

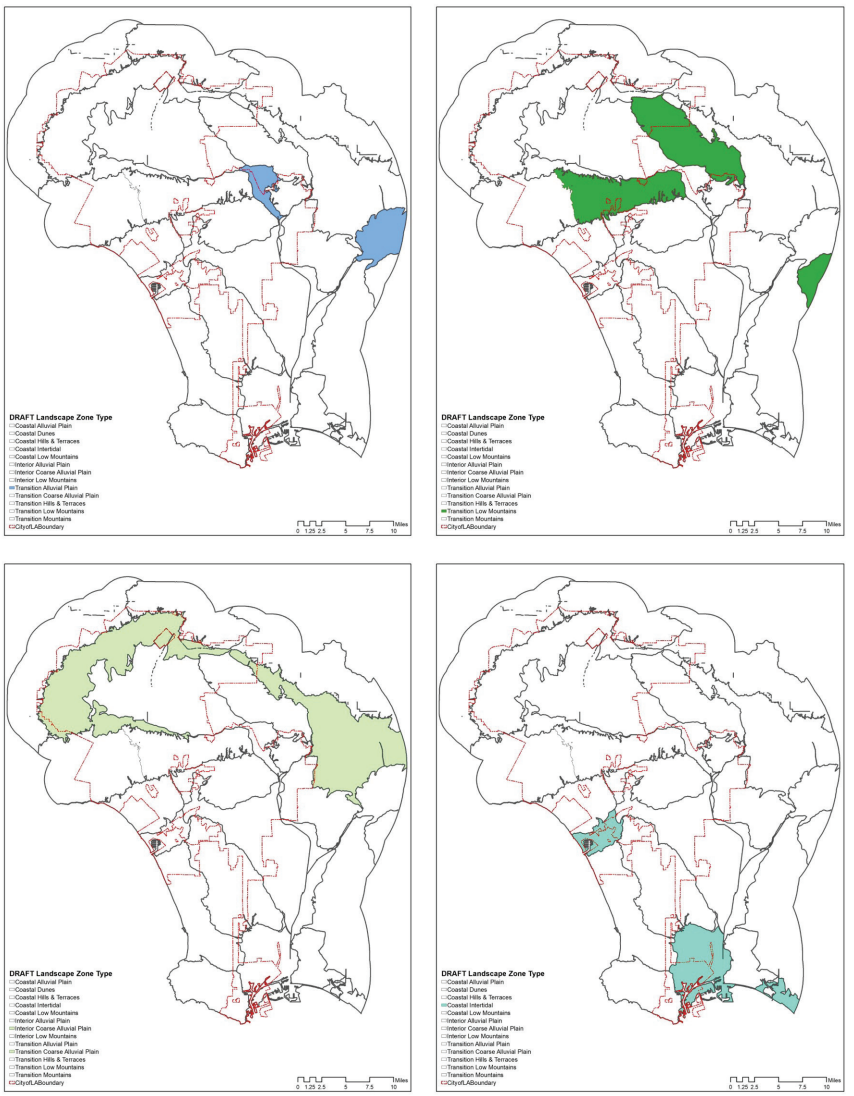
Appendix B

Los Angeles Ecotopes Characterization

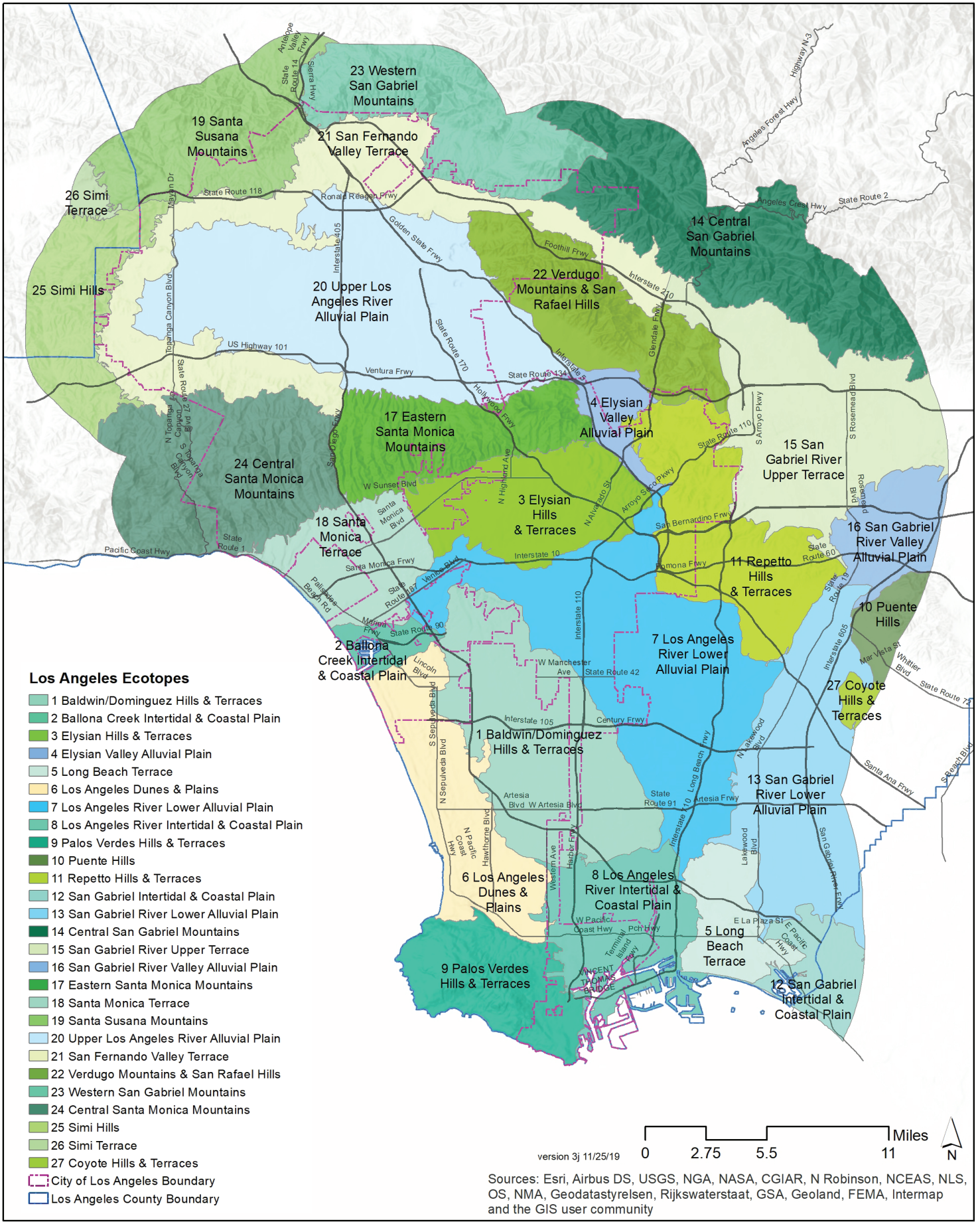
APPENDIX B

The following maps and descriptions provide a general overview of the varying environmental factors that comprise 27 ecotopes mapped for the study area. Quantitative results tables for aerial extent of principal environmental factors within each ecotope can be found in Brown (2019), Appendix E. The primary intent for mapping ecotopes was to support biodiversity and urban ecosystem management in the City of Los Angeles. Therefore, ecotopes were only partitioned for the City and surrounding areas (the study area) relevant to measurement of the LA Biodiversity Index. The main driver for the study area extent boundary (see Figure 2-2) was planned habitat connectivity modeling, described in Chapter 3, which requires measuring connectivity within the City within its broader habitat matrix beyond the City boundaries. Therefore, ecotopes were mapped for all areas between the City and target habitat patches outside of City boundaries, generally within 5 km (3.1 miles) to the west and north of the City, and 15 km (9.3 miles) to the east. Urban development is more contiguous to the east, thus, the longer 15 km distance is needed to reach important patches at Whittier Narrows, Santa Fe Dam, and Seal Beach Marine Reserve.

Since ecotopes boundaries were not delimited beyond the important patches, all ecotopes at the edge of the study area boundary have not been fully delineated (i.e., Ecotopes 10, 12, 13, 14, 15, 16, 19, 23, 24, 25, 26, 27). Descriptions and boundary partitions of these partial ecotopes should be reevaluated and refined in the future if ecotope mapping is expanded further into LA, Orange, and Ventura Counties and characteristics of the entire extent of these ecotopes are fully considered. Additionally, since only very small portions of the Simi Hills and the Coyote Hills & Terraces (ecotopes 25 and 27) are included, descriptions for those ecotopes are only discussed generally and are included within descriptions of larger adjacent ecotopes, the Puente Hills, Ecotope 10, and Santa Susana Mountains, Ecotope 19, respectively. Description of the Simi Terrace, Ecotope 26, is also combined with the Santa Susana Mountains.



Study area boundaries were determined based on the location of target habitat core areas for connectivity modeling discussed in Chapter 3. A core habitat area adjacent to the City within each ecotope "type" present in the City was identified and the study area was extended to that location. Above, a 15 km buffer to the east of the City was needed to include core habitat areas within ecotope types including riparian habitats in the Whittier Narrows (top left); chaparral, coastal sage scrub, and oak woodlands in the Puente Hills (top right); El Dorado Park in the Lower San Gabriel River alluvial plain (not shown); coastal sage scrub at Signal Hill (not shown), Riversidian sage-scrub on coarse alluvial fans at the Santa Fe Dam (bottom left); and the Seal Beach marine intertidal wetlands (bottom right). Since large patches of habitat occur directly adjacent to the City to the north and west in the Angeles National Forest and Santa Monica Mountains, a smaller 5 km buffer from the City was used in those directions.



Los Angeles Subregional-Scale Ecotopes

Written characterization of each ecotope is accompanied by 15 principal and additional environmental factor maps that support the explanation of how ecotopes were differentiated. Spatial data for most factors was provided at relatively high resolution and includes key locational information, such as roads, creeks, jurisdictional boundaries, and topography, in order to support local biodiversity and ecological decision making. While many key environmental characteristics presented within these maps are discussed in the ecotope characterization narratives, the maps certainly support numerous other considerations relevant to stewardship decision making. The following list includes general considerations for how each map could potentially be relevant to decision making, but end users will find additional insight by reviewing this information in the specific locational context and stewardship topics of interest for their projects. These layers are intended to be shared digitally in the future to provide even greater resolution and ability to identify site-level context.

1. ECOTOPE CONTEXT - The overview map provides the local context of each ecotope relative to adjacent ecotopes and key points of reference in the landscape including roads, jurisdictional boundaries, and streams.

2. MICROCLIMATE - As the source of energy and moisture, climate is the primary natural driver of ecosystem characteristics. In the Los Angeles region, microclimatic characteristics are relatively fine-grained due to the complex interaction of ocean and continental weather influences and topography.

3. LANDFORM - Slope, soils, and elevation influence an ecosystem's microclimate and surface hydrology at finer scales, which in turn influences vegetation, biodiversity, and disturbance process (e.g., such as wildfire or land use), making landform characteristics important features for defining finer-scale ecosystems.

4. ELEVATION - The study area exhibits more than 7000' (2,100 meters) in elevation change (the City of Los Angeles exhibits more than 5000' (1,500 meters) of change), which strongly influences temperature and precipitation conditions and, ultimately, vegetation and habitat.

5. ASPECT - The direction terrain faces impacts solar exposure, which drives native vegetation patterns and suitability. Aspect also influences landscape irrigation demand, solar and wind energy potential, and future extreme heat event impacts projected to accompany climate change.

6. SLOPE PERCENT - The steepness, position, and shape of terrain is an important driver of soil moisture and formation processes, both key drivers of vegetation and habitat. Disturbance processes, such as wildfire behavior, soil erosion/deposition, and land use patterns are also strongly driven by slope.

7. DRAINAGE - Soils vary in their ability to retain or drain water. Soil profile characteristics, depth to water table, and impermeable layers, all influence drainage through soil. The dataset mapped, the NRCS SSURGO Dominant Drainage Class, looks at the frequency and duration of wet periods.

8. VEGETATION ALLIANCE - The CALVEG dataset includes detailed vegetation classification to the alliance level, which emphasizes species composition. CALVEG also maps wildlife habitat relationships (WHR), presented in Chapter 2, which emphasize vegetation structure characteristics.

9. HYPOTHESIZED POTENTIAL NATURAL VEGETATION - Since existing vegetation is limited in many ecotopes, historic and potential suitable native vegetation is discussed for several ecotopes where supported by existing research. These maps can be useful for determining targets for ecological restoration or native plant landscaping.

10. HABITAT QUALITY - This layer estimates the quality of all landscapes and waterbodies in the City, at a 10-foot grid resolution, and the general ability of landscapes to provide habitat for native biodiversity. Understanding the habitat value of all areas of the City, including urban landscapes, provides a useful tool for prioritizing habitat protection and enhancement work on a variety of scales.

11. NATURAL AREAS CLASSIFICATION - The natural areas map is the basis for metric 1.1a. Natural areas provide important habitat for native species. Methods for classifying natural areas are included in Table 1-1 and in the 2018 Los Angeles Biodiversity Report Methods, Appendix B.

12. CALENVIROSCREEN 3.0 POLLUTION PERCENTILE - CalEnviroScreen 3.0 provides data at the census tract level about pollution. The pollution data comes from many sources and is distilled to a single score for each census tract. The scores can be used to identify neighborhoods with high pollution burdens.

13. CALENVIROSCREEN 3.0 POPULATION PERCENTILE - CalEnviroScreen 3.0 also provides a population score that combines demographic and socioeconomic factors. The population percentile dataset shows populations that are vulnerable to pollution exposure. When a census tract receives a high pollution score and a high population score, it is designated as a disadvantaged community. These areas can be targeted for investment using the State's cap-and-trade program proceeds for urban forestry projects, park improvements, and other pollution mitigation activities.

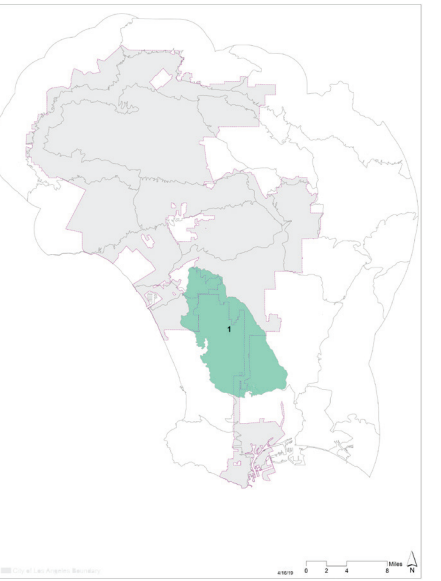
14. ECOLOGICAL HAZARDS - This map shows areas at risk of flooding, sea level rise, and wildfire. Riparian flooding is a critical public safety concern which drives major infrastructure projects in LA. Sea level has important ecological implications for coastal ecotopes. Ecotopes with extreme wildfire hazard conditions have public safety, insurance, and land use implications. The combined effects of riparian flooding near the coast present unique integrated challenges.

15. LAND USE - Land use has implications for biodiversity, especially in cities where natural and developed areas coexist. Small fragments of habitat are subject to "edge effects". Land use, and more specifically zoning, is envisioned as the key delimiting feature for future neighborhood-scale ecotopes.

We recognize that the short ecotope descriptions presented in Appendix B provide a high-level overview of these complex and relatively large areas. We envision that specific stewardship plans and management recommendations for individual ecotopes could be developed in the future. This would entail much more robust mapping and characterization, likely including the characterization of neighborhood-scale ecotopes.

ECOTOPE 1: BALDWIN-DOMINGUEZ HILLS & TERRACES

(Partially within the City of Los Angeles)



LANDFORM

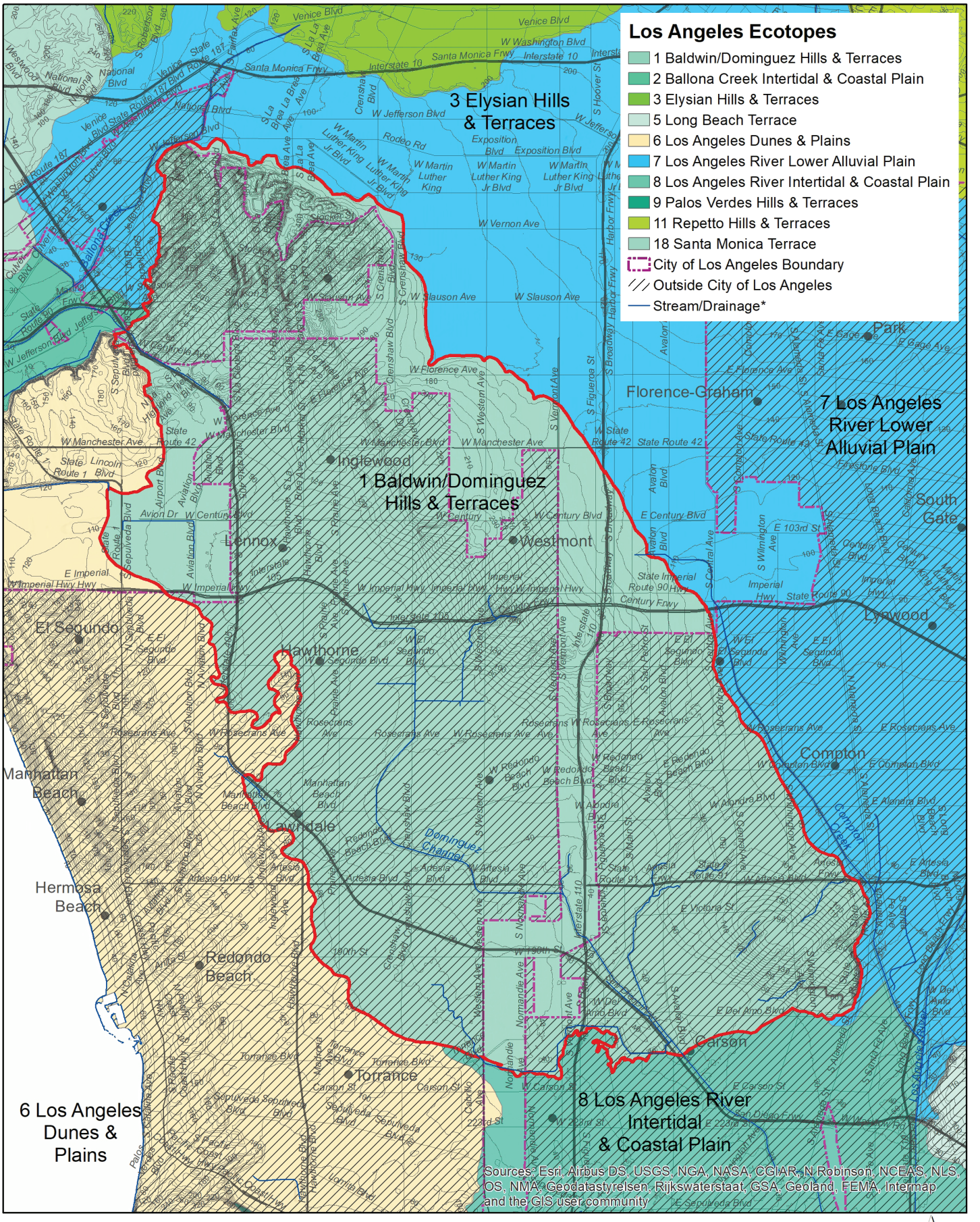
The Baldwin-Dominguez Hills and Terraces ecotope contains a mix of landforms including low hills, terraces, and coastal plains. The dominant feature is a line of northwest to southeast-running low hills, with the steeper Baldwin Hills to the northwest and the gently sloping Dominguez Hills to the southeast. These hills and terraces rise above the Los Angeles River alluvial plain as a result of uplift from the Newport-Inglewood fault. Elevations range from 20' at the ecotope's outfall of the Dominguez Channel to 500' above sea level in the Baldwin Hills at Kenneth Hahn State Recreation Area. Ballona Creek and the Los Angeles River alluvial plain delimits this ecotope from the northwest to the southeast. Several small creeks and washes drain the hills running to the west and east. Centinela Creek flows west and then north draining the Baldwin Hills and Inglewood areas into Ballona Creek. Historic springs along the Creek were noted near Inglewood (Dark et al., 2011). Other creeks drain west, and then south, to feed the Dominguez Channel and historic wetland and slough complex (which have since been drained) that make up the western portion of the ecotope. These areas consist of very flat coastal and alluvial plains comprised of poorly drained soils with areas of flooding concern. Historic creeks that flow east from the hills feed into Ballona or Compton Creeks.

MICROCLIMATE

The ecotope exhibits a strong cooling coastal influence to the west and decreased coastal influence to the east. Low elevation change limits any orographic precipitation enhancement in winter, and relatively cool temperatures common in summer due to its position near the coast. Its low elevation may also moderate heat extremes since most of the ecotope typically falls below the prominent atmospheric marine inversion layer often present across the Los Angeles coastal plain during summer heat waves. Slopes are mostly gradual, except the north slopes of the Baldwin Hills. The general aspect of slopes facing northeast or southwest strongly influences microclimate at the site-scale, which in turn affects vegetation suitability. Southwesterly-oriented slopes and extensive flat areas experience the hottest and driest conditions due to more direct solar exposure, especially in the summer or during winter and spring heat waves. Easterly slopes are relatively cool and moist because of the stronger coastal influence and the frequent diurnal morning fog prevalence in late spring and early summer that reduces direct sun exposure during morning hours for a longer duration of the year. This ecotope is exposed to a relatively low urban heat island effect (UHI) since urban heat is mostly transported inland on ocean breezes; however, heat produced here exacerbates the UHI in eastern areas of Los Angeles.

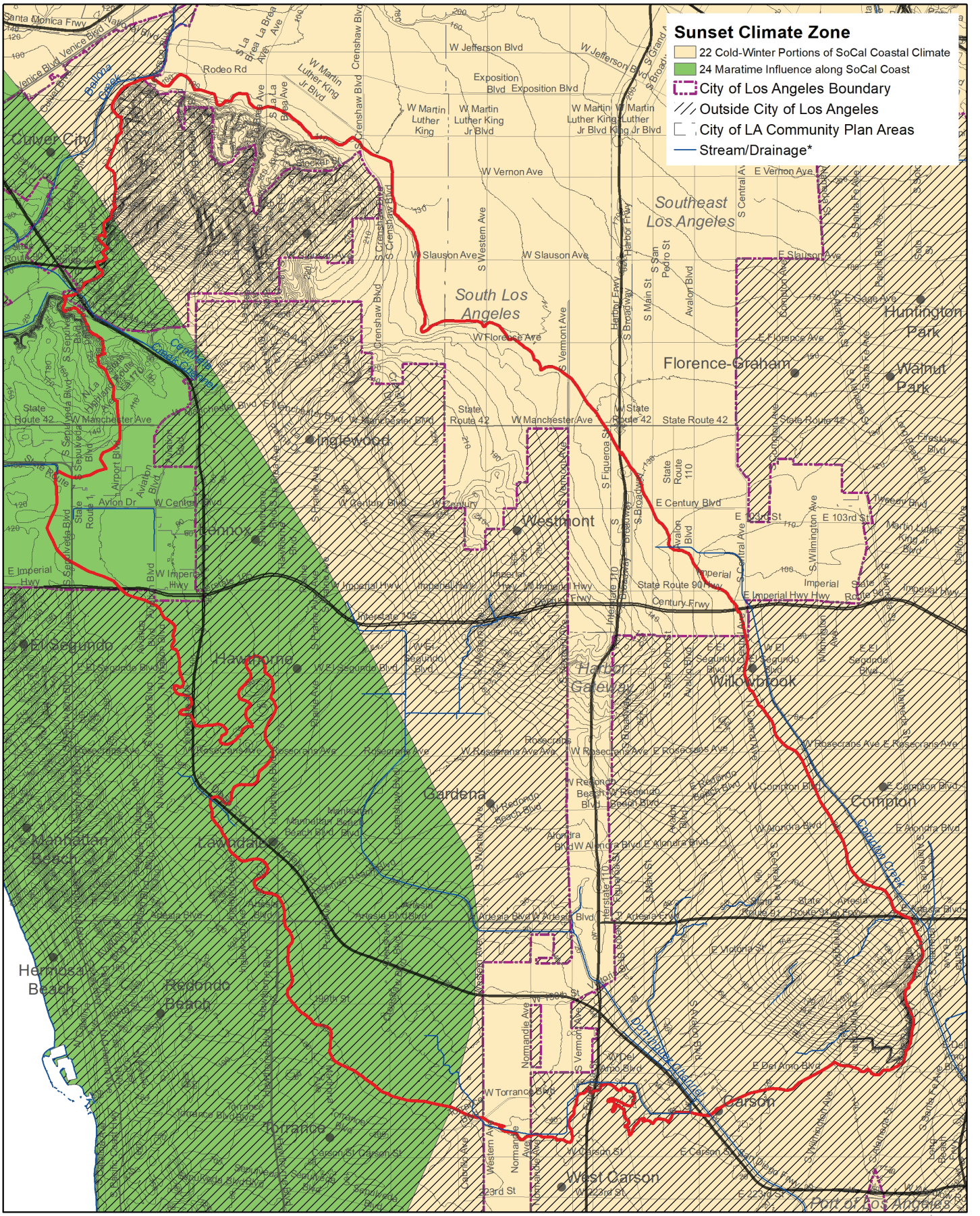
VEGETATION & LANDCOVER

The ecotope is nearly 94% built or urban landcover, and includes the Inglewood Oil Field, yet retains about 1% natural and degraded natural areas (annual grasslands) in the Baldwin Hills. This is a relatively large patch of native vegetation in urban Los Angeles and an important conservation area that has been documented to contain relatively rare urban fauna, including gray fox (*Urocyon cinereoargenteus;* Miguel Ordeñana, personal communication) and California quail (*Callipepla californica*; Travis Longcore, personal communication). Remaining native vegetation is dominated by coastal sage scrub alliances, with any oak or chaparral limited to the northerly slopes of the Baldwin Hills. Mattoni and Longcore (1997) also document unique coastal prairie and herbaceous ecosystems from the historical record, which likely occurred on flat coastal plain and terrace areas in the western portion of the ecotope. Central and southern portions of the ecotope include limited remaining native vegetation or natural areas, but do include large parcels of degraded natural areas. These areas may benefit from enhancement of urban biodiversity and ecosystem services and contribute to broader regional connectivity for birds and other highly mobile fauna.



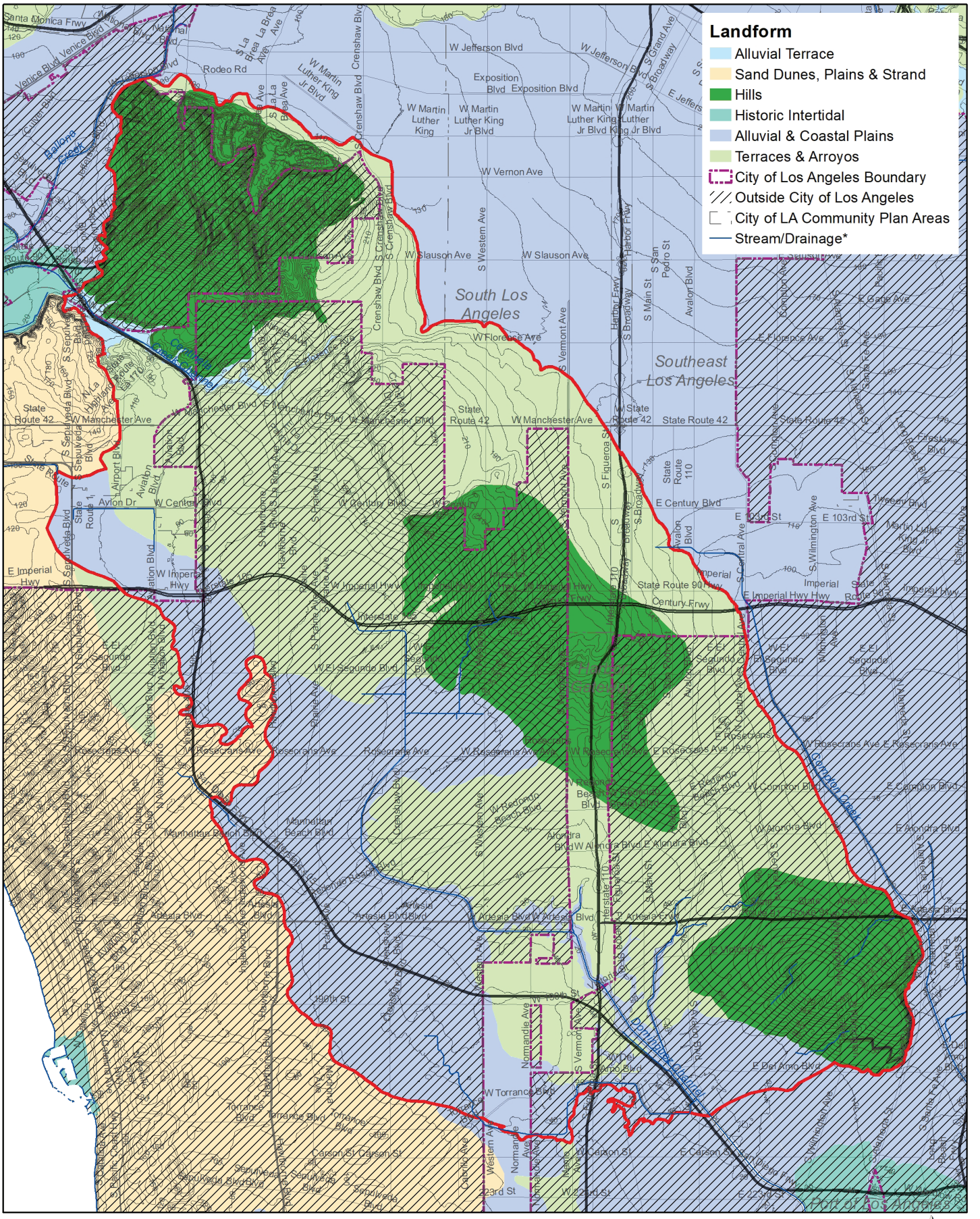
Ecotope 1 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



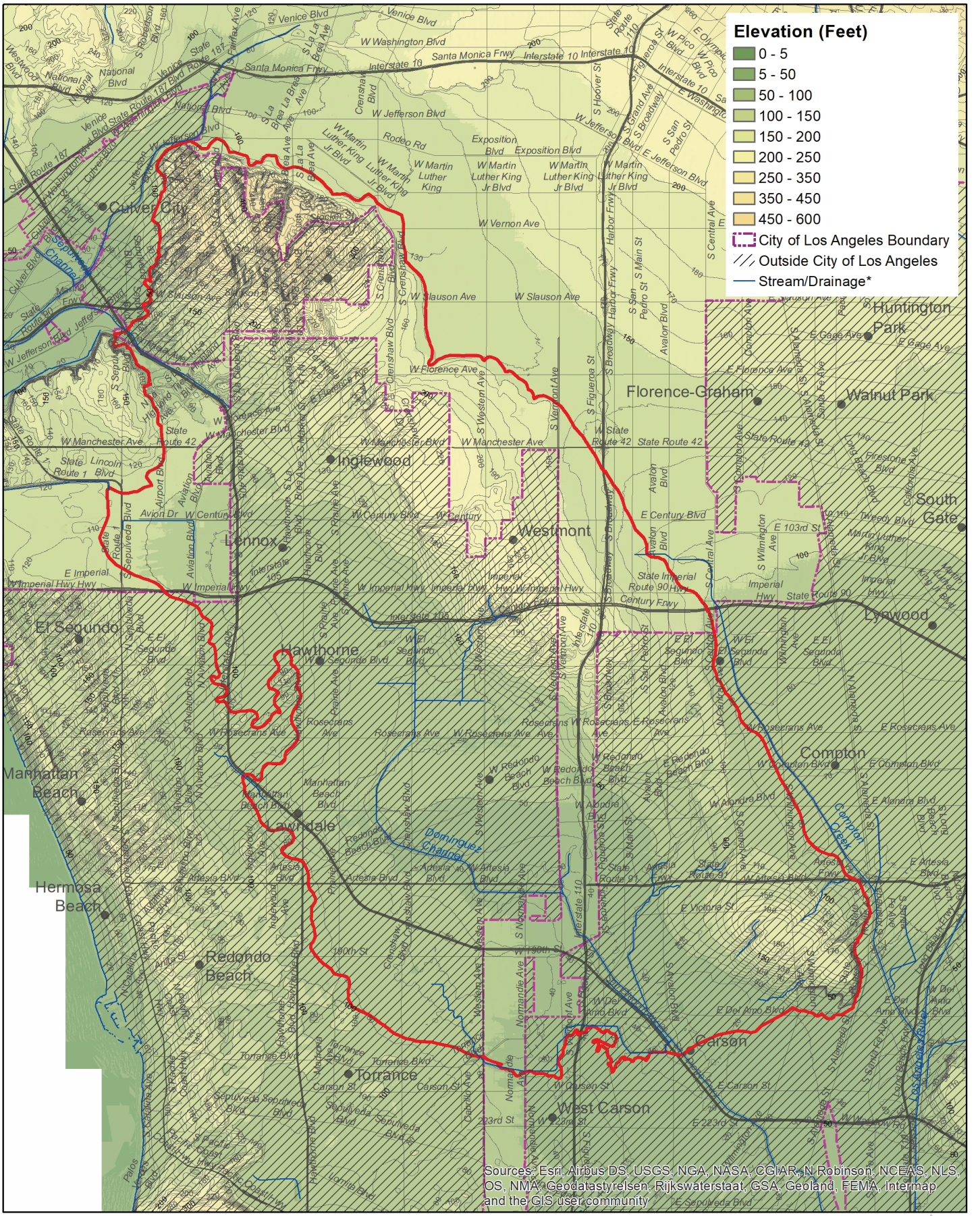
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



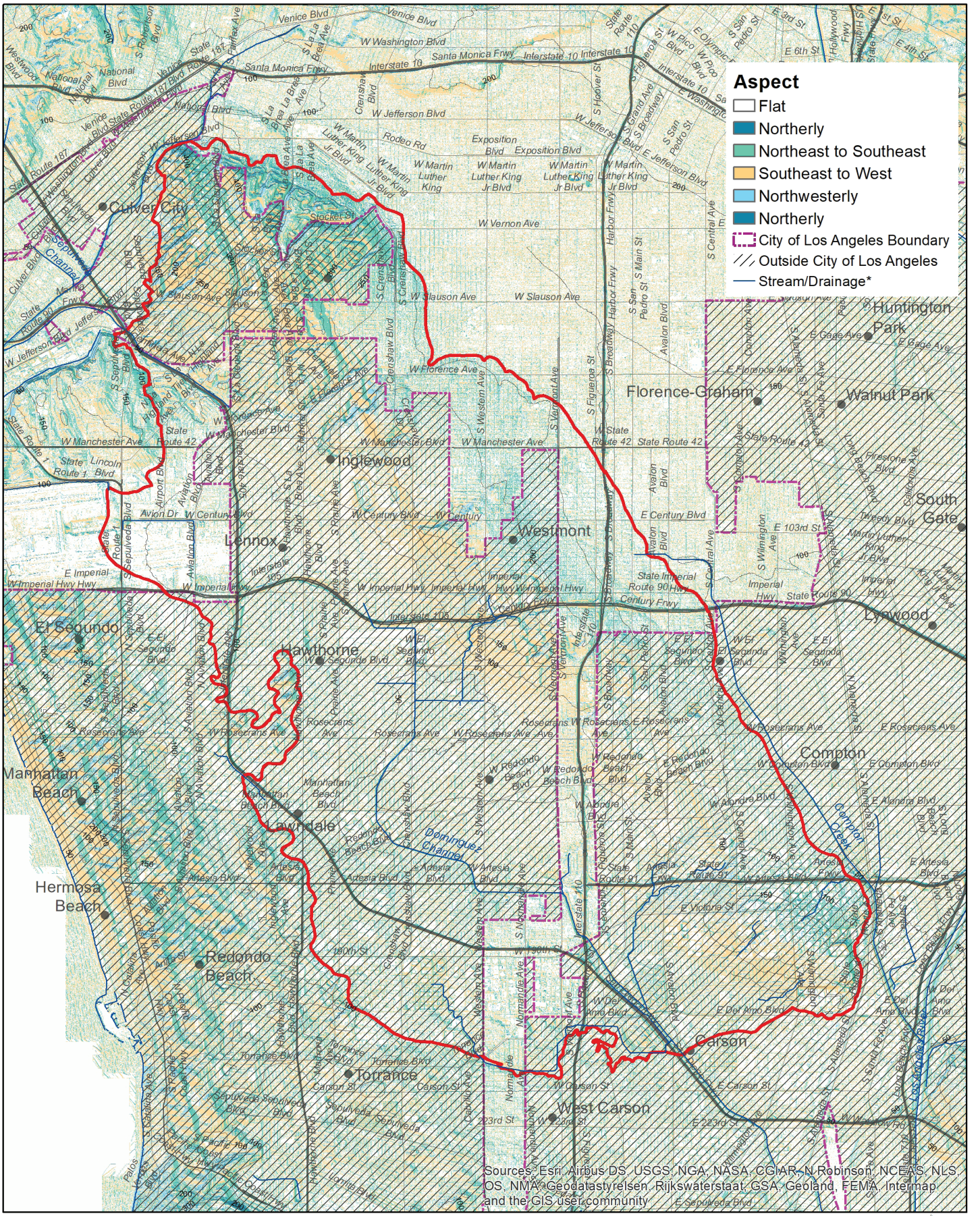
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



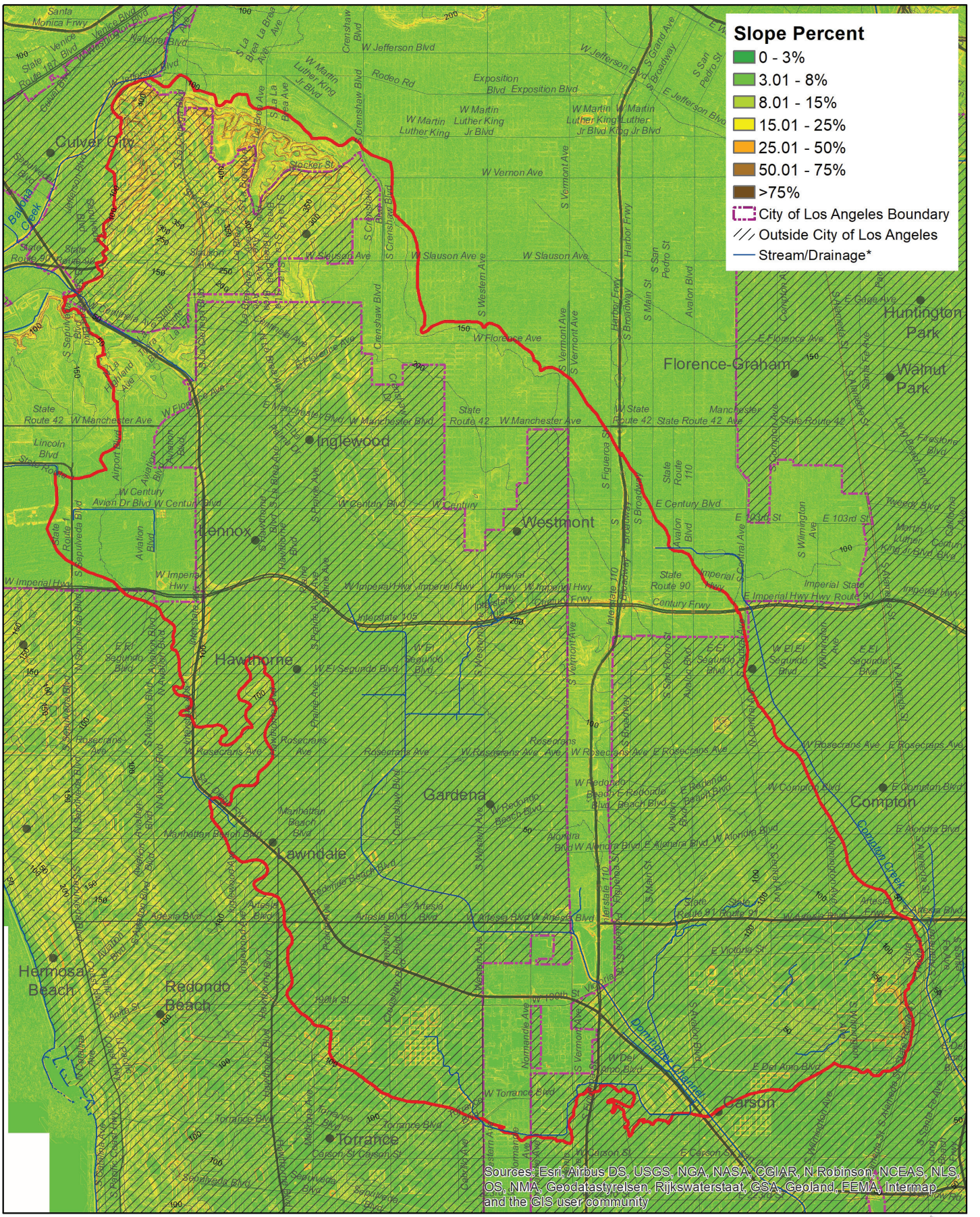
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



