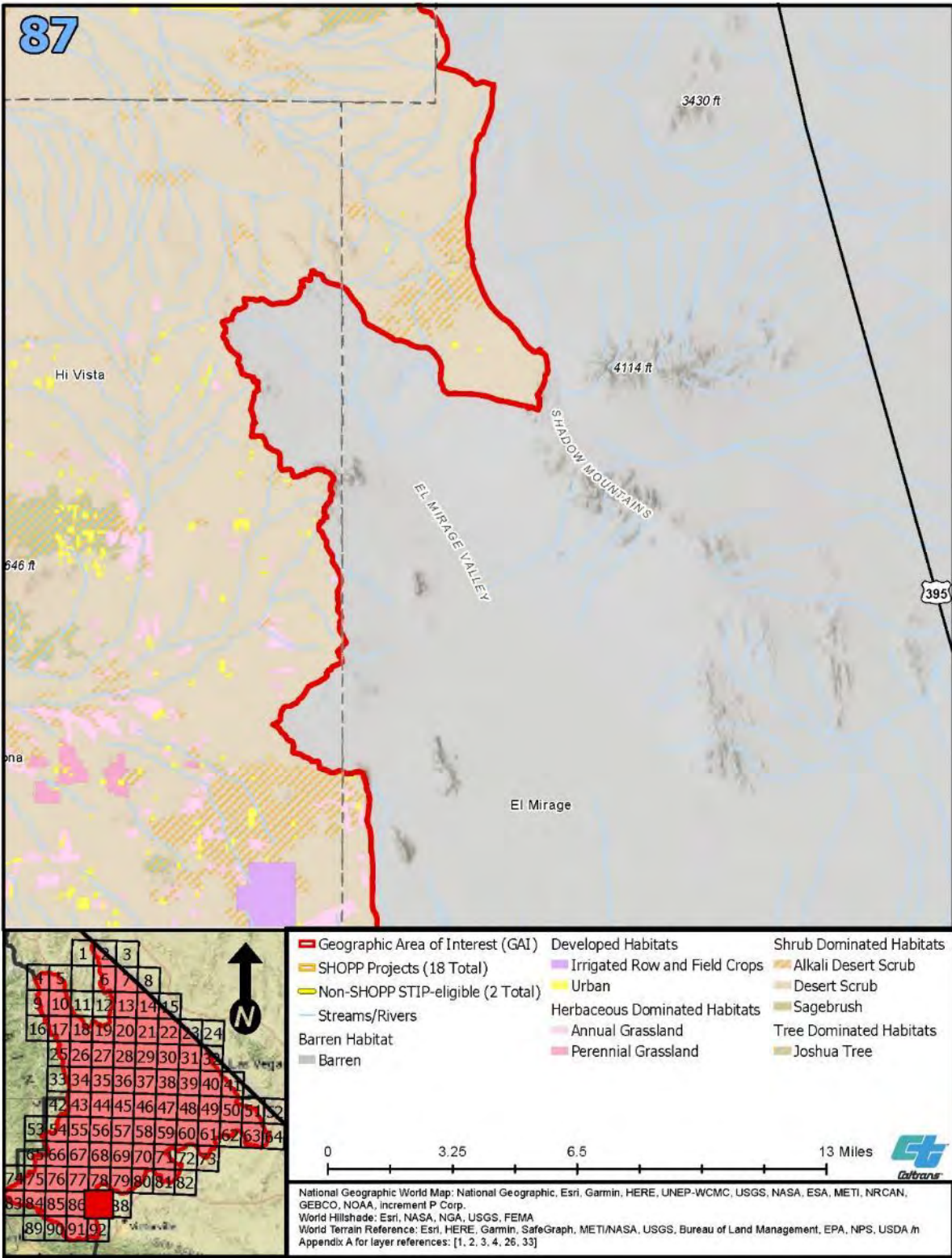


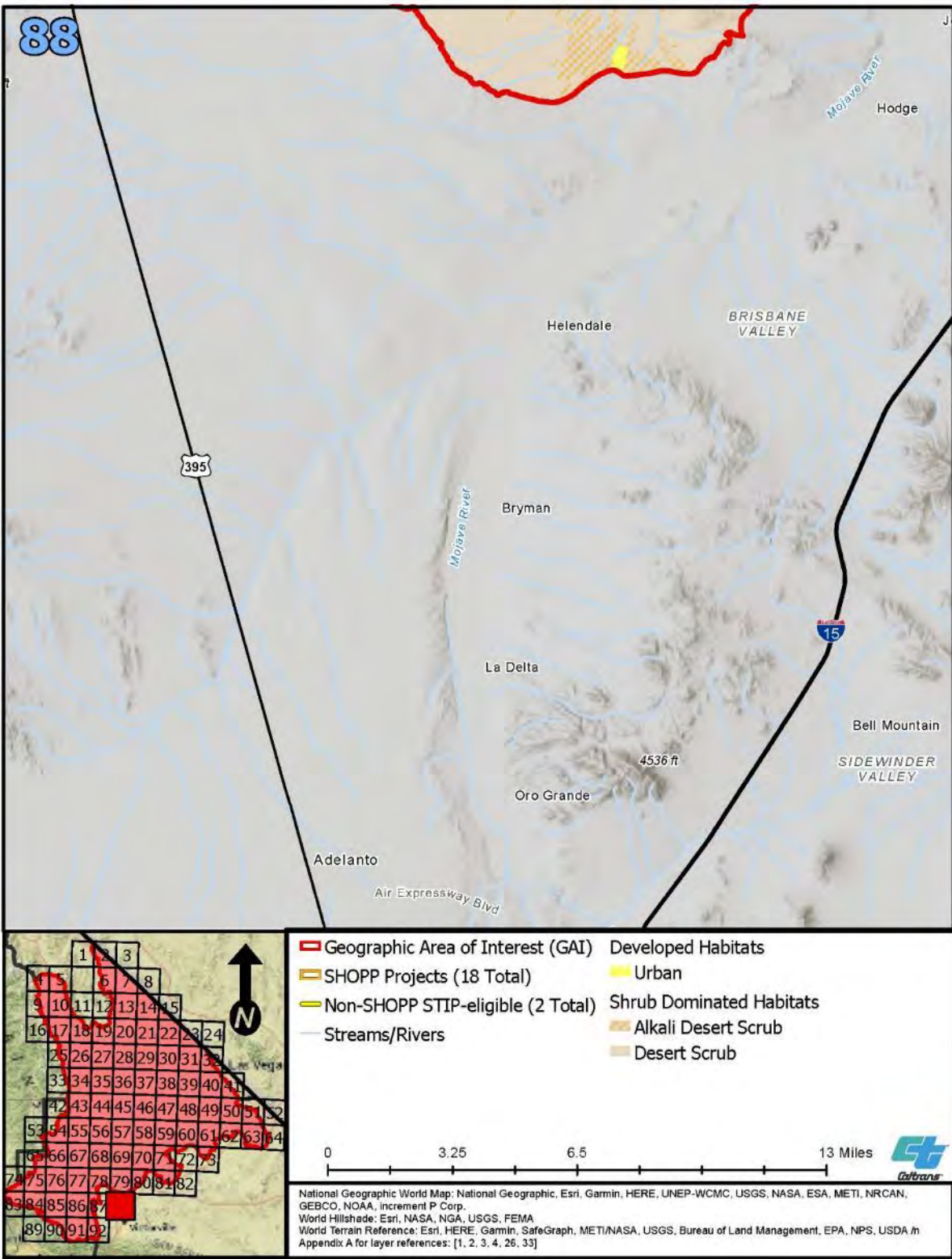


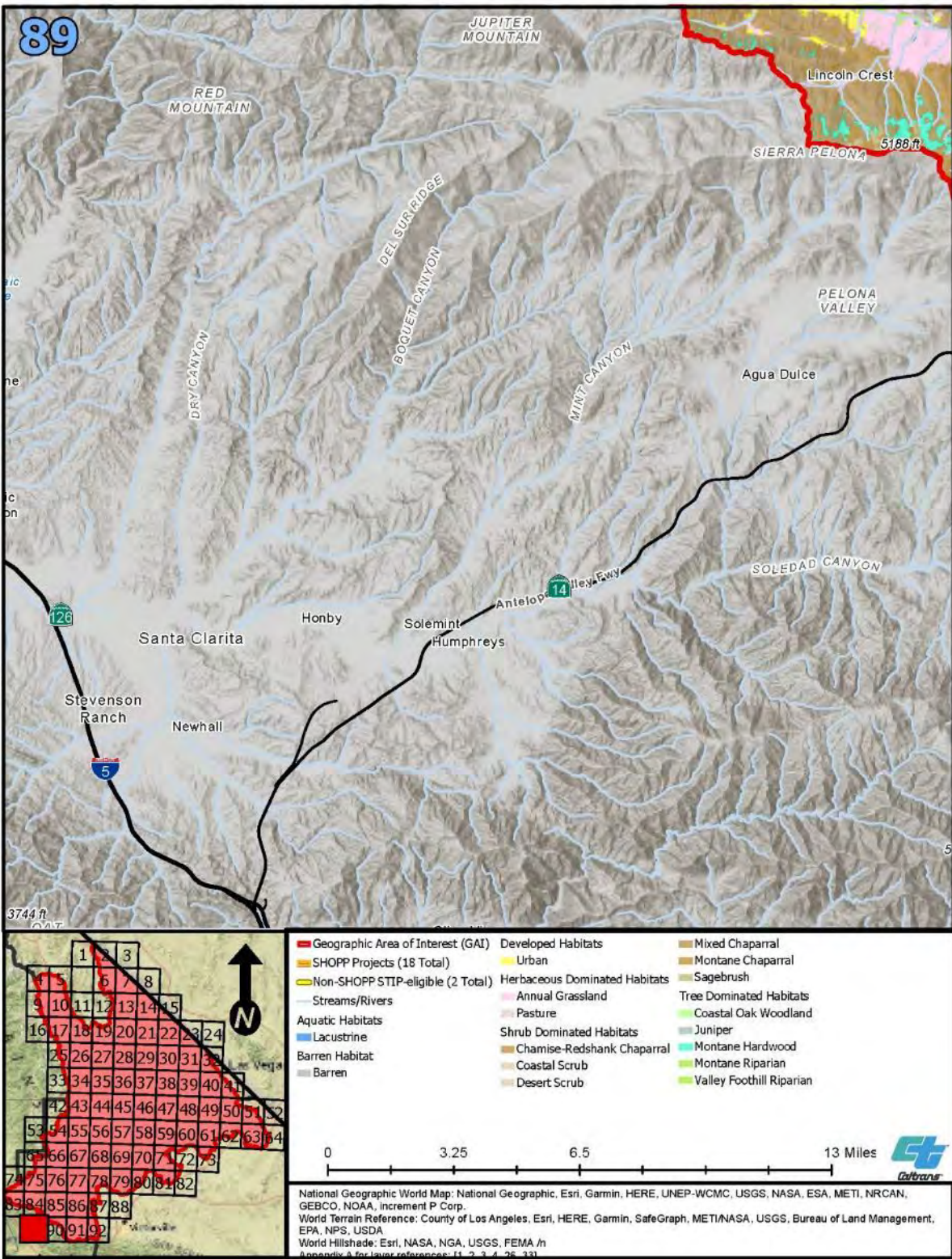


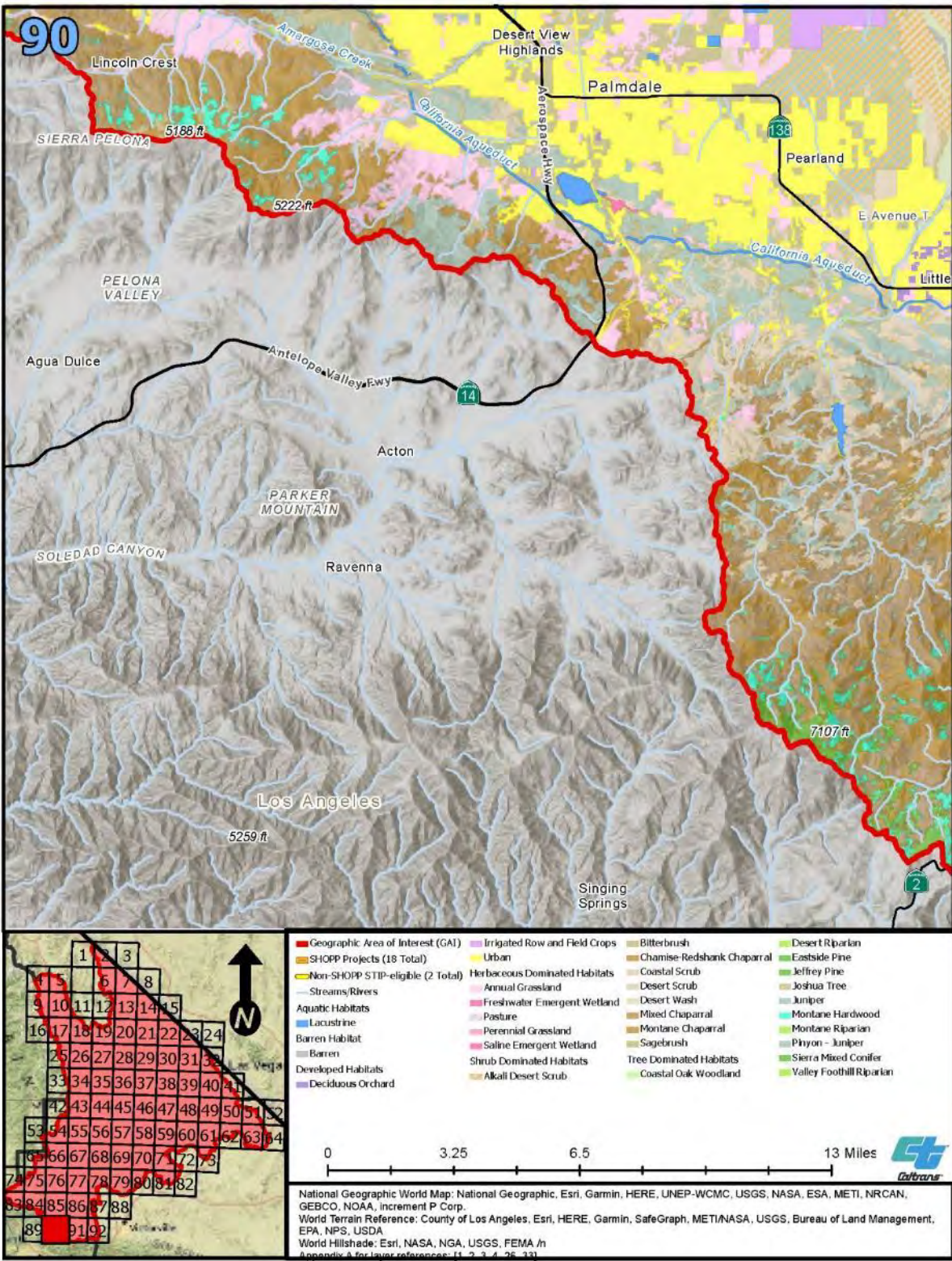


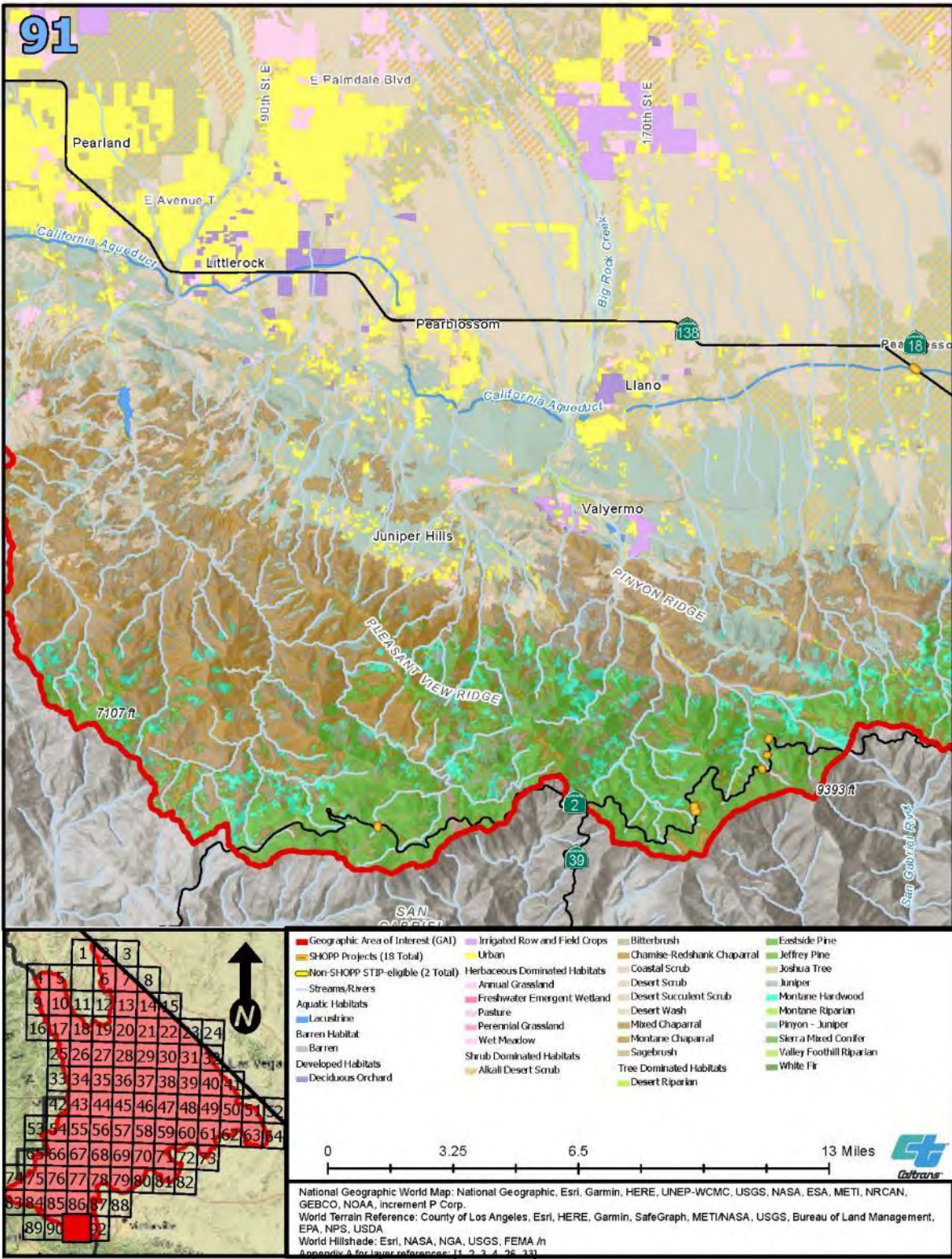


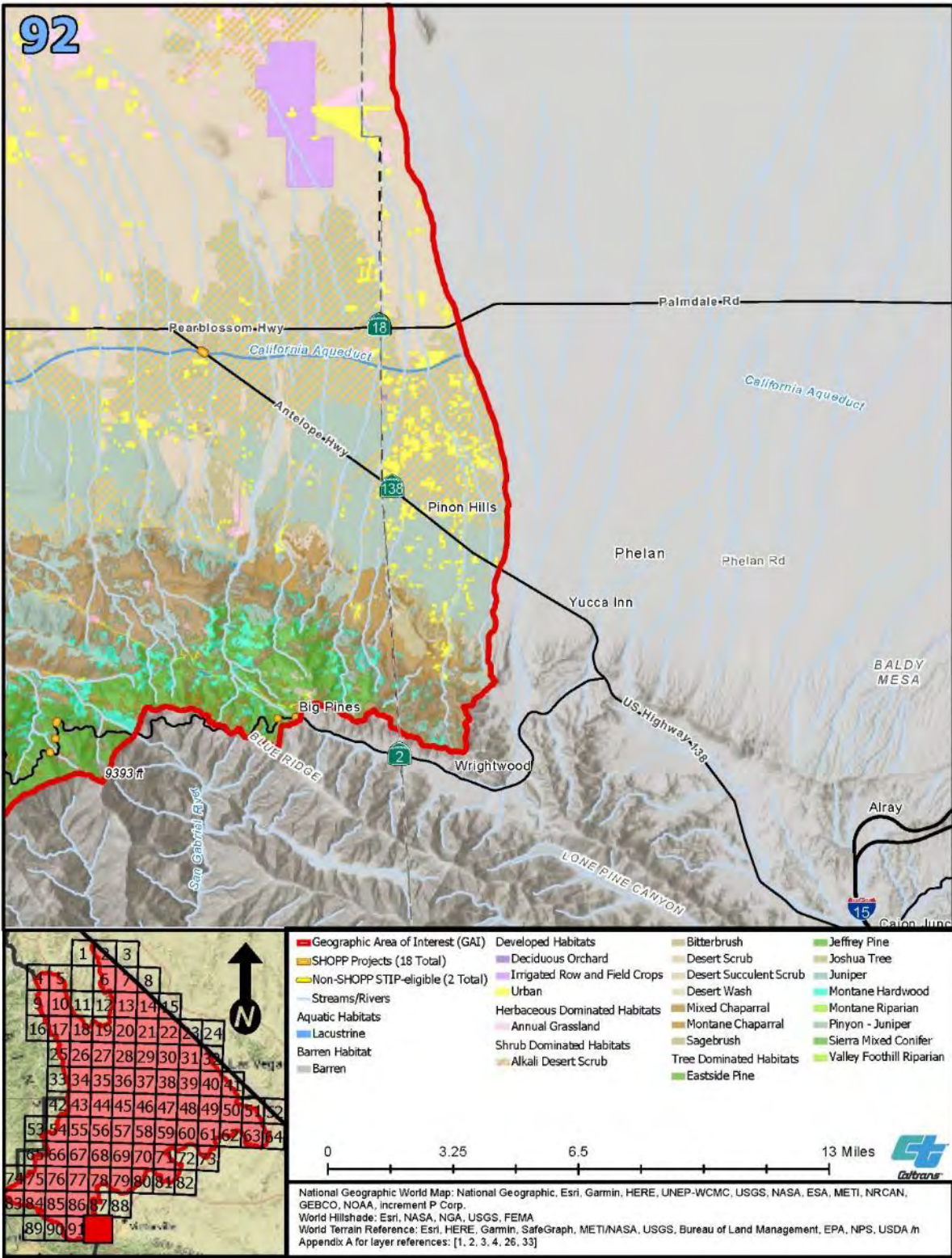












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APPENDIX C: COMPLETE SAMNA SPECIES RESULTS

Complete terrestrial species SAMNA results for the GAI are provided in Tables C-1 through C-3, which include SAMNA results for the portions of the Mojave Desert Section (starts on page C-3), Sierra Nevada Section (starts on page C-11), and Southern California Mountains and Valleys Section (starts on page C-18) 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. Regarding these results:

- Species without CWHR system-supplied home ranges but identified by the California Natural Diversity Database as potentially present will be incorporated into the analysis of specific advance mitigation projects and future transportation projects.
- Subspecies may or may not have CWHR-supplied or other documented sources showing their home ranges. When a subspecies did not have home range information 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 that have 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 to 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 impacted 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. These totals are not additive across all special-status species because each habitat type may provide suitable habitat for more than one special-status species or subspecies.

Habitats referenced in Tables C-1 through C-3 are mapped in Appendix B. While desert tortoise, Joshua tree, Mojave ground squirrel, burrowing owl, and willow flycatcher 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 to improve the conservation benefits of compensatory mitigation in

the GAI. For example, advance mitigation established for desert tortoise 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-3 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 Mojave Desert Section in the GAI, by Land Cover (acres)

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	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
Lane Mountain milk-vetch	<i>Astragalus jaegerianus</i>	FE	0.00	0.00	0.00	10.05	0.00	0.00	0.75	0.00	0.00	0.00	10.80
Red Rock tarplant	<i>Deinandra arida</i>	SR	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	0.00	0.00	10.05
Rock lady	<i>Holmgrenanthe petrophila</i>	SR	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	0.00	0.00	10.05
Spreading navarretia	<i>Navarretia fossalis</i>	FT	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91
Amargosa nitrophila	<i>Nitrophila mohavensis</i>	FE, SE	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91
Eureka Dunes evening-primrose	<i>Oenothera californica</i> ssp. <i>eurekensis</i>	SR	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	0.00	0.00	10.05
Eureka Valley dune grass	<i>Swallenia alexandrae</i>	FT, SR	0.00	0.00	0.00	10.05	0.00	0.00	0.00	0.00	0.00	0.00	10.05
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 red-legged frog	<i>Rana draytonii</i>	FT, SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.23

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	Total
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
Mohave desert tortoise	<i>Gopherus agassizii</i>	FT, ST	8.97	1.91	0.15	10.05	0.10	0.00	0.75	0.00	0.19	0.00	22.12
California legless lizard	<i>Anniella pulchra</i>	FS, SSC	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Desert nightlizard ^a	<i>Xantusia vigilis</i>	FS, SSC	8.97	1.91	0.00	10.05	0.10	0.00	0.75	0.00	0.19	0.00	21.97
Gila monster	<i>Heloderma suspectum</i>	FS, SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.50
Coachwhip ^b	<i>Masticophis [Coluber] flagellum</i> ^c	SSC	8.97	1.91	0.00	10.05	0.10	0.00	0.75	0.00	0.19	0.00	21.97
Western patch-nosed snake ^d	<i>Salvadora hexalepis</i>	SSC	8.97	1.91	0.15	10.05	0.10	0.00	0.75	0.00	0.19	0.00	22.12
Gophersnake	<i>Pituophis catenifer</i>	None	8.97	1.91	0.00	10.05	0.10	0.37	0.75	0.00	0.19	59.94	82.28
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
American white pelican ^e	<i>Pelecanus erythrorhynchos</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.23
Great blue heron	<i>Ardea herodias</i>	SFS	0.00	1.91	0.00	0.00	0.00	0.37	0.00	0.23	0.00	59.94	62.45
Great egret	<i>Ardea alba</i>	SFS	0.00	1.91	0.00	0.00	0.00	0.37	0.00	0.23	0.00	57.53	60.04

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	Total
Osprey	<i>Pandion haliaetus</i>	SFS	5.33	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	5.51
White-tailed kite	<i>Elanus leucurus</i>	FS, SFP	3.64	1.91	0.00	10.05	0.00	0.37	0.00	0.00	0.00	57.53	73.50
Northern harrier	<i>Circus hudsonius [cyaneus]</i> ^c	SSC	8.97	1.91	0.15	10.05	0.10	0.00	0.00	0.23	0.19	59.94	81.54
Swainson's hawk	<i>Buteo swainsoni</i>	FS, ST	0.00	1.91	0.00	10.05	0.00	0.00	0.00	0.00	0.18	57.53	69.67
Golden eagle	<i>Aquila chrysaetos</i>	FS, SFS, SFP	8.97	1.91	0.15	10.05	0.10	0.00	0.75	0.00	0.19	59.94	82.06
Peregrine falcon	<i>Falco peregrinus</i>	FS, SFP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13
California quail ^f	<i>Callipepla californica</i>	SSC	8.97	1.91	0.00	10.05	0.00	0.00	0.25	0.00	0.19	57.53	78.90
Mountain plover	<i>Charadrius montanus</i>	FS	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.18	0.00	0.55
Burrowing owl	<i>Athene cunicularia</i>	FS, SSC	8.97	1.91	0.15	10.05	0.10	0.00	0.75	0.00	0.19	59.94	82.06
Long-eared owl	<i>Asio otus</i>	SSC	0.00	1.91	0.00	10.05	0.00	0.00	0.00	0.00	0.19	0.00	12.15
Short-eared owl	<i>Asio flammeus</i>	SSC	1.41	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.18	1.95	3.91
Cactus wren ^g	<i>Campylorhynchus brunneicapillus</i>	FS, SSC	0.00	0.00	0.00	10.05	0.00	0.00	0.75	0.00	0.00	59.94	70.74
Bewick's wren ^h	<i>Thryomanes bewickii</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	59.94	60.69

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	Total
Le Conte's thrasher ⁱ	<i>Toxostoma lecontei</i>	FS, SSC	8.97	0.00	0.00	10.05	0.10	0.00	0.75	0.00	0.00	0.00	19.87
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	8.97	1.91	0.15	10.05	0.10	0.00	0.75	0.00	0.19	59.94	82.06
Spotted towhee ^j	<i>Pipilo maculatus</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13
Bell's sparrow ^k	<i>Artemisospiza belli</i>	FT, SSC	8.97	0.00	0.00	10.05	0.00	0.00	0.75	0.00	0.19	0.00	19.96
Savannah sparrow ^l	<i>Passerculus sandwichensis</i>	SE	8.97	1.91	0.00	10.05	0.10	0.00	0.00	0.00	0.19	0.00	21.22
Song sparrow ^m	<i>Melospiza melodia</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	31.67	31.90
Red-winged blackbird ⁿ	<i>Agelaius phoeniceus</i>	SSC	0.00	1.91	0.00	0.00	0.00	0.37	0.00	0.00	0.00	59.94	62.22
Tricolored blackbird	<i>Agelaius tricolor</i>	FS, ST, SSC	0.00	1.91	0.00	0.00	0.00	0.37	0.00	0.00	0.00	57.48	59.76
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	2.14
Bendire's thrasher	<i>Toxostoma bendirei</i>	FS, SSC	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.50
Crissal thrasher	<i>Toxostoma crissale</i>	FS, SSC	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.08

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	Total
Gilded flicker	<i>Colaptes chrysoides</i>	FS, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.50
Lucy's warbler	<i>Leiothlypis [Oreothlypis] luciae</i> ^c	FS, SSC	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.08
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
Yuma myotis	<i>Myotis yumanensis</i>	FS	5.33	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	5.40
Long-eared myotis	<i>Myotis evotis</i>	FS	5.33	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	5.56
Fringed myotis	<i>Myotis thysanodes</i>	FS	0.00	0.00	0.14	0.00	0.08	0.00	0.50	0.00	0.00	0.00	0.72
Small-footed myotis	<i>Myotis ciliolabrum</i>	FS	5.33	0.00	0.15	0.18	0.00	0.00	0.50	0.23	0.00	2.47	8.86
Spotted bat	<i>Euderma maculatum</i>	FS, SSC	8.97	1.91	0.00	10.05	0.10	0.00	0.75	0.00	0.19	59.94	81.91
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	8.97	1.91	0.15	10.05	0.10	0.37	0.75	0.00	0.19	59.94	82.43
Pallid bat	<i>Antrozous pallidus</i>	FS, SSC	8.97	1.91	0.15	10.05	0.10	0.37	0.75	0.00	0.19	59.94	82.43
Western mastiff bat	<i>Eumops perotis</i>	FS, SSC	3.64	1.91	0.03	10.05	0.08	0.37	0.75	0.00	0.00	59.94	76.77
Brush rabbit ^o	<i>Sylvilagus bachmani</i>	FE, SE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	Total
Black-tailed jackrabbit ^p	<i>Lepus californicus</i>	SSC	8.97	1.91	0.00	10.05	0.10	0.37	0.75	0.00	0.19	59.94	82.28
Mohave ground squirrel	<i>Xerospermophilus mohavensis</i>	FS, ST	8.97	1.91	0.00	10.05	0.00	0.00	0.25	0.00	0.00	0.00	21.18
Round-tailed ground squirrel ^q	<i>Xerospermophilus tereticaudus</i>	FS, SSC	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02
San Joaquin pocket mouse	<i>Perognathus inornatus</i>	FS	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.91
Great Basin pocket mouse	<i>Perognathus parvus</i>	FS, SSC	5.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.33
Little pocket mouse ^r	<i>Perognathus longimembris</i>	FE, SSC	5.33	0.00	0.00	0.18	0.10	0.00	0.75	0.00	0.02	0.00	6.38
Merriam's kangaroo rat ^s	<i>Dipodomys merriami</i>	FE, SCE, SSC	8.97	1.91	0.00	10.05	0.10	0.00	0.75	0.00	0.19	0.00	21.97
Deer mouse ^t	<i>Peromyscus maniculatus</i>	SSC	8.97	1.91	0.15	10.05	0.10	0.37	0.75	0.00	0.19	59.94	82.43
Southern grasshopper mouse	<i>Onychomys torridus</i>	SSC	8.97	1.91	0.00	10.05	0.10	0.00	0.00	0.00	0.19	0.00	21.22
Desert woodrat ^u	<i>Neotoma lepida</i>	SSC	8.97	0.00	0.00	10.05	0.10	0.00	0.75	0.00	0.19	0.00	20.06
California vole	<i>Microtus californicus</i>	FE, SE	5.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	5.35

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Desert Wash	Irrigated Row and Field Crops	Joshua Tree	Lacustrine	Sagebrush	Urban	Total
Kit fox ^v	<i>Vulpes macrotis</i>	FE, ST	8.97	1.91	0.15	10.05	0.10	0.00	0.75	0.00	0.19	0.00	22.12
Ringtail	<i>Bassariscus astutus</i>	SFP	6.75	0.54	0.15	4.96	0.10	0.00	0.50	0.00	0.00	0.00	13.00
American badger	<i>Taxidea taxus</i>	SSC	8.97	1.91	0.15	10.05	0.10	0.37	0.75	0.00	0.19	0.00	22.49
Western spotted skunk ^w	<i>Spilogale gracilis</i>	SSC	8.97	1.91	0.00	0.00	0.00	0.37	0.00	0.00	0.18	59.89	71.32
Mountain lion	<i>Puma concolor</i>	ST	0.00	0.00	0.00	0.18	0.02	0.00	0.50	0.00	0.00	0.00	0.70
Bighorn sheep	<i>Ovis canadensis</i>	SFP	5.34	0.00	0.00	0.18	0.10	0.00	0.00	0.00	0.00	0.00	5.62
Total	N/A	N/A	8.97	1.91	0.15	10.05	0.10	0.37	0.75	0.23	0.19	59.94	82.66

Notes: FE = federally endangered; FS = federally 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

^a Desert night lizard: Only the Sierra subspecies (*Xantusia vigilis sierrae*) is special status, and it does not occur in the GAI.

^b Coachwhip: Only the San Joaquin subspecies (*Masticophis flagellum ruddocki*) is special status, and it does not occur in the GAI.

^c Scientific name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).

^d Western patch-nosed snake: Only the Coast subspecies (*Salvadora hexalepis virgulata*) is special status, and it does not occur in the GAI.

^e American white pelican: This species is only considered special status in the portion of its range where it nests, and it does not nest in the GAI.

^f California quail: Only the Catalina subspecies (*Callipepla californica catalinensis*) is special status, and it does not occur in the GAI.

^g Cactus wren: Only the San Diego subspecies (*Campylorhynchus brunneicapillus sandiegensis*) is special status, and it does not occur in the GAI.