Aspect

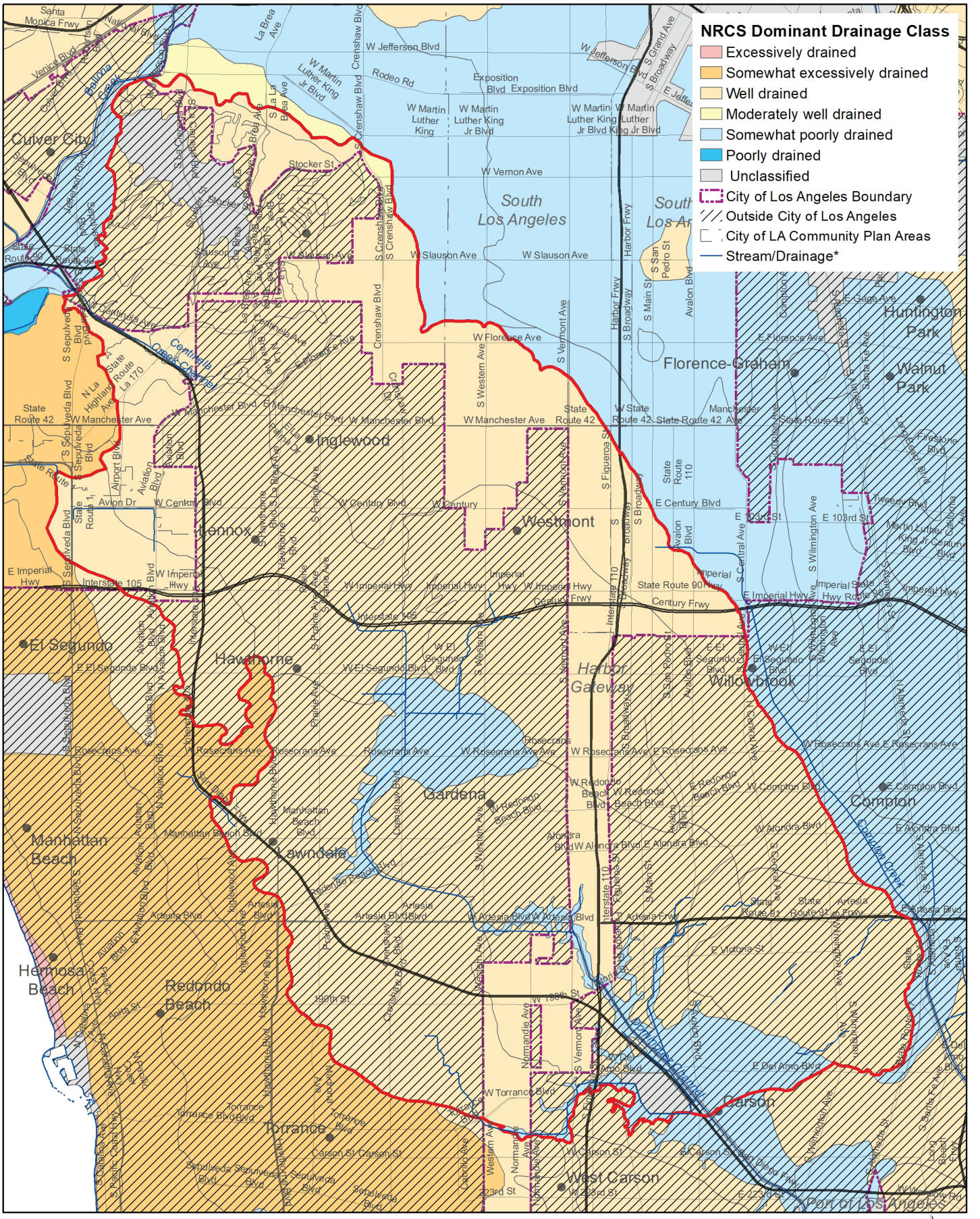
Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



*Source: National Hydrography Dataset

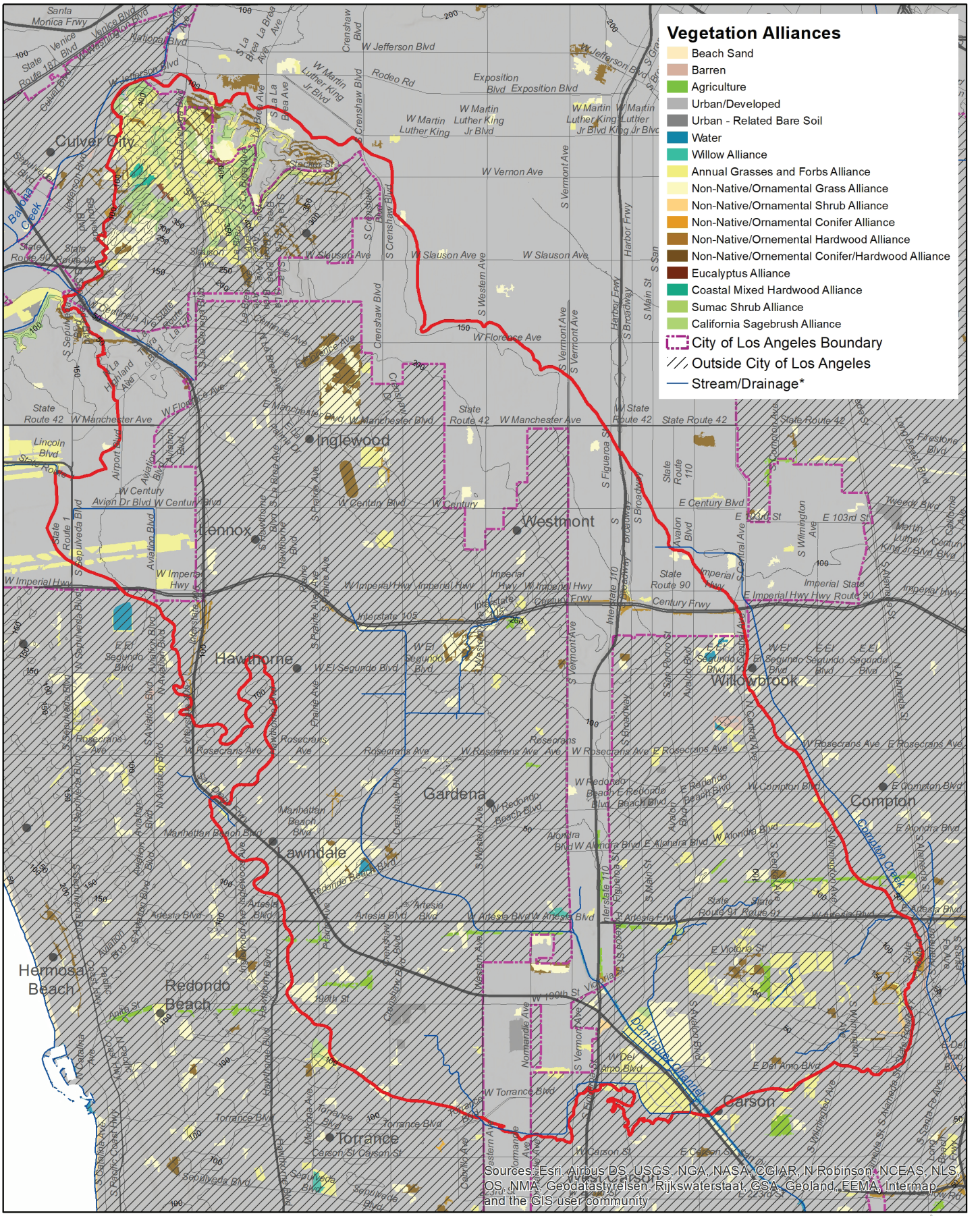
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



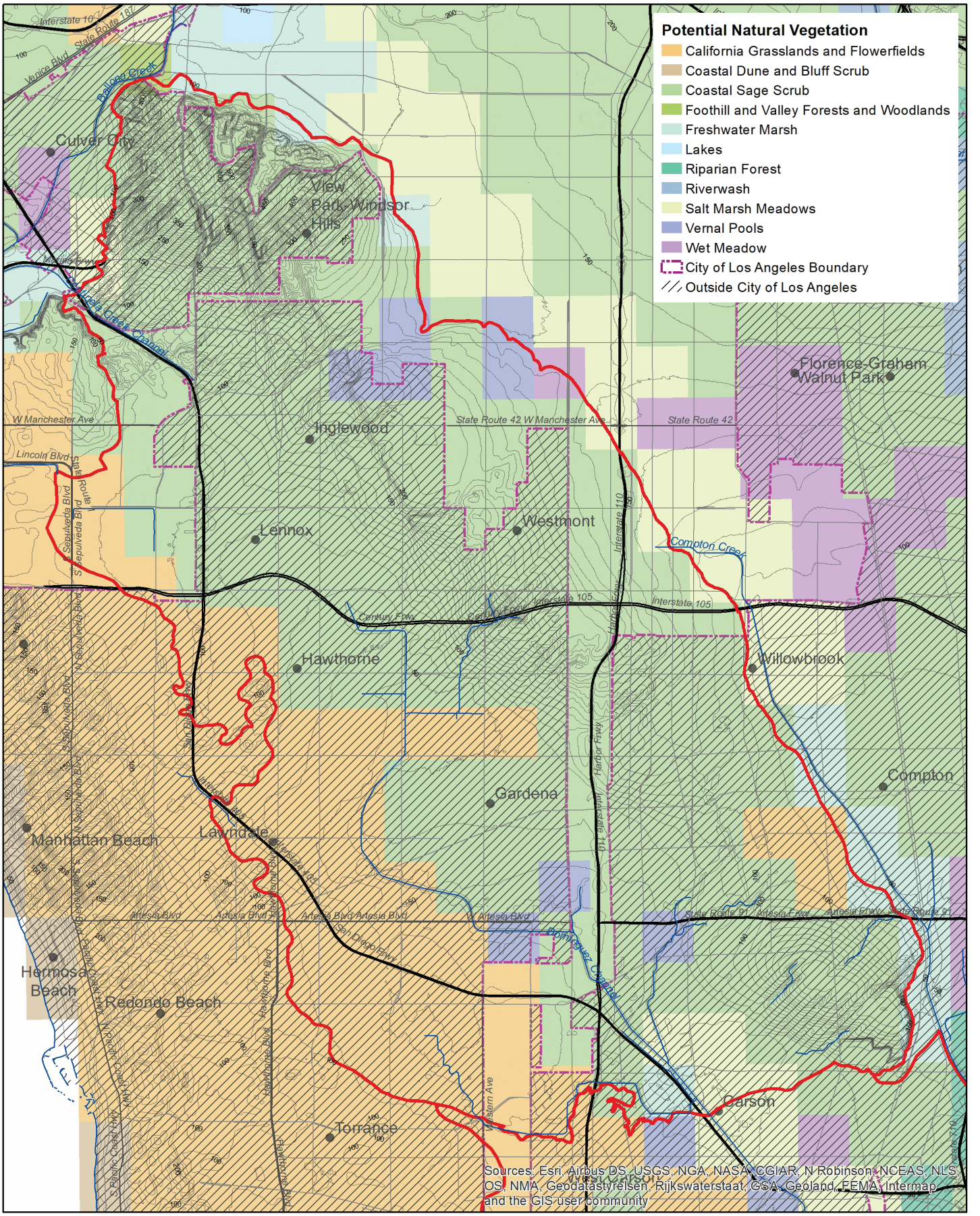
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



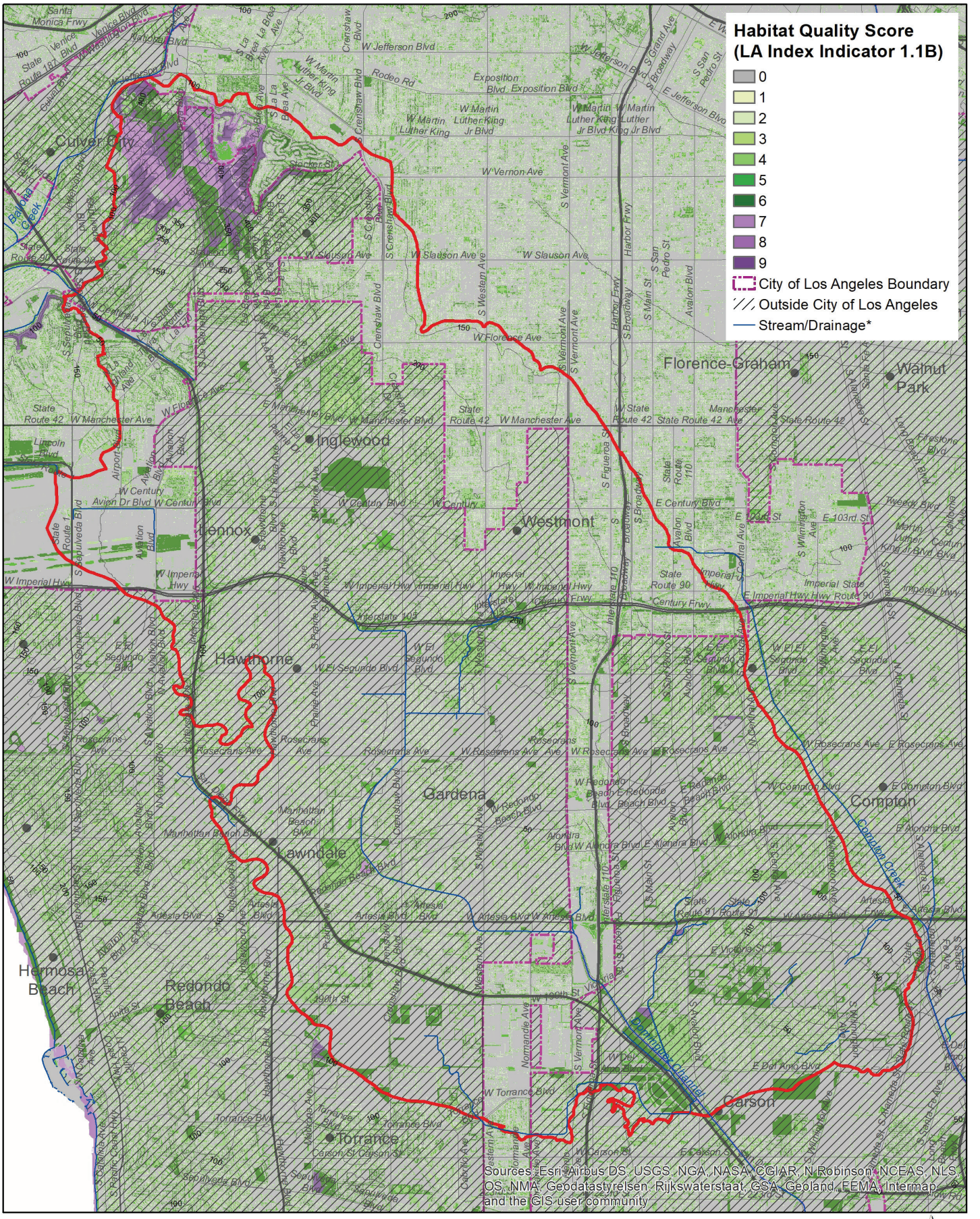
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



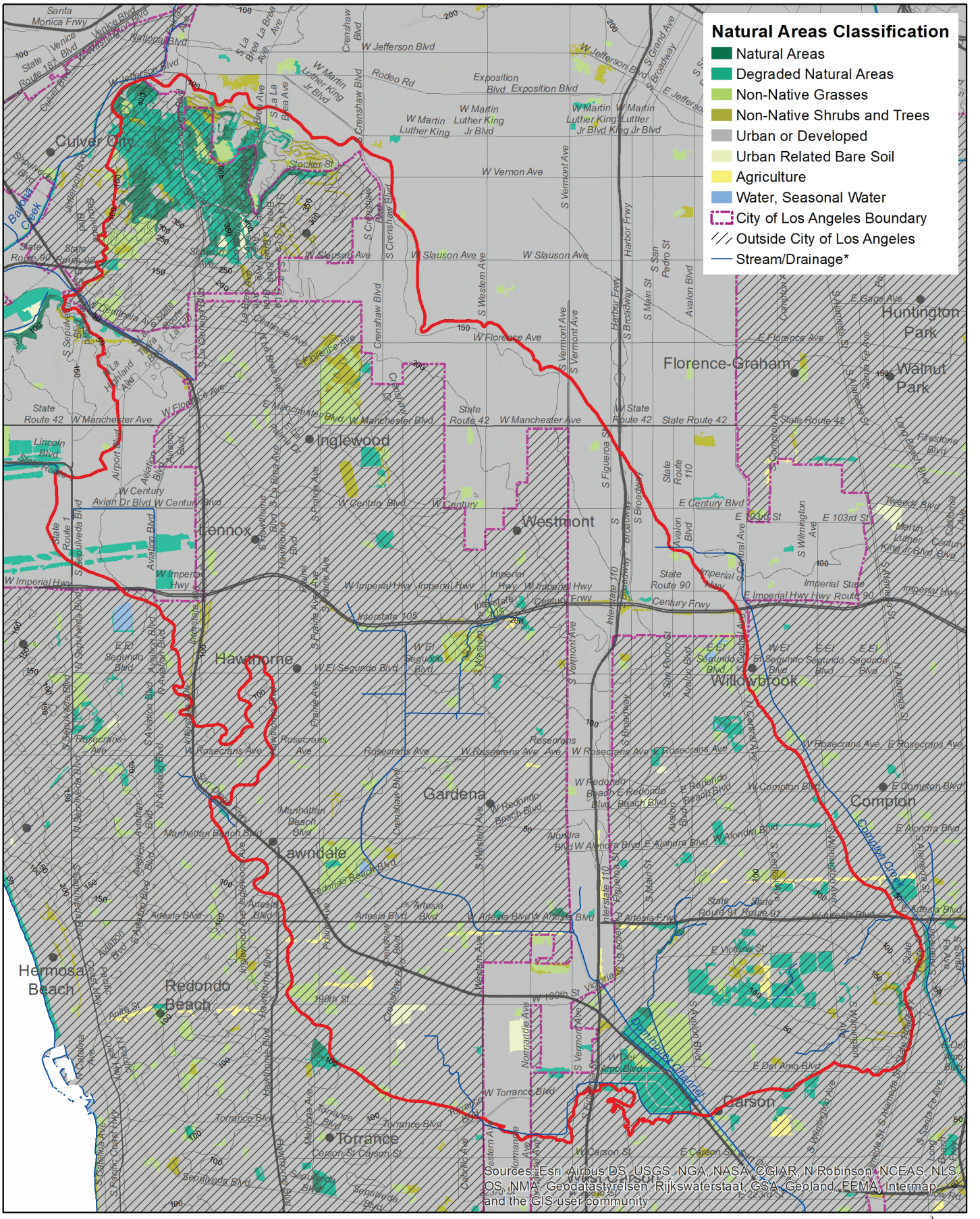
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



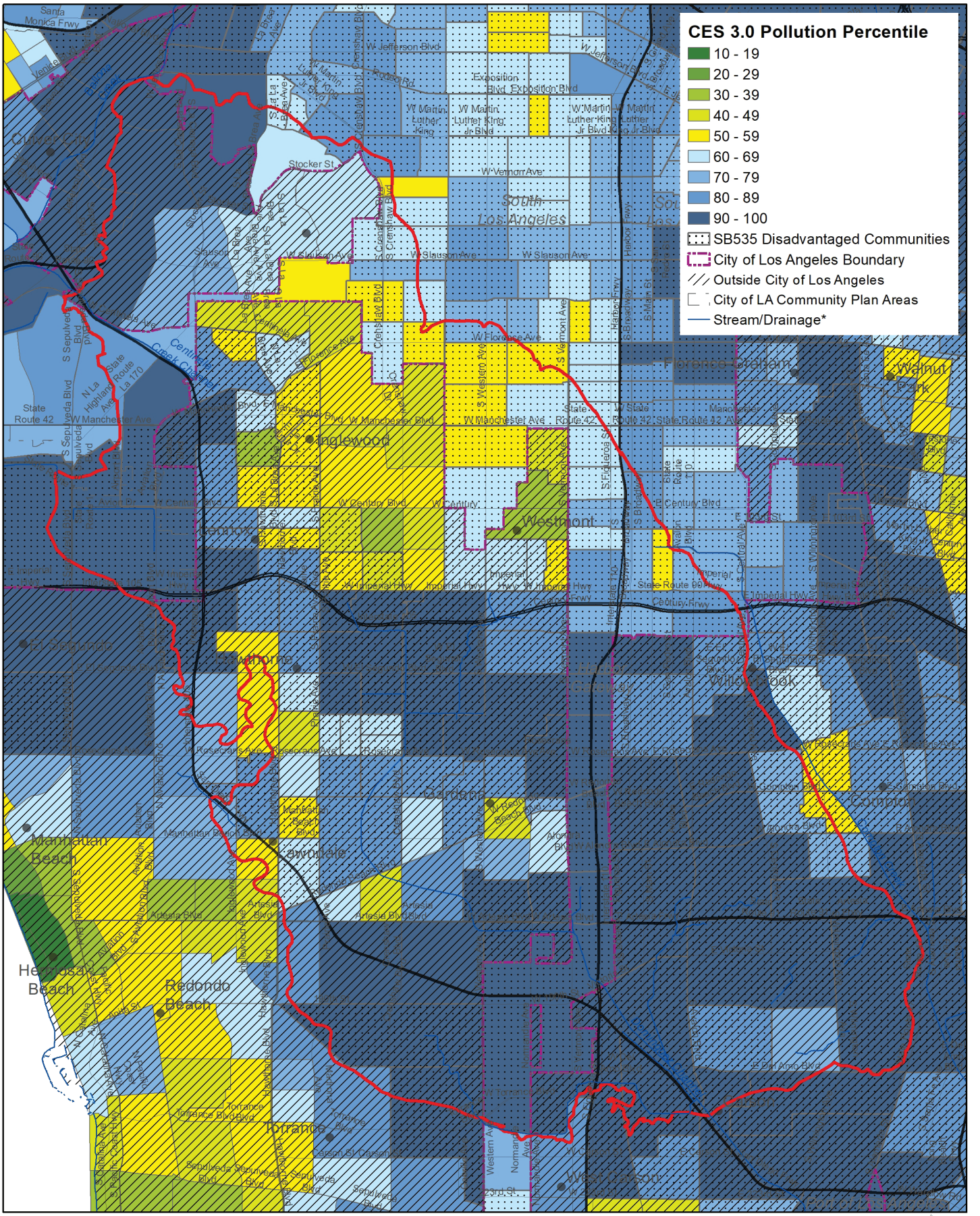
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



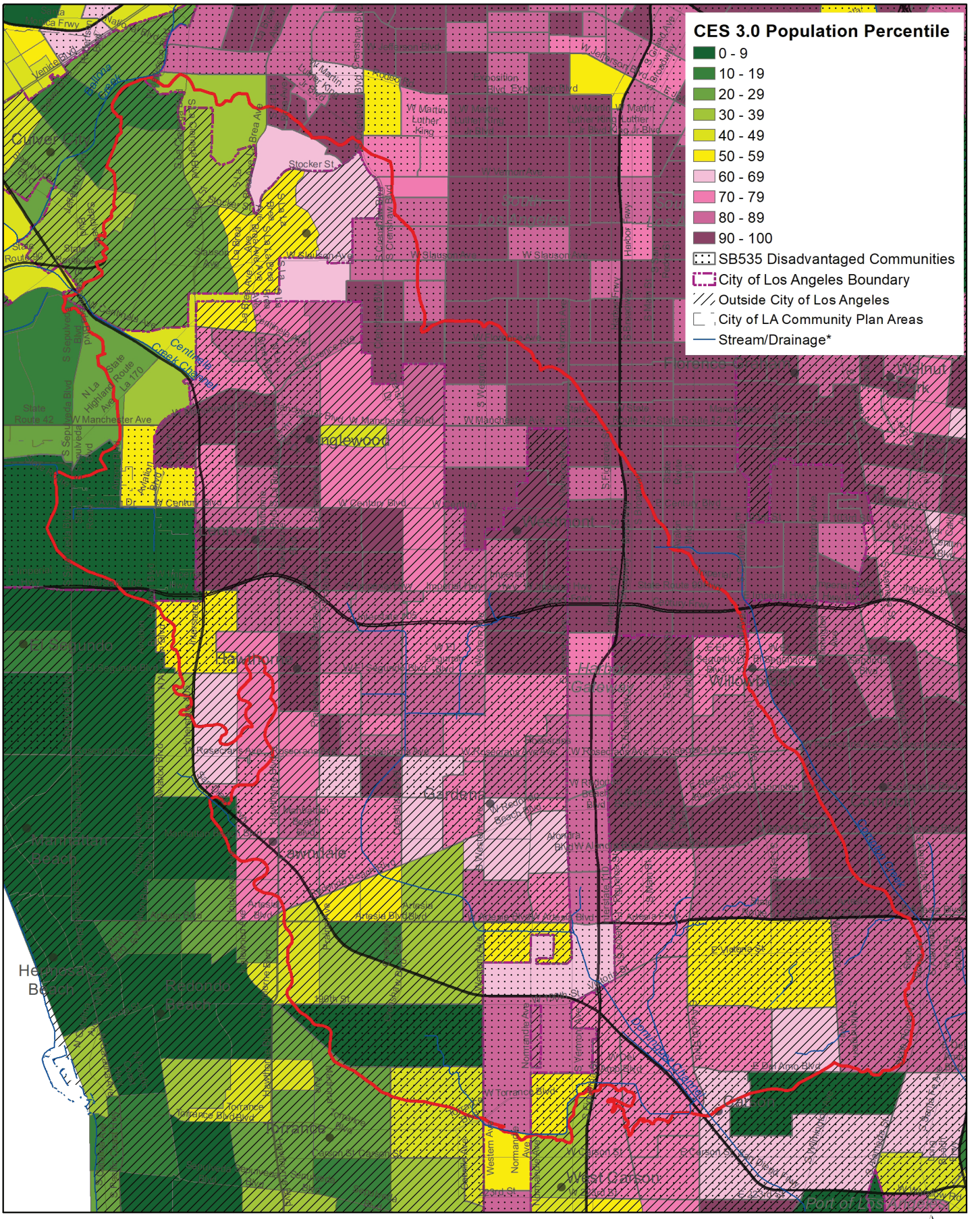
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



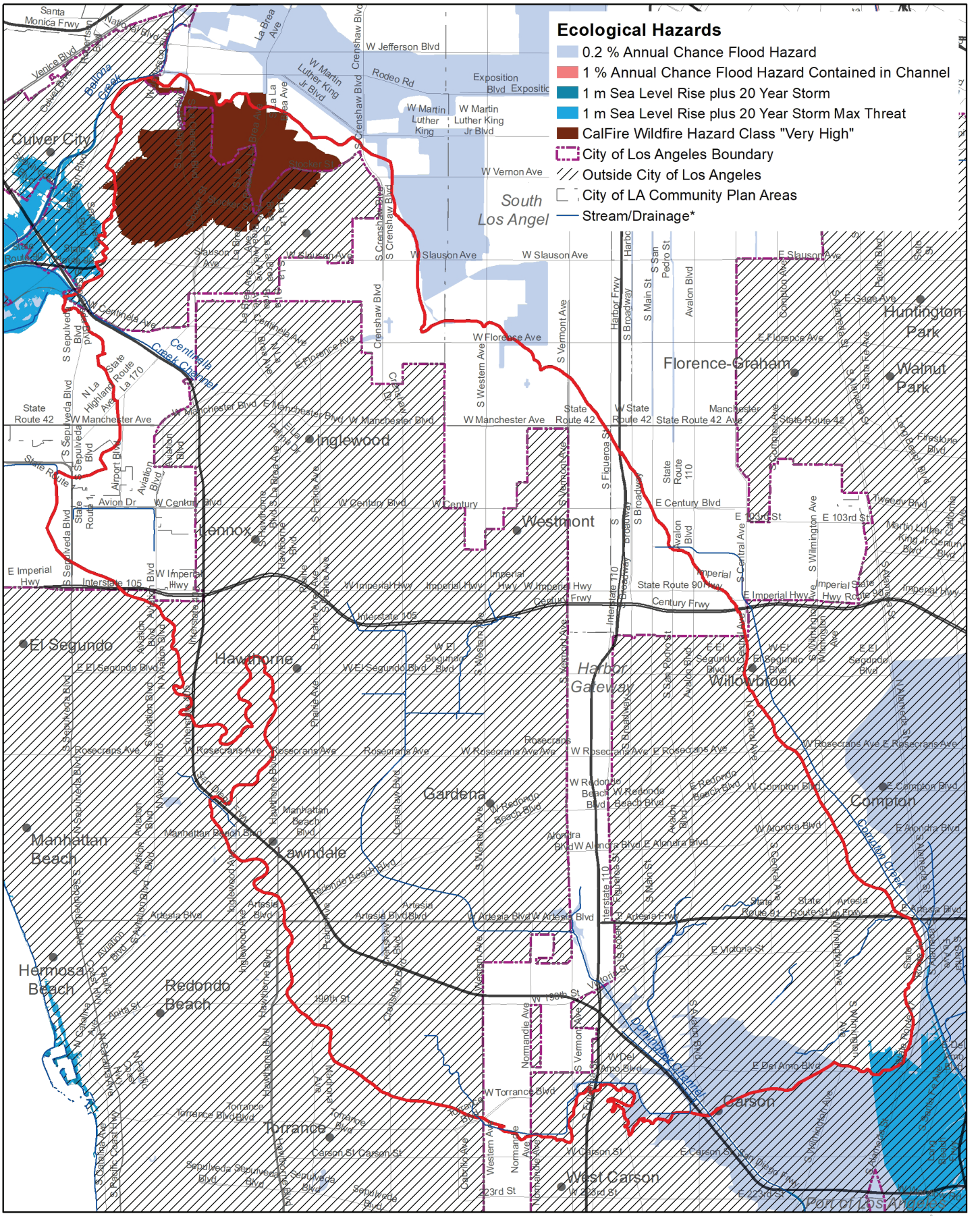
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



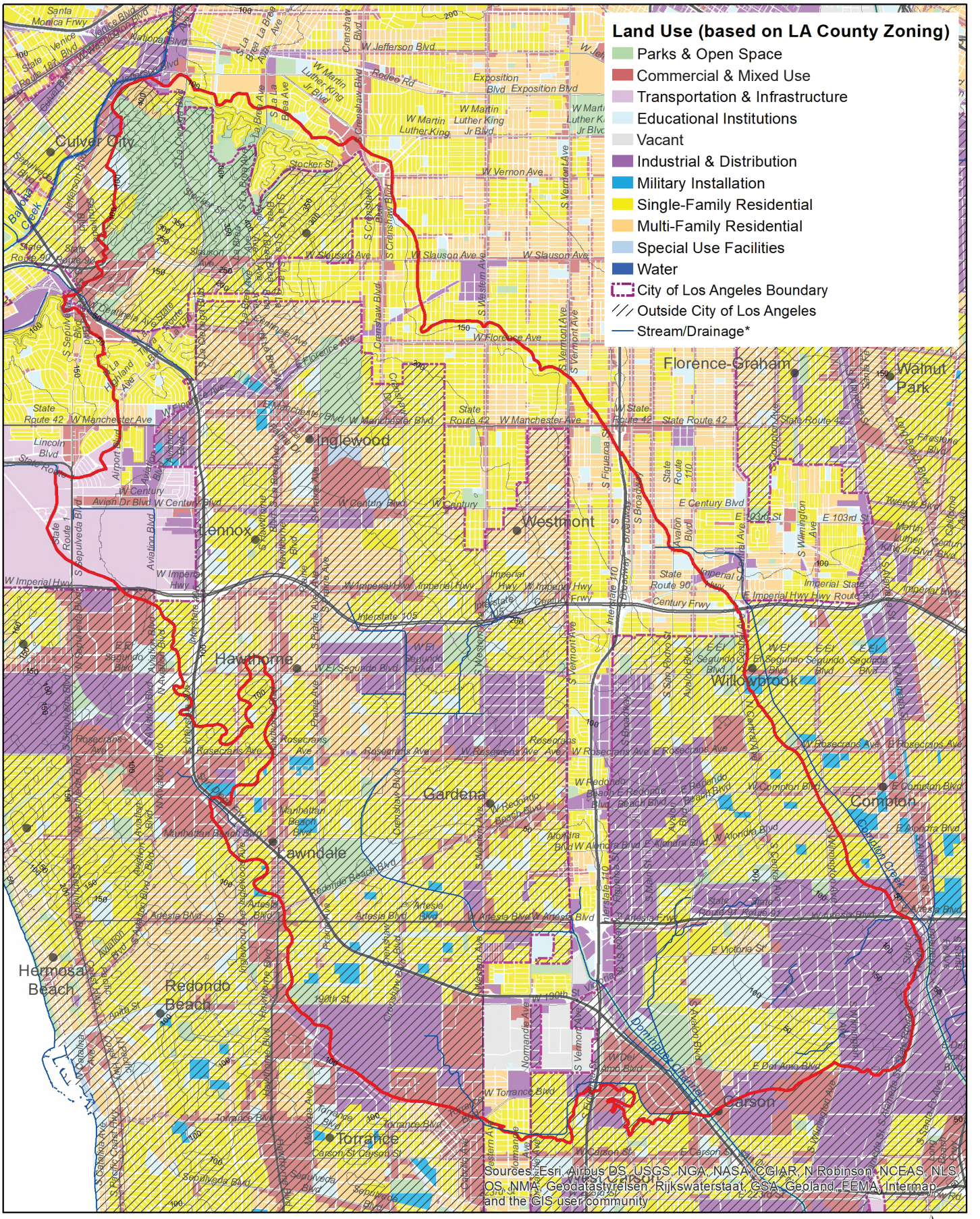
CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.

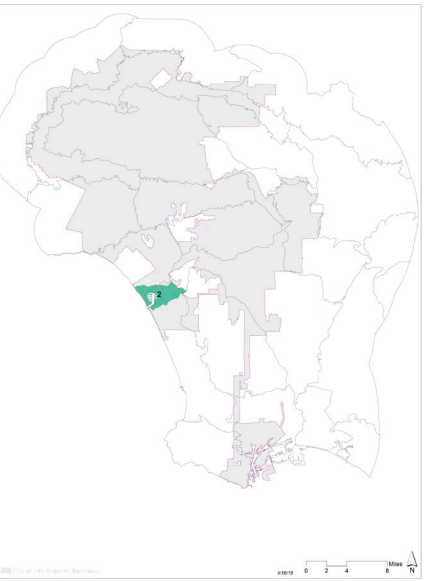


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 2: BALLONA CREEK INTERTIDAL & COASTAL PLAIN

(Mostly within the City of Los Angeles)



LANDFORM

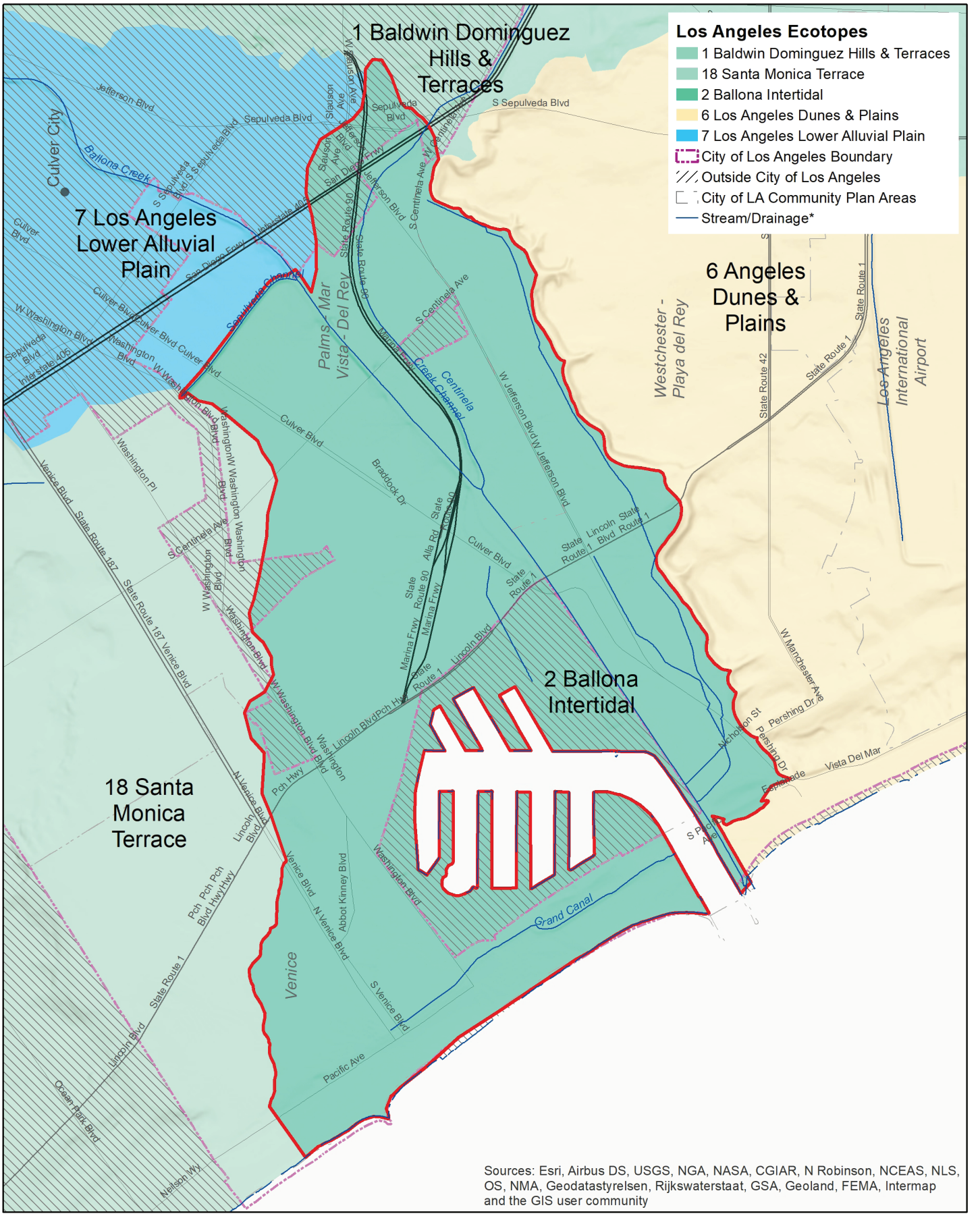
Intertidal and coastal plain zones encompass the expanse of land that could be directly impacted by sea level rise in the coming century, along with some adjacent areas within 20 feet of elevation above sea level. These areas were the historic sites of the expansive Ballona Creek estuary and wetlands. The estuary receives waters flowing from the Ballona Creek watershed, and also historically received waters from the LA River during the early 19th century prior to the river course shifting to its current outlet in Long Beach. Soils are sandy on dune and strand landforms, with poorly drained hydric and clay coastal plain soils elsewhere. While much of the ecotope has been filled for development, some areas of Bluff Creek, Ballona Creek, and adjacent marshes are being restored from past agricultural and industrial uses. With its low elevation, many areas within this ecotope are subject to exposure from sea level rise, which may drastically alter the character of existing and adjacent land use in the coming century.