^h Bewick's wren: Only the San Clemente subspecies (*Thryomanes bewickii leucophrys*) is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).

ⁱ Le Conte's thrasher: Only the San Joaquin population is special status, and it does not occur in the GAI.

^j Spotted towhee: Only the San Clemente subspecies (*Pipilo maculatus clementae*) is special status, and it does not occur in the GAI.

^k Bell's sparrow: Only the San Clemente subspecies (*Artemisiospiza belli clementae*) is special status, and it does not occur in the GAI.

^l Savannah sparrow: There are three special-status subspecies of savannah sparrow, none of which occur in the GAI.

^m Song sparrow: There are five special-status subspecies of song sparrow, none of which occur in the GAI.

ⁿ Red-winged blackbird: Only the Kern subspecies (*Agelaius phoeniceus aciculatus*) is special status, and it does not occur in the GAI (restricted to Lake Isabella and Walker Basin).

^o Brush rabbit: Only the riparian subspecies (*Sylvilagus bachmani riparius*) is special status, and it does not occur in the GAI.

^p Black-tailed jackrabbit: Only the San Diego subspecies (*Lepus californicus benettii*) is special status, and it does not occur in the GAI.

^q Round-tailed ground squirrel: Only the Palm Springs subspecies (*Xerospermophilus tereticaudus chlorus*) is special status, and it does not occur in the GAI.

^r Little pocket mouse: There are four special-status subspecies of little pocket mouse, none of which occur in the GAI.

^s Merriam's kangaroo rat: Only the San Bernardino subspecies (*Dipodomys merriami parvus*) is special status, and it does not occur in the GAI.

^t Deer mouse: Only the Anacapa and San Clemente Island subspecies (*Peromyscus maniculatus anacapae* and *Peromyscus maniculatus clementis*) are special status, and they do not occur in the GAI.

^u Desert woodrat: Only the San Diego subspecies (*Neotoma lepida intermedia*) is special status, and it does not occur in the GAI.

^v Kit fox: Only the San Joaquin subspecies (*Vulpes macrotis mutica*) is special status, and it does not occur in the GAI.

^w Western spotted skunk: Only the Channel Islands subspecies (*Spilogale gracilis amphiala*) is special status, and it does not occur in the GAI.

Table C-2. Complete SAMNA Results for the Sierra Nevada Section in the GAI, by Land Cover (acres)

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Juniper	Urban	Total
Plants	See below	See below	See below	See below	See below	See below	See below	See below	See below
Lane Mountain milk-vetch ^a	<i>Astragalus jaegerianus</i>	FE	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Kaweah brodiaea ^a	<i>Brodiaea insignis</i>	FS, SE	0.00	1.07	0.00	0.00	0.00	0.00	1.07
Succulent owl's-clover ^a	<i>Castilleja campestris</i> var. <i>succulenta</i>	FT, SE	0.00	1.07	0.00	0.00	0.00	0.00	1.07
Springville clarkia ^a	<i>Clarkia springvillensis</i>	FT, SE	0.00	1.07	0.00	0.00	0.00	0.00	1.07
Red Rock tarplant	<i>Deinandra arida</i>	SR	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Striped adobe-lily	<i>Fritillaria striata</i>	FS, ST	0.00	1.07	0.00	0.00	0.00	0.00	1.07
Rock lady ^a	<i>Holmgrenanthe petrophila</i>	SR	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Eureka Dunes evening-primrose ^a	<i>Oenothera californica</i> ssp. <i>eurekensis</i>	SR	0.00	0.00	0.00	0.07	0.00	0.00	0.07
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	FT, SE	0.00	1.07	0.00	0.00	0.00	0.00	1.07
Keck's checkerbloom ^a	<i>Sidalcea keckii</i>	FE	0.00	1.07	0.00	0.00	0.00	0.00	1.07
Eureka Valley dune grass ^a	<i>Swallenia alexandrae</i>	FT, SR	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Amphibians	See below	See below	See below	See below	See below	See below	See below	See below	See below
Foothill yellow-legged frog	<i>Rana boylei</i>	FS, SE, SSC	0.00	0.99	0.00	0.00	0.00	0.00	0.99

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Juniper	Urban	Total
Reptiles	See below	See below	See below	See below	See below	See below	See below	See below	See below
Mohave desert tortoise	<i>Gopherus agassizii</i>	FT, ST	0.01	0.25	0.35	0.27	0.00	0.00	0.88
Common sagebrush lizard	<i>Sceloporus graciosus</i>	FS	0.00	0.00	0.00	0.00	0.10	0.00	0.1
Desert night lizard ^b	<i>Xantusia vigilis</i>	FS, SSC	0.01	1.14	0.00	0.27	0.00	0.00	1.42
Blainville's horned lizard	<i>Phrynosoma blainvillii</i>	FS, SSC	0.01	1.14	0.00	0.00	0.10	0.00	1.25
California legless lizard	<i>Anniella pulchra</i>	FS, SSC	0.00	0.00	0.00	0.27	0.00	0.00	0.27
Coachwhip ^c	<i>Masticophis [Coluber] flagellum</i> ^d	SSC	0.01	1.14	0.00	0.27	0.10	0.00	1.52
Western patch-nosed snake ^e	<i>Salvadora hexalepis</i>	SSC	0.01	1.14	2.26	0.27	0.00	0.00	3.68
Common gartersnake ^f	<i>Thamnophis sirtalis</i>	SSC	0.00	0.99	0.00	0.00	0.00	0.00	0.99
Gophersnake	<i>Pituophis catenifer</i>	None	0.01	1.14	0.00	0.27	0.10	3.25	4.77
Birds	See below	See below	See below	See below	See below	See below	See below	See below	See below
American white pelican ^g	<i>Pelecanus erythrorhynchos</i>	SSC	0.00	0.00	0.05	0.00	0.00	0.00	0.05
Great blue heron	<i>Ardea herodias</i>	SFS	0.00	1.14	0.00	0.00	0.10	3.25	4.49
Osprey	<i>Pandion haliaetus</i>	SFS	0.01	1.14	2.26	0.27	0.10	0.00	3.78
White-tailed kite	<i>Elanus leucurus</i>	FS	0.00	0.00	0.05	0.13	0.00	0.00	0.18

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Juniper	Urban	Total
Bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SFS, SE, SFP	0.00	1.14	2.26	0.00	0.10	0.00	3.50
Northern harrier	<i>Circus hudsonius [cyaneus]^d</i>	SSC	0.01	1.14	2.26	0.27	0.10	3.25	7.03
Swainson's hawk	<i>Buteo swainsoni</i>	FS, ST	0.00	0.00	0.05	0.13	0.00	0.00	0.18
Golden eagle	<i>Aquila chrysaetos</i>	FS, SFS, SFP	0.01	1.14	2.26	0.27	0.10	3.25	7.03
Peregrine falcon	<i>Falco peregrinus</i>	FS, SFP	0.00	1.14	2.26	0.00	0.10	3.25	6.75
California condor	<i>Gymnogyps californianus</i>	FE, FS, SE, SFP	0.00	0.99	0.00	0.00	0.00	0.00	0.99
California quail ^h	<i>Callipepla californica</i>	SSC	0.01	1.14	0.00	0.27	0.10	3.25	4.77
Burrowing owl	<i>Athene cunicularia</i>	FS, SSC	0.00	0.99	1.95	0.13	0.00	3.00	6.07
Long-eared owl	<i>Asio otus</i>	SSC	0.00	1.14	0.00	0.27	0.10	0.00	1.51
Purple martin	<i>Progne subis</i>	SSC	0.00	0.99	0.00	0.00	0.00	3.00	3.99
Cactus wren ⁱ	<i>Campylorhynchus brunneicapillus</i>	FS, SSC	0.00	0.00	0.00	0.27	0.00	0.26	0.53
Bewick's wren ^j	<i>Thryomanes bewickii</i>	SSC	0.00	0.00	0.00	0.00	0.10	3.25	3.35
Le Conte's thrasher ^k	<i>Toxostoma lecontei</i>	FS, SSC	0.01	0.00	0.00	0.27	0.00	0.00	0.28
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	0.01	1.14	2.26	0.27	0.10	3.25	7.03

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Juniper	Urban	Total
Hutton's vireo ^l	<i>Vireo huttoni</i>	SSC	0.00	0.00	0.00	0.00	0.00	2.43	2.43
Yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	0.00	0.00	0.00	0.00	3.00	3.00
Spotted towhee ^m	<i>Pipilo maculatus</i>	SSC	0.00	0.00	0.00	0.00	0.10	3.25	3.35
California towhee ⁿ	<i>Melospiza [Pipilo] crissalis</i> ^d	FT, SE	0.00	0.00	0.00	0.00	0.00	3.00	3.00
Common yellowthroat ^o	<i>Geothlypis trichas</i>	SSC	0.00	0.99	0.00	0.00	0.00	0.00	0.99
Rufous-crowned sparrow ^p	<i>Aimophila ruficeps</i>	SSC	0.00	0.99	0.00	0.00	0.00	0.00	0.99
Bell's sparrow ^q	<i>Artemisiospiza belli</i>	FT, SSC	0.01	0.00	0.00	0.27	0.10	0.00	0.38
Savannah sparrow ^r	<i>Passerculus sandwichensis</i>	SE	0.01	1.14	0.00	0.27	0.10	0.00	1.52
Song sparrow ^s	<i>Melospiza melodia</i>	SSC	0.00	1.14	0.00	0.00	0.00	3.25	4.39
Red-winged blackbird ^t	<i>Agelaius phoeniceus</i>	SSC	0.00	1.14	0.00	0.00	0.00	3.25	4.39
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SSC	0.00	0.25	0.00	0.00	0.00	0.00	0.25
Mammals	See below	See below	See below	See below	See below	See below	See below	See below	See below
Ornate shrew ^u	<i>Sorex ornatus</i>	SSC	0.00	0.99	0.00	0.00	0.00	0.00	0.99
Broad-footed mole ^v	<i>Scapanus latimanus</i>	SSC	0.00	1.14	0.00	0.00	0.00	0.00	1.14
Yuma myotis	<i>Myotis yumanensis</i>	FS	0.01	1.14	0.00	0.22	0.10	3.23	4.70

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Juniper	Urban	Total
Long-eared myotis	<i>Myotis evotis</i>	FS	0.00	0.00	1.90	0.00	0.00	0.00	1.90
Fringed myotis	<i>Myotis thysanodes</i>	FS	0.00	1.14	2.26	0.00	0.10	3.25	6.75
Small-footed myotis	<i>Myotis ciliolabrum</i>	FS	0.00	0.99	1.90	0.09	0.00	3.00	5.98
Spotted bat	<i>Euderma maculatum</i>	FS, SSC	0.01	1.14	0.00	0.27	0.10	3.25	4.77
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	0.01	1.14	2.26	0.27	0.10	3.25	7.03
Pallid bat	<i>Antrozous pallidus</i>	FS, SSC	0.01	1.14	2.26	0.27	0.10	3.25	7.03
Western mastiff bat	<i>Eumops perotis</i>	FS, SSC	0.01	1.14	2.26	0.27	0.10	3.25	7.03
Brush rabbit ^w	<i>Sylvilagus bachmani</i>	FE, SE	0.01	1.14	0.00	0.00	0.00	3.25	4.40
Black-tailed jackrabbit ^x	<i>Lepus californicus</i>	SSC	0.01	1.14	0.00	0.27	0.10	3.25	4.77
Mohave ground squirrel	<i>Xerospermophilus mohavensis</i>	FS, ST	0.01	0.25	0.00	0.27	0.00	0.00	0.53
Little pocket mouse ^y	<i>Perognathus longimembris</i>	FE, SSC	0.00	0.00	0.00	0.07	0.00	0.00	0.07
California pocket mouse ^z	<i>Chaetodipus californicus</i>	SSC	0.00	1.14	0.00	0.00	0.00	0.00	1.14
San Joaquin pocket mouse	<i>Perognathus inornatus</i>	FS	0.00	1.14	2.26	0.00	0.00	0.00	3.40
Merriam's kangaroo rat ^{aa}	<i>Dipodomys merriami</i>	FE, SCE, SSC	0.01	0.25	0.00	0.27	0.00	0.00	0.53

Common Name	Scientific Name	Status	Alkali Desert Scrub	Annual Grassland	Barren	Desert Scrub	Juniper	Urban	Total
Deer mouse ^{bb}	<i>Peromyscus maniculatus</i>	SSC	0.01	1.14	2.26	0.27	0.10	3.25	7.03
Southern grasshopper mouse	<i>Onychomys torridus</i>	SSC	0.01	1.14	0.00	0.27	0.00	0.00	1.42
Desert woodrat ^{cc}	<i>Neotoma lepida</i>	SSC	0.01	0.00	0.00	0.27	0.00	0.00	0.28
California vole ^{dd}	<i>Microtus californicus</i>	FE, SE	0.00	0.99	0.00	0.00	0.00	2.43	3.42
Kit fox ^{ee}	<i>Vulpes macrotis</i>	FE, ST	0.00	0.00	0.05	0.13	0.00	0.00	0.18
Ringtail	<i>Bassariscus astutus</i>	SFP	0.01	1.14	2.26	0.27	0.10	0.00	3.78
American badger	<i>Taxidea taxus</i>	SSC	0.01	1.14	2.26	0.27	0.10	0.00	3.78
Western spotted skunk ^{ff}	<i>Spilogale gracilis</i>	SSC	0.01	1.14	0.00	0.00	0.10	3.25	4.50
Mountain lion	<i>Puma concolor</i>	ST	0.00	1.14	0.00	0.27	0.10	0.00	1.51
Bighorn sheep	<i>Ovis canadensis</i>	FE, SE, SFP	0.01	0.00	0.00	0.27	0.00	0.00	0.28
Total N/A			0.01	1.14	2.26	0.27	0.10	3.25	7.03

Notes: FE = federally endangered; FS = federally 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

^a This plant species does not occur in the Sierra Nevada Section of the GAI.

^b Desert night lizard: Only the Sierra subspecies (*Xantusia vigilis sierrae*) is special status, and it does not occur in the GAI.

^c Coachwhip: Only the San Joaquin subspecies (*Masticophis flagellum ruddocki*) is special status, and it does not occur in the GAI.

^d Scientific name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).

^e Western patch-nosed snake: Only the Coast subspecies (*Salvadora hexalepis virgulata*) is special status, and it does not occur in the GAI.

^f Common gartersnake: Only the South Coast population is special status, and it does not occur in the GAI.

^g American white pelican: Only considered special status in the portion of its range where it nests, and it does not nest in the GAI.

^h California quail: Only the Catalina subspecies (*Callipepla californica catalinensis*) is special status, and it does not occur in the GAI.

- ⁱ Cactus wren: Only the San Diego subspecies (*Campylorhynchus brunneicapillus sandiegensis*) is special status, and it does not occur in the GAI.
- ^j Bewick's wren: Only the San Clemente subspecies (*Thryomanes bewickii leucophrys*) is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).
- ^k Le Conte's thrasher: Only the San Joaquin population is special status, and it does not occur in the GAI.
- ^l Hutton's vireo: Only the Catalina subspecies (*Vireo huttoni unitti*) is special status, and it does not occur in the GAI.
- ^m Spotted towhee: Only the San Clemente subspecies (*Pipilo maculatus clementae*) is special status, and it does not occur in the GAI.
- ⁿ California towhee: Only the Inyo subspecies (*Melospiza crissalis eremophilus*) is special status, and it does not occur in the Sierra Nevada section of the GAI.
- ^o Common yellowthroat: Only the San Francisco/saltmarsh subspecies (*Geothlypis trichas sinuosa*) is special status, and it does not occur in the GAI.
- ^p Rufous-crowned sparrow: Only the Santa Cruz Island subspecies (*Aimophila ruficeps obscura*) is special status, and it does not occur in the GAI.
- ^q Bell's sparrow: Only the San Clemente subspecies (*Artemisospiza belli clementae*) is special status, and it does not occur in the GAI.
- ^r Savannah sparrow: There are three special-status subspecies of savannah sparrow, none of which occur in the GAI.
- ^s Song sparrow: There are five special-status subspecies of song sparrow, none of which occur in the GAI.
- ^t Red-winged blackbird: Only the Kern subspecies (*Agelaius phoeniceus aciculatus*) is special status, and it does not occur in the GAI (restricted to Lake Isabella and Walker Basin).
- ^u Ornate shrew: There are five special-status subspecies of ornate shrew, none of which occur in the GAI.
- ^v Broad-footed mole: Only the Alameda Island subspecies (*Scapanus latimanus parvus*) is special status, and it does not occur in the GAI.
- ^w Brush rabbit: Only the riparian subspecies (*Sylvilagus bachmani riparius*) is special status, and it does not occur in the GAI.
- ^x Black-tailed jackrabbit: Only the San Diego subspecies (*Lepus californicus benettii*) is special status, and it does not occur in the GAI.
- ^y Little pocket mouse: There are four special-status subspecies of little pocket mouse, none of which occur in the GAI.
- ^z California pocket mouse: Only the Dulzura subspecies (*Chaetodipus californicus femoralis*) is special status, and it does not occur in the GAI.
- ^{aa} Merriam's kangaroo rat: Only the San Bernardino subspecies (*Dipodomys merriami parvus*) is special status, and it does not occur in the GAI.
- ^{bb} Deer mouse: Only the Anacapa and San Clemente Island subspecies (*Peromyscus maniculatus anacapae* and *Peromyscus maniculatus clementis*) are special status, and they do not occur in the GAI.
- ^{cc} Desert woodrat: Only the San Diego subspecies (*Neotoma lepida intermedia*) is special status, and it does not occur in the GAI.
- ^{dd} California vole: There are five special-status subspecies of California vole, none of which occur in the Sierra Nevada section of the GAI.
- ^{ee} Kit fox: Only the San Joaquin subspecies (*Vulpes macrotis mutica*) is special status, and it does not occur in the GAI.
- ^{ff} Western spotted skunk: Only the Channel Islands subspecies (*Spilogale gracilis amphiala*) is special status, and it does not occur in the GAI.

Table C-3. Complete SAMNA Results for the Southern California Mountains and Valleys Section in the GAI, by Land Cover (acres)

Common Name	Scientific Name	Status	Barren	Eastside Pine	Jeffrey Pine	Montane Chaparral	Sierran Mixed Conifer	Urban	Total
Amphibians	See below	See below	See below	See below	See below	See below	See below	See below	See below
Ensatina ^a	<i>Ensatina eschscholtzii</i>	FS	0.00	0.00	0.00	0.17	0.15	0.00	0.32
Southern mountain yellow-legged frog	<i>Rana muscosa</i>	FE, FS, SE	0.00	0.00	0.04	0.00	0.15	0.00	0.19
San Gabriel slender salamander	<i>Batrachoseps gabrieli</i>	FS	0.26	0.00	0.00	0.00	0.00	0.00	0.26
Reptiles	See below	See below	See below	See below	See below	See below	See below	See below	See below
Common sagebrush lizard ^b	<i>Sceloporus graciosus</i>	FS	0.00	0.05	0.04	0.17	0.15	0.00	0.41
Desert night lizard ^c	<i>Xantusia vigilis</i>	FS, SSC	0.00	0.05	0.00	0.00	0.00	0.00	0.05
Western skink ^d	<i>Plestiodon skiltonianus</i>	FS	0.00	0.00	0.00	0.17	0.15	0.00	0.32
Ring-necked snake	<i>Diadophis punctatus</i>	FS	0.00	0.00	0.00	0.00	0.00	0.40	0.40
Striped racer ^e	<i>Masticophis [Coluber] lateralis</i> ^f	FT, ST	0.00	0.00	0.00	0.17	0.15	0.00	0.32
Western patch-nosed snake ^g	<i>Salvadora hexalepis</i>	SSC	0.41	0.00	0.00	0.17	0.00	0.00	0.58
Gophersnake	<i>Pituophis catenifer</i>	None	0.00	0.05	0.04	0.17	0.15	0.71	1.12
California mountain kingsnake	<i>Lampropeltis zonata</i>	None	0.00	0.00	0.04	0.17	0.15	0.00	0.36
California mountain kingsnake (San Bernardino population)	<i>Lampropeltis zonata parviruba</i>	FS	0.00	0.00	0.04	0.17	0.15	0.00	0.36

Common Name	Scientific Name	Status	Barren	Eastside Pine	Jeffrey Pine	Montane Chaparral	Sierran Mixed Conifer	Urban	Total
Two-striped gartersnake	<i>Thamnophis hammondi</i>	FS, SSC	0.00	0.00	0.04	0.17	0.00	0.00	0.21
Birds	See below	See below	See below	See below	See below	See below	See below	See below	See below
American white pelican ^h	<i>Pelecanus erythrorhynchos</i>	SSC	0.41	0.00	0.00	0.00	0.00	0.00	0.41
Great blue heron	<i>Ardea herodias</i>	SFS	0.00	0.05	0.00	0.00	0.15	0.71	0.91
Osprey	<i>Pandion haliaetus</i>	SFS	0.41	0.05	0.04	0.17	0.15	0.00	0.82
Bald eagle	<i>Haliaeetus leucocephalus</i>	FS, SFS, SE, SFP	0.41	0.05	0.04	0.17	0.15	0.00	0.82
Northern harrier	<i>Circus hudsonius [cyaneus]</i> ^f	SSC	0.04	0.00	0.00	0.00	0.15	0.35	0.54
Northern goshawk	<i>Accipiter gentilis</i>	FS, SFS, SSC	0.00	0.05	0.04	0.17	0.15	0.00	0.41
Golden eagle	<i>Aquila chrysaetos</i>	FS, SFS, SFP	0.41	0.05	0.04	0.17	0.15	0.71	1.53
Peregrine falcon	<i>Falco peregrinus</i>	FS, SFP	0.41	0.05	0.04	0.17	0.15	0.71	1.53
California quail ⁱ	<i>Callipepla californica</i>	SSC	0.00	0.05	0.00	0.17	0.15	0.71	1.08
Spotted owl ^j	<i>Strix occidentalis</i>	FT, ST	0.00	0.05	0.04	0.00	0.15	0.00	0.24
California spotted owl	<i>Strix occidentalis occidentalis</i>	FS, SSC	0.00	0.05	0.04	0.00	0.15	0.00	0.24