MICROCLIMATE

The ecotope falls entirely within the coastal influence microclimate zone leading to relatively temperate conditions throughout the year and prominent coastal fog in spring and early summer. The low elevation and close proximity to the coast reduces summer heat extremes compared to higher and/or more inland areas. Generally flat terrain makes aspect variation limited in the ecotope. This ecotope has a relatively low urban heat island effect due to the strong marine influence that maintains cool air near the surface during prevalent onshore breezes.

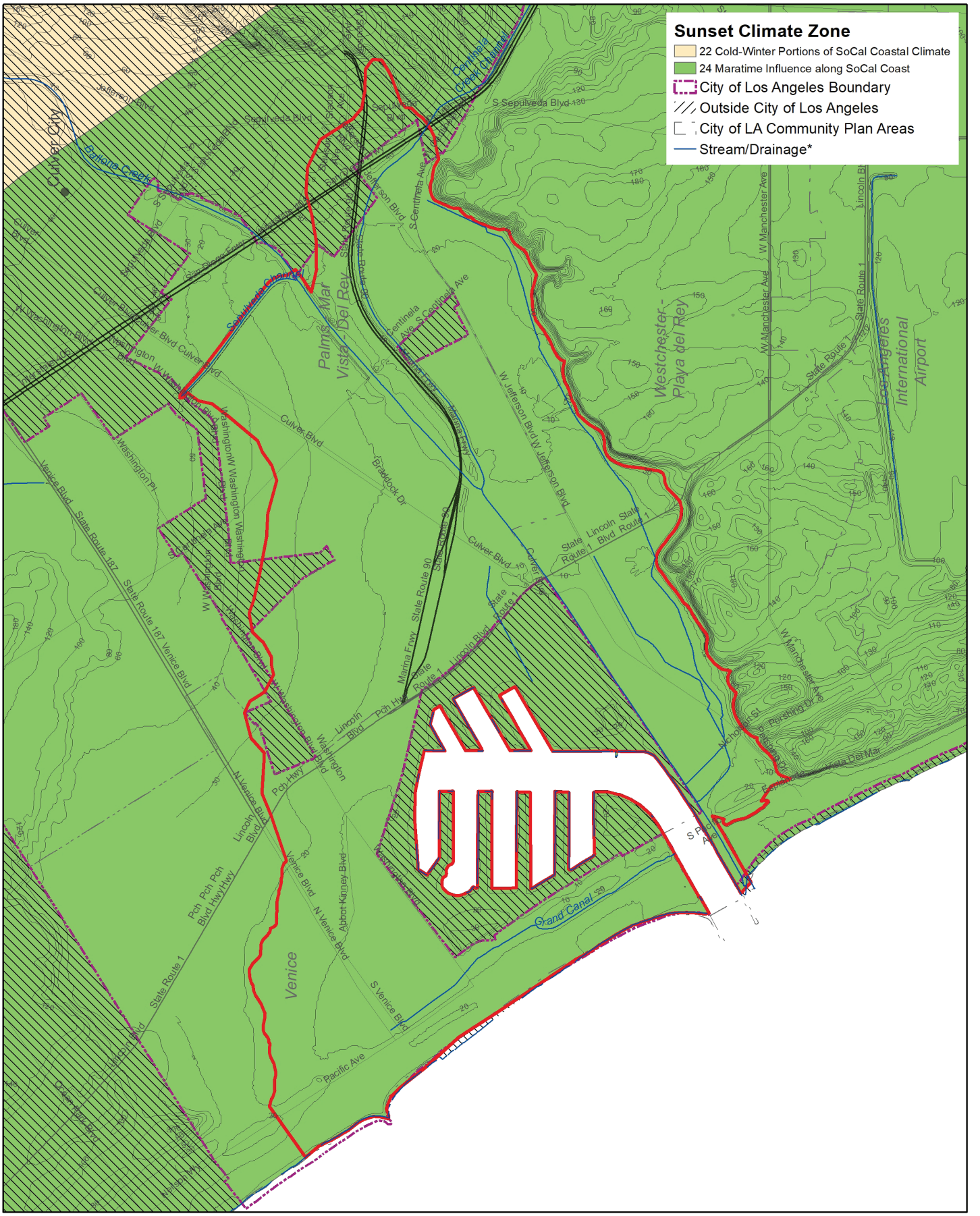
VEGETATION & LANDCOVER

At the time of the CALVEG mapping in 2000, prior to the development of Playa Vista, this ecotope was nearly 25% non-urban landcover, making it one of the least developed ecotopes in the City. Remnant high quality saline emergent marsh, coastal sage scrub, coastal strand, and riparian vegetation are still present. These areas are home to many rare and protected wildlife species of high conservation concern, including the El Segundo blue butterfly (*Euphilotes battoides allyni*), Ridgeway's rail *(Rallus longirostris obsoletus)*, Least Bell's vireo (*Vireo bellii pusillus*), and the Belding's savannah sparrow (*Passerculus sandwichensis*). One of the last documented sightings of a Southern California Steelhead (*Oncorhynchus mykiss*) in Los Angeles was also in Ballona Creek within the ecotope in 2010. Large areas of the former Ballona Creek Estuary are currently being planned for restoration. Detailed descriptions of the ecological context relevant to the project, the broader ecotope, and the alternatives for restoration can be found in the Draft Environmental Impact Report prepared for the project (USACE & CDFW, 2017).



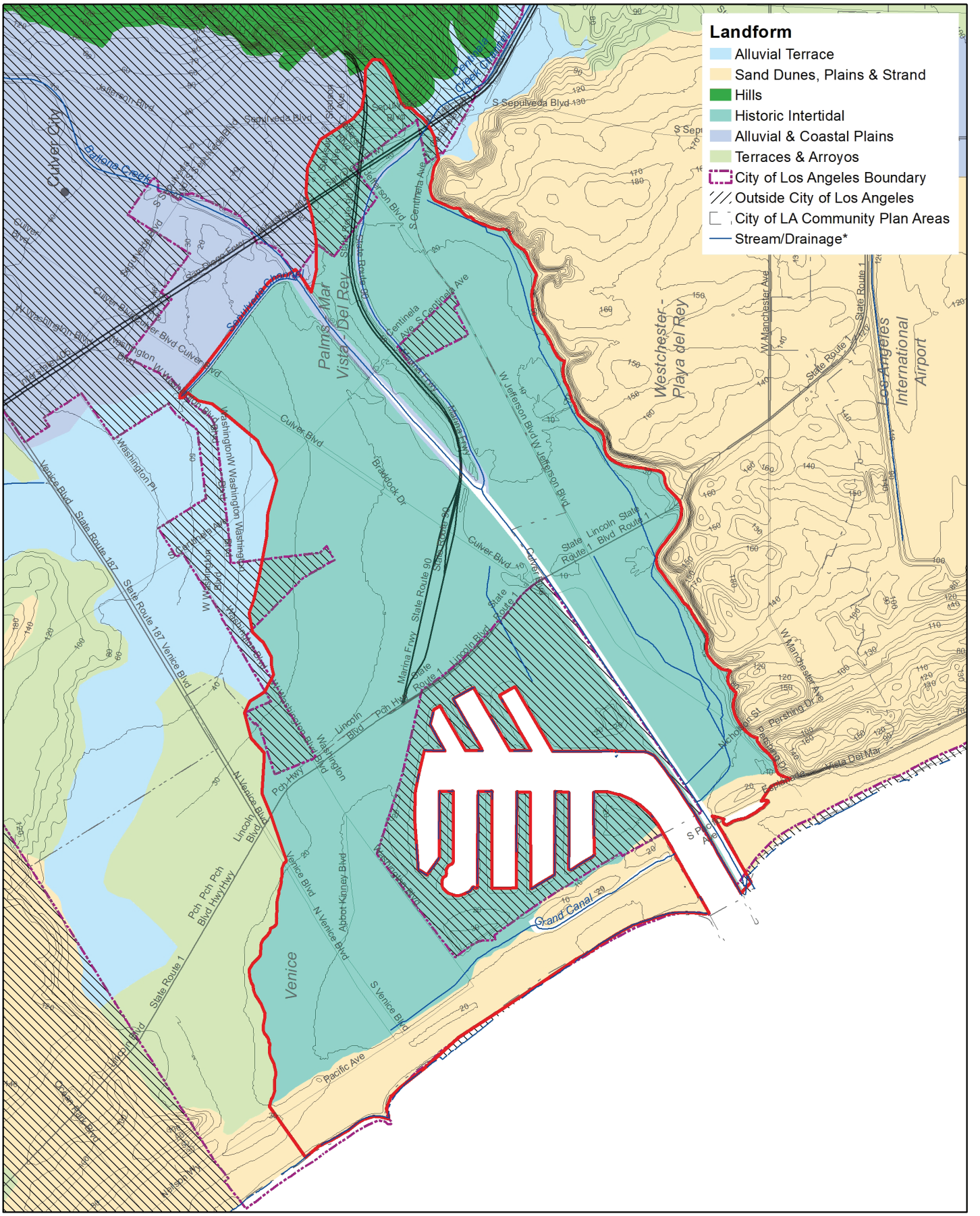
Ecotope 2 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



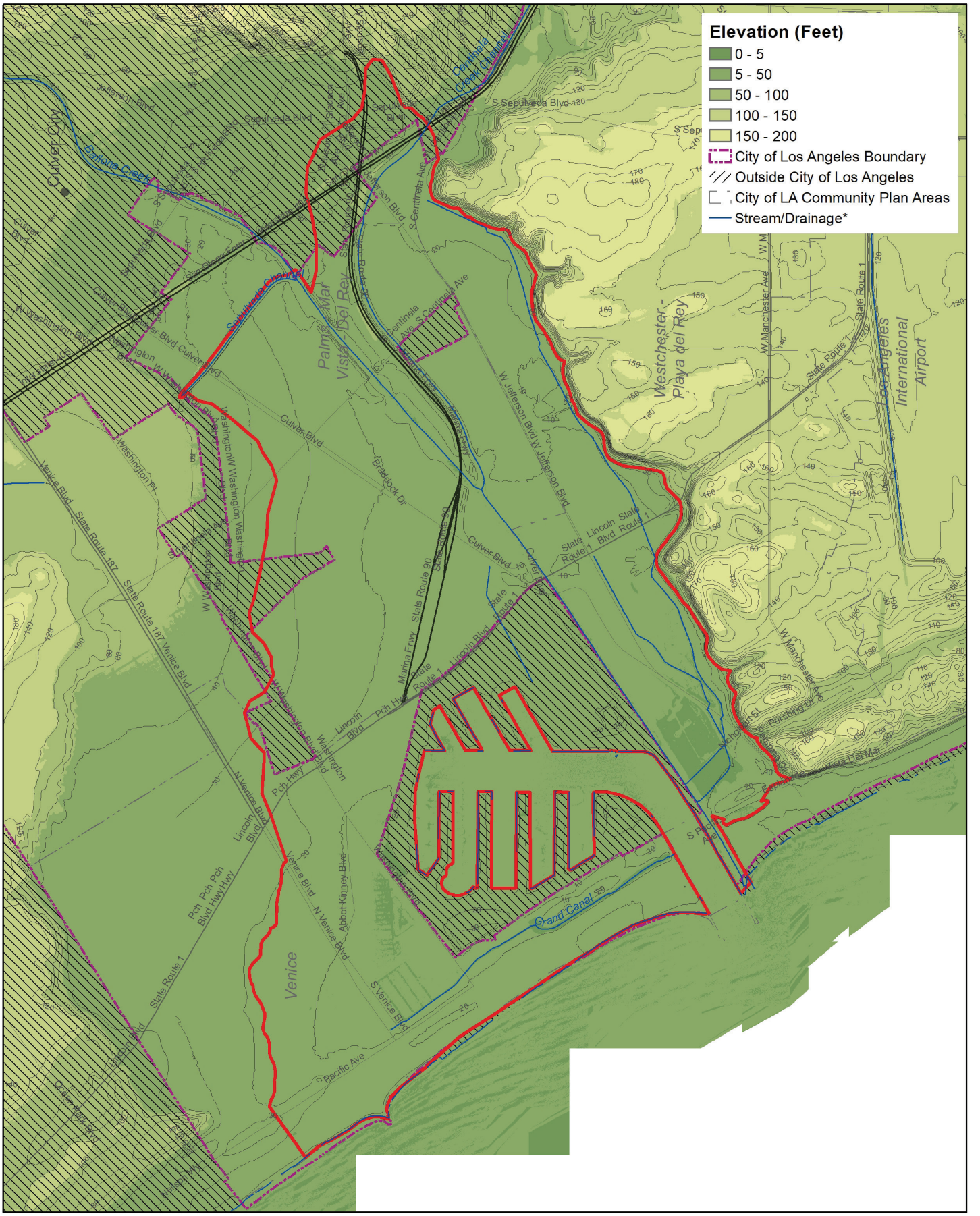
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



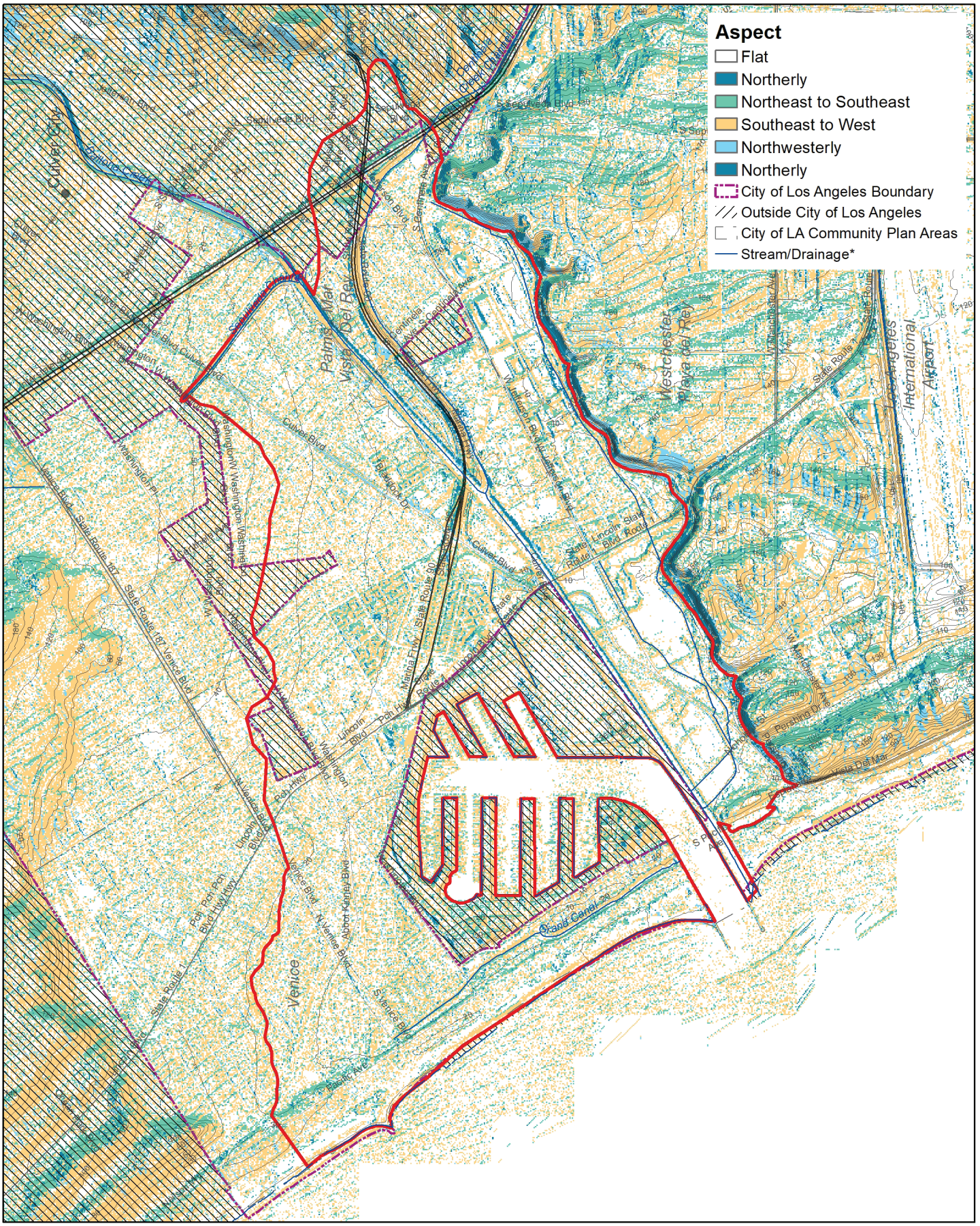
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



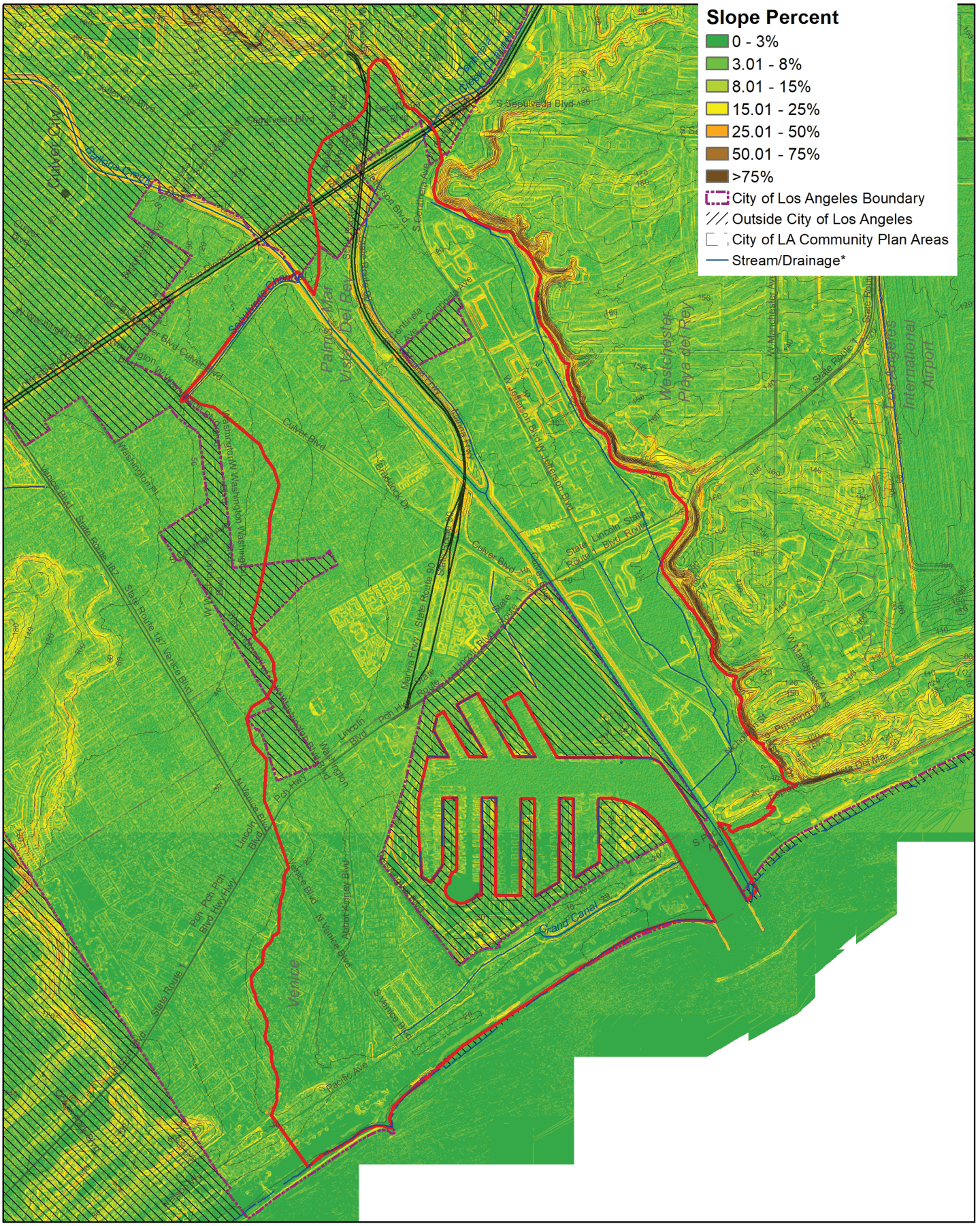
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



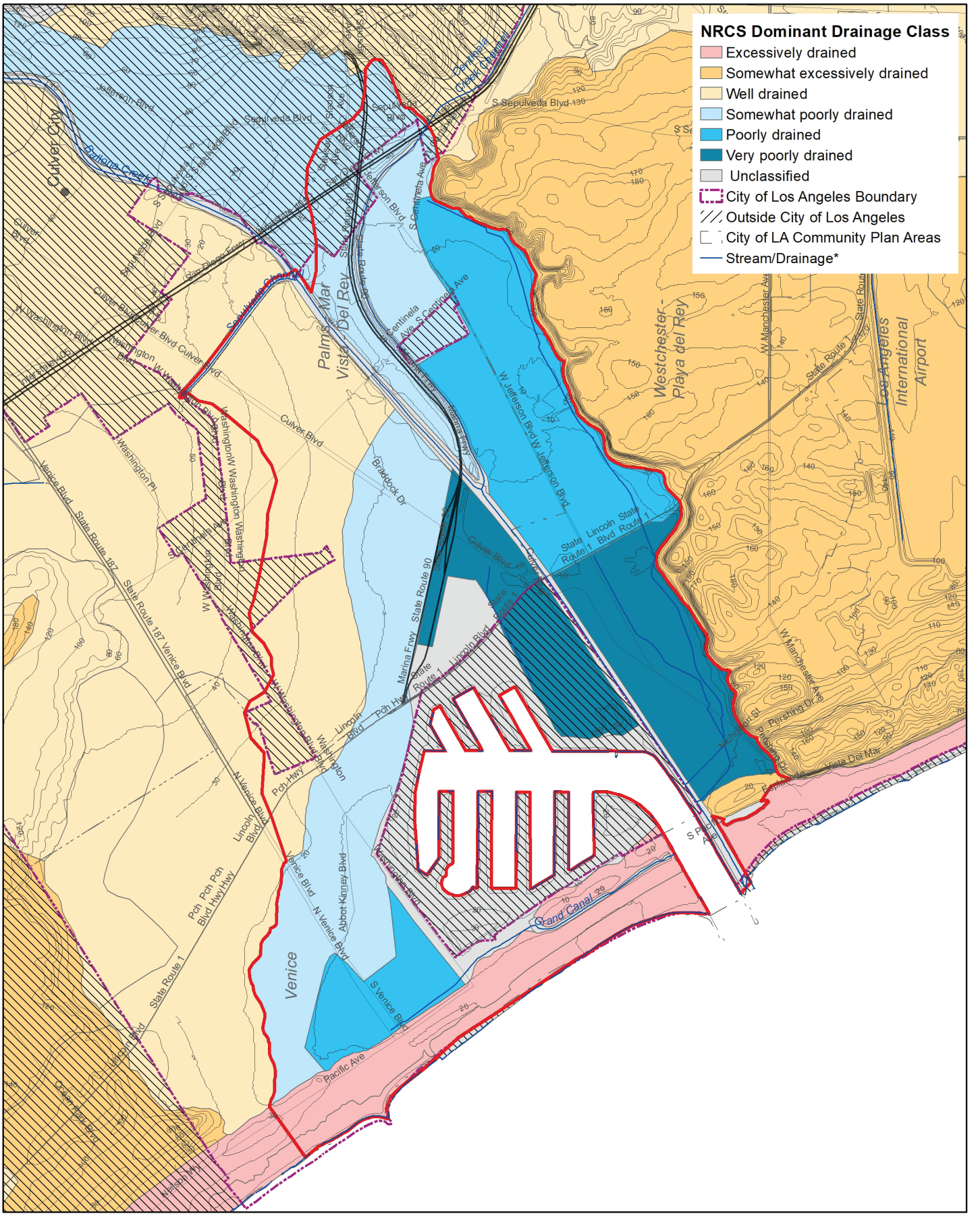
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



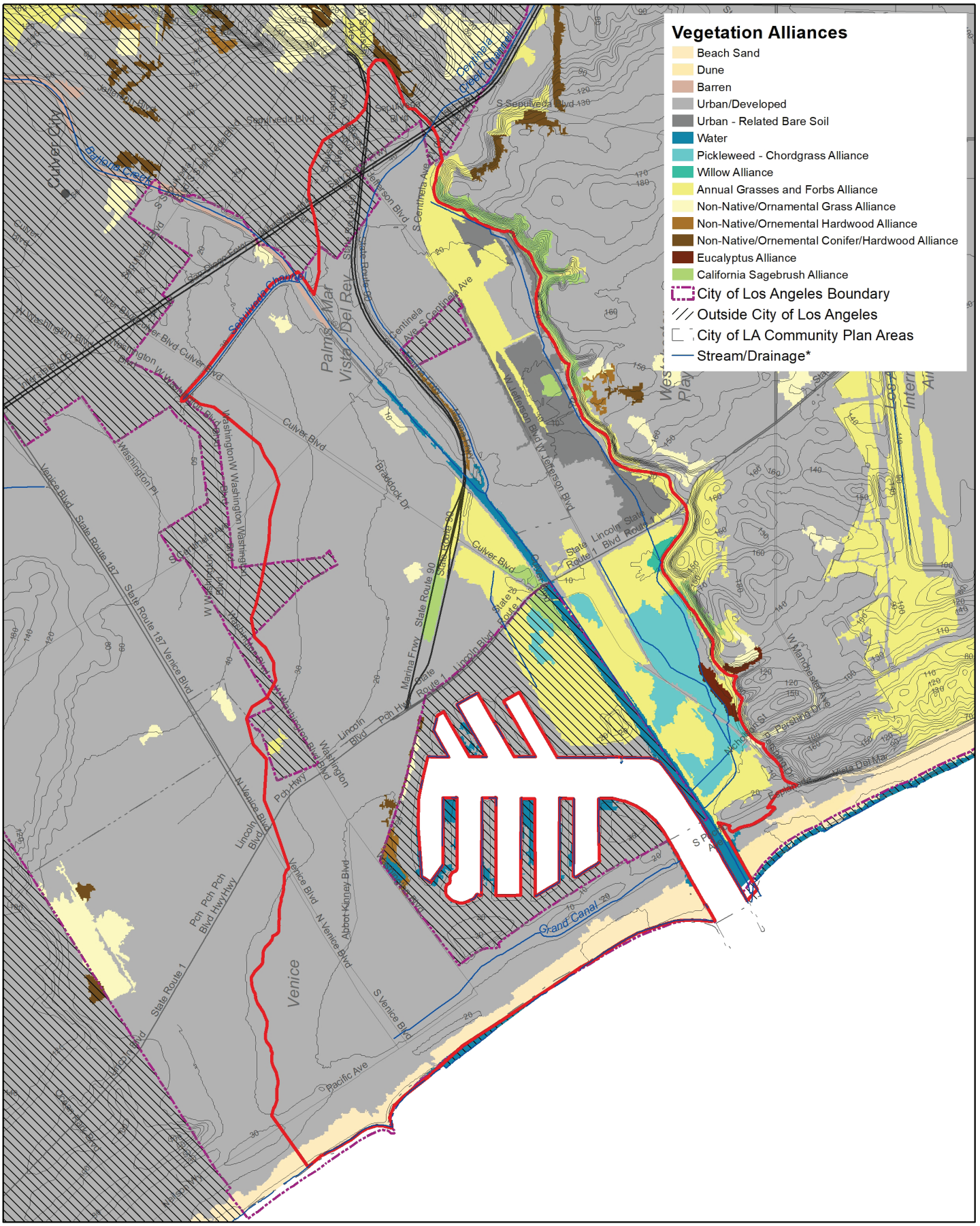
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



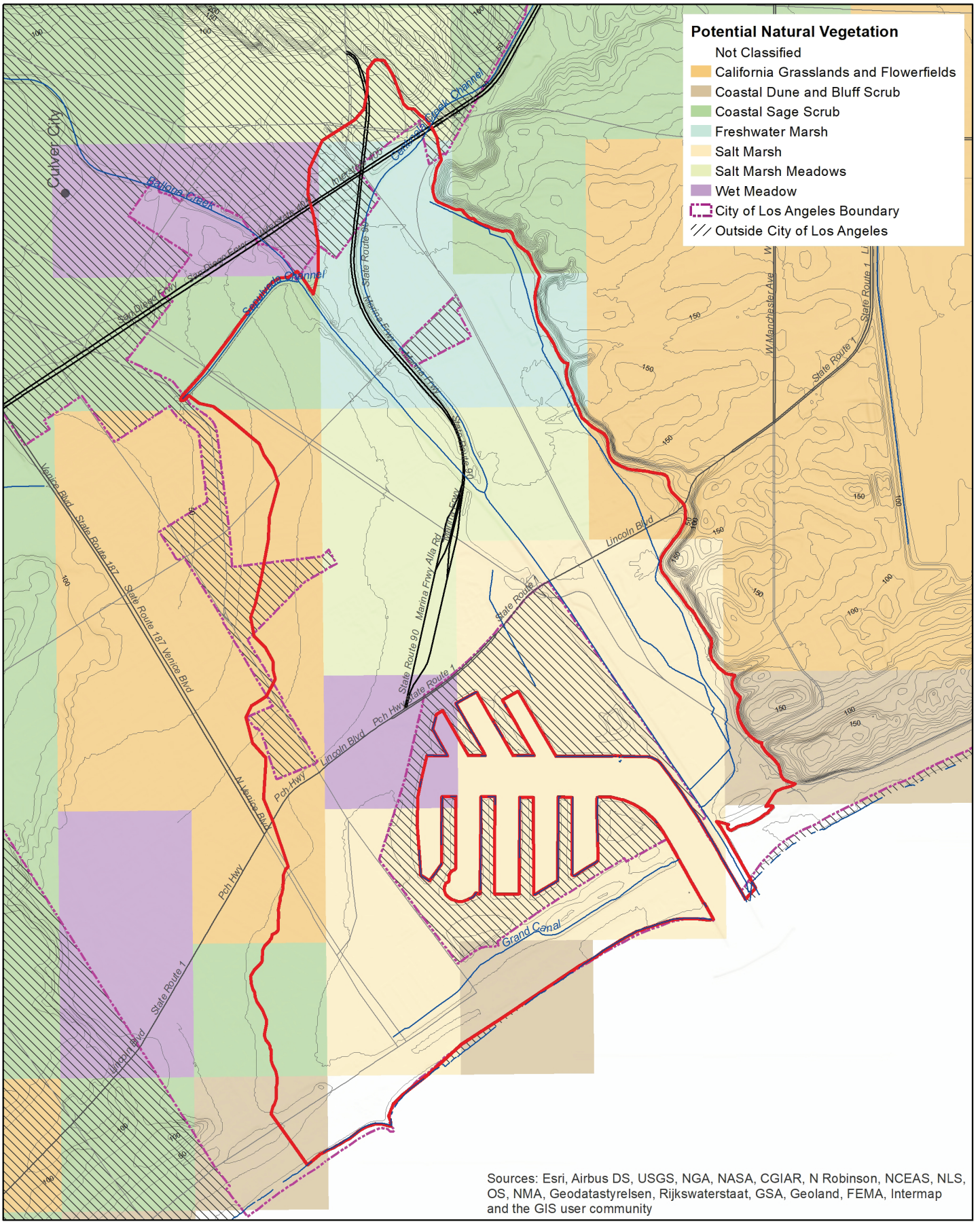
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



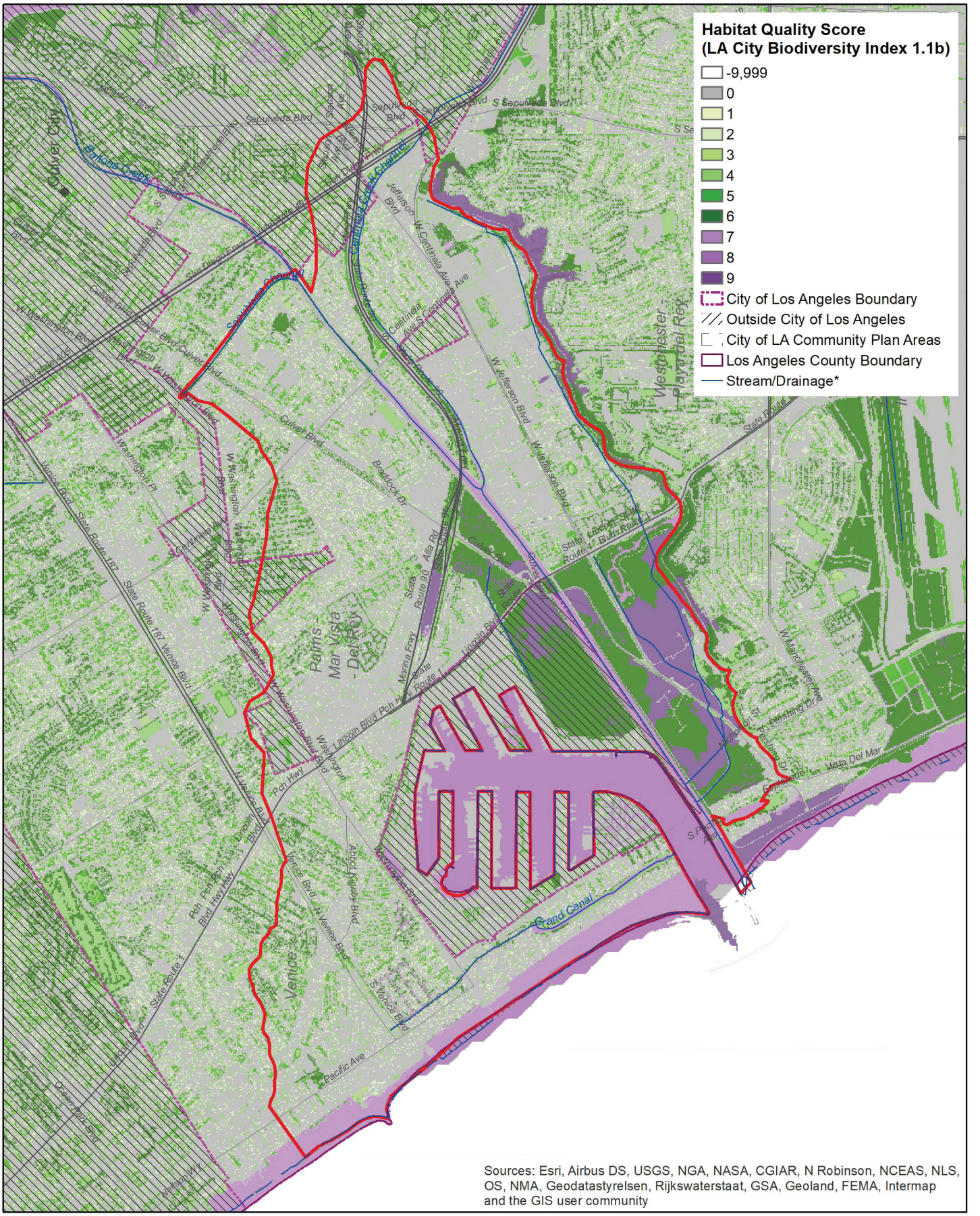
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



Hypothesized Potential Natural Vegetation

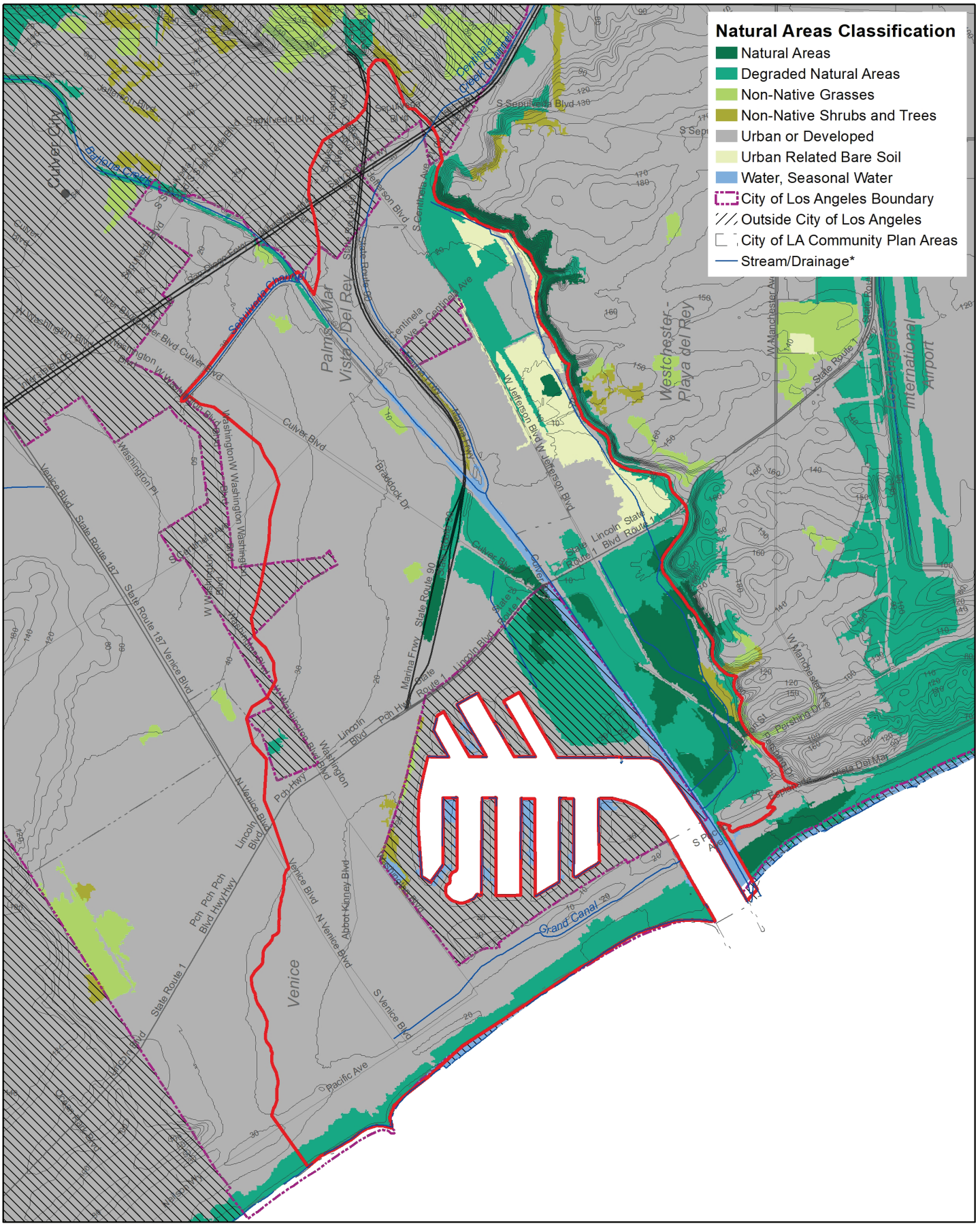
Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr

0 0.275 0.55 1.1 Miles

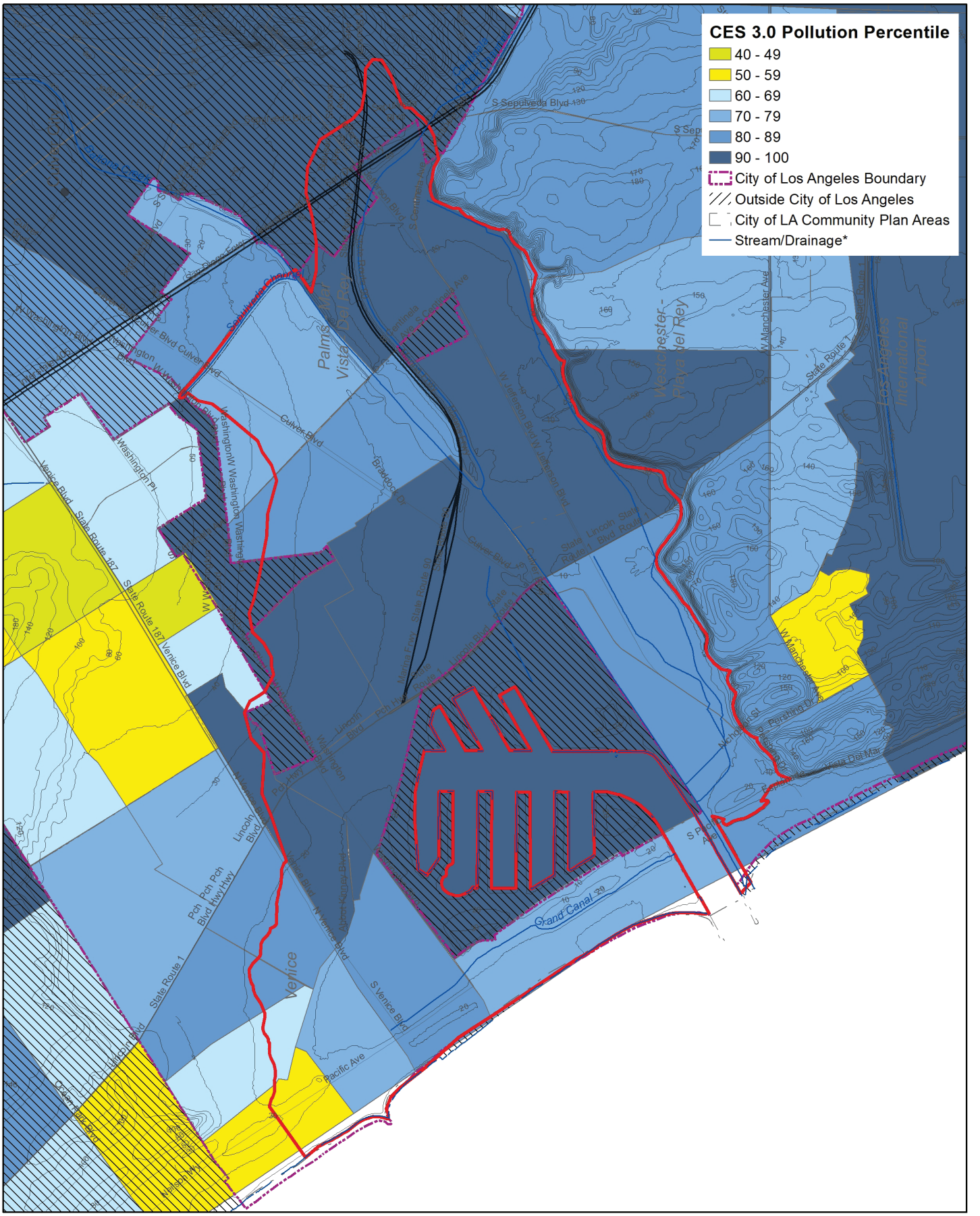


Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf

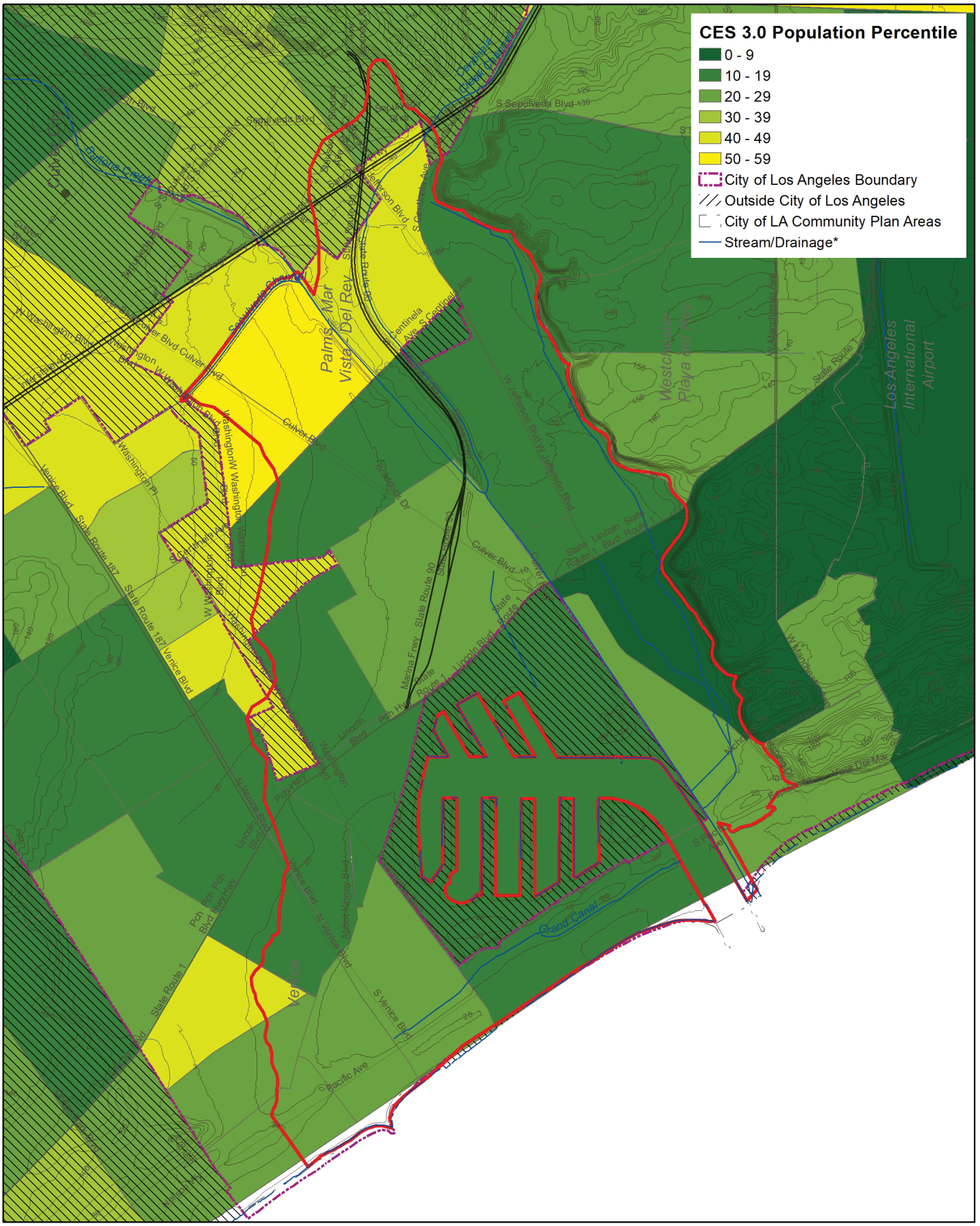
0 0.275 0.55 1.1 Miles

N



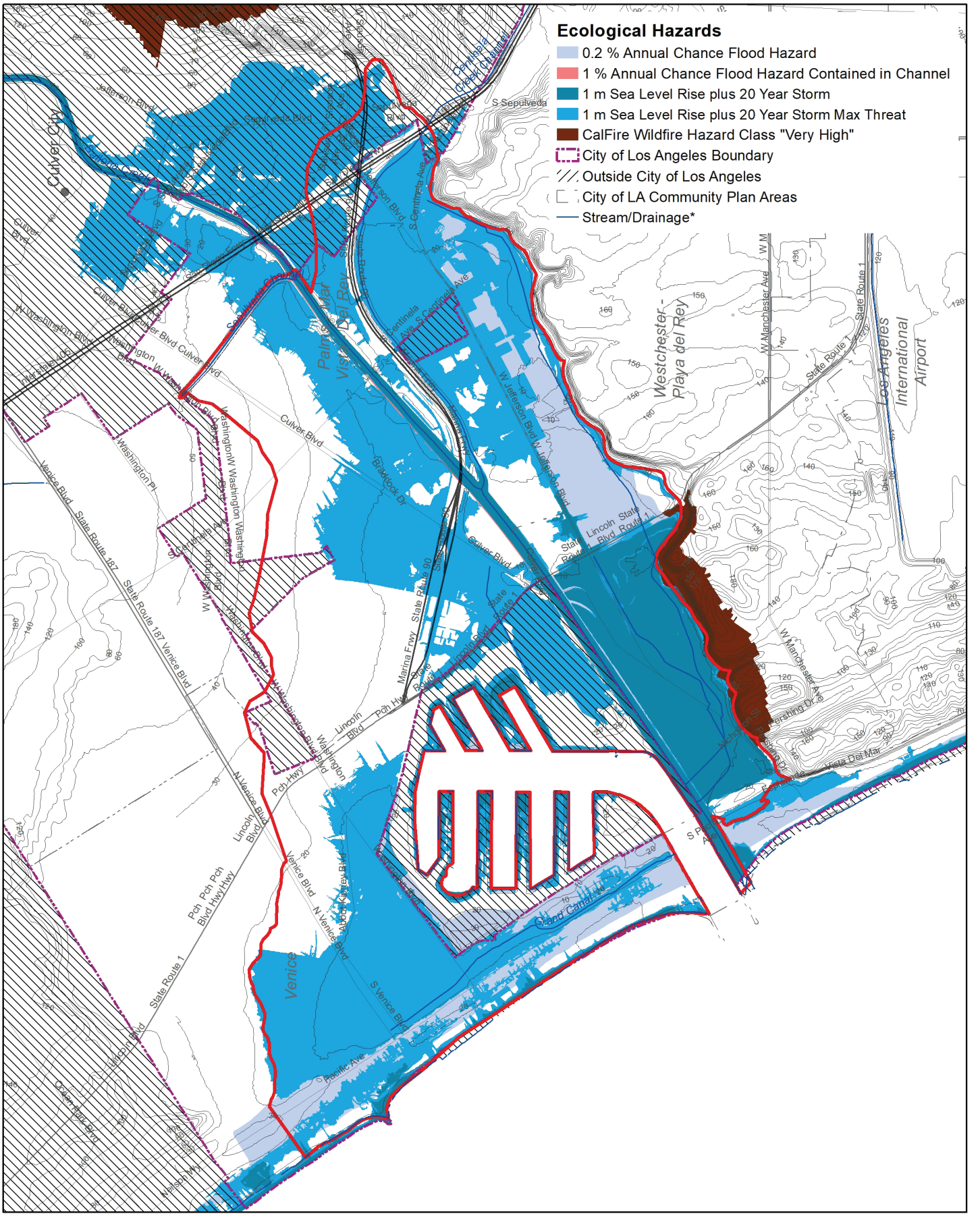
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



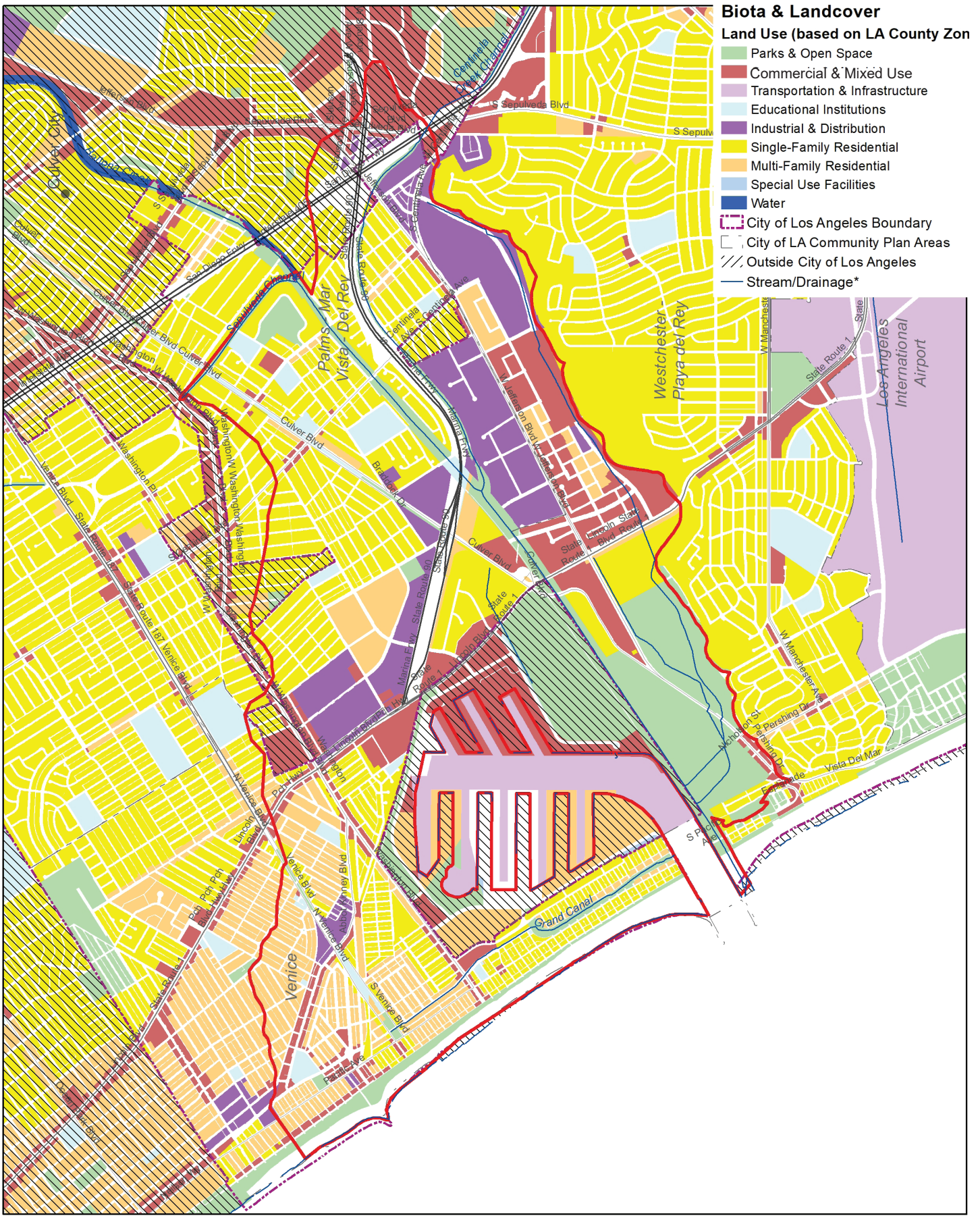
CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



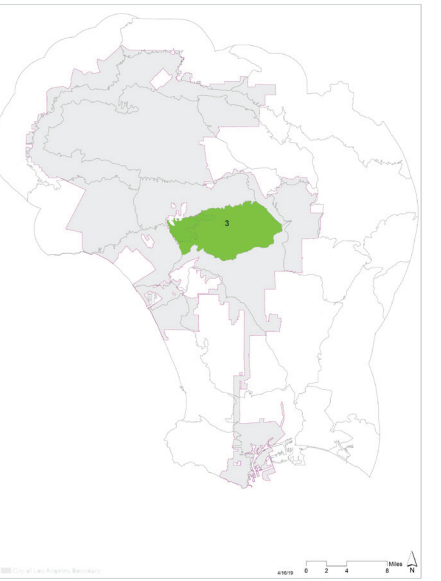
Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.


Biota & Landcover
Land Use (based on LA County Zon
Parks & Open Space
Commercial & Mixed Use
Transportation & Infrastructure
Educational Institutions
Industrial & Distribution
Single-Family Residential
Multi-Family Residential
Special Use Facilities
Water
City of Los Angeles Boundary
City of LA Community Plan Areas
Outside City of Los Angeles
Stream/Drainage*
Culver City
Palms
Mar Vista
Del Rey
Westchester -
Playa del Rey
Los Angeles
International
Airport
Venice
Grand Canal
Ballona Creek
Centinela
Creek
Culver Blvd
Venice Blvd
Marina Fwy
Lincoln Blvd
Pershing Dr
Vista Del Mar
Esplanade
Washington Blvd
Washington Pl
Braddock Dr
Jefferson Blvd
S Sepulveda Blvd
W Manchester Ave
Michelson St
Abbot Kinney Blvd
Pacific Ave
Ocean Front Walk
Speedway
Main St
Pch Hwy
Pch
Hwy
Blvd
Ave
Dr
Pl
St
Fwy
State Route 1
State Route 90
State Route 187 Venice Blvd
Jefferson Blvd
Sepulveda Blvd
Centinela Ave

ECOTOPE 3: ELYSIAN HILLS AND TERRACES

(Mostly within the City of Los Angeles)



LANDFORM

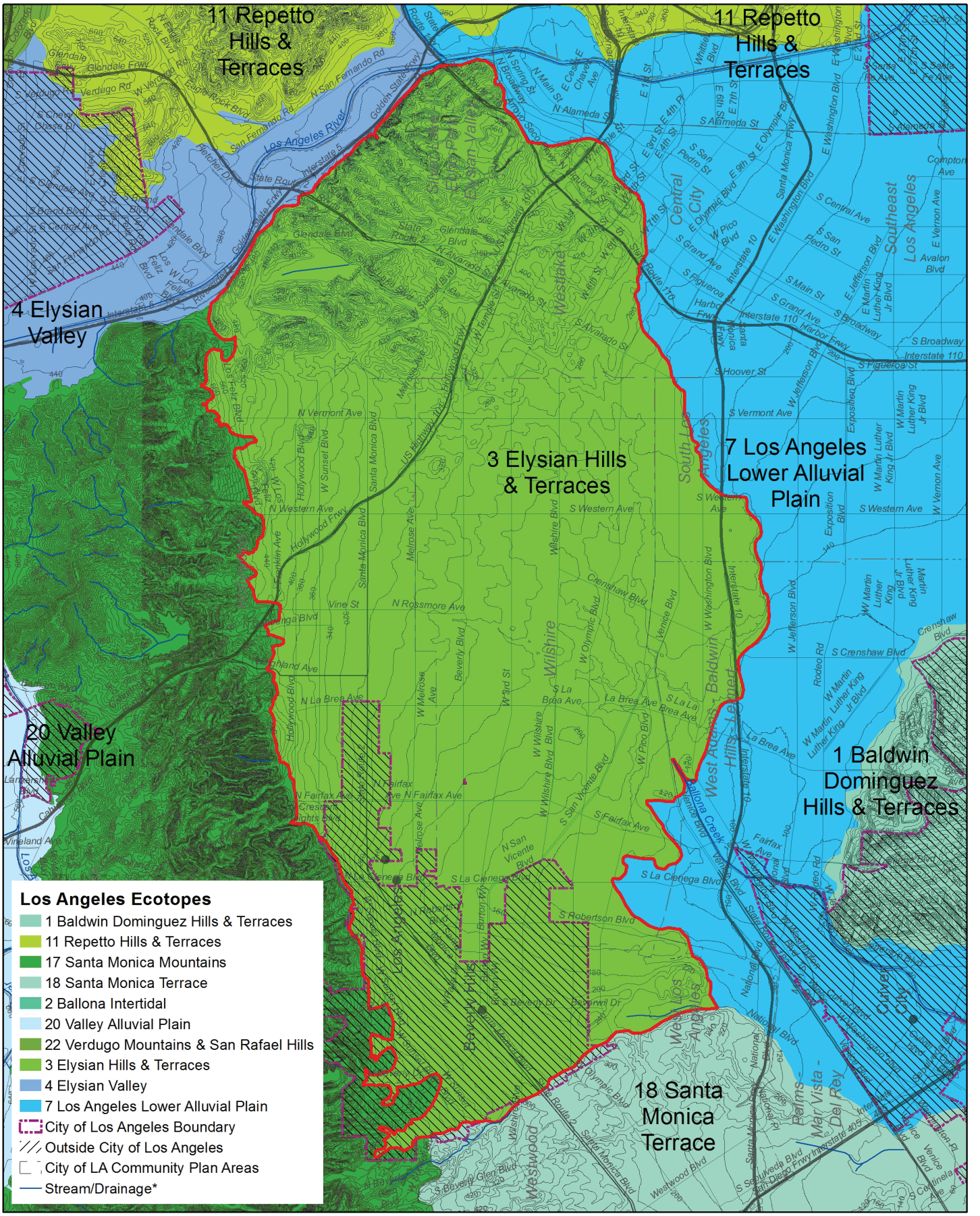
The Elysian Hills and Terraces is a diverse ecotope ranging from 100' to 800' in elevation that includes areas between the historic LA River and Ballona Creek floodplains and the Santa Monica Mountains. It is characterized by the Elysian Hills, the undulating terraces and arroyos draining them to the west, and the broad alluvial terraces and plains draining the Eastern Santa Monica Mountains to the south. The rolling hills of Westwood border the ecotope to the west. Areas draining the Santa Monica Mountains are flatter, with the exception of steep arroyos that run generally north and south. A broad flat area of historic wetlands in the southwest portion of the ecotope, formerly known as "La Cienegas," forms at the low point of the ecotope where it meets the broad, flat LA River/Ballona Creek historic floodplain. Areas draining the Elysian Hills are more rolling and include historic creek beds running east and west. Historic wetland areas at the base of the Elysian Hills are now home to popular parks including MacArthur Park, Echo Park Lake, Lafayette Park, and the Shatto Recreation Center. The wetlands at MacArthur Park are being considered for restoration.

MICROCLIMATE

The microclimate here is transitional between coastal and interior valley climates. Temperatures are moderate and summers are often moderated by ocean breezes compared to more inland areas. Upper elevations of the ecotope fall within "thermal belts," rarely experience frost in winter, and exhibit a relatively long growing season. Lower portions experience more frequent frost. Moderate elevation areas on hills and terraces can also experience relatively hotter summer temperatures during heat waves in locations near and above the inversion layer that typically characterizes the LA air basin in summer. Aspects are generally south for alluvial terraces draining the Santa Monicas, also resulting in relatively hot microclimates. Aspects for areas draining the Elysian Hills are more variable. Morning fog moderates temperatures, especially for eastern aspects, in early summer. Cooler air transported inland along the Santa Monica Mountains and nearby ocean results in a relatively low urban heat island in the ecotope during summer months.

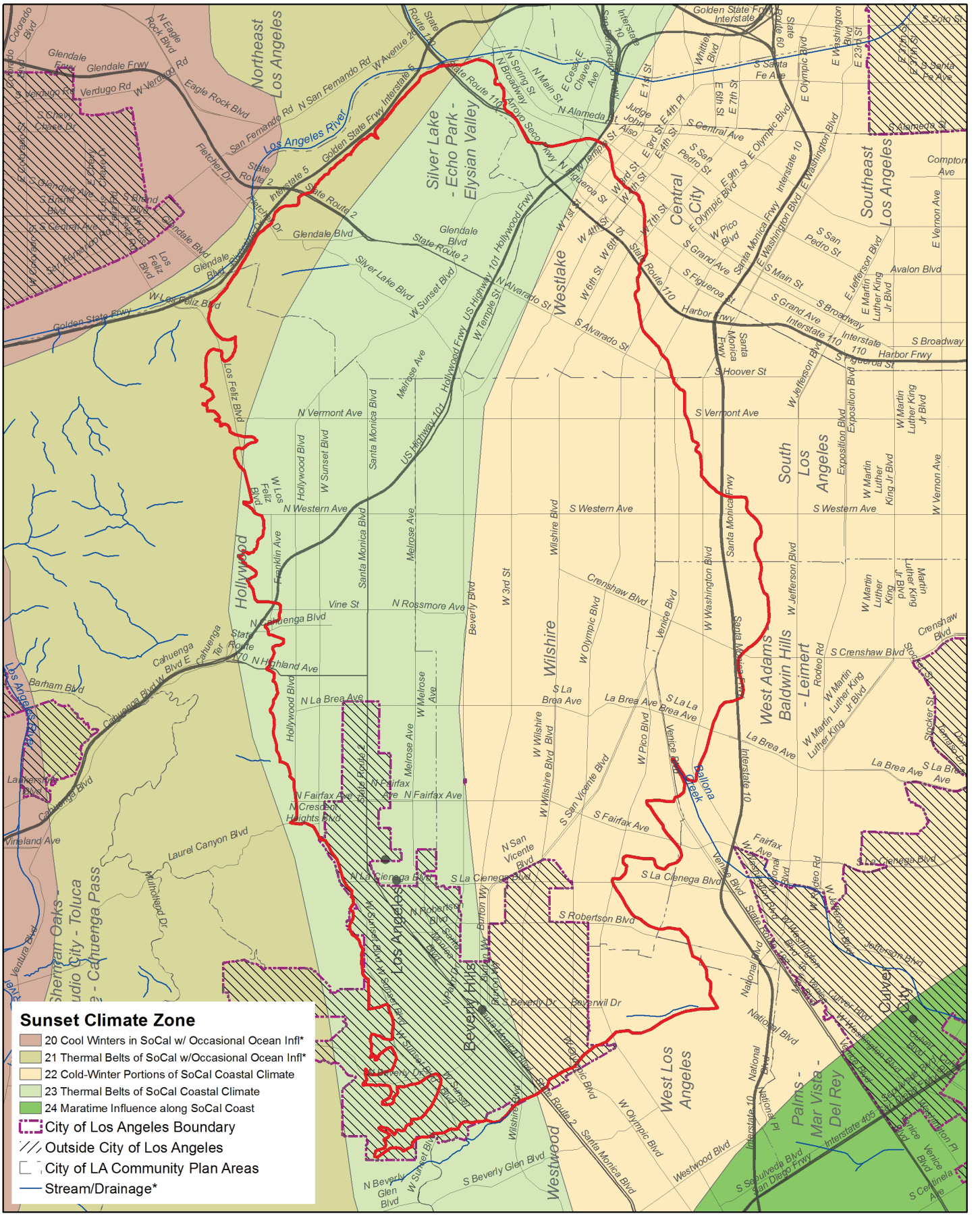
VEGETATION & LANDCOVER

About 1% of natural areas remain in the ecotope and are concentrated on the steeper slopes of the Elysian Hills. These areas are mostly coast live oak or California black walnut woodlands. Other areas include chaparral and coastal sage scrub alliances. Historically, natural vegetation was likely very diverse due to the variety of landforms and hydrology present. Extensive historic wetlands, seeps, and springs along the creeks, adjacent terraces, and alluvial landforms draining the Eastern Santa Monica Mountains and Elysian Hills have been converted, including the most extensive wetland complex, "La Cienega," which covered the flat terrain adjacent to La Cienega Blvd (Dark et al. 2011). Several historic wetlands along the base of the Elysian Hills have been converted to parks, including MacArthur Park. Few historic springs still exist, including the unusual La Brea Tar Pits. Given the similar landform and microclimate context, the natural condition of flat upland areas likely comprised a mix of coastal sage scrub and grassland complexes similar to those described by Mattoni and Longcore (1997) for the prairies of the Baldwin-Dominguez Hills/Los Angeles Dunes and Prairies ecotopes.



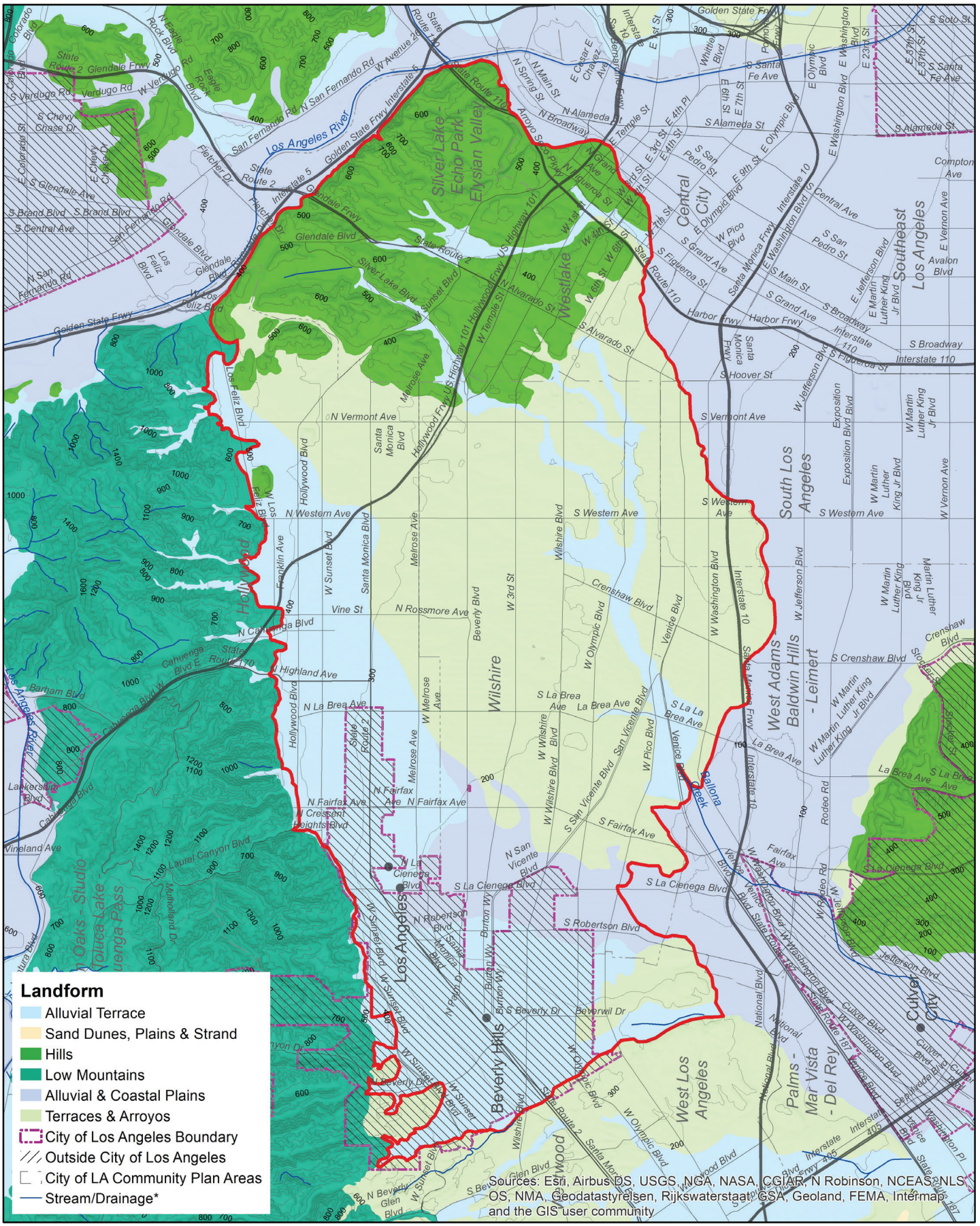
Ecotope 3 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



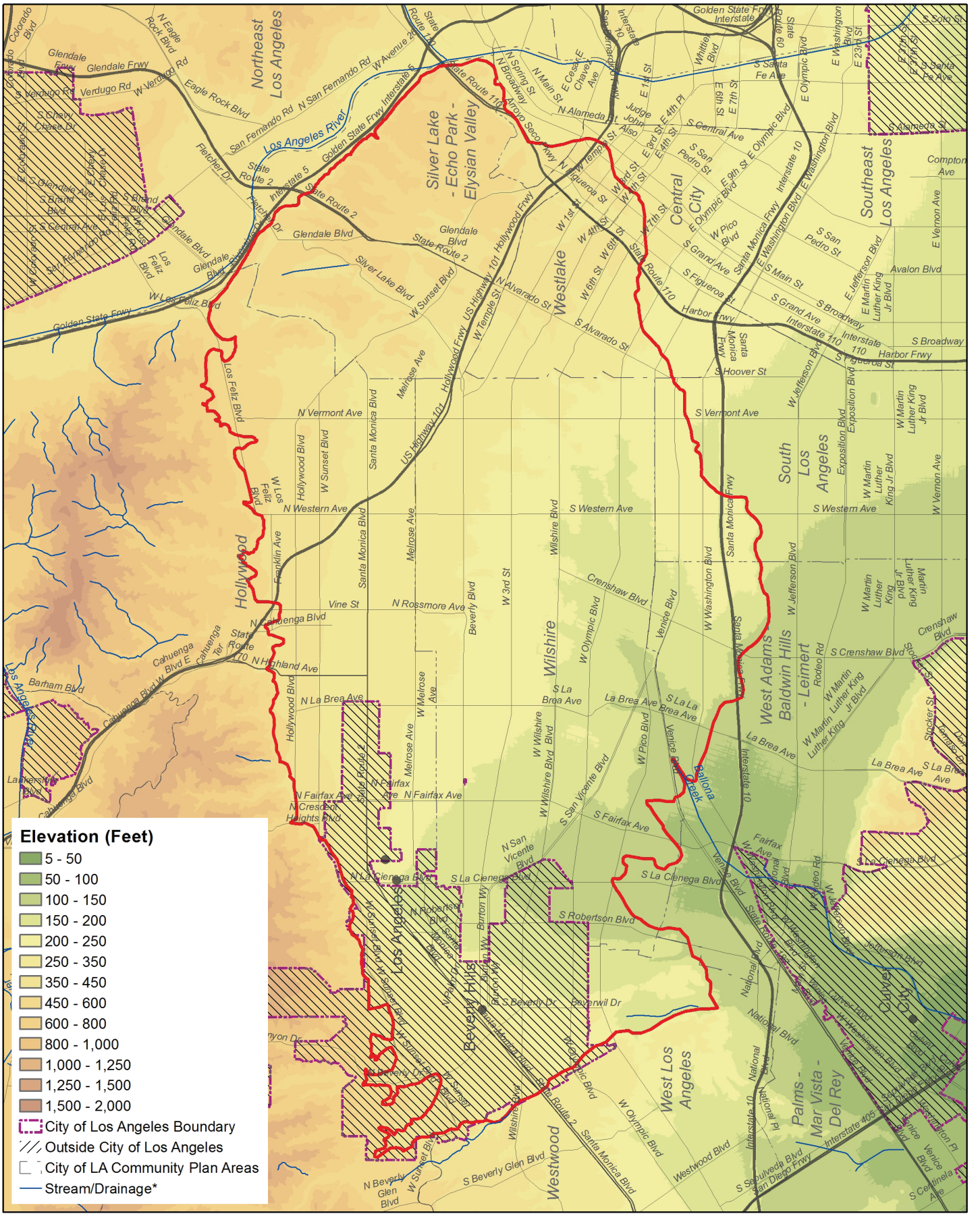
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



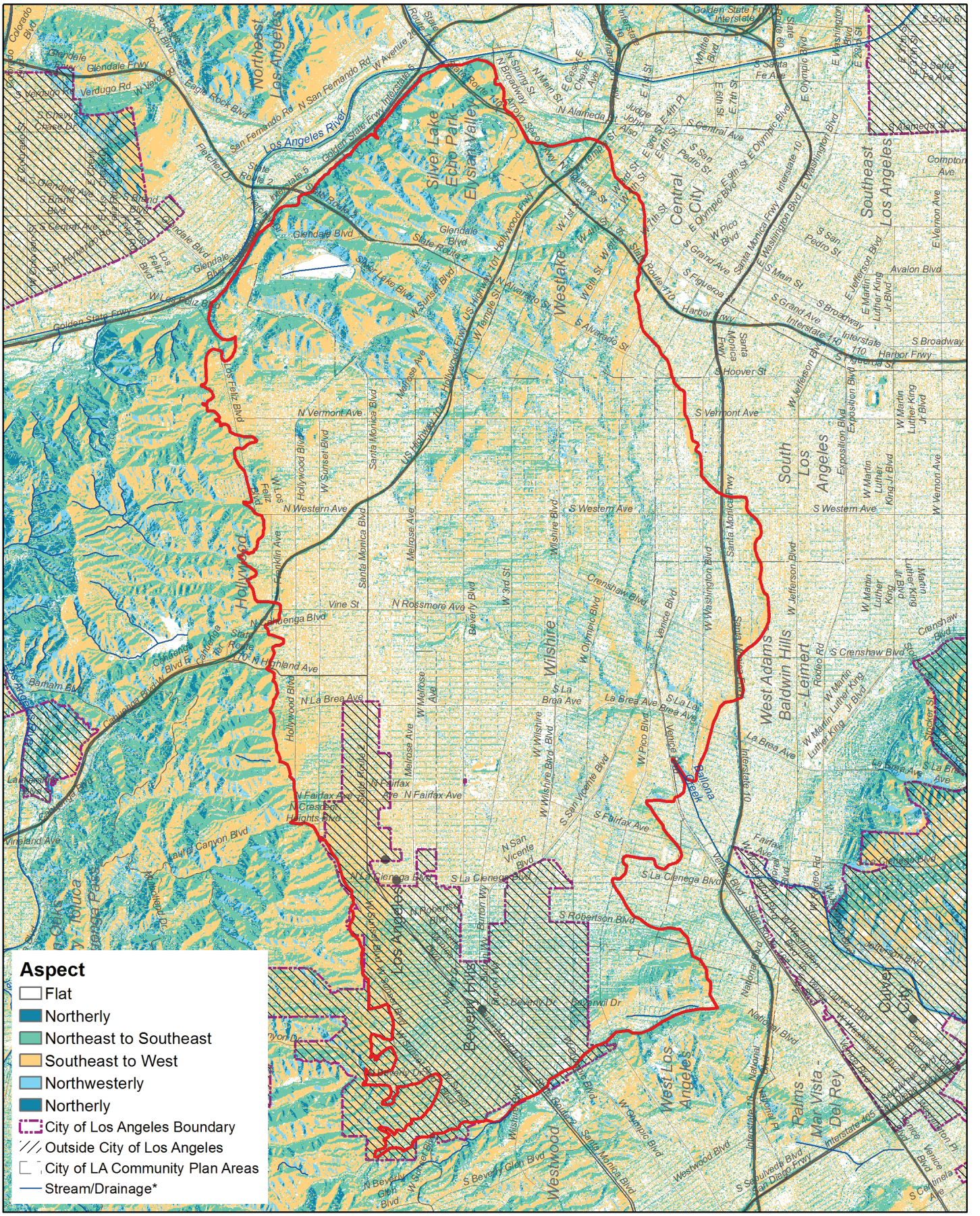
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