Common Name	Scientific Name	Status	Barren	Eastside Pine	Jeffrey Pine	Montane Chaparral	Sierran Mixed Conifer	Urban	Total
Long-eared owl	<i>Asio otus</i>	SSC	0.00	0.05	0.00	0.17	0.15	0.00	0.37
Black swift	<i>Cypseloides niger</i>	SSC	0.04	0.00	0.00	0.00	0.00	0.58	0.62
Olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	0.00	0.05	0.04	0.00	0.15	0.00	0.24
Purple martin	<i>Progne subis</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.61	0.61
Cactus wren ^k	<i>Campylorhynchus brunneicapillus</i>	FS, SSC	0.00	0.00	0.00	0.00	0.00	0.71	0.71
Bewick's wren ^l	<i>Thryomanes bewickii</i>	SSC	0.00	0.00	0.00	0.17	0.00	0.71	0.88
Loggerhead shrike	<i>Lanius ludovicianus</i>	SSC	0.41	0.05	0.04	0.00	0.00	0.71	1.21
Hutton's vireo ^m	<i>Vireo huttoni</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.24	0.24
Yellow warbler	<i>Setophaga petechia</i>	SSC	0.00	0.05	0.04	0.17	0.15	0.71	1.12
Spotted towhee ⁿ	<i>Pipilo maculatus</i>	SSC	0.00	0.05	0.04	0.17	0.15	0.71	1.12
California towhee ^o	<i>Melospiza [Pipilo] crissalis</i> ^f	FT, SE	0.00	0.00	0.00	0.17	0.00	0.71	0.88
Bell's sparrow ^p	<i>Artemisiospiza belli</i>	FT, SSC	0.00	0.05	0.00	0.17	0.00	0.00	0.22
Song sparrow ^q	<i>Melospiza melodia</i>	SSC	0.00	0.05	0.04	0.00	0.15	0.71	0.95
Red-winged blackbird ^r	<i>Agelaius phoeniceus</i>	SSC	0.00	0.00	0.00	0.00	0.00	0.71	0.71

Common Name	Scientific Name	Status	Barren	Eastside Pine	Jeffrey Pine	Montane Chaparral	Sierran Mixed Conifer	Urban	Total
Mammals	See below	See below	See below	See below	See below	See below	See below	See below	See below
Ornate shrew ^s	<i>Sorex ornatus</i>	SSC	0.00	0.00	0.00	0.17	0.15	0.00	0.32
Broad-footed mole ^t	<i>Scapanus latimanus</i>	SSC	0.00	0.05	0.04	0.00	0.15	0.00	0.24
Yuma myotis	<i>Myotis yumanensis</i>	FS	0.00	0.05	0.04	0.17	0.15	0.71	1.12
Long-eared myotis	<i>Myotis evotis</i>	FS	0.41	0.05	0.04	0.17	0.15	0.00	0.82
Fringed myotis	<i>Myotis thysanodes</i>	FS	0.41	0.05	0.04	0.17	0.15	0.71	1.53
Small-footed myotis	<i>Myotis ciliolabrum</i>	FS	0.41	0.05	0.04	0.17	0.15	0.71	1.53
Spotted bat	<i>Euderma maculatum</i>	FS, SSC	0.00	0.05	0.04	0.17	0.15	0.71	1.12
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	FS, SSC	0.41	0.05	0.04	0.17	0.15	0.71	1.53
Pallid bat	<i>Antrozous pallidus</i>	FS, SSC	0.41	0.05	0.04	0.17	0.15	0.71	1.53
Western mastiff bat	<i>Eumops perotis</i>	FS, SSC	0.41	0.00	0.00	0.17	0.00	0.71	1.29
Brush rabbit ^u	<i>Sylvilagus bachmani</i>	FE, SE	0.00	0.00	0.00	0.00	0.00	0.24	0.24
Black-tailed jackrabbit ^v	<i>Lepus californicus</i>	SSC	0.00	0.00	0.00	0.00	0.15	0.68	0.83
Lodgepole chipmunk	<i>Neotamias [Tamias] speciosus</i> ^f	FS	0.00	0.00	0.04	0.17	0.00	0.00	0.21
Northern flying squirrel	<i>Glaucomys sabrinus</i>	None	0.00	0.05	0.02	0.00	0.00	0.00	0.07

Common Name	Scientific Name	Status	Barren	Eastside Pine	Jeffrey Pine	Montane Chaparral	Sierran Mixed Conifer	Urban	Total
San Bernardino flying squirrel ^w	<i>Glaucomys oregonensis [sabrinus] californicus</i> ^f	FS, SSC	0.00	0.05	0.02	0.00	0.00	0.00	0.07
California pocket mouse ^x	<i>Chaetodipus californicus</i>	SSC	0.00	0.00	0.00	0.17	0.00	0.00	0.17
Deer mouse ^y	<i>Peromyscus maniculatus</i>	SSC	0.41	0.05	0.04	0.17	0.15	0.71	1.53
Desert woodrat ^z	<i>Neotoma lepida</i>	SSC	0.00	0.00	0.00	0.17	0.00	0.00	0.17
California vole ^{aa}	<i>Microtus californicus</i>	FE, SE	0.00	0.05	0.00	0.17	0.15	0.71	1.08
Ringtail	<i>Bassariscus astutus</i>	SFP	0.41	0.05	0.04	0.17	0.15	0.00	0.82
American badger	<i>Taxidea taxus</i>	SSC	0.41	0.05	0.04	0.17	0.15	0.00	0.82
Western spotted skunk ^{bb}	<i>Spilogale gracilis</i>	SSC	0.00	0.05	0.04	0.17	0.15	0.71	1.12
Mountain lion	<i>Puma concolor</i>	ST	0.00	0.05	0.04	0.17	0.15	0.00	0.41
Big-eared woodrat ^{cc}	<i>Neotoma macrotis</i>	FS, SSC	0.00	0.00	0.00	0.17	0.15	0.00	0.32
Total	N/A	N/A	0.41	0.05	0.04	0.17	0.15	0.71	1.53

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

^a Ensatina: Only the yellow-blotched subspecies (*Ensatina eschscholtzii croceator*) is special status, and it does not occur in the Southern California Mountains and Valleys Section of the GAI.

^b Common sagebrush lizard: Only the northern subspecies (*Sceloporus graciosus graciosus*) is special status, and it does not occur in the Southern California Mountains and Valleys Section of the GAI.

^c Desert night lizard: Only the Sierra subspecies (*Xantusia vigilis sierrae*) is special status, and it does not occur in the GAI.

^d Western skink: Only the Coronado subspecies (*Plestiodon skiltonianus interparietalis*) is special status, and it does not occur in the GAI.

^e Striped racer: Only the Alameda subspecies (*Masticophis lateralis euryxanthus*) is special status, and it does not occur in the GAI.

- ^f Scientific name or regulatory status has changed since the SAMNA model was run (Caltrans 2021).
- ^g Western patch-nosed snake: Only the Coast subspecies (*Salvadora hexalepis virgulata*) is special status, and it does not occur in the GAI.
- ^h American white pelican: Only considered special status in the portion of its range where it nests, and it does not nest in the GAI.
- ⁱ California quail: Only the Catalina subspecies (*Callipepla californica catalinensis*) is special status, and it does not occur in the GAI.
- ^j Spotted owl: The northern subspecies (*Strix occidentalis caurina*) is state and federally listed threatened, and it does not occur in the GAI.
- ^k Cactus wren: Only the San Diego subspecies (*Campylorhynchus brunneicapillus sandiegensis*) is special status, and it does not occur in the GAI.
- ^l Bewick's wren: Only the San Clemente subspecies (*Thryomanes bewickii leucophrys*) is special status, and it does not occur in the GAI (was endemic to San Clemente Island and is now extinct).
- ^m Hutton's vireo: Only the Catalina subspecies (*Vireo huttoni unitti*) is special status, and it does not occur in the GAI.
- ⁿ Spotted towhee: Only the San Clemente subspecies (*Pipilo maculatus clementae*) is special status, and it does not occur in the GAI.
- ^o California towhee: Only the Inyo subspecies (*Melospiza crissalis eremophilus*) is special status, and it does not occur in the Southern California Mountains and Valleys section of the GAI.
- ^p Bell's sparrow: Only the San Clemente subspecies (*Artemisiospiza belli clementae*) is special status, and it does not occur in the GAI.
- ^q Song sparrow: There are five special-status subspecies of song sparrow, none of which occur in the GAI.
- ^r Red-winged blackbird: Only the Kern subspecies (*Agelaius phoeniceus aciculatus*) is special status, and it does not occur in the GAI (restricted to Lake Isabella and Walker Basin).
- ^s Ornate shrew: There are five special-status subspecies of ornate shrew, none of which occur in the GAI.
- ^t Broad-footed mole: Only the Alameda Island subspecies (*Scapanus latimanus parvus*) is special status, and it does not occur in the GAI.
- ^u Brush rabbit: Only the riparian subspecies (*Sylvilagus bachmani riparius*) is special status, and it does not occur in the GAI.
- ^v Black-tailed jackrabbit: Only the San Diego subspecies (*Lepus californicus benettii*) is special status, and it does not occur in the GAI.
- ^w San Bernardino flying squirrel: This subspecies does not occur in the GAI.
- ^x California pocket mouse: Only the Dulzura subspecies (*Chaetodipus californicus femoralis*) is special status, and it does not occur in the GAI.
- ^y Deer mouse: Only the Anacapa and San Clemente Island subspecies (*Peromyscus maniculatus anacapae* and *Peromyscus maniculatus clementis*) are special status, and they do not occur in the GAI.
- ^z Desert woodrat: Only the San Diego subspecies (*Neotoma lepida intermedia*) is special status, and it does not occur in the GAI.
- ^{aa} California vole: There are five special-status subspecies of California vole, none of which occur in the Southern California Mountains and Valleys section of the GAI.
- ^{bb} Western spotted skunk: Only the Channel Islands subspecies (*Spilogale gracilis amphiala*) is special status, and it does not occur in the GAI.
- ^{cc} Big-eared woodrat: Only the Monterey subspecies (*Neotoma macrotis luciana*) is special status, and it does not occur in the GAI.

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APPENDIX D: HYDROLOGIC UNITS

Sub-basin Descriptions

Seven 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.

Antelope-Fremont Valleys Sub-basin

The Antelope-Fremont Valleys sub-basin drains an area of approximately 2,155,221 acres (3,368 square miles) and includes 3,120 rivers and streams that traverse 4,383 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Antelope-Fremont Valleys sub-basin includes portions of the Antelope, Cuddeback, Fremont, Grapevine, Indian Wells, Kern River, Los Angeles River, Mojave, San Gabriel River, Santa Clara-Calleguas, and Trona HUs.

The Antelope HU corresponds to the Antelope Valley basin, an enclosed inland basin that is bounded by the Tehachapi Mountains and Garlock Fault Zone to the north and west, and the San Gabriel Mountains and San Andreas Rift Zone to the south and west. Streams originate in the mountains and foothills surrounding the valley, and eventually pond in dry lakes (Los Angeles County Department of Public Works 1987). The part of the Antelope HU that lies within the Antelope-Fremont Valleys sub-basin includes portions of the Buttes, Chafee, Gloster, Lancaster, Neenach, North Muroc, Rock Creek, and Willow Springs hydrologic areas.

The Cuddeback HU includes the watershed of the Cuddeback dry lake basin.

The part of the Fremont HU that lies within the Antelope-Fremont Valleys sub-basin includes portions of the Dove Springs, East Tehachapi, Kelson Landis, and Koehn hydrologic areas.

The part of the Grapevine HU that lies within the Antelope-Fremont Valleys sub-basin includes portions of the Tehachapi Creek, Tejon Creek, and San Emigdio hydrologic areas.

The part of the Indian Wells HU that lies within the Antelope-Fremont Valleys sub-basin includes a portion of the Rose hydrologic area.

The Kern River HU is associated with the Kern River, flowing approximately 165 miles. The north fork of the Kern River originates within Sequoia National Park, west of Mount Whitney. The south fork of the Kern River originates within the Inyo National Forest. Both forks meet at Isabella Dam and flow approximately 30 miles southwest before emptying onto the Central Valley floor (Kern River Watershed Coalition Authority 2014). The GAI only includes the extreme eastern portion of the Kern River HU, which includes a portion of the Upper Kern hydrologic area near the headwaters of the Kern River.

The Los Angeles River HU is associated with the Los Angeles River, Big Tujunga Creek, and Rio Hondo watersheds. The Los Angeles River is approximately 55 miles long and

originates in the Santa Monica, Santa Susana, and San Gabriel Mountains, flowing from areas covered by forest or open space land through highly urbanized areas. Lower parts of the river are highly modified and lined with concrete (Los Angeles RWQCB 2014). The GAI only includes the extreme northern portion of the Los Angeles River HU, which includes a portion of the San Fernando hydrologic area.