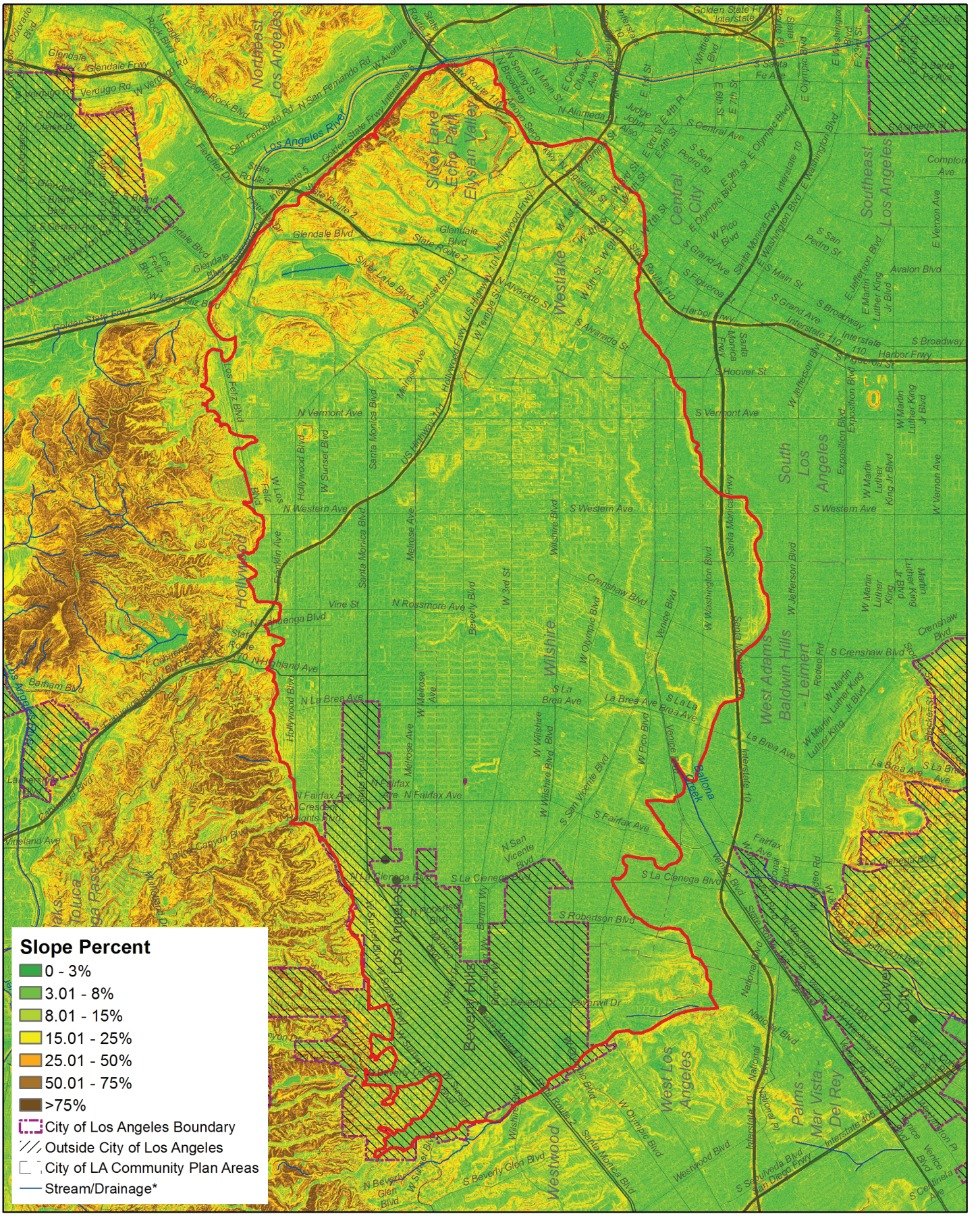
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



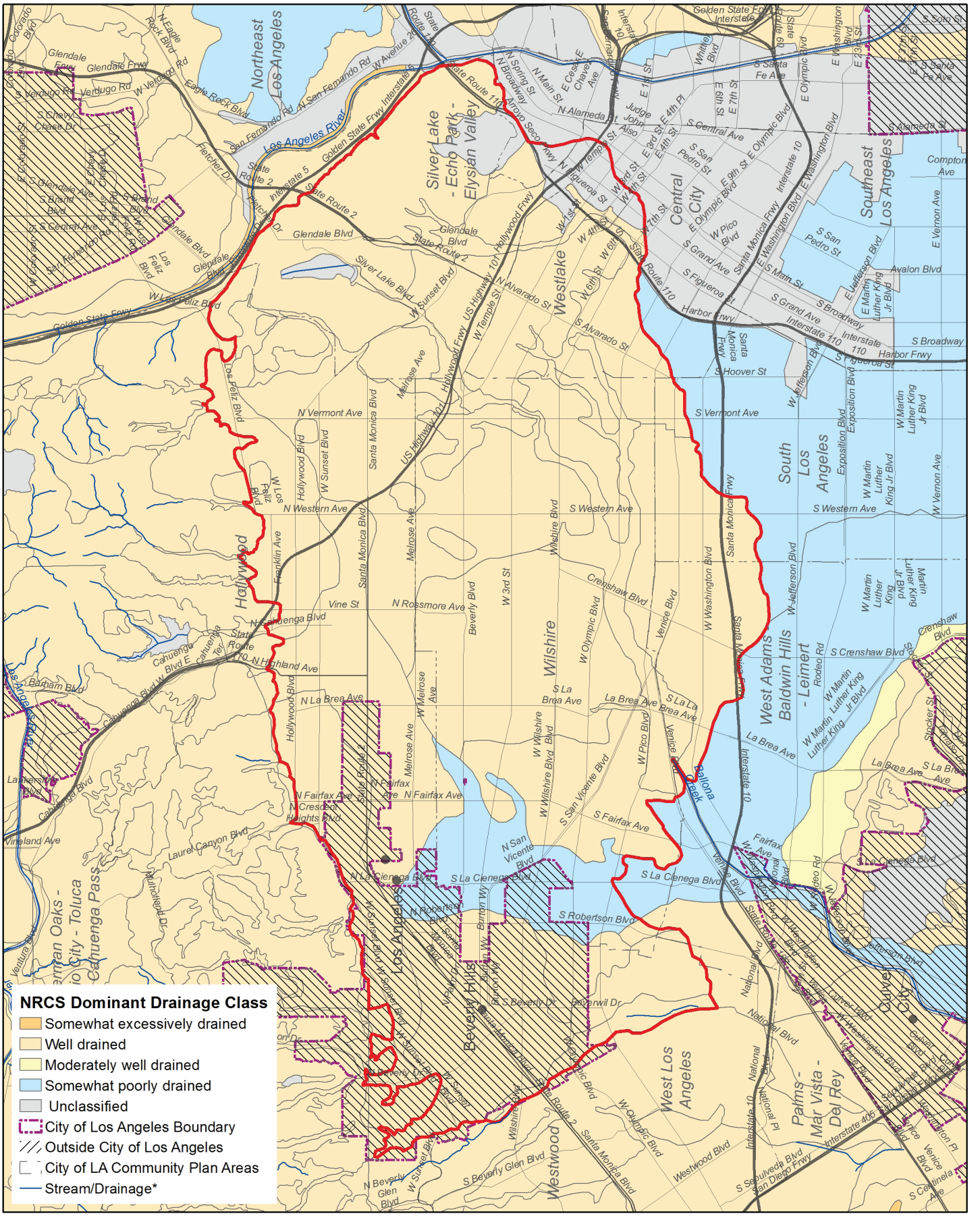
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



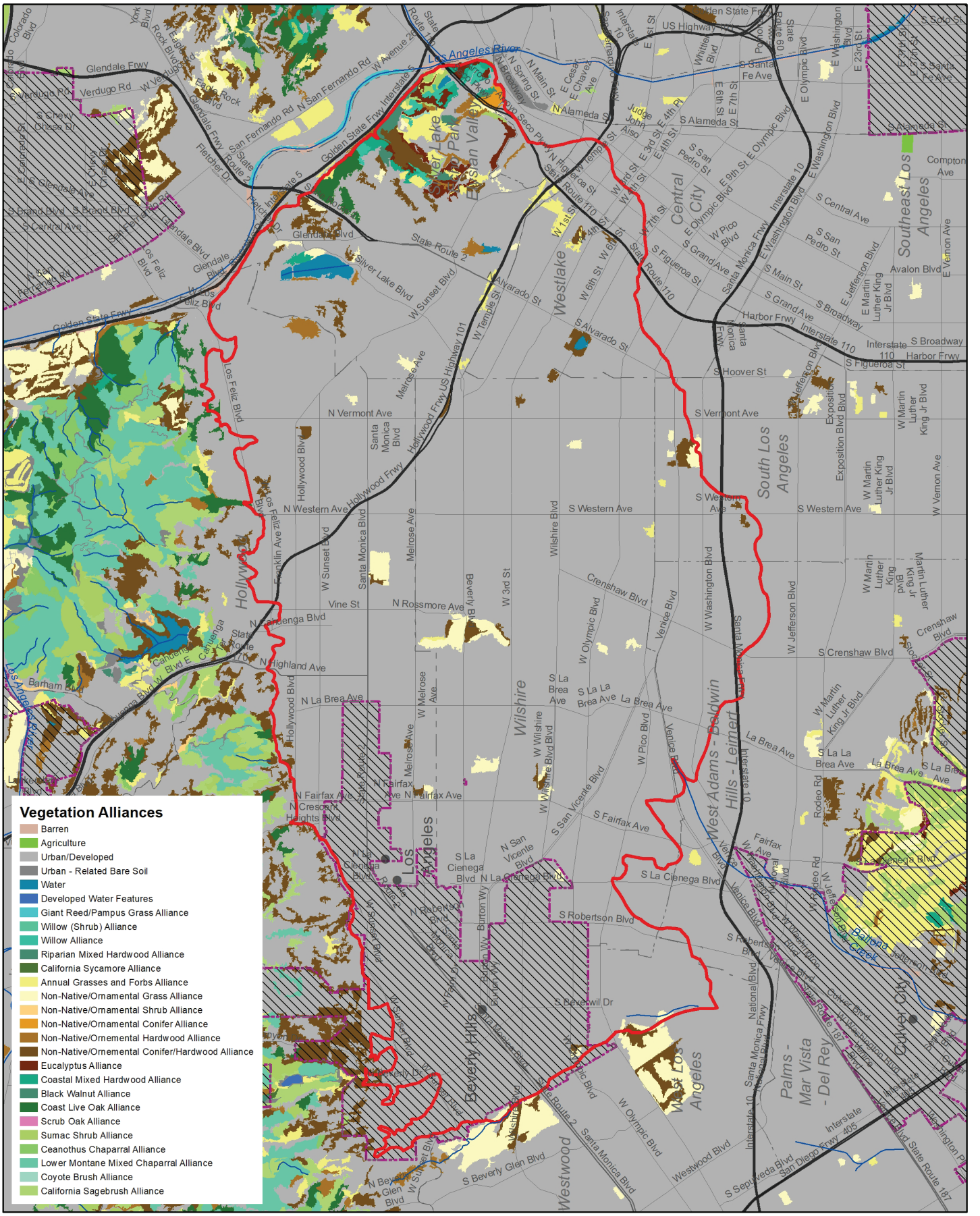
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



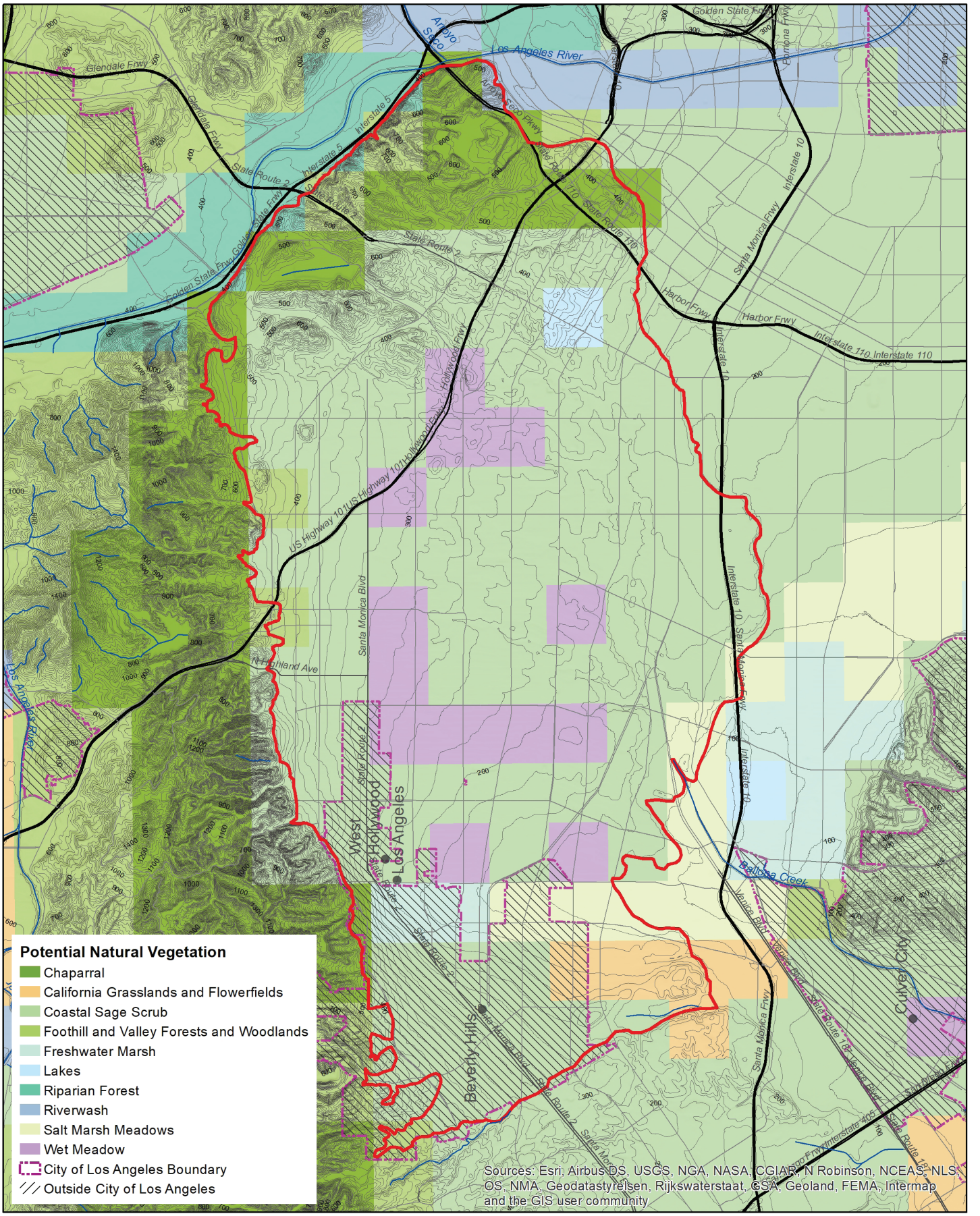
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



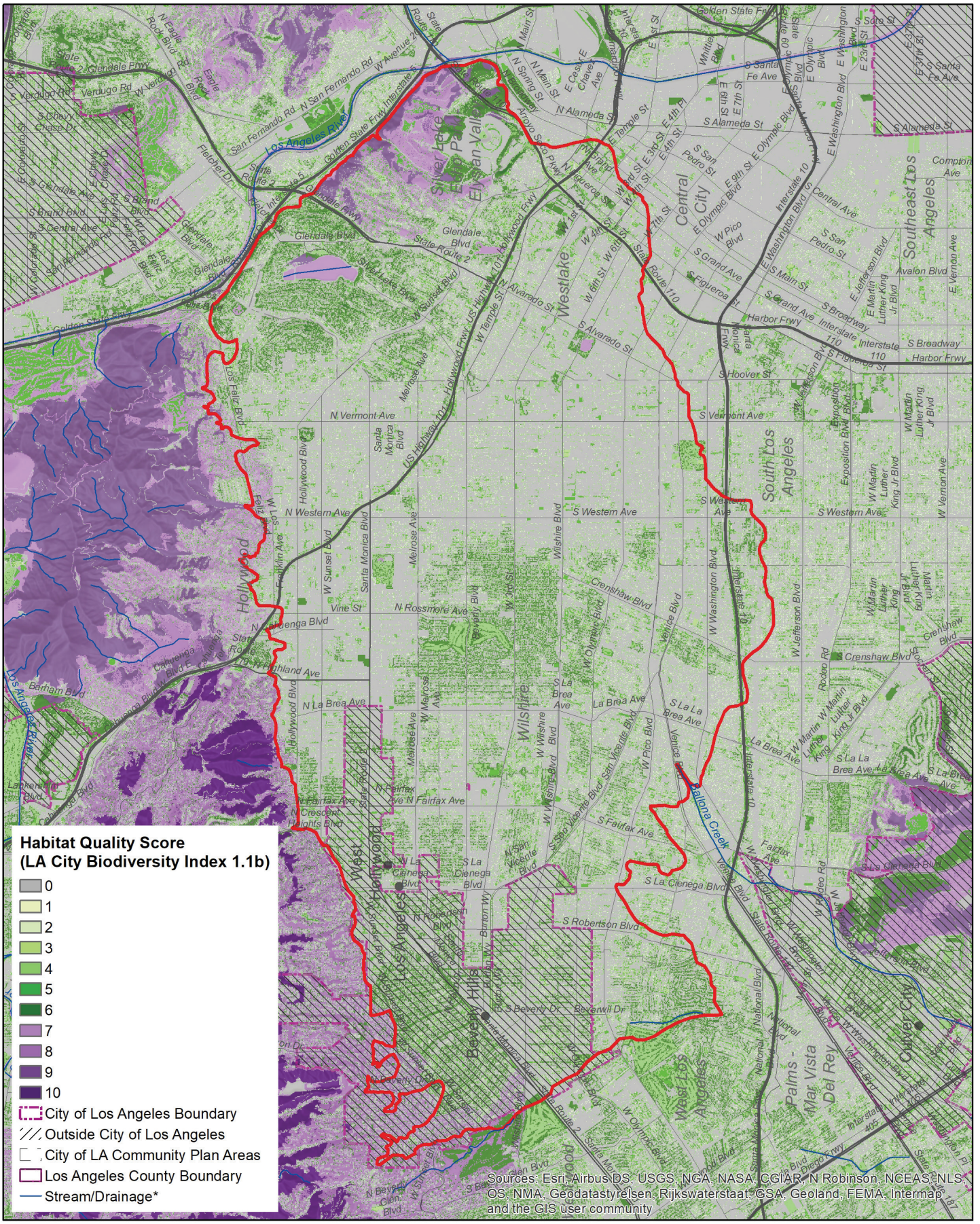
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



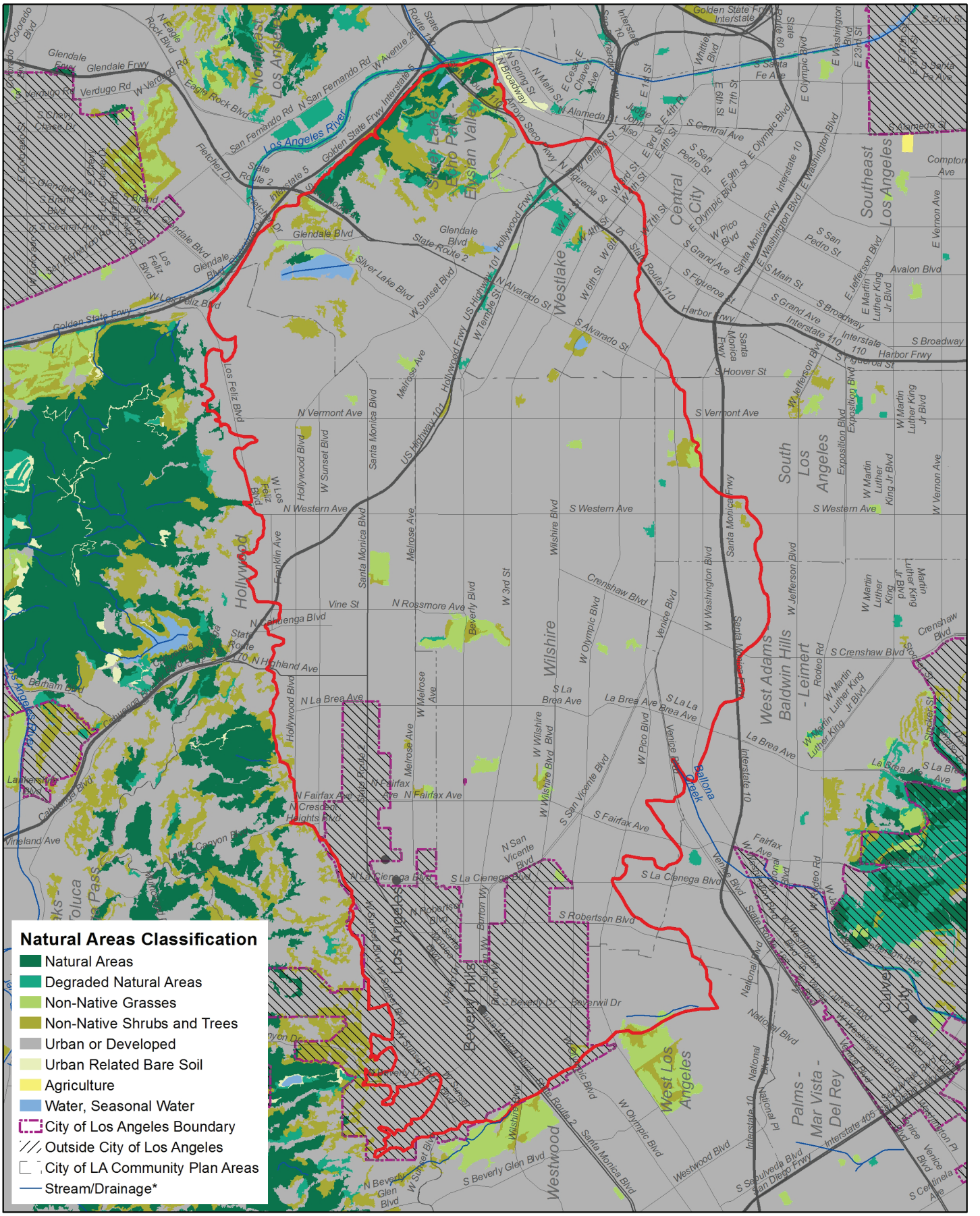
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



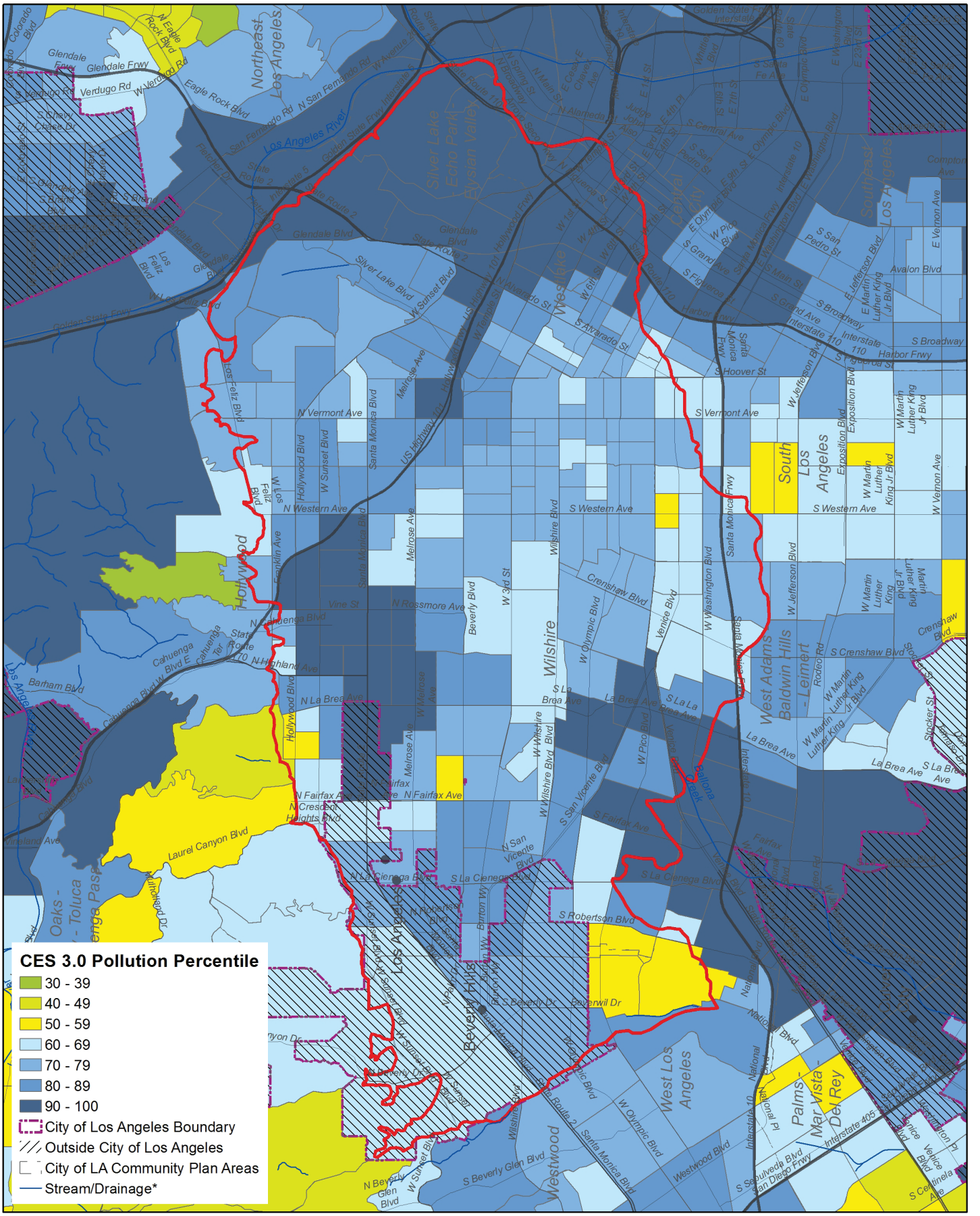
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



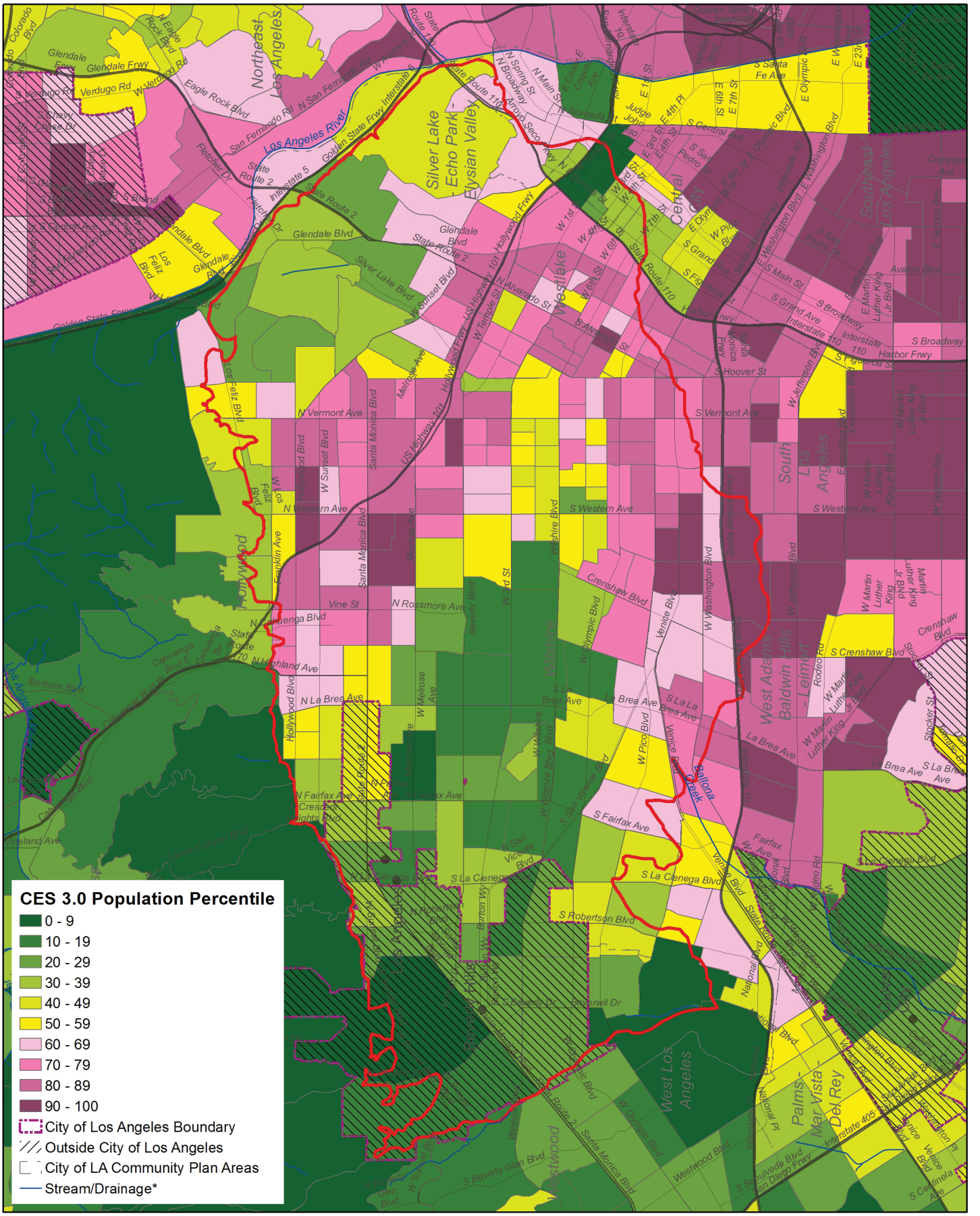
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



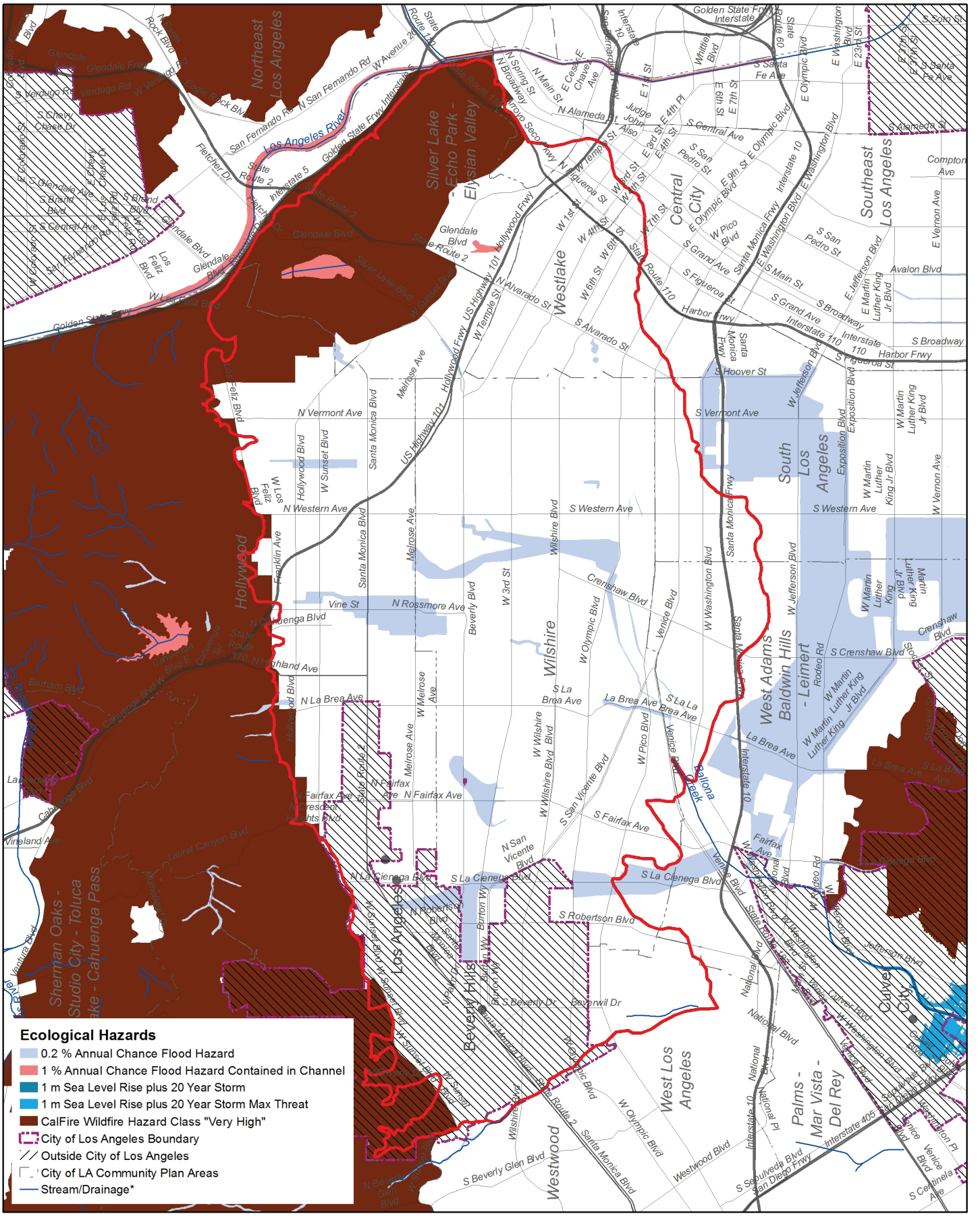
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



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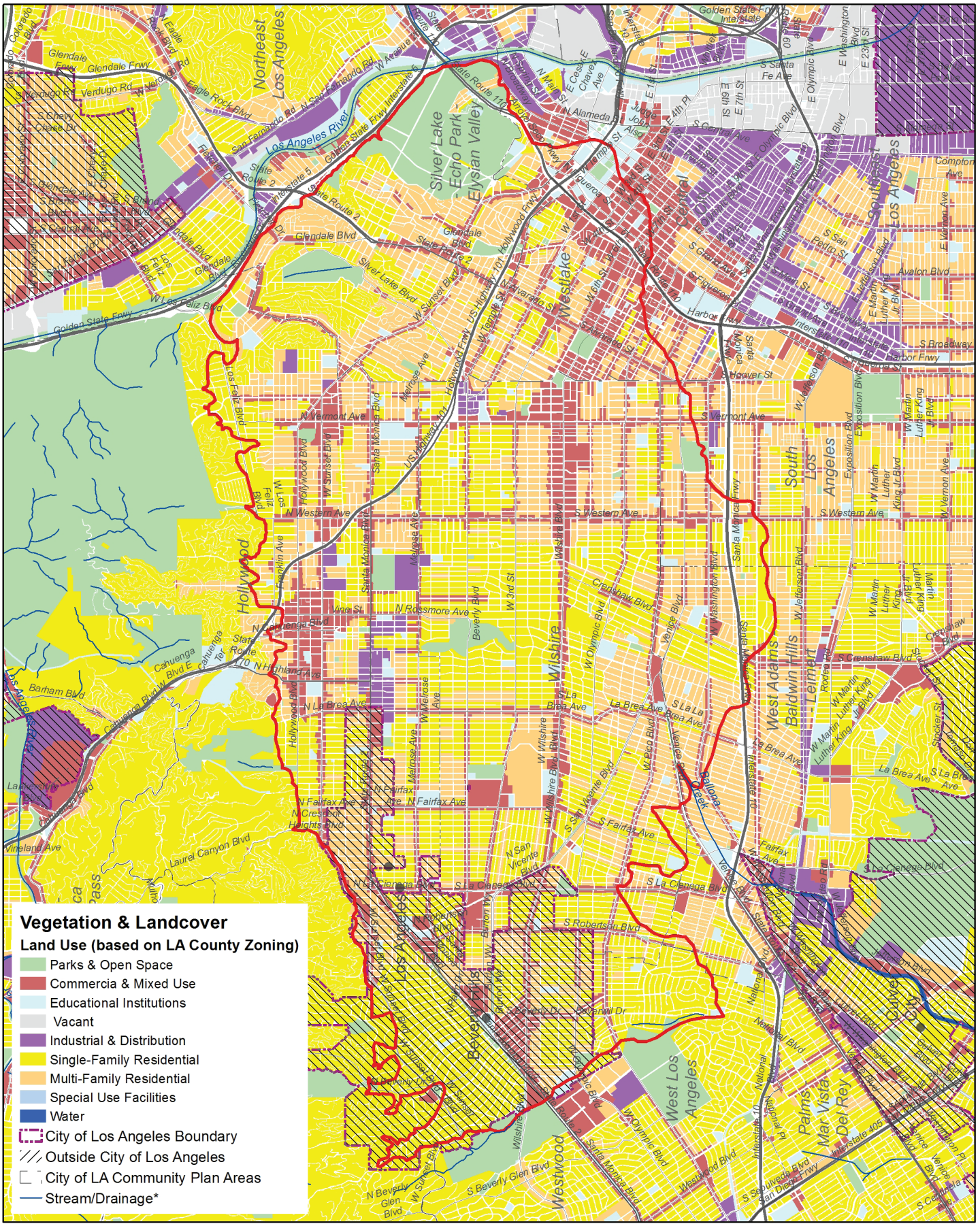
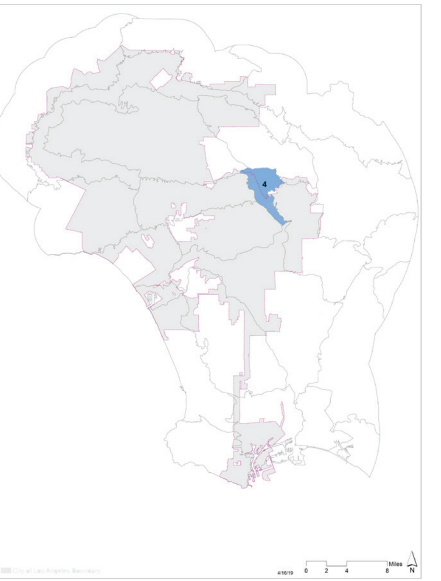


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 4: ELYSIAN VALLEY ALLUVIAL PLAIN

(Partially within the City of Los Angeles)



LANDFORM

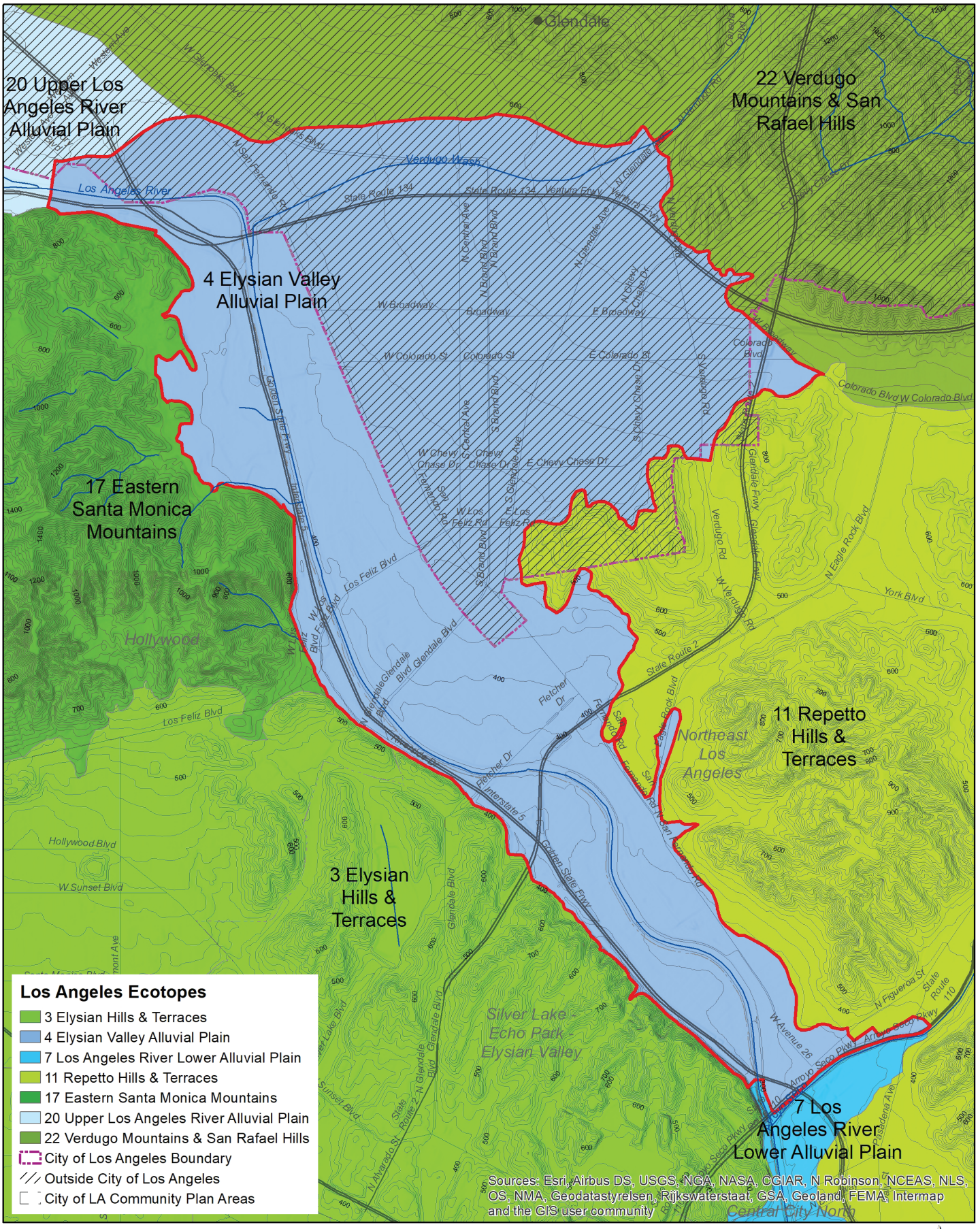
The Elysian Valley comprises relatively flat alluvial landforms driven by historic natural alluvial processes of the LA River and tributaries. Sometimes referred to as the "Glendale Narrows," this was one reach of the LA River below the San Gabriel Mountains that historically exhibited substantial year-round flow due to geology that kept groundwater at the surface. Today, the reach still maintains year-round flow, but most originates as wastewater discharges from water reclamation plants at Glendale and the Sepulveda Basin. Natural hydrology has been severely altered due to flood control along the channel and in the broader watershed. Historically, the naturally meandering LA River, Verdugo Wash, and other smaller tributary streams resulted in braided floodplains flanked by upland stream terraces throughout the valley. These historical features are well mapped by Dr. Travis Longcore and others in Nature Conservancy (2016). Historically, groundwater, lush vegetation, and potentially afternoon shading from the adjacent Elysian Hills and Eastern Santa Monica Mountains, kept this reach of the River relatively cool throughout the year, which helped support historic steelhead trout and other native fish populations in the watershed.

MICROCLIMATE

This ecotope is characterized by cooler nighttime temperatures in winter that are driven by the valley cooling effect with occasional frost and hot, dry summers. Coastal fog is less frequent here in late spring and early summer than in areas of the coastal plain to the south and west. Less coastal influence also results in higher summer temperatures and the flat terrain exacerbates summer surface temperatures due to high solar loading during the heat of the day across most of the ecotope. However, urban heat island modeling by Taha (2017) showed a lower urban heat island effect here, possibly due to channeling of naturally cooler ocean breezes to the ecotope along the Santa Monica Mountains. The steep bluffs of the Elysian Hills and Santa Monica Mountains to the west may result in relatively cool conditions at the surface in spring and fall when lower sun angles result in relatively early afternoon shade reaching the valley floor, especially along the western portions of the ecotope.

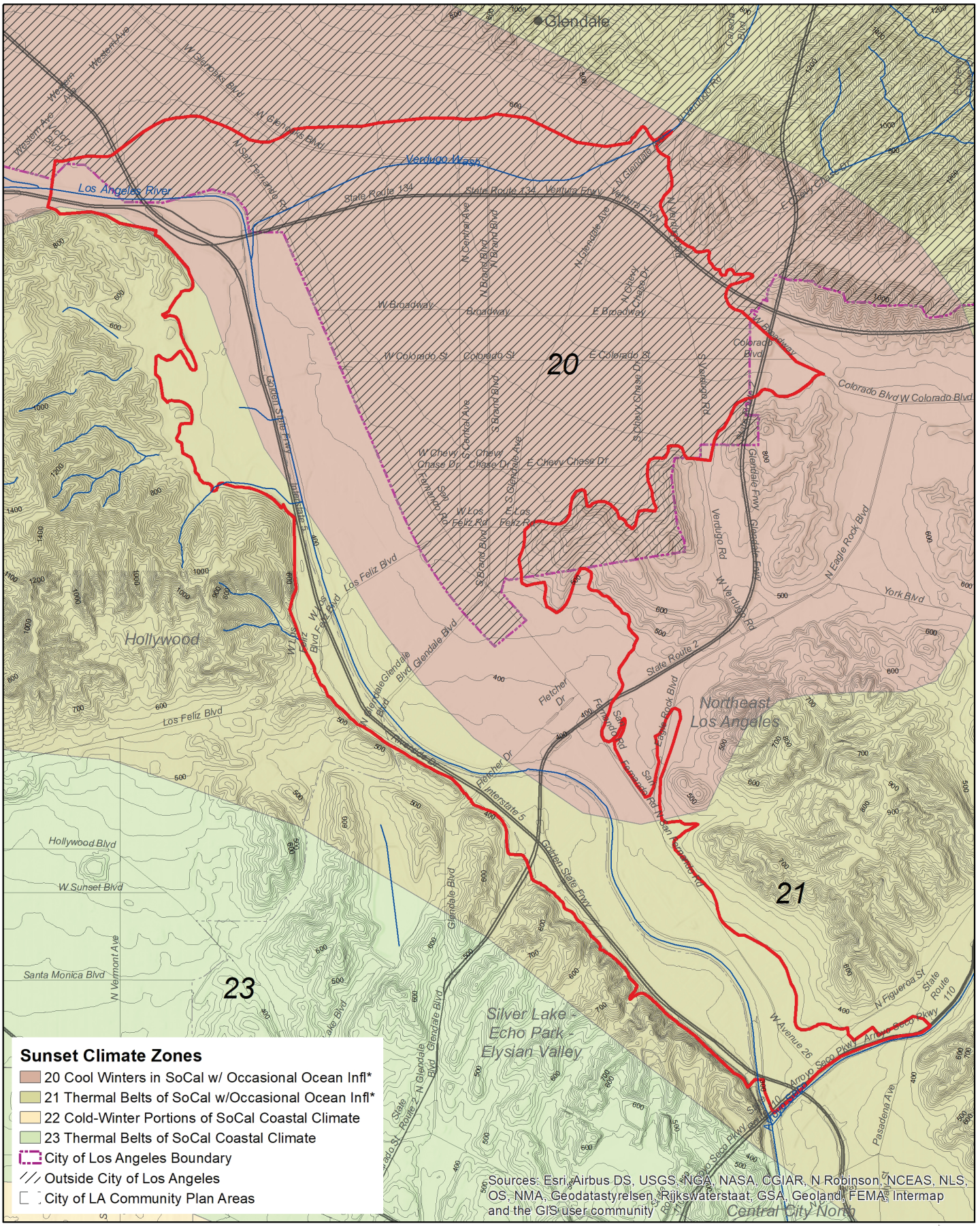
VEGETATION & LANDCOVER

Natural areas comprise only 0.22% of the ecotope based on CALVEG data. These are mostly upland vegetation along boundaries of the ecotope along the Elysian Hills and Griffith Park where small areas of black walnut woodland, coastal sage scrub, and chaparral are present. Little natural riparian vegetation remains or was detected in the CALVEG mapping. The US Army Corps of Engineers (USACE, 2013) and the Nature Conservancy (2016) provide a more detailed characterization of LA River vegetation, including some higher quality riparian vegetation within the river channel. Historic vegetation and ecosystems along the LA River channel are well characterized by Dr. Travis Longcore in Nature Conservancy (2016) and included a combination of marsh, riparian woodland, and riparian sand/strand types. Adjacent upland "stream terraces" likely included oak woodlands and savannas mixed with coastal sage scrub and chaparral species. Historic accounts by the first Europeans to visit the area on July 30th, 1769 describe "large trees, sycamores, willows, cottonwoods, and very large live oaks." The account also notes a "very full flowing and wide river" about 7-yards wide (Gumprecht, 2001). This flow is notable since late July is approaching the driest time of year.



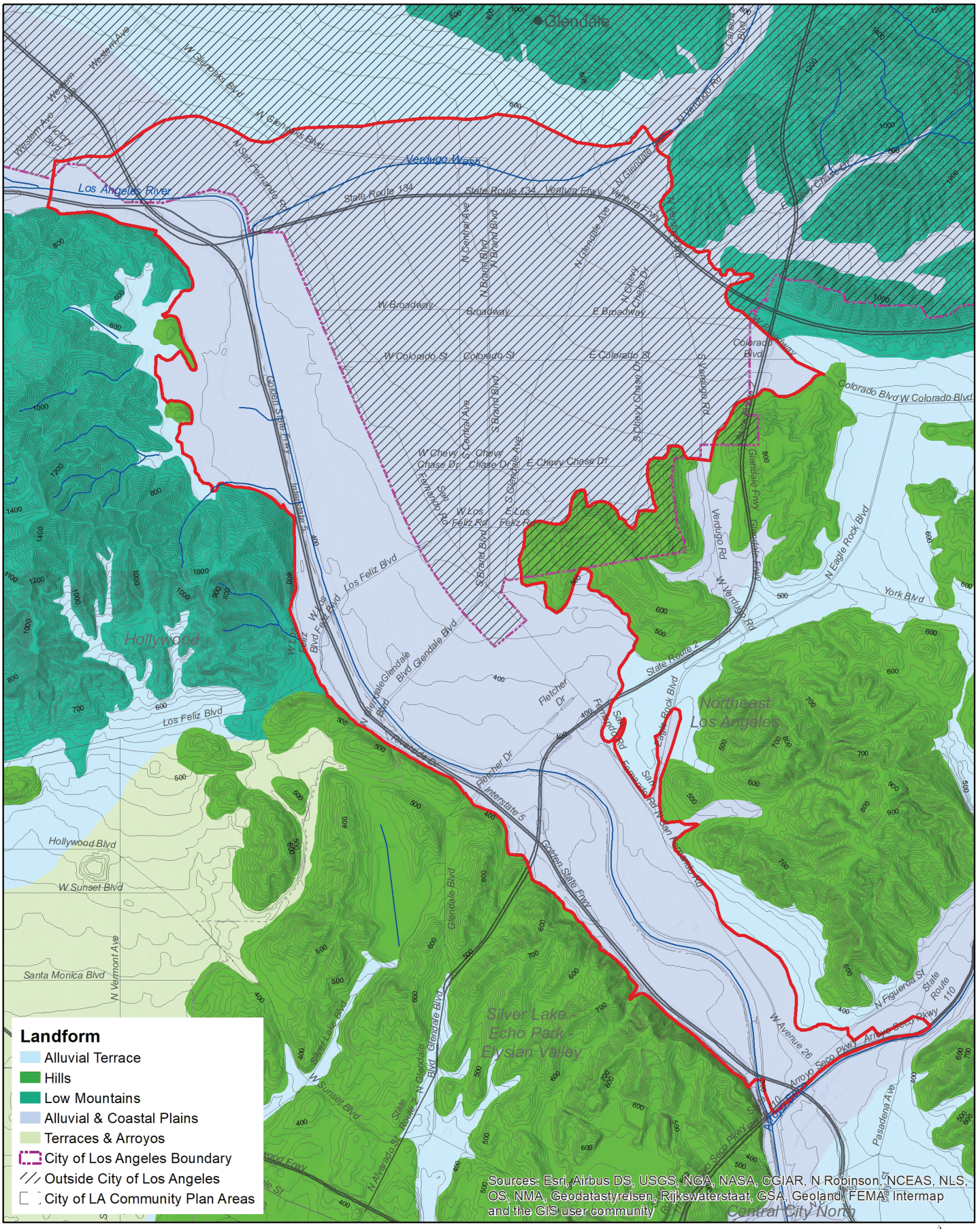
Ecotope 4 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



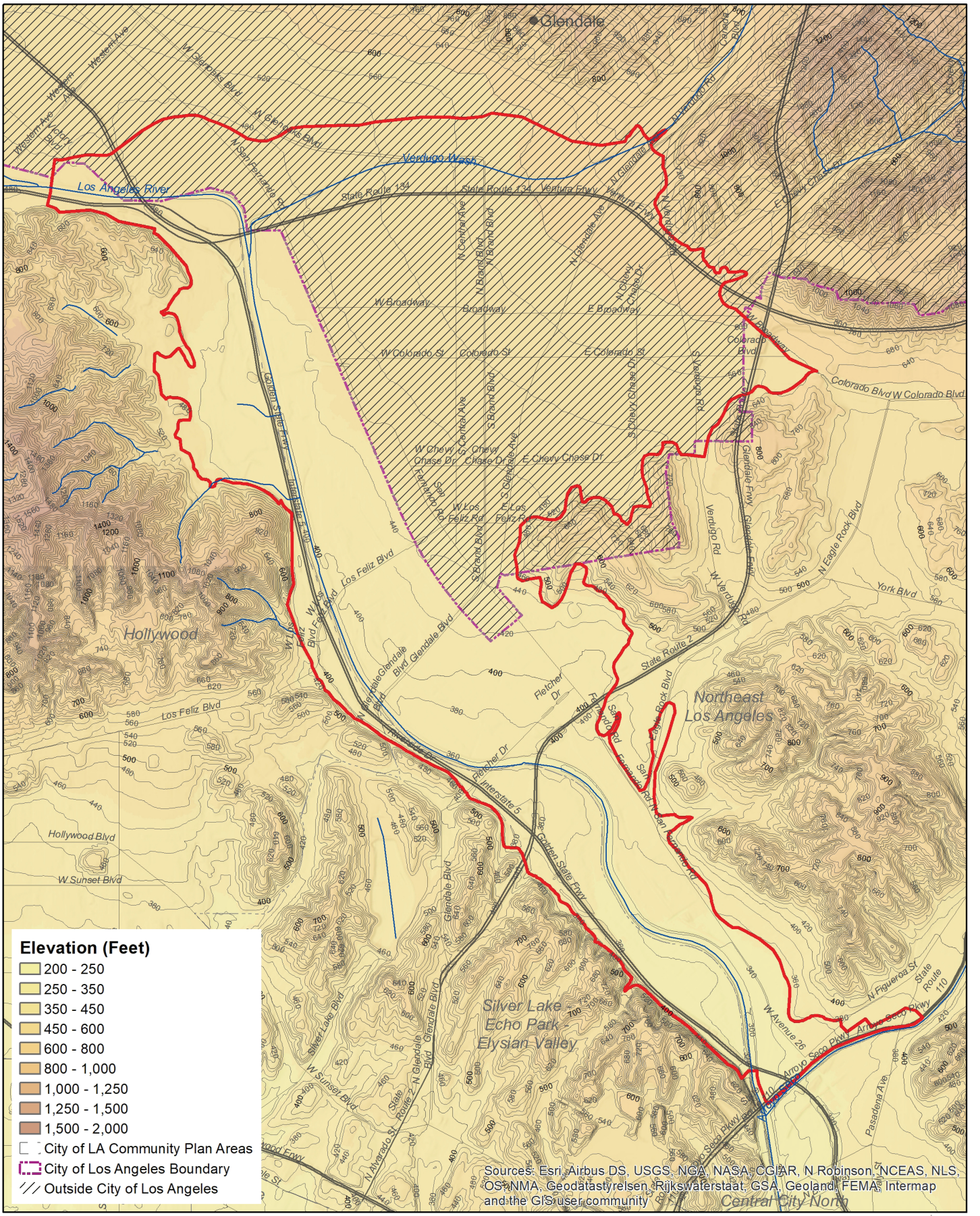
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



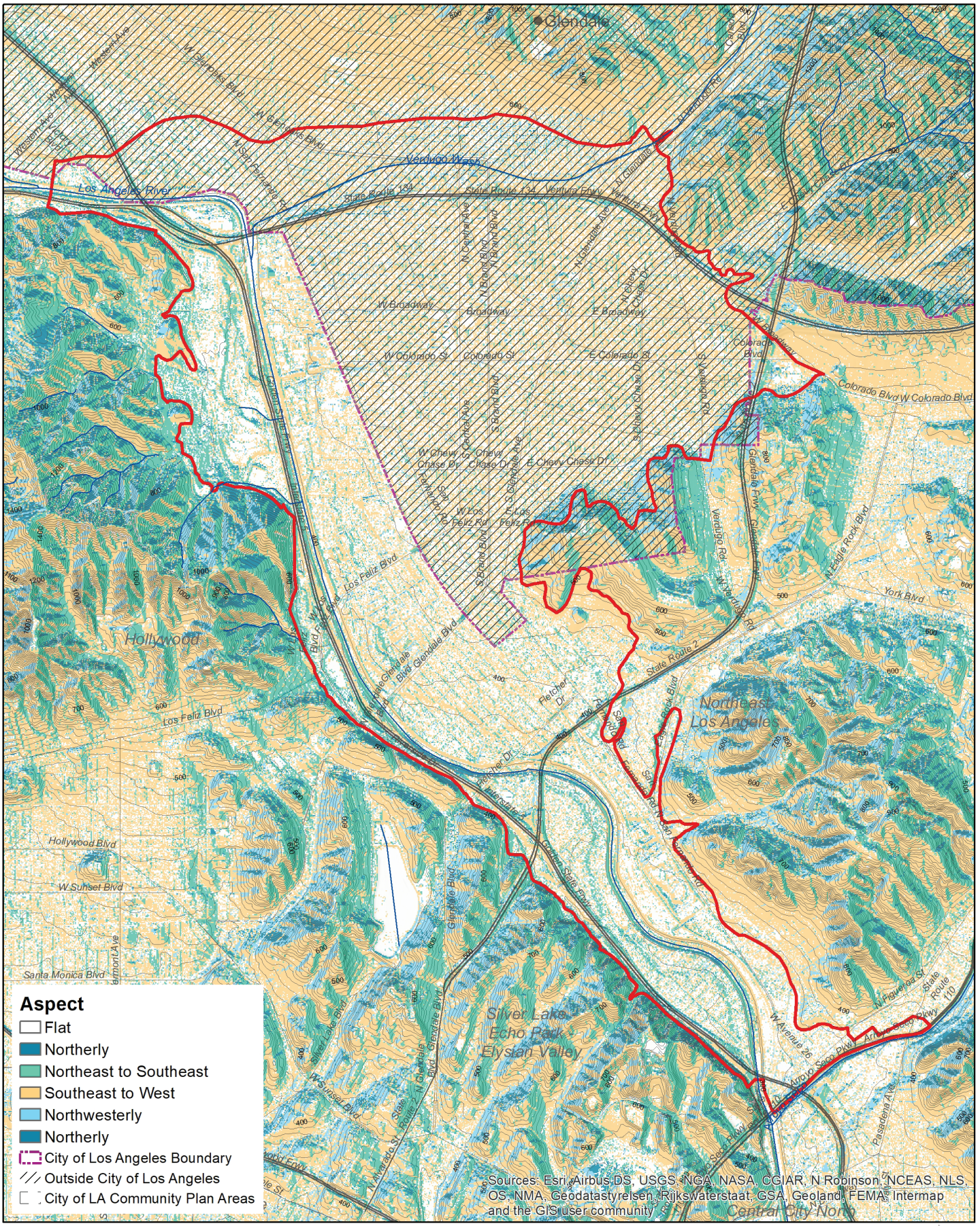
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



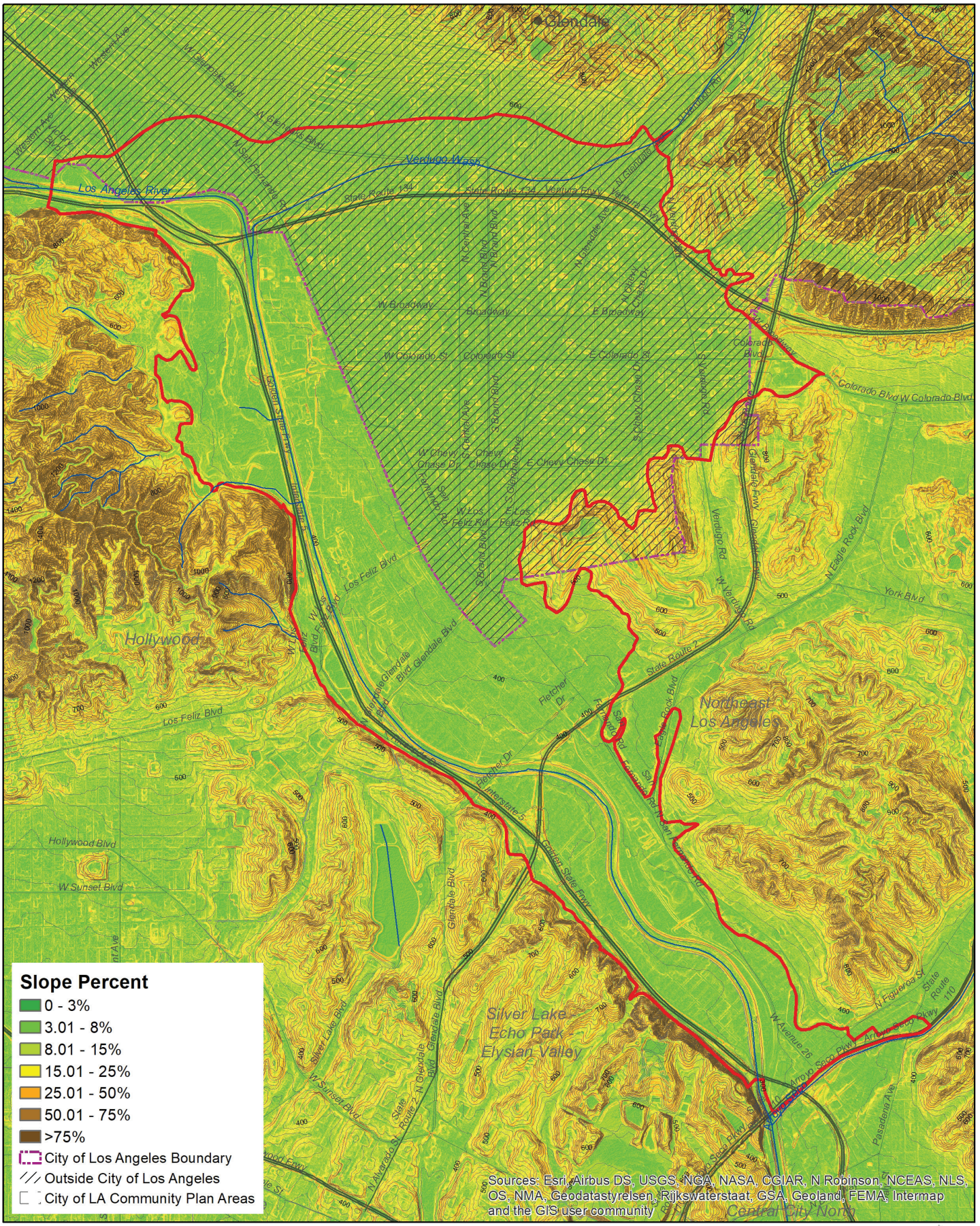
Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



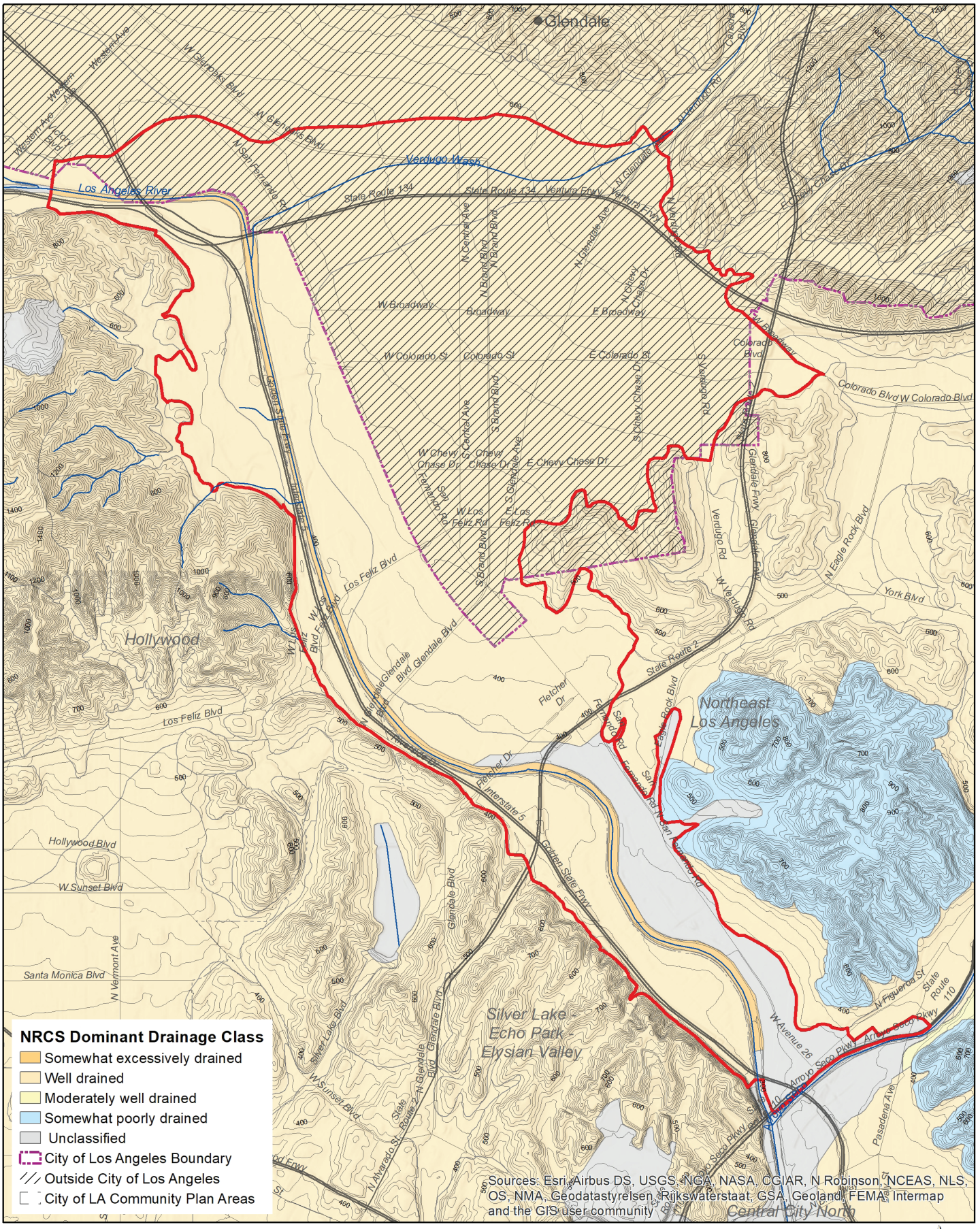
Aspect

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



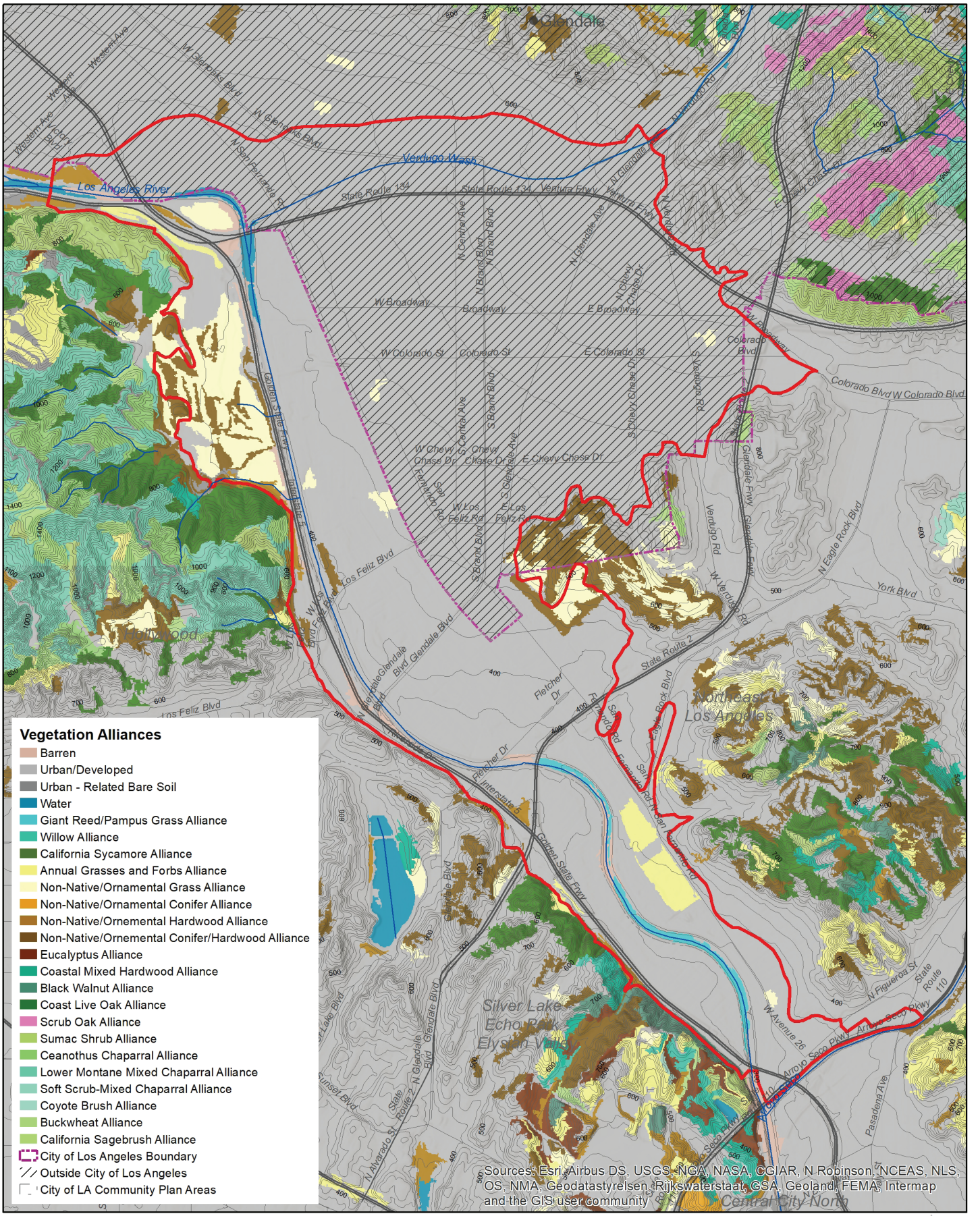
Slope Percent

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



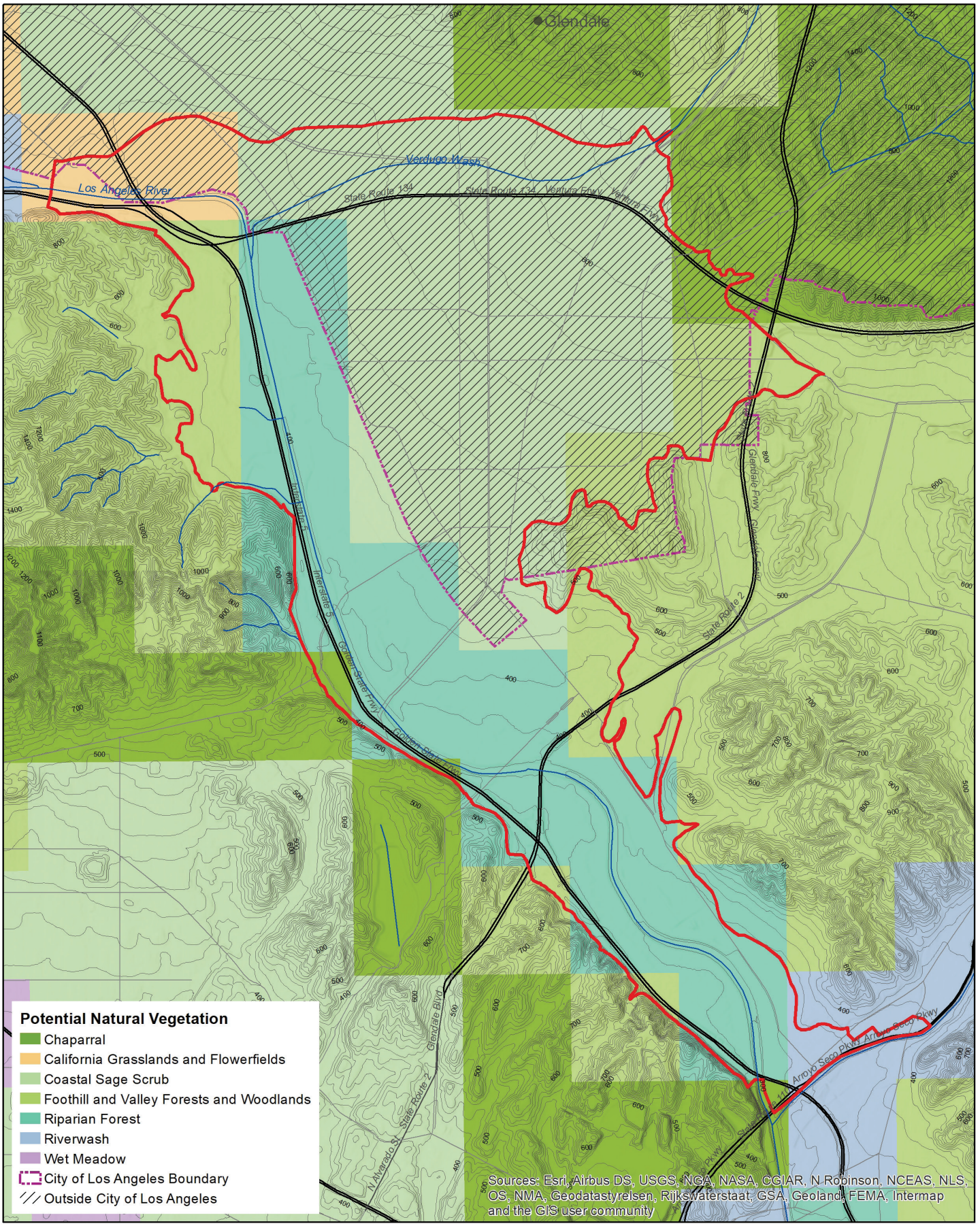
Drainage

Data source: Soil Survey Geographic (SSURGO) Database for Los Angeles County, Southeastern Part, CA; National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016.



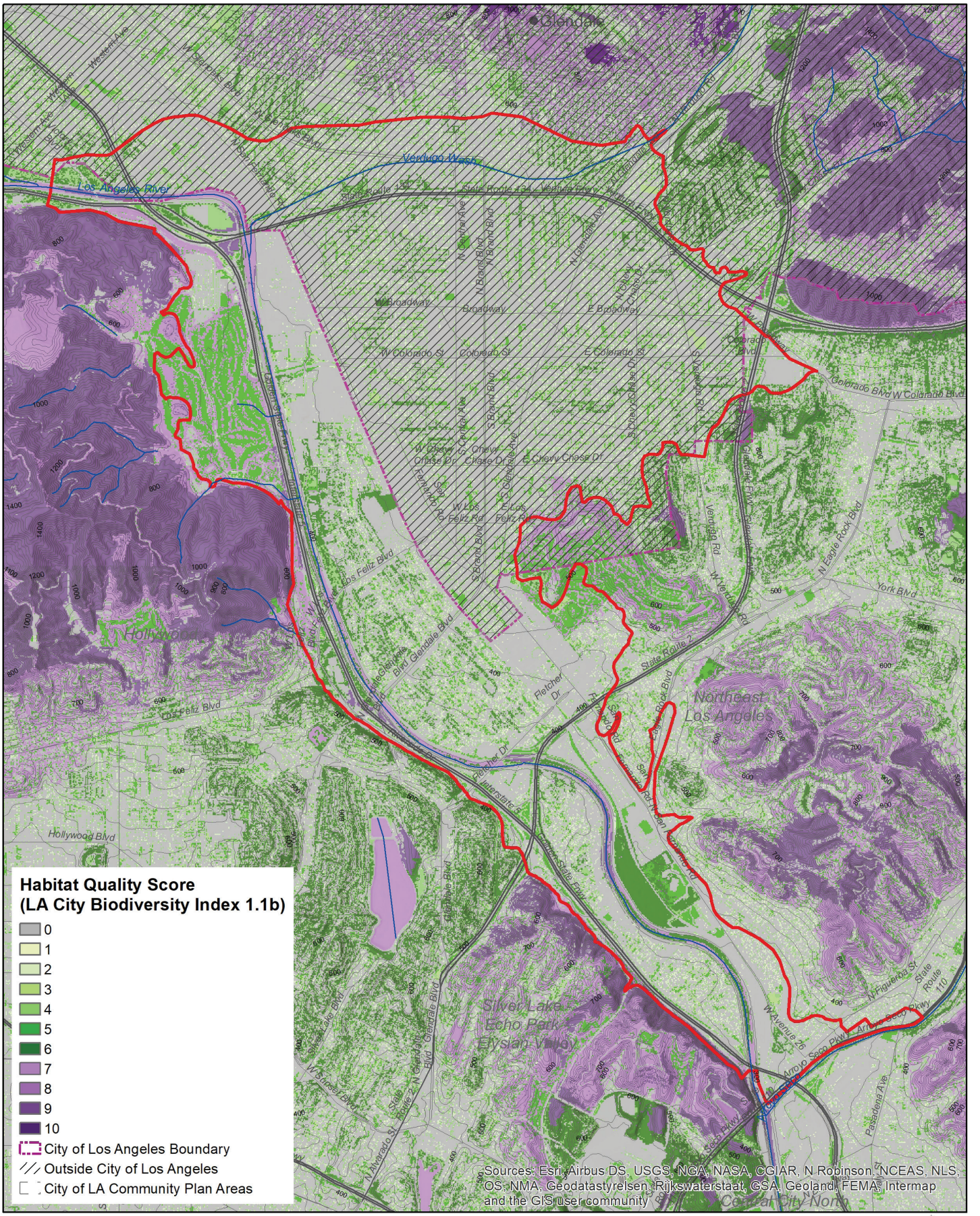
Vegetation Alliances

Data source: CALVEG. https://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192



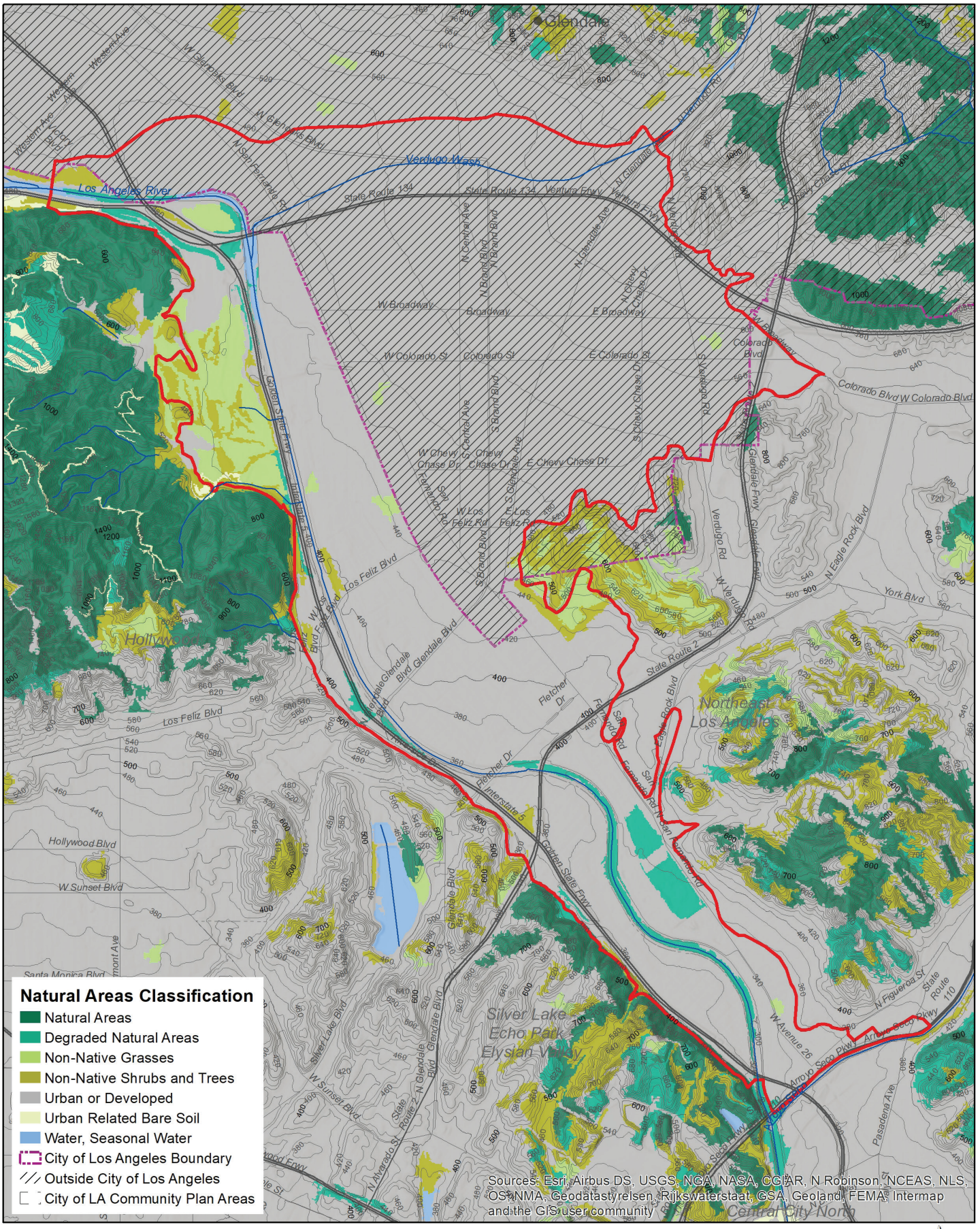
Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.