The Mojave HU is associated with the Mojave River, its surface waters originating on the northern slope of the San Bernardino Mountains, flowing approximately 110 miles through the Mojave Desert, and ultimately terminating at Soda Lake. The main stem forms upstream of the Mojave Forks Dam, north of the GAI at the confluence of Deep Creek, a perennial stream, and the West Fork Mojave River, typically an ephemeral stream (Lahontan RWQCB 2019). The part of the Mojave HU that lies within the Antelope-Fremont Valleys sub-basin includes portions of the El Mirage, Lockhart, and Middle Mojave hydrologic areas.

The San Gabriel River HU includes the San Gabriel River, which originates in the San Gabriel Mountains, where the upper reaches of the river are in undisturbed riparian and woodland habitats. The middle reaches of the river have been modified to control flood and debris flows, and to recharge groundwater. The lower reaches are concrete-lined, flowing through urban areas of Los Angeles, ultimately discharging into the Pacific Ocean near the city of Long Beach (Los Angeles RWQCB 2014). The GAI only includes the extreme northern portion of the San Gabriel River HU, which includes a portion of the San Gabriel Valley hydrologic area.

The Santa Clara-Calleguas HU contains the Santa Clara River watershed and portions of the Calleguas Creek watershed. The headwaters of the Santa Clara River originate on the northern slope of the San Gabriel Mountains. The Santa Clara River ultimately discharges into the Pacific Ocean between the cities of Ventura and Oxnard (Kamer and Fairey 2005). The GAI only includes the extreme northern portion of the Santa Clara-Calleguas HU, which includes portions of the Piru and Upper Santa Clara hydrologic areas.

The part of the Trona HU that lies within the Antelope-Fremont Valleys sub-basin includes a portion of the Searles Valley hydrologic area.

Coyote-Cuddeback Lakes Sub-basin

The Coyote-Cuddeback Lakes sub-basin drains an area of approximately 1,182,408 acres (1,848 square miles) and includes 859 rivers and streams that traverse 1,730 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Coyote-Cuddeback Lakes sub-basin includes portions of the Amargosa, Antelope, Ballarat, Bicycle, Coyote, Cuddeback, Fremont, Goldstone, Granite, Leach, Mojave, Superior, and Trona HUs. Descriptions of the Antelope, Cuddeback, Fremont, and Mojave HUs are provided in the Antelope-Fremont Valleys sub-basin section. No descriptions were found for the Bicycle, Coyote, Goldstone, Leach, or Superior HUs.

The Amargosa HU is associated with the Amargosa River watershed, which originates in springs near Beatty, Nevada and terminates at the playa in Death Valley. The approximately 180-mile-long Amargosa River is mostly intermittent, except for portions of the river in the Amargosa Canyon area in California, and near Beatty, Nevada (The Nature Conservancy 2014). The part of the Amargosa HU that lies within the Coyote-Cuddeback Lakes sub-basin includes a portion of the Silurian Hills hydrologic area.

The part of the Antelope HU that lies within the Coyote-Cuddeback Lakes sub-basin includes a portion of the North Muroc hydrologic area.

The part of the Ballarat HU that lies within the Coyote-Cuddeback Lakes sub-basin includes a portion of the Robbers hydrologic area.

The part of the Fremont HU that lies within the Coyote-Cuddeback Lakes sub-basin includes a portion of the Koehn hydrologic area.

The part of the Granite HU that lies within the Coyote-Cuddeback Lakes sub-basin includes portions of the McLean and Nelson hydrologic areas.

The part of the Mojave HU that lies within the Coyote-Cuddeback Lakes sub-basin includes portions of the Afton, Lockhart, Lower Mojave, and Middle Mojave hydrologic areas.

The part of the Trona HU that lies within the Coyote-Cuddeback Lakes sub-basin includes portions of the Pilot Knob and Searles Valley hydrologic areas.

Death Valley-Lower Amargosa Sub-basin

The Death Valley-Lower Amargosa sub-basin drains an area of approximately 3,234,916 acres (5,055 square miles) and includes 2,581 rivers and streams that traverse 5,176 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Death Valley-Lower Amargosa sub-basin includes portions of the Amargosa, Ballarat, Bicycle, Eureka, Granite, Ivanpah, Leach, Mesquite, Mojave, Owlshead, Race Track, and Saline HUs. Descriptions of the Amargosa, Ballarat, and Granite HUs are provided in the Coyote-Cuddeback Lakes sub-basin section. A description of the Mojave HU is provided in the Antelope-Fremont Valleys sub-basin section. No descriptions were found for the Bicycle, Ivanpah, Leach, or Mesquite HUs.

The part of the Amargosa HU that lies within the Death Valley-Lower Amargosa sub-basin includes portions of the Amargosa Desert, Death Valley, Ryan, and Silurian Hills hydrologic areas.

The part of the Ballarat HU that lies within the Death Valley-Lower Amargosa sub-basin includes portions of the Brown, Panamint Valley, Robbers, Wild Rose, and Wingate Pass hydrologic areas.

The Eureka HU is associated with Eureka Valley in Inyo County, adjacent to the California-Nevada state line. The GAI only includes the extreme eastern portion of the Eureka HU, which includes portions of the Marble Bath and Marble Canyon hydrologic areas.

The part of the Granite HU that lies within the Death Valley-Lower Amargosa sub-basin includes portions of the McLean and Nelson hydrologic areas.

The part of the Mojave HU that lies within the Death Valley-Lower Amargosa sub-basin includes portions of the Afton, Baker, and Kelso hydrologic areas.

The part of the Owlshead HU that lies within the Death Valley-Lower Amargosa sub-basin includes portions of the Lost Lake and Owl Lake hydrologic areas.

The part of the Race Track HU that lies within the Death Valley-Lower Amargosa sub-basin includes portions of the Hidden Valley, Sand Flat, Teakettle Junction, and Ulida hydrologic areas.

The Saline HU is associated with the aquatic resources within Saline Valley in Inyo County, south of Eureka Valley and east of Owens Valley. The GAI only includes the extreme southern portion of the Saline HU, which includes portions of the Cameo and Salt Lake hydrologic areas.

Indian Wells-Searles Valleys Sub-basin

The Indian Wells-Searles Valleys sub-basin drains an area of approximately 1,292,390 acres (2,019 square miles) and includes 1,280 rivers and streams that traverse 2,205 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Indian Wells-Searles Valleys sub-basin includes portions of the Ballarat, Coso, Cuddeback, Fremont, Indian Wells, Kern River, Mojave, Owens, Superior, Trona, and Upper Cactus HUs. A description of the Ballarat HU is provided in the Coyote-Cuddeback Lakes sub-basin section. Descriptions of the Cuddeback, Fremont, Indian Wells, Kern River, Mojave, and Trona HUs are provided in the Antelope-Fremont Valleys sub-basin section. No descriptions were found for the Superior or Upper Cactus HUs.

The part of the Ballarat HU that lies within the Indian Wells-Searles Valleys sub-basin includes portions of the Brown, Darwin, Panamint Valley, and Robbers hydrologic areas.

The part of the Coso HU that lies within the Indian Wells-Searles Valleys sub-basin includes portions of the Airport and Wild Horse hydrologic areas.

The part of the Fremont HU that lies within the Indian Wells-Searles Valleys sub-basin includes portions of the Dove Springs and Koehn hydrologic areas.

The part of the Indian Wells HU that lies within the Indian Wells-Searles Valleys sub-basin includes portions of the China Lake and Rose hydrologic areas.

The part of the Kern River HU that lies within the Indian Wells-Searles Valleys sub-basin includes a portion of the Upper Kern hydrologic area.

The part of the Mojave HU that lies within the Indian Wells-Searles Valleys Lake sub-basin includes a portion of the Lockhart hydrologic area.

The Owens HU is associated with the aquatic resources located within Owens Valley, including the Owens River and its tributaries. The Owens River originates within Long Valley and flows south through Owens Valley, terminating at Owens Lake, now a dry

lakebed due to water from the Owens River being diverted to Los Angeles (Inyo County Water Department 2016). The part of the Owens HU that lies within the Indian Wells-Searles Valleys sub-basin includes a portion of the Centennial hydrologic area.

The part of the Trona HU that lies within the Indian Wells-Searles Valleys Lake sub-basin includes portions of the Pilot Knob, Salt Wells, and Searles Valley hydrologic areas.

Owens Lake Sub-basin

The Owens Lake sub-basin drains an area of approximately 877,197 acres (1,371 square miles) and includes 602 rivers and streams that traverse 1,070 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Owens Lake sub-basin includes portions of the Ballarat, Coso, Eureka, Indian Wells, Kern River, Kings River, Owens, Saline, and Upper Cactus HUs. A description of the Ballarat HU is provided in the Coyote-Cuddeback Lakes sub-basin section. A description of the Coso HU is provided in the Indian Wells-Searles Valleys sub-basin section. Descriptions of the Eureka, Owens, and Saline HUs are provided in the Death Valley-Lower Amargosa sub-basin section. Descriptions of the Indian Wells and Kern River HUs are provided in the Antelope-Fremont Valleys sub-basin section. No description was found for the Upper Cactus HU.

The part of the Ballarat HU that lies within the Owens Lake sub-basin includes portions of the Darwin and Santa Rosa Flat hydrologic areas.

The part of the Coso HU that lies within the Owens Lake sub-basin includes a portion of the Airport hydrologic area.

The part of the Eureka HU that lies within the Owens Lake sub-basin includes a portion of the Marble Canyon hydrologic area.

The part of the Indian Wells HU that lies within the Owens Lake sub-basin includes a portion of the Rose hydrologic area.

The part of the Kern River HU that lies within the Owens Lake sub-basin includes a portion of the Upper Kern hydrologic area.

The Kings River HU is associated with the Kings River, an approximately 272-mile-long waterway. The Kings River has headwaters in the Sierra Nevada and flows to the Central Valley, terminating at the Tulare Lake Basin (South Fork Kings River) and the confluence of the San Joaquin River at Mendota Pool (North Fork Kings River) (Water Education Foundation 2021). The GAI only includes the extreme eastern portion of the Kings River HU, which includes a portion of the Upper Kings hydrologic area.

The part of the Owens HU that lies within the Owens Lake sub-basin includes portions of the Centennial, Lower Owens, and Upper Owens hydrologic areas.

The part of the Saline HU that lies within the Owens Lake sub-basin includes a portion of the Salt Lake hydrologic area.

Panamint Valley Sub-basin

The Panamint Valley sub-basin drains an area of approximately 1,043,787 acres (1,631 square miles) and includes 1,005 rivers and streams that traverse 1,812 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Panamint Valley sub-basin includes portions of the Amargosa, Ballarat, Coso, Goldstone, Granite, Indian Wells, Leach, Owens, Owlshead, Saline, Superior, and Trona HUs. Descriptions of the Amargosa, Ballarat, and Granite HUs are provided in the Coyote-Cuddeback Lakes sub-basin section. A description of the Coso HU is provided in the Indian Wells-Searles Valleys sub-basin section. Descriptions of the Indian Wells and Trona HUs are provided in the Antelope-Fremont Valleys sub-basin section. Descriptions of the Owens, Owlshead, and Saline HUs are provided in the Death Valley-Lower Amargosa sub-basin section. No descriptions were found for the Goldstone, Leach, or Superior HUs.

The part of the Amargosa HU that lies within the Panamint Valley sub-basin includes a portion of the Death Valley hydrologic area.