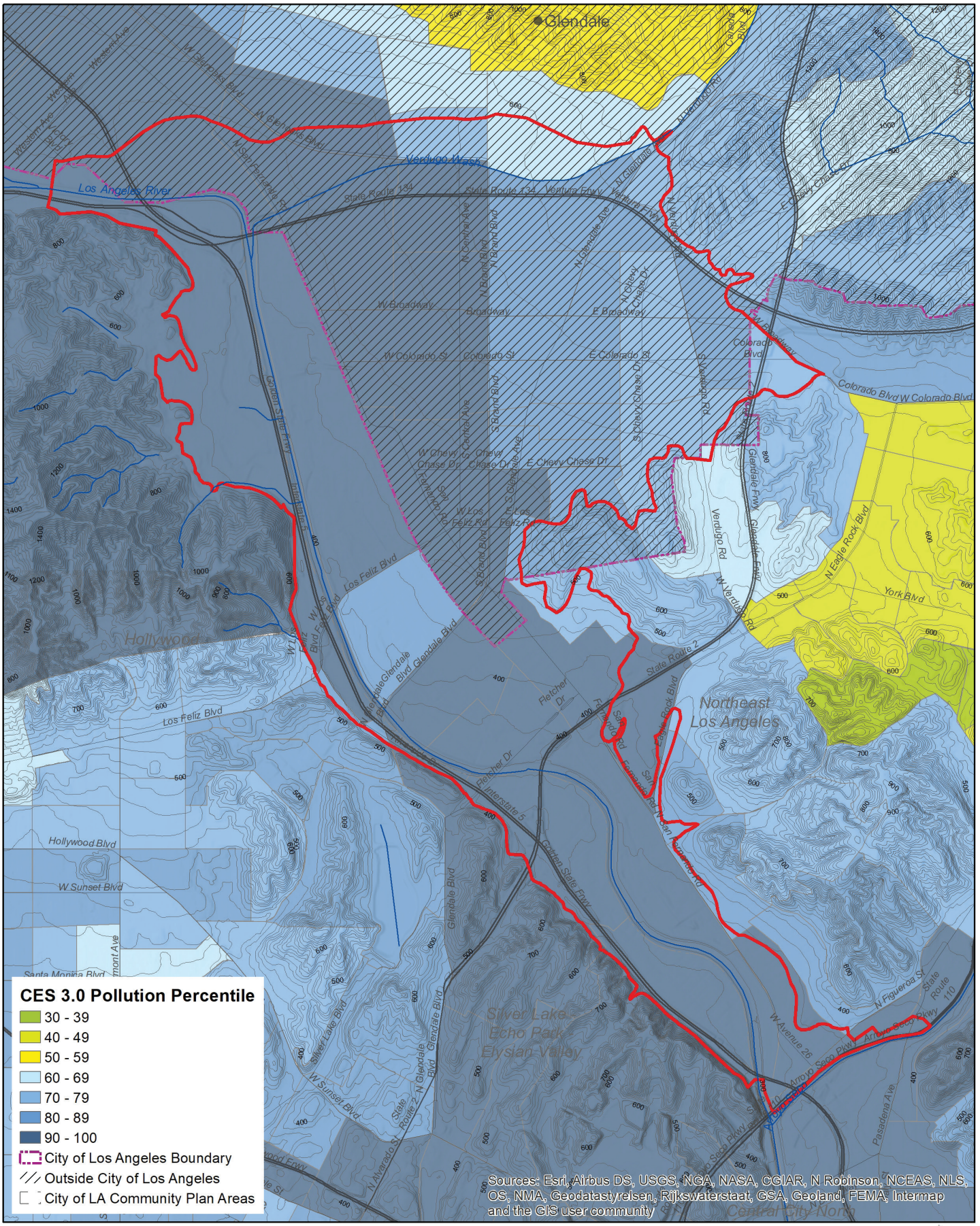
General Habitat Quality

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



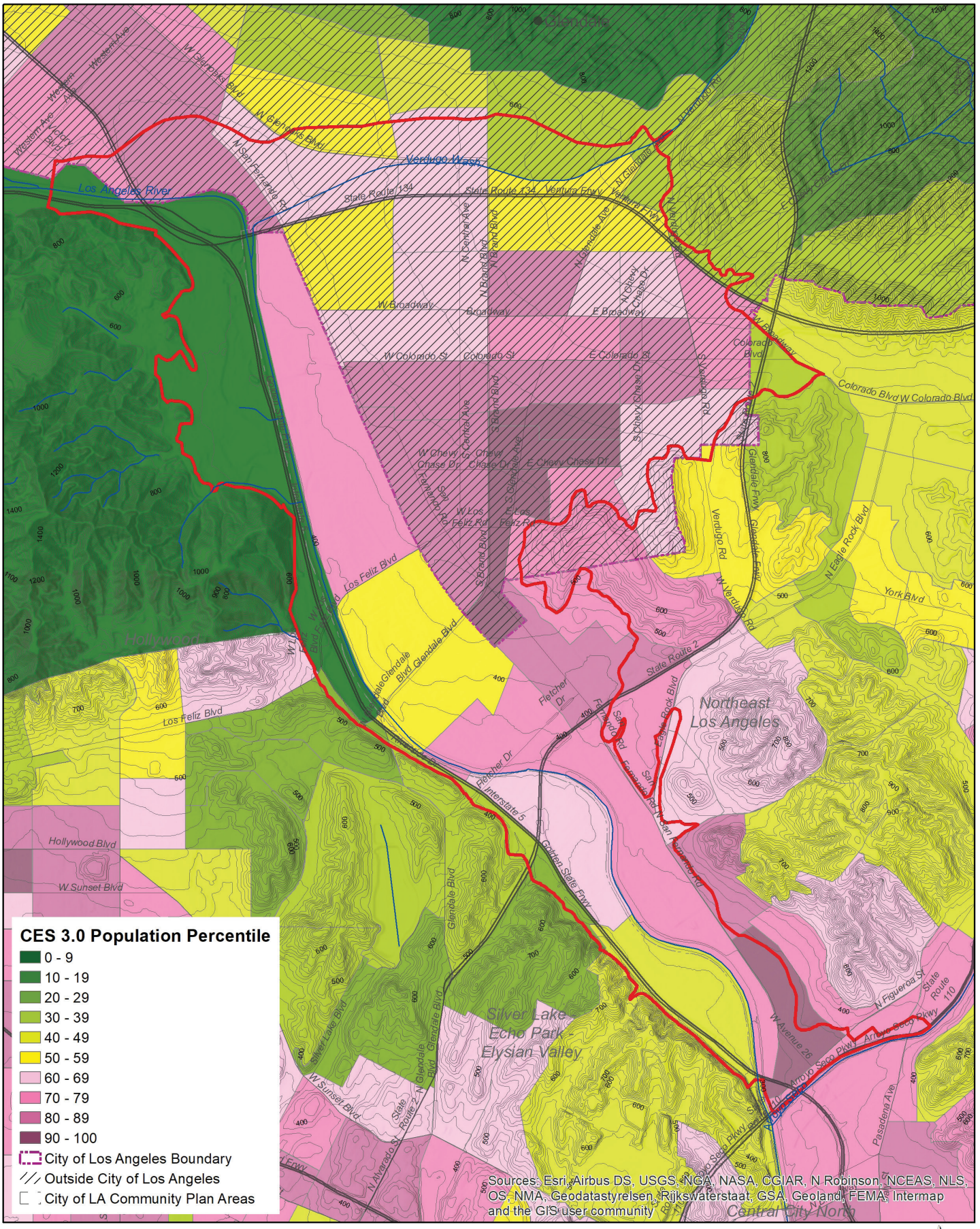
Natural Areas Classification

Data source: 2018 City of Los Angeles Biodiversity Report, Appendix B. https://www.lacitysan.org/cs/groups/public/documents/document/y250/mdi0/~edisp/cnt024943.pdf



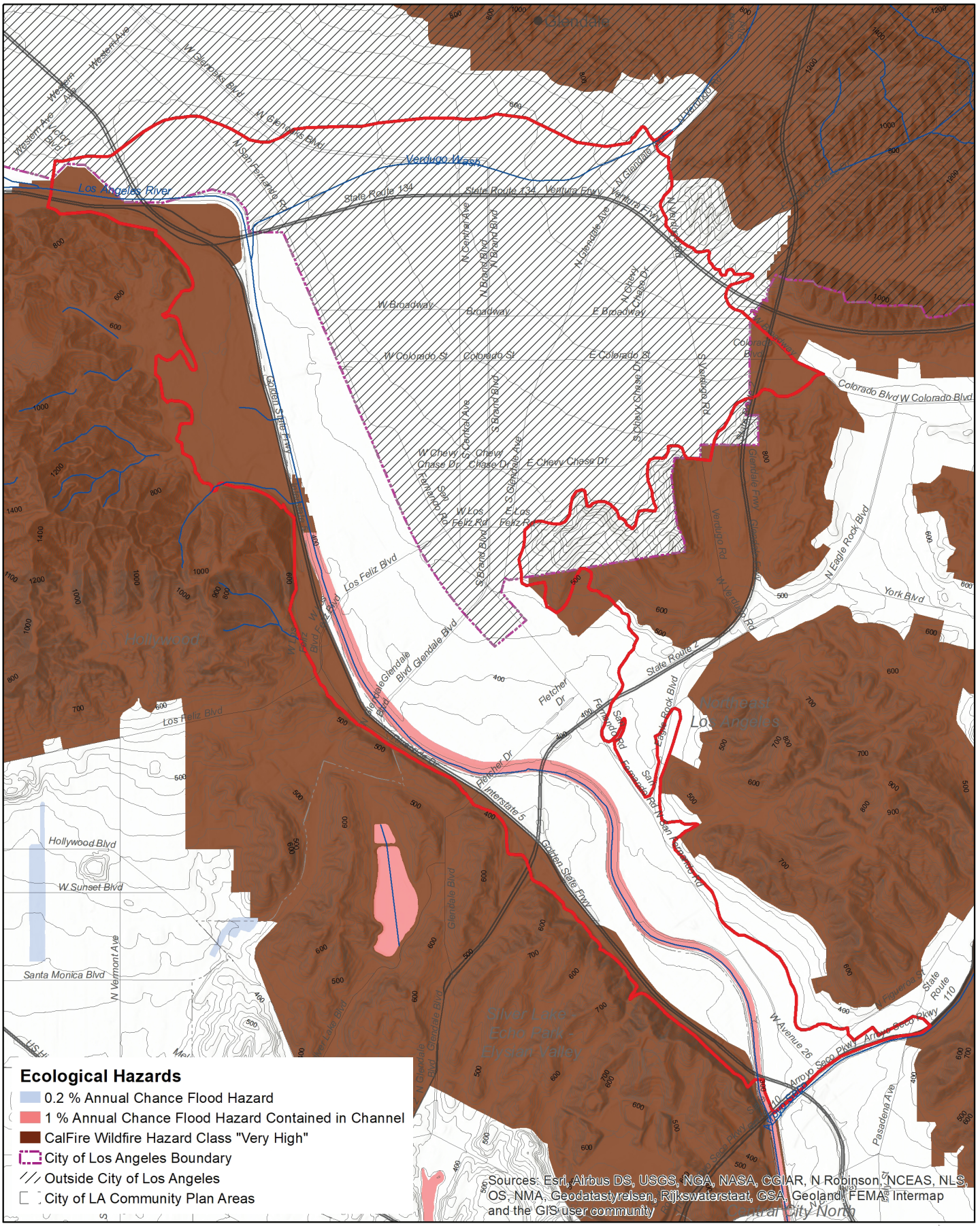
CalEnviroScreen Pollution Precentile (pollution exposure)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



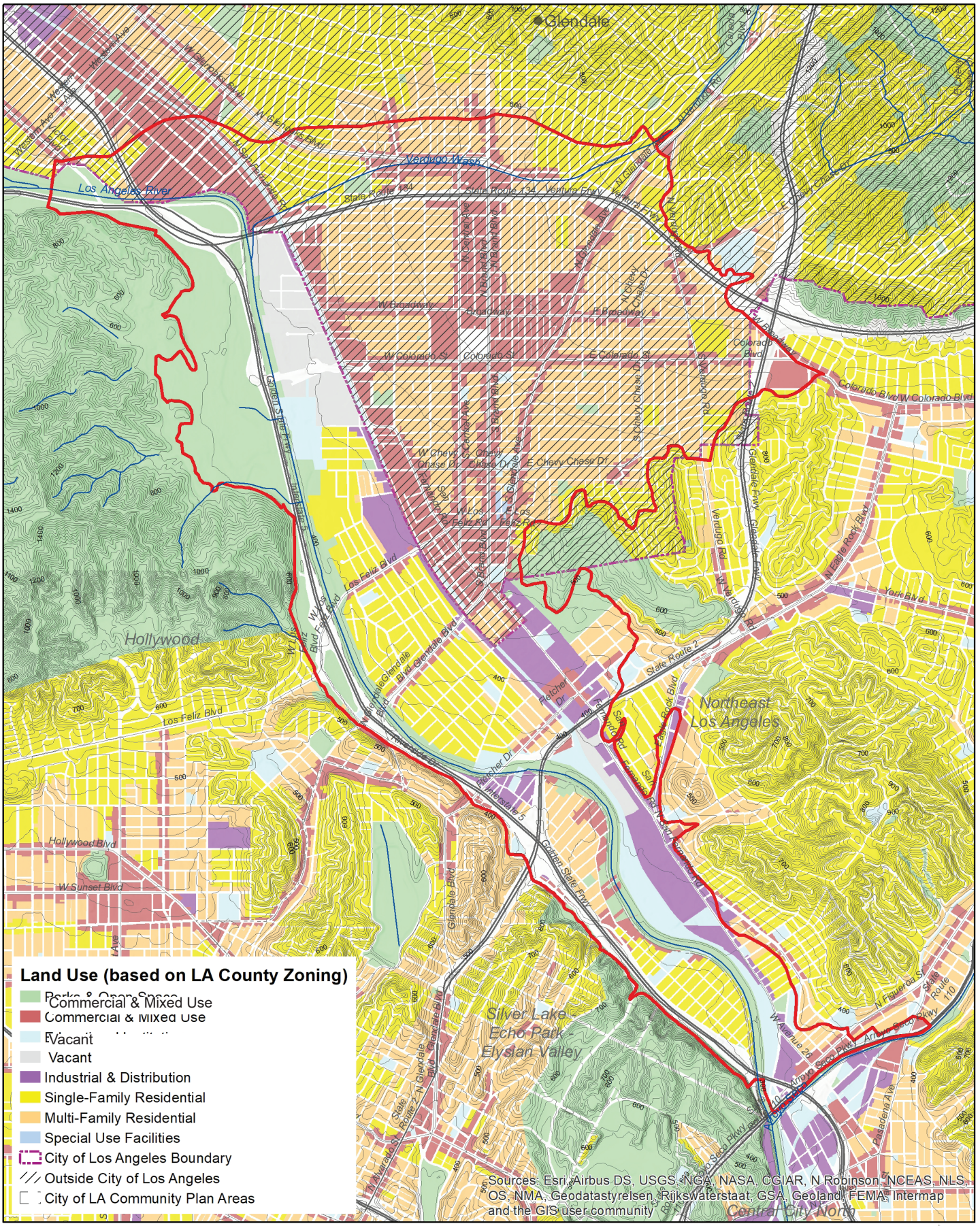
CalEnviroscreen Population Percentile (population vulnerability)

Data source: CalEnviroScreen 3.0. The California Office of Environmental Health Hazard Assessment (OEHHA). https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30



Ecological Hazards

Data sources: Coastal Storm Modeling System (CoSMoS) for Southern California, v3.0, Phase 2; Calfire Fire Hazard Severity Zone Maps; Federal Emergency Management Agency, National Flood Hazard Layer, Version 1.1.1.0, 11/01/2016.

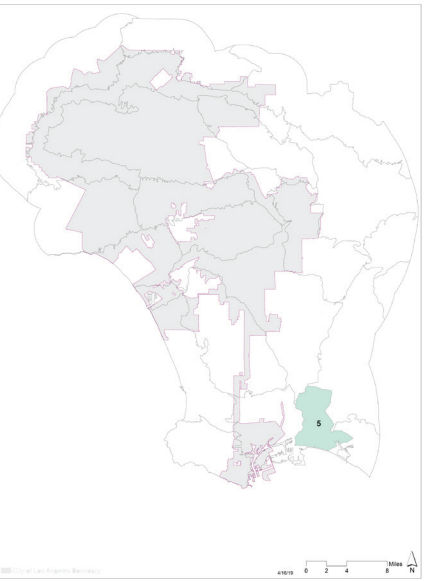


Land Use

Data source: 2008 Los Angeles County Countywide Zoning by the Southern California Association of Governments (SCAG). https://egis3.lacounty.gov/dataportal/2012/04/10/county-wide-zoning/

ECOTOPE 5: LONG BEACH TERRACE

(Outside of the City of Los Angeles)



LANDFORM

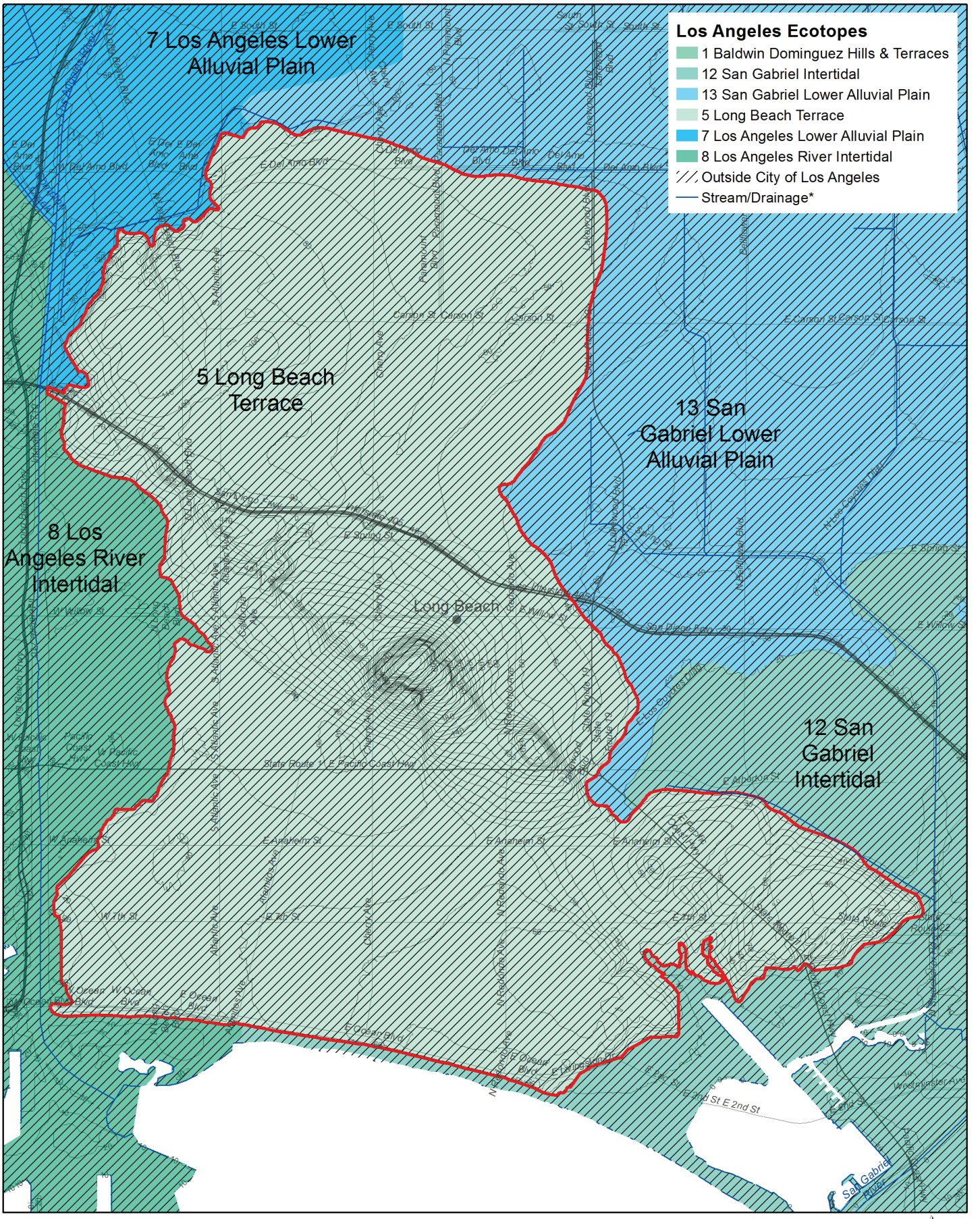
The Long Beach Terrace ecotope contains the hills, terraces, and arroyos that comprise the City of Long Beach, which spans from the ocean inland to just north of the Bixby Knolls area. The western boundary of the ecotope is formed by the LA River floodplain and intertidal zone, and the eastern boundary is bounded by the San Gabriel River floodplain and intertidal zone. Like the Baldwin-Dominguez Hills ecotope, a dominant feature is a line of northwest to southeast-running low hills that resulted from uplift of the Newport-Inglewood fault, including Signal Hill and the Bixby Knolls. The relatively high terrain results in limited riparian flooding or sea level rise-induced flood hazards, except near the boundaries of the ecotope where these risks are potentially substantial.

MICROCLIMATE

The ecotope exhibits a strong coastal influence to the south and decreased coastal influence to the north. Low elevation change results in limited orographic precipitation enhancement. Slopes are mostly gradual, except those of Signal Hill and bluff areas adjacent to the coast and floodplains. On steeper slopes, the aspects strongly influence microclimate at the site scale, which in turn affects vegetation suitability. Southwesterly-oriented slopes and extensive flat areas experience the hottest and driest conditions due to more direct solar exposure, especially in the summer or during winter and spring heat waves. Easterly slopes are relatively cool and moist, especially given the stronger coastal influence and morning fog prevalence of this ecotope in late spring and early summer that reduces direct sun exposure for a longer duration of the year. Northern portions of this ecotope have a relatively high pollution and urban heat island influence due to the extensive built land uses around the Ports of Los Angeles and Long Beach.

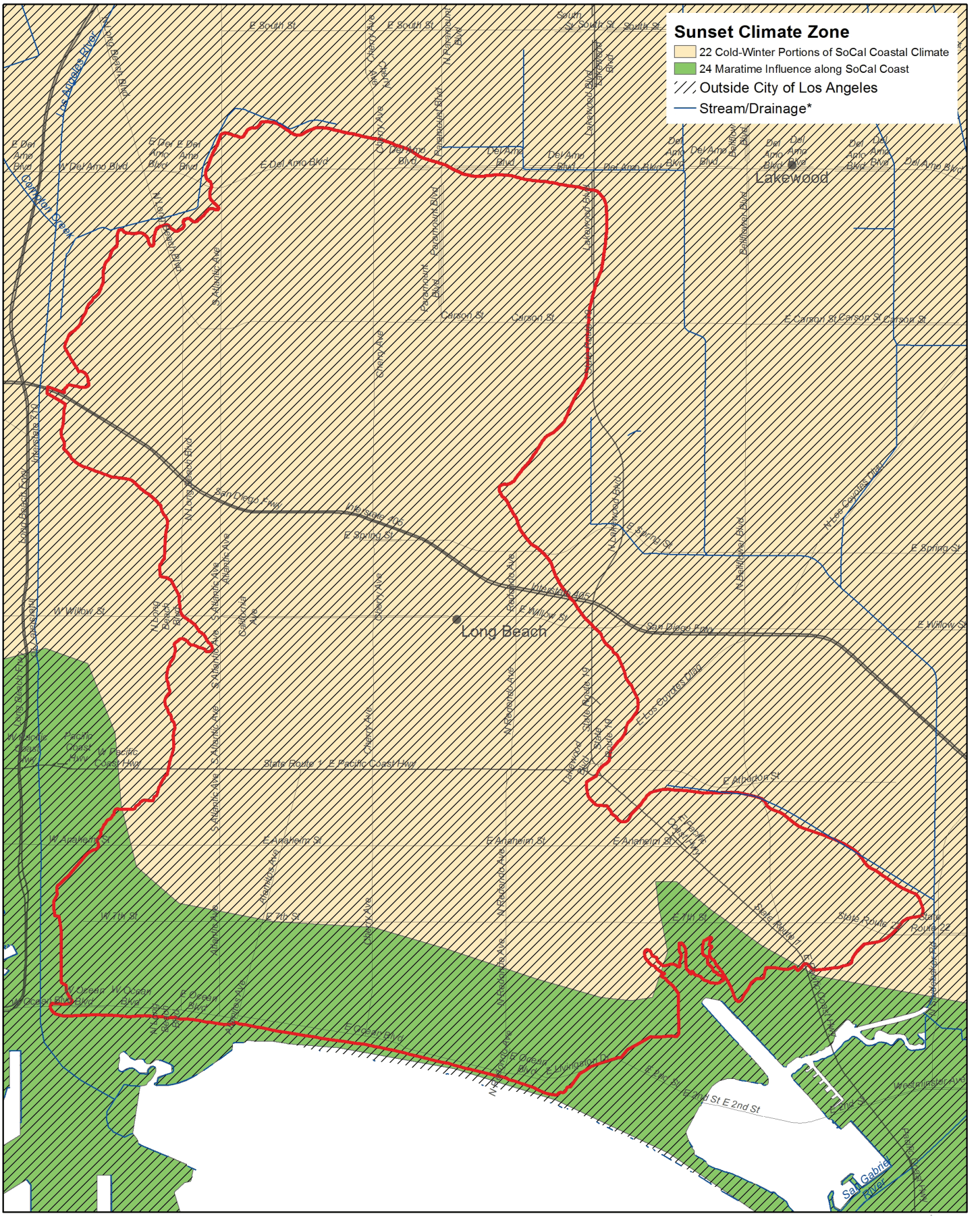
VEGETATION & LANDCOVER

Very little natural vegetation was detected in the ecotope during the CALVEG analysis, except for small amounts of coastal sage scrub near Signal Hill. Given the predominant upland landforms, historic natural vegetation was likely similar to the Baldwin-Dominguez Hills, with mostly coastal sage scrub interspersed with herbaceous prairies. Coastal bluff scrub was also likely present near the coast. Current landcover includes a mix of urban land uses, including relatively dense residential neighborhoods closer to Downtown Long Beach. Several areas of this ecotope, such as golf courses, large oil fields, the Long Beach Airport, coastal bluffs, and the steep terrain around Signal Hill, provide opportunities for larger-scale biodiversity enhancements.



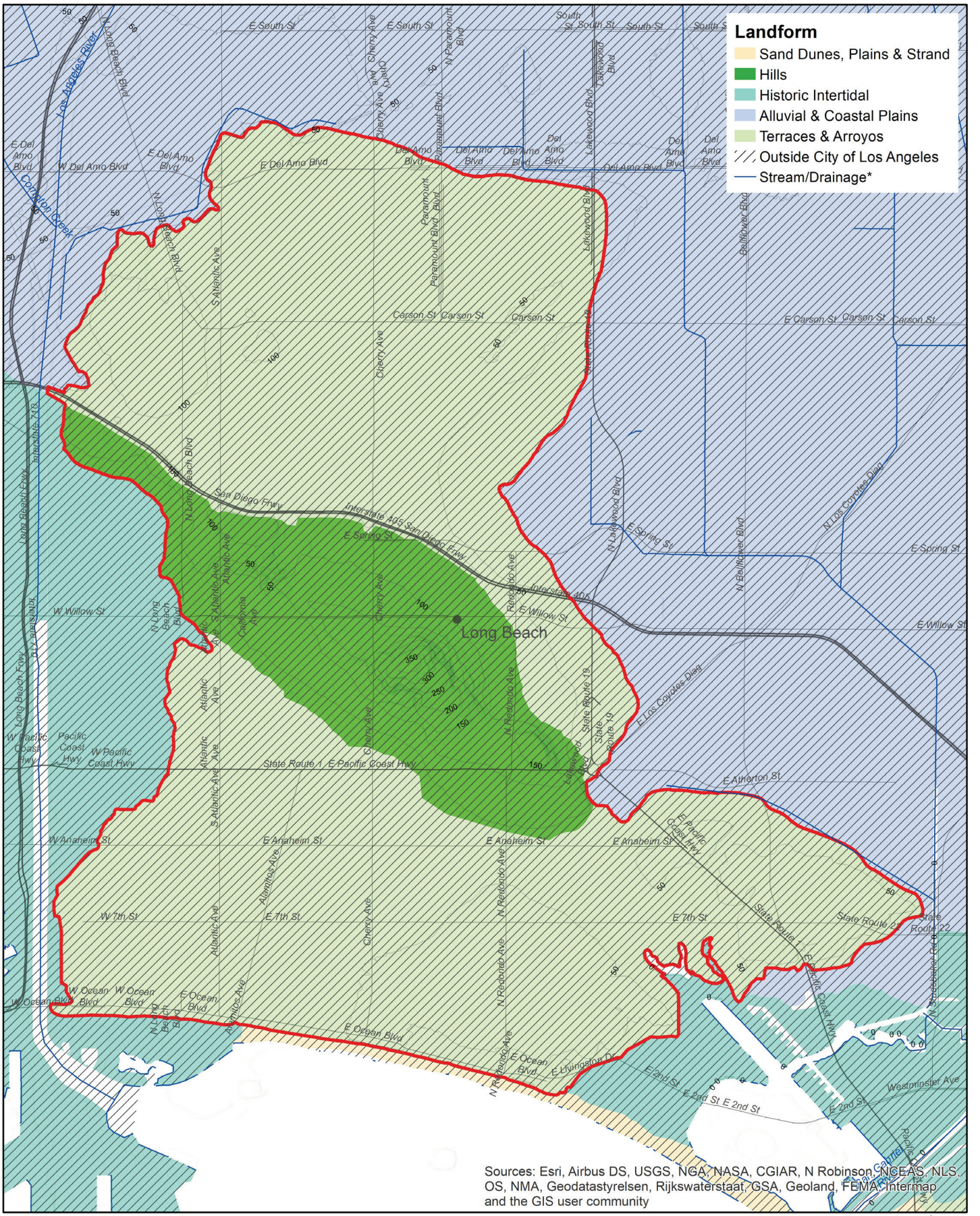
Ecotope 5 Context Map

Data source: I. Brown (2019). https://escholarship.org/uc/item/4c81w4nr



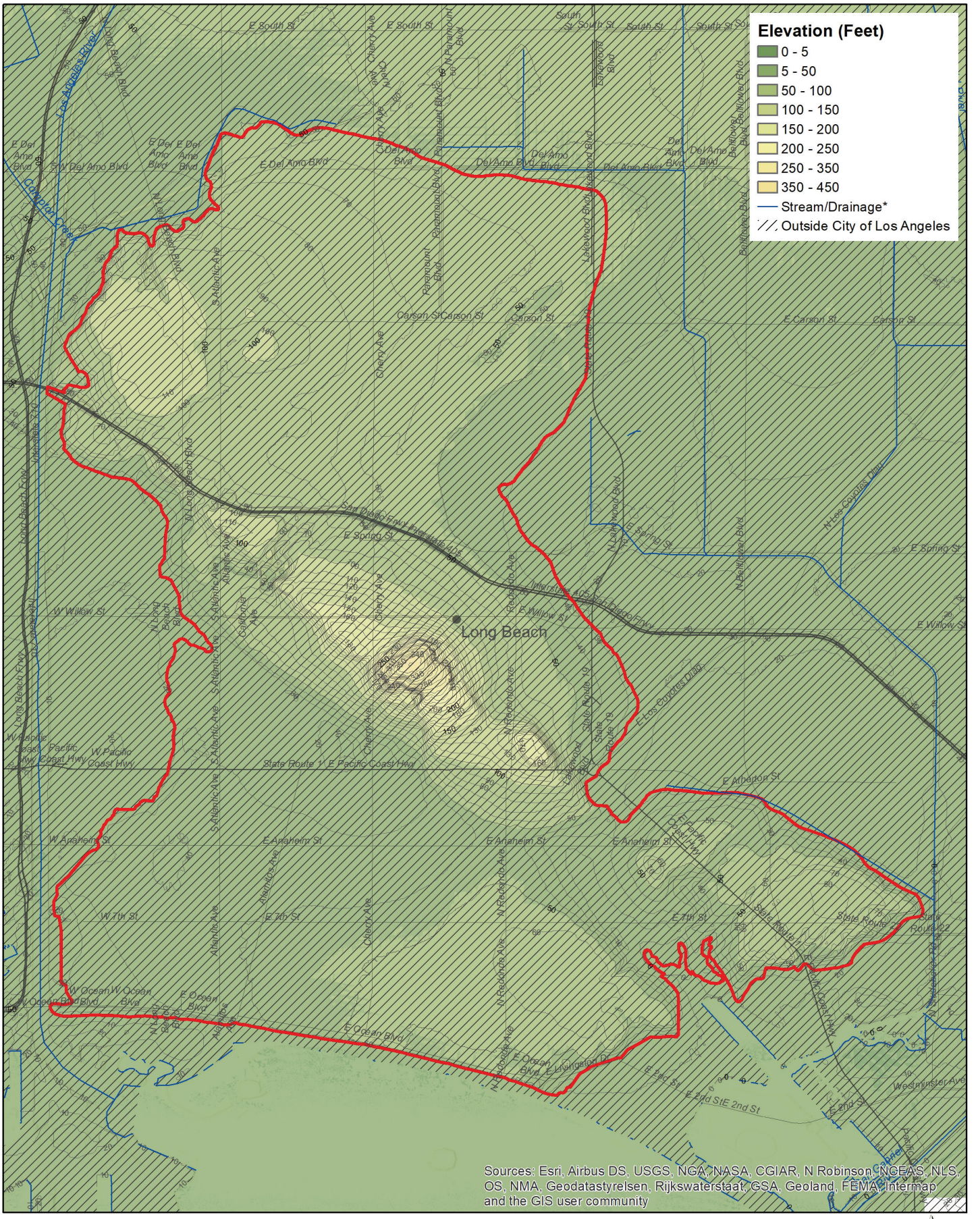
Microclimate

Data source: Sunset Magazine. http://www.sunset.com/garden/climate-zones/climate-zones-intro-us-map



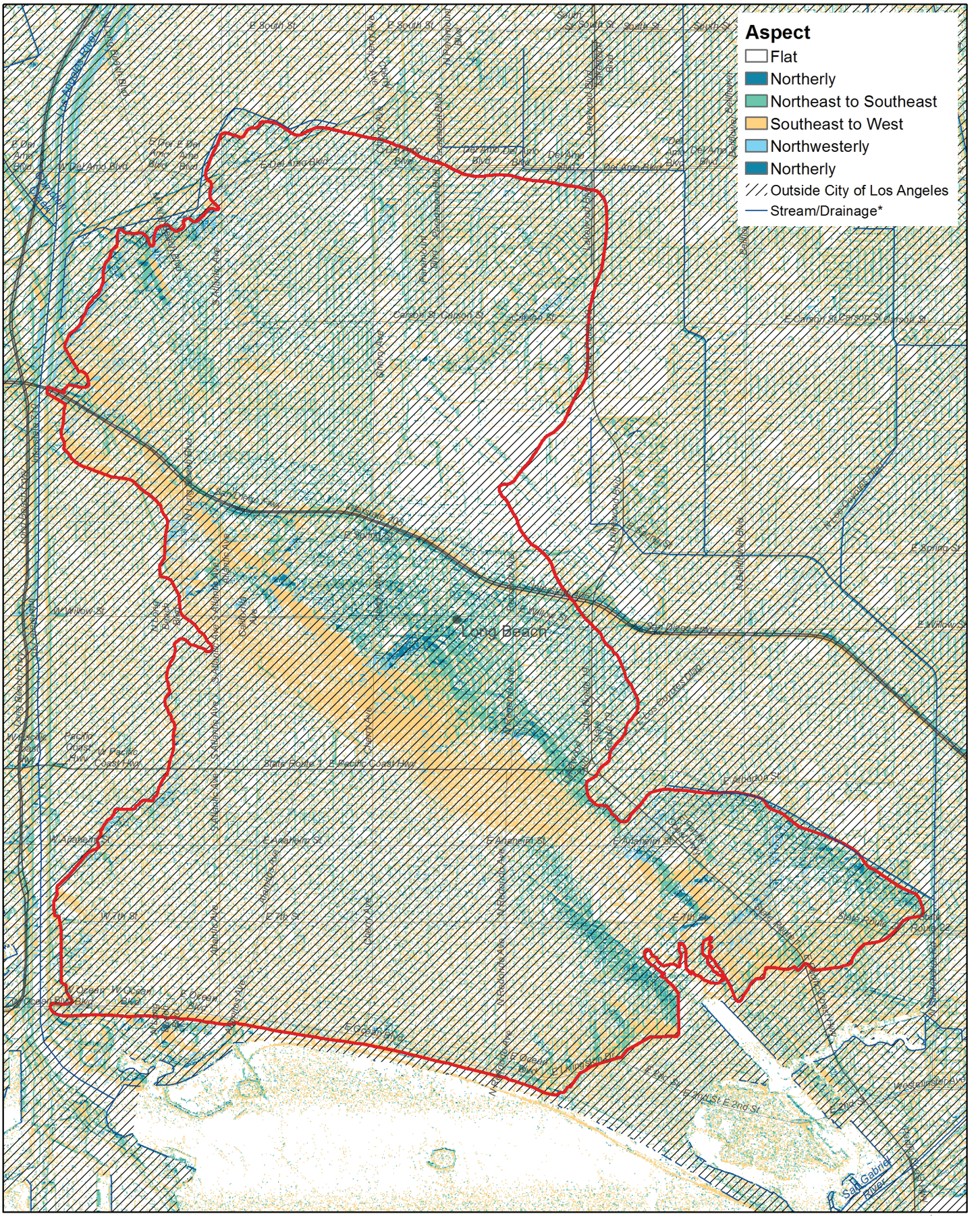
Landform

Data source: I. Brown (2019), https://escholarship.org/uc/item/4c81w4nr



Elevation

Data source: 2006 10-foot Digital Elevation Model (DEM) – LARIAC – Public Domain. https://egis3.lacounty.gov/dataportal/2011/01/26/2006-10-foot-digital-elevation-model-dem-public-domain/



Aspect

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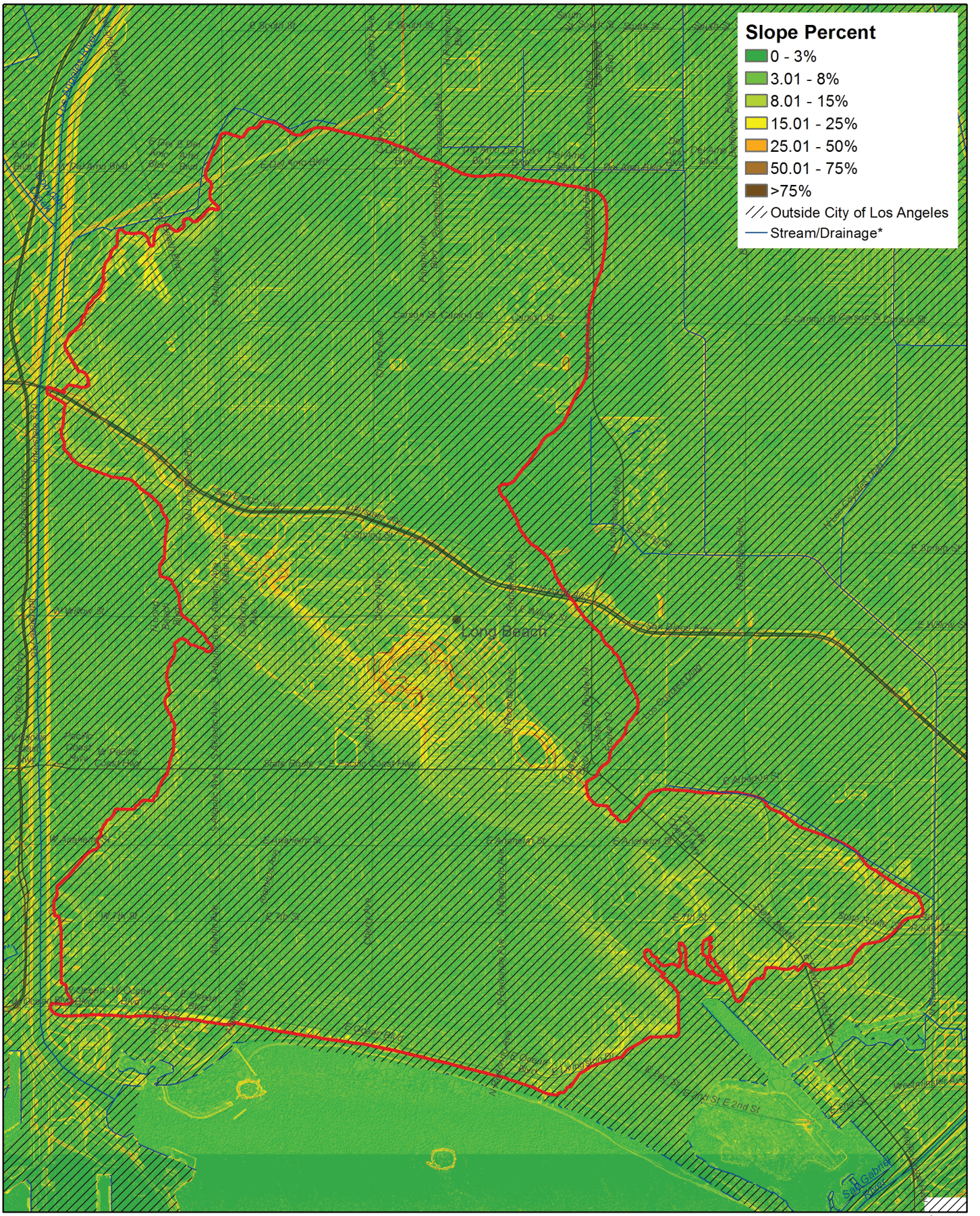

Slope Percent

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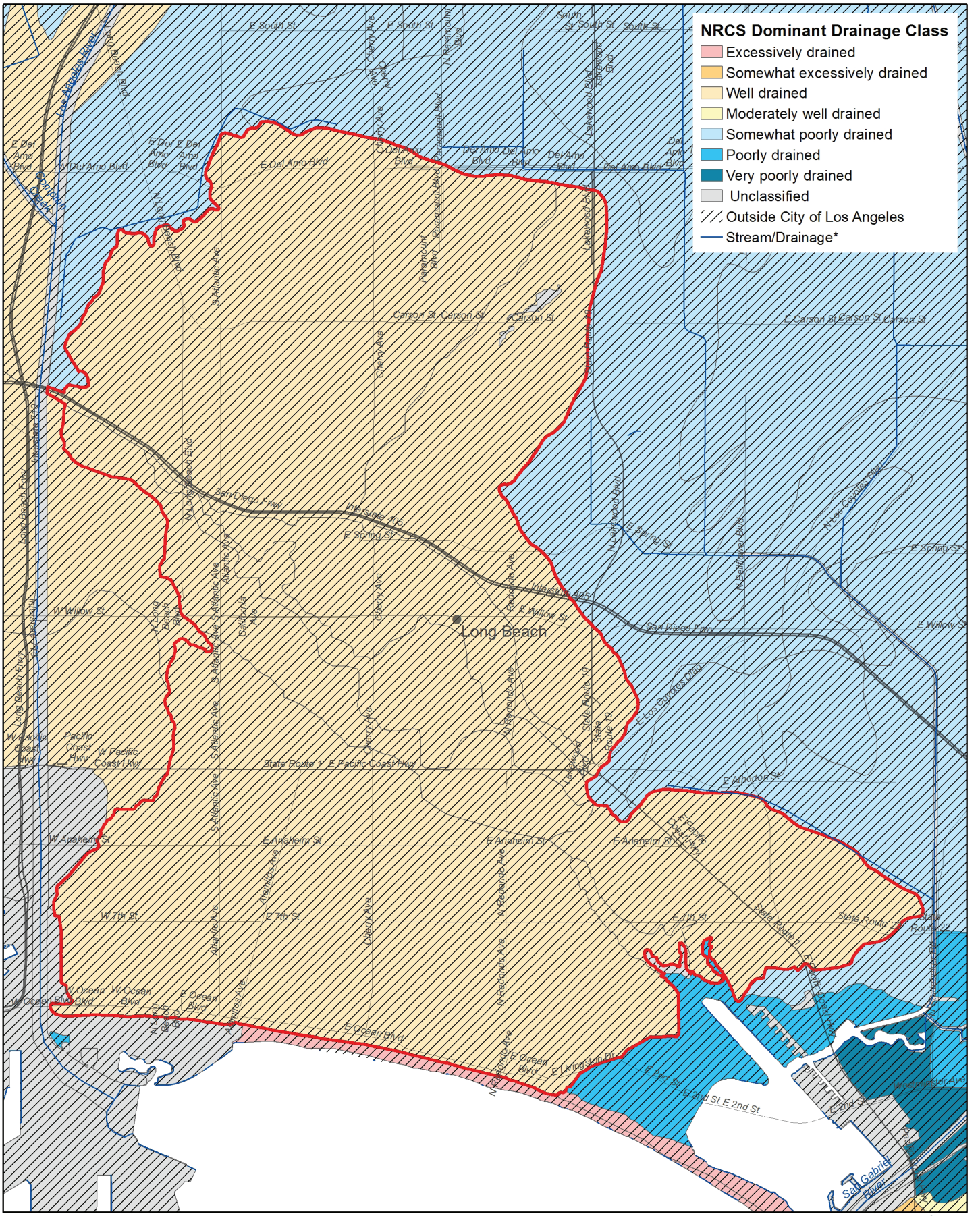

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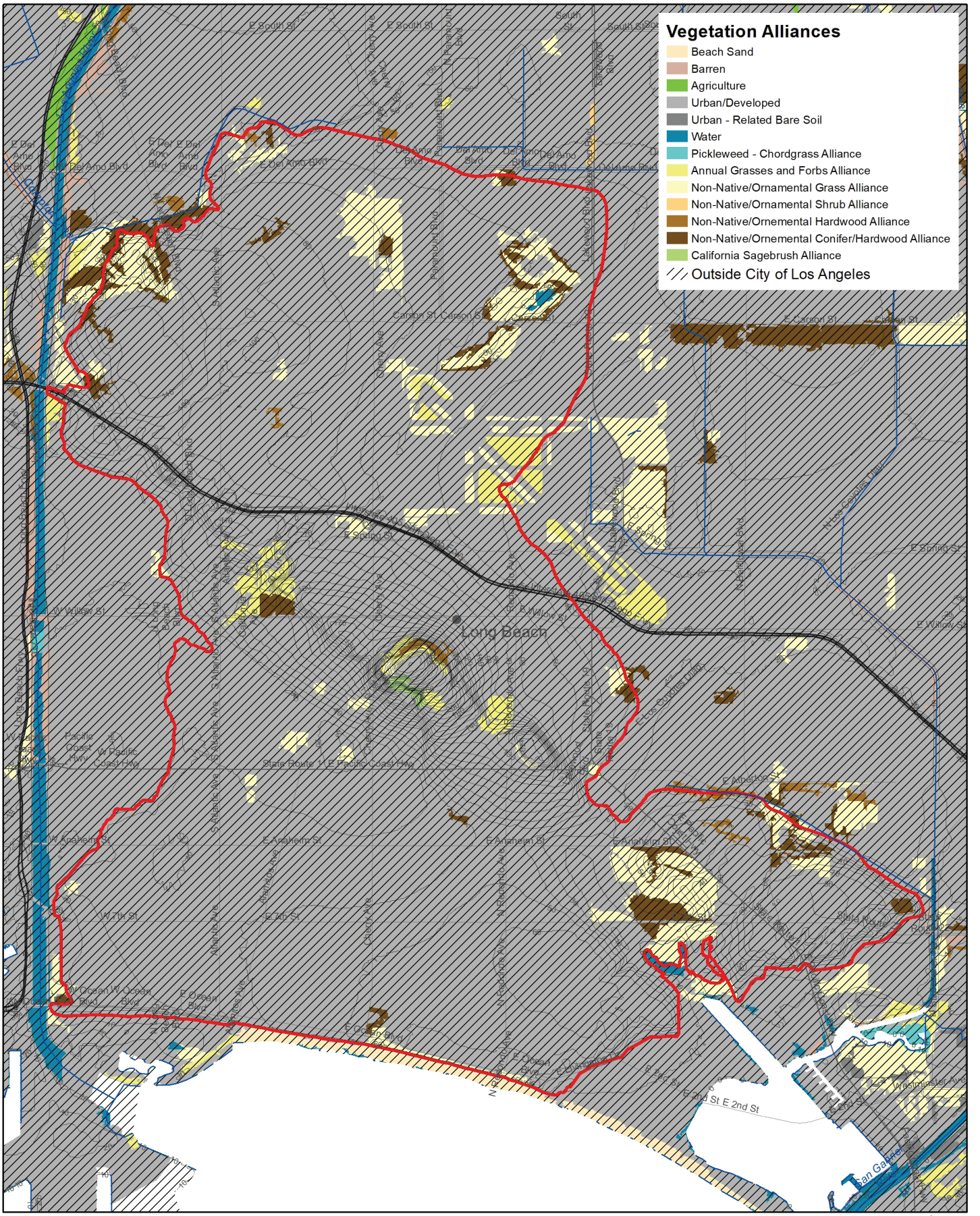

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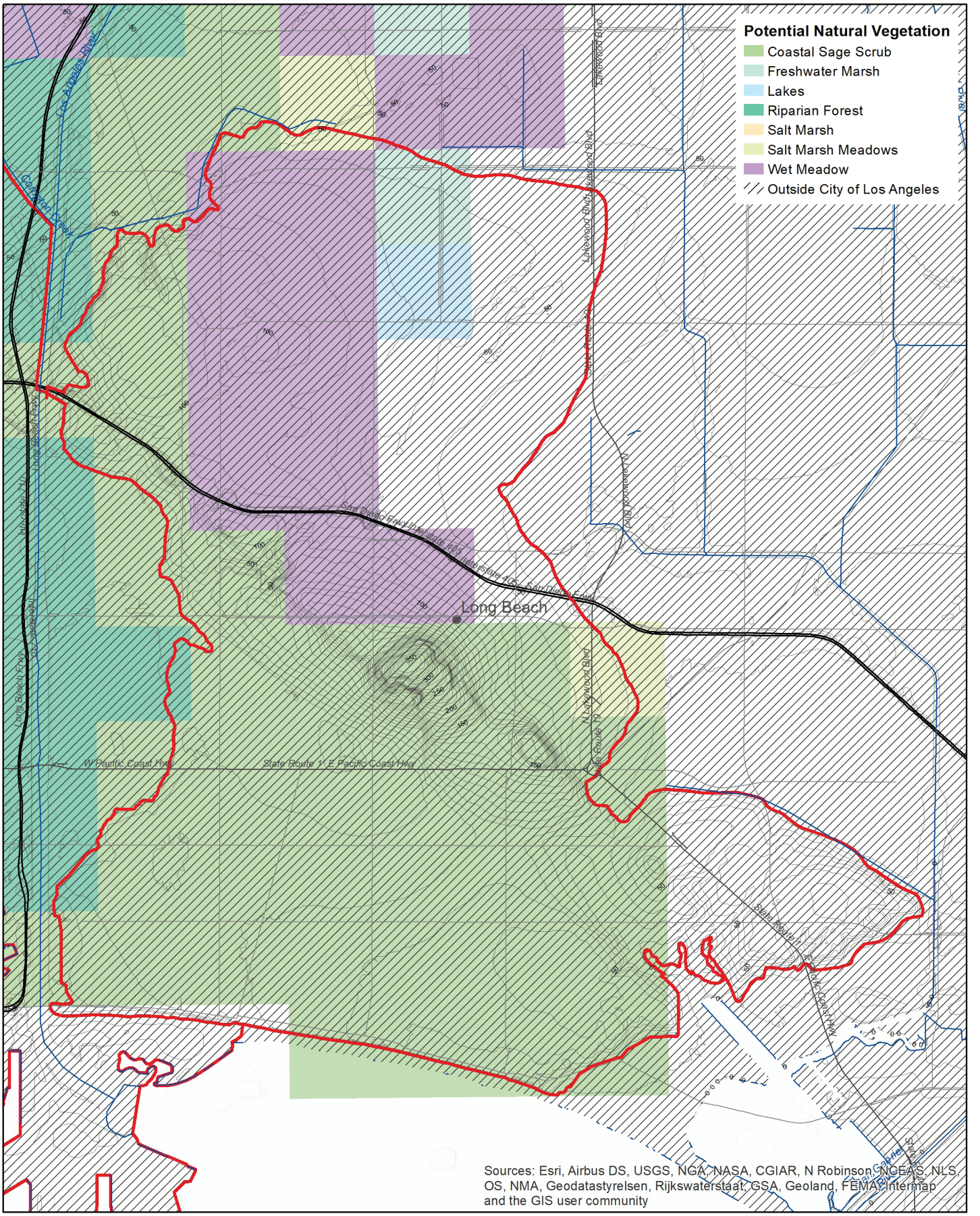
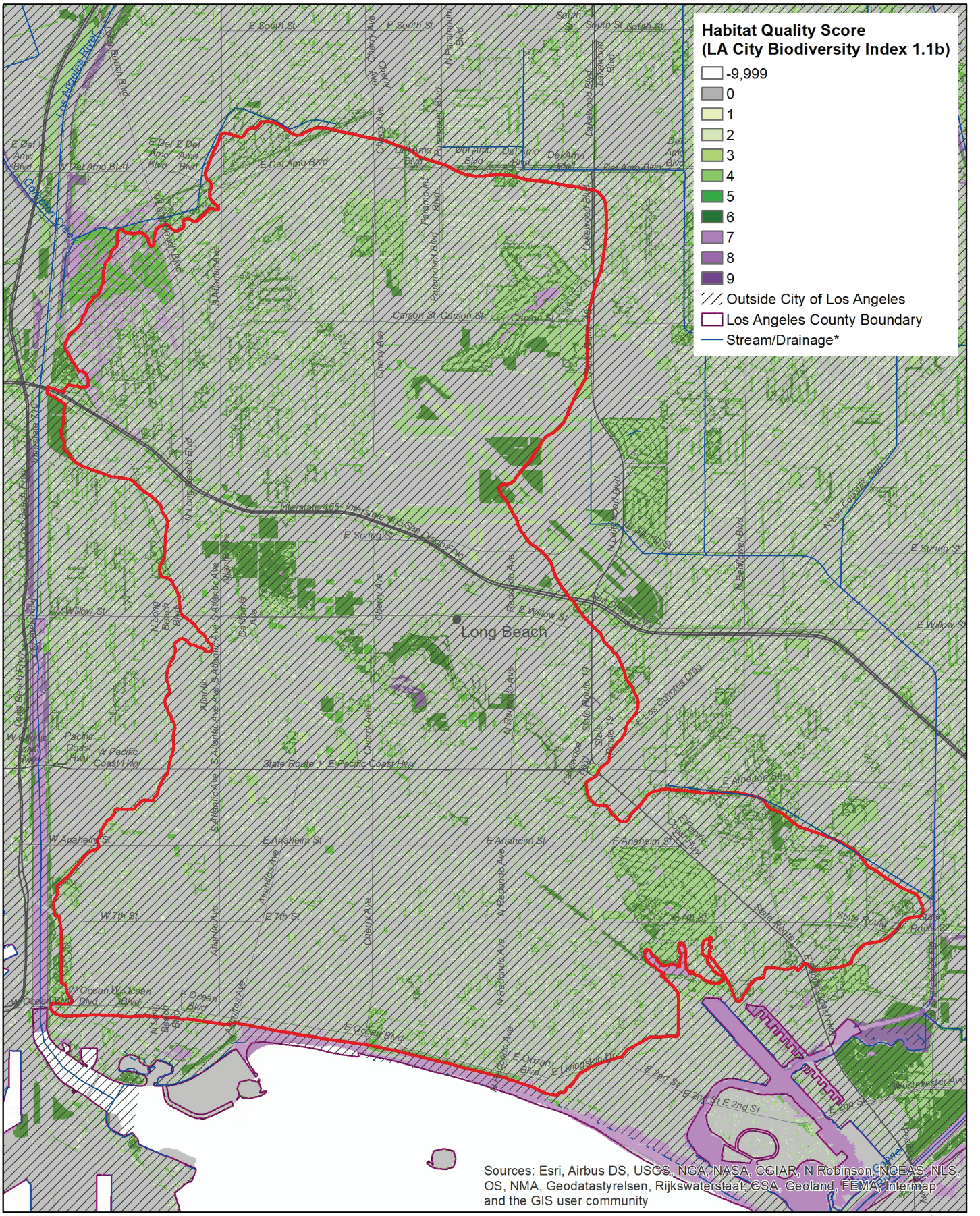


Hypothesized Potential Natural Vegetation

Data source: USC Spatial Sciences Institute/UCLA Institute of the Environment: Historical Ecology of the Los Angeles River Watershed Project.

0 0.375 0.75 1.5 Miles

N



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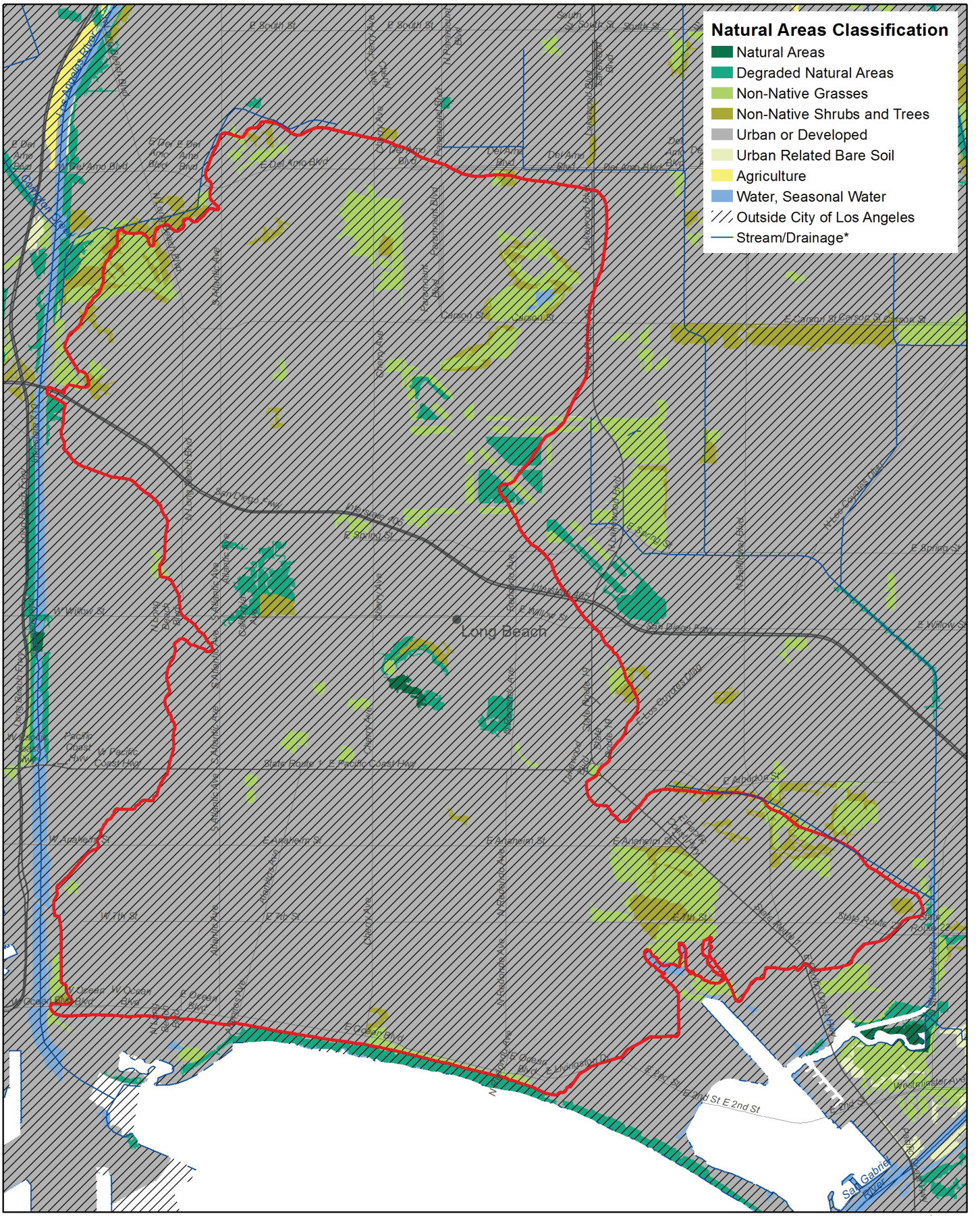

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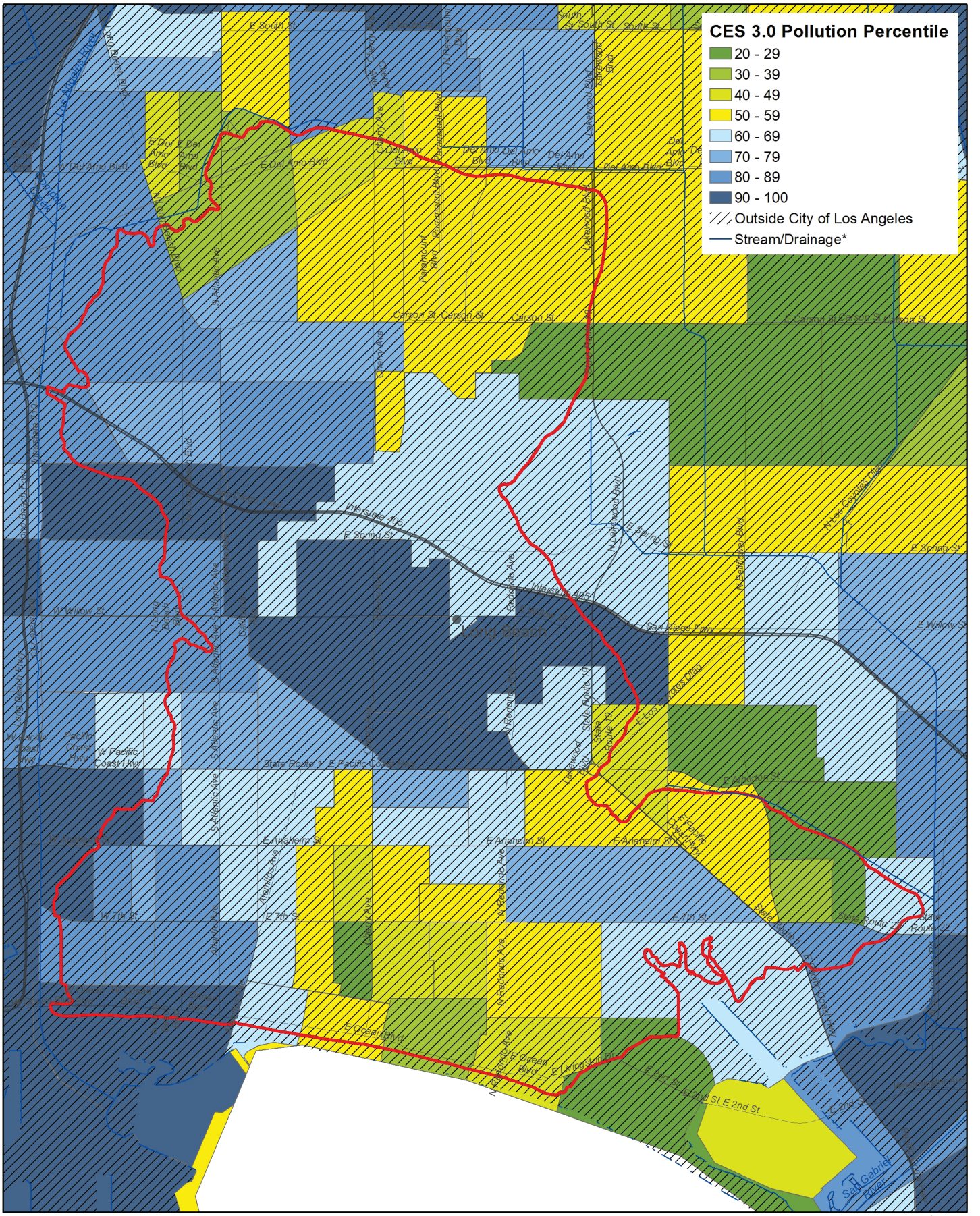

CalEnviroScreen Pollution Precentile (pollution exposure)

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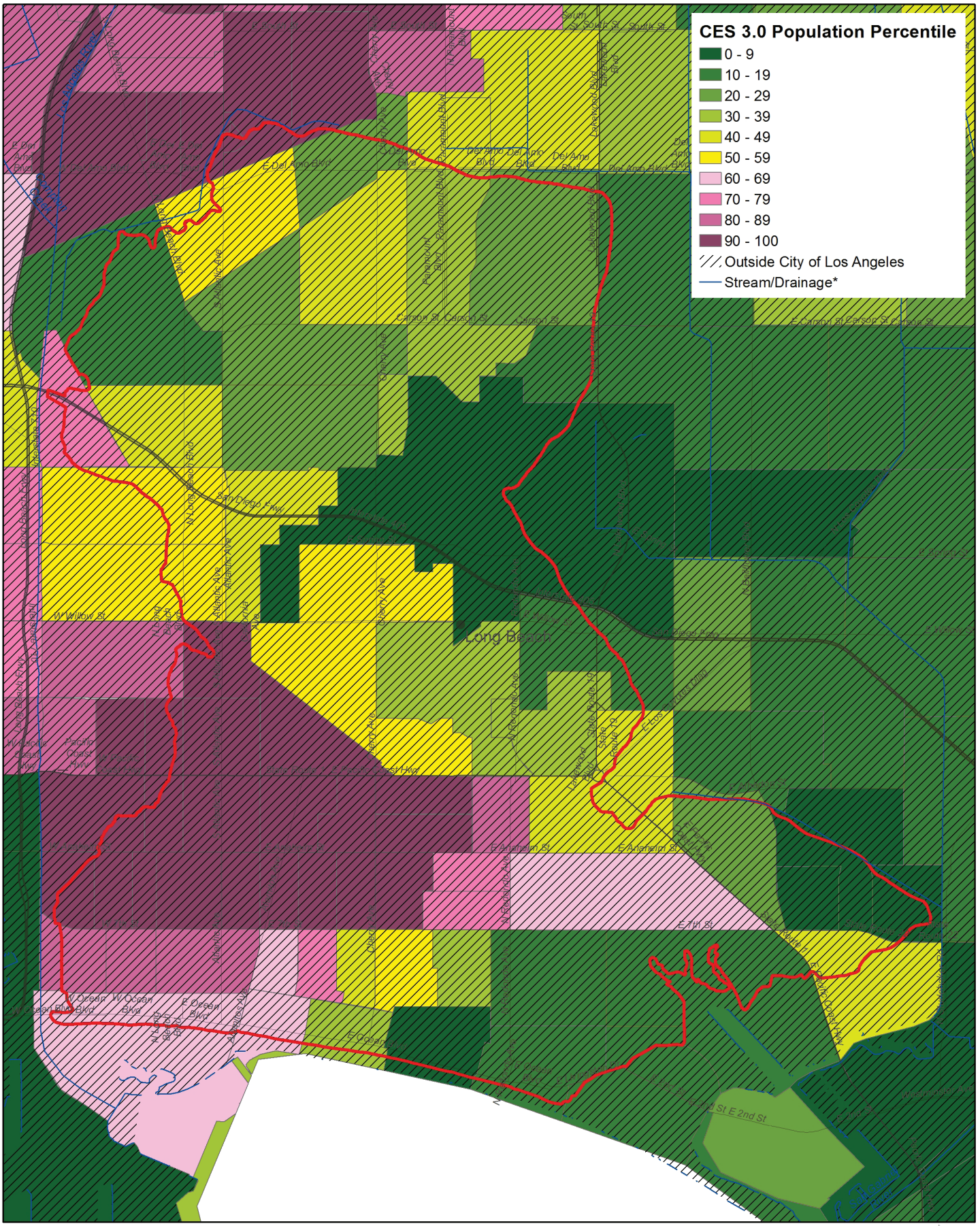

CalEnviroscreen Population Percentile (population vulnerability)

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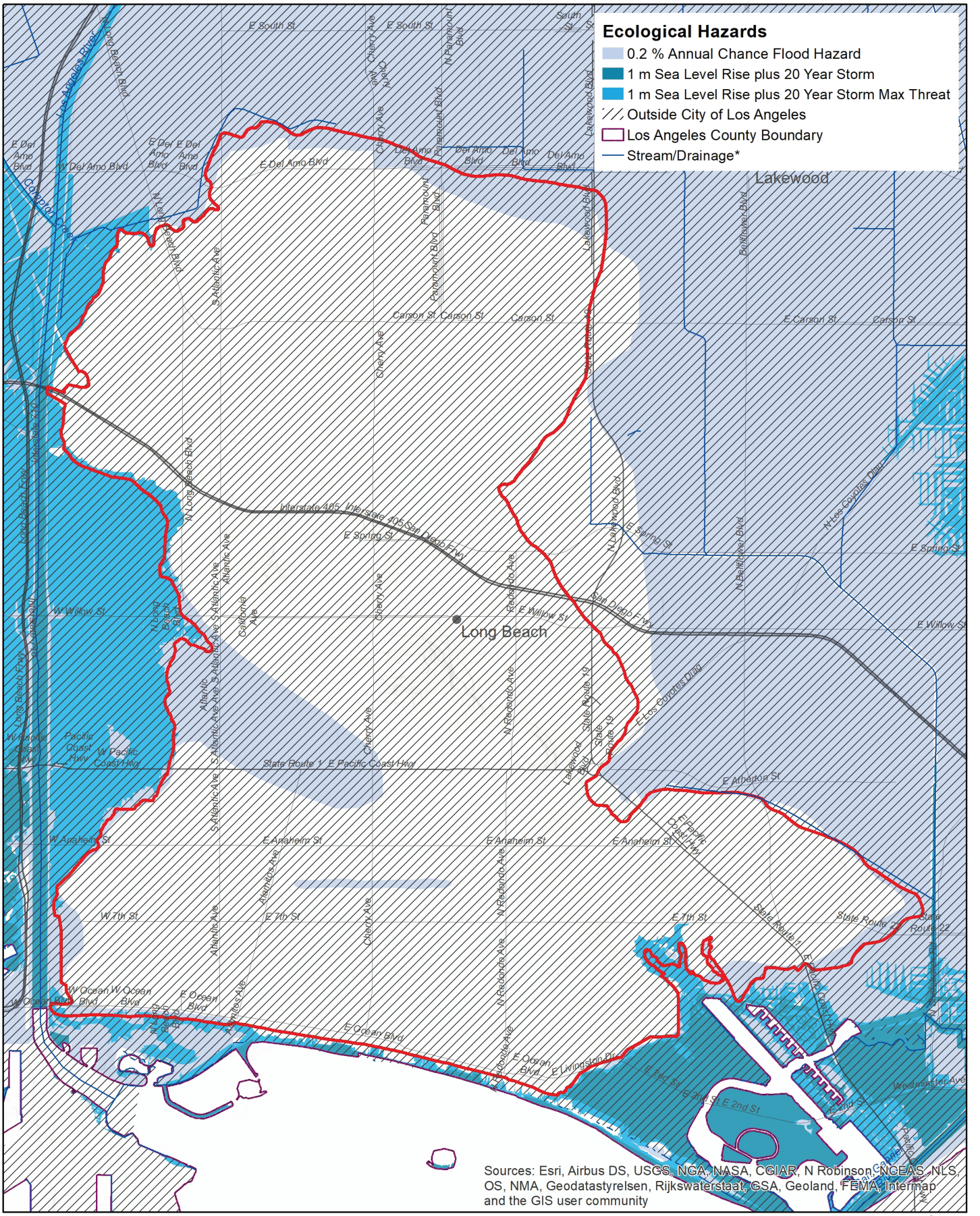

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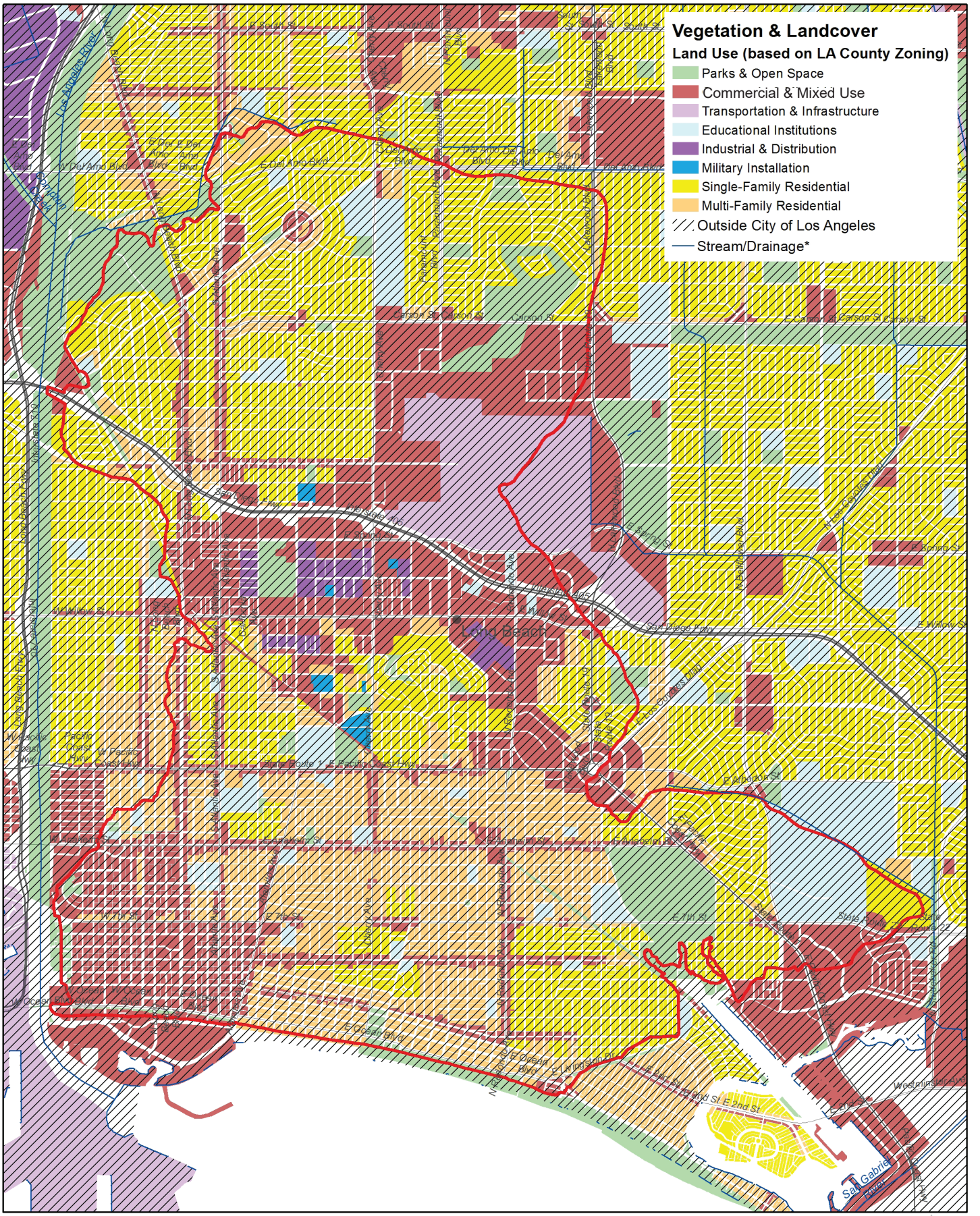
0 0.4 0.8 1.6 Miles

N



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