The part of the Ballarat HU that lies within the Panamint Valley sub-basin includes portions of the Brown, Darwin, Lee Flat, Panamint Valley, Robbers, Santa Rosa Flat, Wild Rose, and Wingate Pass hydrologic areas.

The part of the Coso HU that lies within the Panamint Valley sub-basin includes portions of the Airport and Wild Horse hydrologic areas.

The part of the Granite HU that lies within the Panamint Valley sub-basin includes portions of the McLean and Nelson hydrologic areas.

The part of the Indian Wells HU that lies within the Panamint Valley sub-basin includes a portion of the China Lake hydrologic area.

The part of the Owens HU that lies within the Panamint Valley sub-basin includes portions of the Centennial and Lower Owens hydrologic areas.

The part of the Owlshead HU that lies within the Panamint Valley sub-basin includes a portion of the Lost Lake hydrologic area.

The part of the Saline HU that lies within the Panamint Valley sub-basin includes a portion of the Salt Lake hydrologic area.

The part of the Trona HU that lies within the Panamint Valley sub-basin includes portions of the Pilot Knob and Searles Valley hydrologic areas.

Upper Amargosa Sub-basin

The Upper Amargosa sub-basin drains an area of approximately 741,903 acres (1,159 square miles) and includes 626 rivers and streams that traverse 1,232 miles (Table 2-7 in Chapter 2, *Environmental Setting*). As noted in Table D-1, the Upper Amargosa sub-basin includes portions of the Amargosa, Mesquite, and Pahrump HUs. A description of the Amargosa HU is provided in the Coyote-Cuddeback Lakes sub-basin section. No descriptions were found for the Pahrump or Mesquite HUs.

The part of the Amargosa HU that lies within the Upper Amargosa sub-basin includes portions of the Amargosa Desert, Death Valley, Ryan, and Silurian Hills 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, the State Water Board 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 ^a	HU #	HU Name	HU Acreage ^a
18090206	Antelope-Fremont Valleys	2,155,257	403	Santa Clara-Calleguas	627,323
18090206	Antelope-Fremont Valleys	2,155,257	404	Santa Clara-Calleguas	567,432
18090206	Antelope-Fremont Valleys	2,155,257	405	San Gabriel River	454,267
18090206	Antelope-Fremont Valleys	2,155,257	412	Los Angeles River	533,853
18090206	Antelope-Fremont Valleys	2,155,257	554	Kern River	1,595,870
18090206	Antelope-Fremont Valleys	2,155,257	556	Grapevine	839,713
18090206	Antelope-Fremont Valleys	2,155,257	621	Trona	1,266,546
18090206	Antelope-Fremont Valleys	2,155,257	624	Indian Wells	728,222
18090206	Antelope-Fremont Valleys	2,155,257	625	Fremont	581,613
18090206	Antelope-Fremont Valleys	2,155,257	626	Antelope	973,883
18090206	Antelope-Fremont Valleys	2,155,257	627	Antelope	732,793
18090206	Antelope-Fremont Valleys	2,155,257	627	Cuddeback	732,793
18090206	Antelope-Fremont Valleys	2,155,257	628	Mojave	1,669,511
18090207	Coyote-Cuddeback Lakes	1,182,441	609	Amargosa	3,761,363
18090207	Coyote-Cuddeback Lakes	1,182,441	614	Leach	98,722
18090207	Coyote-Cuddeback Lakes	1,182,441	615	Granite	54,674
18090207	Coyote-Cuddeback Lakes	1,182,441	616	Bicycle	87,899
18090207	Coyote-Cuddeback Lakes	1,182,441	617	Goldstone	44,685
18090207	Coyote-Cuddeback Lakes	1,182,441	618	Coyote	159,543
18090207	Coyote-Cuddeback Lakes	1,182,441	619	Superior	184,099
18090207	Coyote-Cuddeback Lakes	1,182,441	621	Ballarat	1,266,546
18090207	Coyote-Cuddeback Lakes	1,182,441	621	Trona	1,266,546

HUC-8 #	HUC-8 Name	HUC-8 Acreage ^a	HU #	HU Name	HU Acreage ^a
18090207	Coyote-Cuddeback Lakes	1,182,411	625	Fremont	581,613
18090207	Coyote-Cuddeback Lakes	1,182,411	627	Antelope	732,793
18090207	Coyote-Cuddeback Lakes	1,182,411	627	Cuddeback	732,793
18090207	Coyote-Cuddeback Lakes	1,182,411	628	Mojave	1,669,511
18090207	Coyote-Cuddeback Lakes	1,182,411	629	Mojave	1,806,012
18090203	Death Valley-Lower Amargosa	3,441,527	606	Eureka	377,433
18090203	Death Valley-Lower Amargosa	3,441,527	607	Saline	472,795
18090203	Death Valley-Lower Amargosa	3,441,527	608	Race Track	77,769
18090203	Death Valley-Lower Amargosa	3,441,527	609	Amargosa	3,761,323
18090203	Death Valley-Lower Amargosa	3,441,527	611	Mesquite	132,163
18090203	Death Valley-Lower Amargosa	3,441,527	612	Ivanpah	278,493
18090203	Death Valley-Lower Amargosa	3,441,527	613	Owlshead	102,000
18090203	Death Valley-Lower Amargosa	3,441,527	614	Leach	98,723
18090203	Death Valley-Lower Amargosa	3,441,527	615	Granite	54,674
18090203	Death Valley-Lower Amargosa	3,441,527	616	Bicycle	87,899
18090203	Death Valley-Lower Amargosa	3,441,527	620	Ballarat	237,362
18090203	Death Valley-Lower Amargosa	3,441,527	621	Ballarat	1,266,546
18090203	Death Valley-Lower Amargosa	3,441,527	629	Mojave	1,806,012
18090205	Indian Wells-Searles Valleys	1,292,391	554	Kern River	1,595,870
18090205	Indian Wells-Searles Valleys	1,292,391	603	Owens	2,003,430
18090205	Indian Wells-Searles Valleys	1,292,391	619	Superior	184,099

HUC-8 #	HUC-8 Name	HUC-8 Acreage ^a	HU #	HU Name	HU Acreage ^a
18090205	Indian Wells-Searles Valleys	1,292,391	620	Ballarat	237,362
18090205	Indian Wells-Searles Valleys	1,292,391	621	Ballarat	1,266,546
18090205	Indian Wells-Searles Valleys	1,292,391	621	Trona	1,266,546
18090205	Indian Wells-Searles Valleys	1,292,391	622	Coso	160,285
18090205	Indian Wells-Searles Valleys	1,292,391	623	Upper Cactus	10,385
18090205	Indian Wells-Searles Valleys	1,292,391	624	Indian Wells	728,222
18090205	Indian Wells-Searles Valleys	1,292,391	625	Fremont	581,613
18090205	Indian Wells-Searles Valleys	1,292,391	627	Cuddeback	732,793
18090205	Indian Wells-Searles Valleys	1,292,391	628	Mojave	1,669,511
18090103	Owens Lake	877,214	552	Kings River	1,897,568
18090103	Owens Lake	877,214	554	Kern River	1,595,870
18090103	Owens Lake	877,214	603	Owens	2,003,430
18090103	Owens Lake	877,214	606	Eureka	377,433
18090103	Owens Lake	877,214	607	Saline	472,795
18090103	Owens Lake	877,214	620	Ballarat	237,362
18090103	Owens Lake	877,214	622	Coso	160,285
18090103	Owens Lake	877,214	623	Upper Cactus	10,385
18090103	Owens Lake	877,214	624	Indian Wells	728,222
18090204	Panamint Valley	1,043,788	603	Owens	2,003,430
18090204	Panamint Valley	1,043,788	607	Saline	472,795
18090204	Panamint Valley	1,043,788	609	Amargosa	3,761,363
18090204	Panamint Valley	1,043,788	613	Owlshead	102,000
18090204	Panamint Valley	1,043,788	614	Leach	98,723
18090204	Panamint Valley	1,043,788	615	Granite	54,674
18090204	Panamint Valley	1,043,788	617	Goldstone	44,685
18090204	Panamint Valley	1,043,788	619	Superior	184,099

HUC-8 #	HUC-8 Name	HUC-8 Acreage ^a	HU #	HU Name	HU Acreage ^a
18090204	Panamint Valley	1,043,788	620	Ballarat	237,362
18090204	Panamint Valley	1,043,788	621	Ballarat	1,266,546
18090204	Panamint Valley	1,043,788	621	Trona	1,266,546
18090204	Panamint Valley	1,043,788	622	Coso	160,285
18090204	Panamint Valley	1,043,788	624	Indian Wells	728,222
18090202	Upper Amargosa	2,180,980	609	Amargosa	3,761,323
18090202	Upper Amargosa	2,180,980	610	Pahrump	140,195
18090202	Upper Amargosa	2,180,980	611	Mesquite	132,163

Source: Caltrans 2021

^a Numbers were rounded to the nearest whole number.

References

- California Department of Water Resources. 2016. "CalWater Hydrologic Areas."
Accessed October 19, 2019. <https://catalog.data.gov/dataset/calwater-2-233fac>.
- Caltrans (California Department of Transportation). 2021. "Waters_D06/D07/D08/D09 in Caltrans District 9 Geospatial Data for the Advance Mitigation Needs Assessment for the Second Quarter of FY 2019/2020" (data file). Accessed March 24, 2021.
- Inyo County Water Department. 2016. *Hydrogeologic Conceptual Model for the Owens Valley Groundwater Basin (6-12), Inyo and Mono Counties*.
- Kamer and Fairey. 2005. *Water Quality in the Calleguas Creek and Santa Clara River Watersheds Under the Surface Water Ambient Monitoring Program: Fiscal Year 2000-2001*.
- Kern River Watershed Coalition Authority. 2014. *Surface Water Monitoring Plan*.
- Lahontan RWQCB (Regional Water Quality Control Board). 2019. "Water Quality Control Plan for the Lahontan Region: North and South Basins." Accessed July 12, 2021.
https://www.waterboards.ca.gov/lahtontan/water_issues/programs/basin_plan/references.html.
- Los Angeles County Department of Public Works. 1987. *Antelope Valley Final Report on the Comprehensive Plan of Flood Control and Water Conservation*.
- Los Angeles RWQCB (Regional Water Quality Control Board). 2014. *Water Quality Control Plan Los Angeles Region*.
- The Nature Conservancy. 2014. *2014 State of the Basin Report: Amargosa River Basin*. Prepared by Andy Zdon & Associates.
- USGS (U.S. Geological Survey). 2014. "National Hydrology Dataset & National Watershed Boundary Dataset." Accessed March 18, 2019.
<https://www.usgs.gov/core-science-systems/ngp/national-hydrography>.
- Water Education Foundation. 2021. "Kings River." Accessed August 12, 2021.
<https://www.watereducation.org/aquapedia/kings-river>.

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APPENDIX E: AQUATIC RESOURCE LOCATIONS

Aquatic resource locations are shown by HUC-8 sub-basin and HU in the following maps, which also include major landmarks for perspective. These locations were excerpted from the SAMNA Reporting Tool's water and wetland layers (Caltrans 2021a, 2021b). Hydrologic units are described in Appendix D, which includes a crosswalk table of HUC-8 subbasins and HUs. These 92 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

- Caltrans (California Department of Transportation). 2021a. "Waters_ D06/D07/D08/D09 in Caltrans District 9 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. "Wetlands_ D06/D07/D08/D09 in Caltrans District 9 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/>.
- FWS. 2021. "National Wetlands Inventory. Wetlands Mapper." Accessed July 12, 2021. <https://www.fws.gov/wetlands/data/mapper.html>.
- San Francisco Estuary Institute. 2018. "California Aquatic Resource Inventory (CARI)." Accessed February 28, 2019. <https://www.sfei.org/cari#sthash.SnPvzyAU.dpbs>.

