

Biological Resources

March 2021



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Biological Resources

The purpose of this section is to provide brief information on the current state of biological resources in the city as well as present emerging trends.

Key issue areas discussed in this section include:

- *The types of habitat found in the city and the implications of increased human activity on the biological resources found in these habitats;*
- *The potential impacts of climate change in the city and the potential consequences to various species of concern found in the community, and;*
- *Potential solutions such as carbon sequestration that the City could further implement to increase biodiversity and mitigate the negative effects of climate change;*
- *The opportunity for further programs and policies to protect the vulnerable plant and animal species found in the city.*

Policy and Regulatory Context

California Endangered Species Act

The California Endangered Species Act (CESA) has remained the State's leading wildlife protection act for plant and animal species that are listed as "threatened" or "endangered" in the state. The California Department of Fish and Wildlife (CDFW) enforces the CESA and is responsible for permitting as well as being the regulatory agency for maintaining the State's endangered species list.

Federal Endangered Species Act

The Federal Endangered Species Act, also known as the Endangered Species Act (ESA) of 1973 is the primary national legislation for the conservation of threatened and endangered plants and animals and their respective habitats. The U.S. Fish and Wildlife Service (FWS) and the U.S. National Oceanic and Atmospheric Administration (NOAA) Fisheries Service help to implement the ESA by ensuring that what they authorize, fund, and carrying out is consistent and compliant with the ESA.

California Coastal Act

The California Coastal Act was signed into law in 1976 and is the primary policy document that governs decision-making by the California Coastal Commission. The California Coastal Act regulates six key issue areas; public access, recreation, the marine environment, land resources, development, and industrial development. Within the key issue area of the marine environment, the California Coastal Act helps to conserve and protect all biological resources located in the coastal zone from both natural and manmade hazards.

Hillside Management Program

The City's Hillside Management Program (HMP) was adopted in 1989. The HMP consists of polices and development criteria established by the City to implement the Comprehensive Plan as it relates to the city's hillside areas. The overall objective is to relate and control the number and distribution of dwelling units in future hillside development to the topographical, geological, biological, and hydrological conditions of the hillsides, so that the terrain will retain its natural and scenic character. Additionally, the HMP was established to reduce the danger to life and property by hazards such as fire, flood, water pollution, soil erosions, and landslides. The HMP helps to protect the city's biological resources and natural communities, by limiting the amount of development that can be built in the foothills habitat. The HMP was adopted in 1989 and was initially created based on the city's available resources at the time. The General Plan Update provides an opportunity to assess other relevant city documents such as the HMP and update to meet the city's current resources and needs as necessary.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires evaluation of the potential effects of governmental actions (including discretionary governmental permits for private actions) on sensitive or special status species, riparian habitats or other sensitive natural communities, wetlands, marshes, vernal pools, migratory fish or wildlife species, and conflicts or violations with applicable policies, plans, and programs. This analysis under CEQA requires the prevention and/or mitigation of significant environmental effects on local biological resources and communities as a result of project development to the maximum degree feasible.

Emerging Trends

Climate Change

The General Plan Update is to provide a framework for the city to help conserve and protect biological resources and communities from both the direct and indirect effects of climate change. Climate change refers to changes in the average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and storms. Climate change can alter biological resources several ways that ultimately reduce a community's overall biodiversity. The effects of climate change can alter overall rates of reproduction, species migration, availability of food and nutrients, increase vulnerability in biological buffer zones, and displace entire ecosystems due to consequences such as sea-level rise and salt-water intrusion.

Like many coastal cities around the globe, Ventura is vulnerable to many of these consequences. Following the guidance outlined in the Ocean Protection Council, sea level rise in Ventura is predicted to be approximately 1.1 ft under the fossil fuel intensive emissions scenario (business as usual) for medium-high risk aversion (1 in 200 chance) (OPC 2018). Certain parts of the community are already seeing larger rates of sea level rise, such as Seaside Wilderness Park and the mouth of the Santa Clara River at McGrath Beach (NOAA 2020). Communities have begun implementing strategies to help mitigate the consequences of sea level rise, including restoration of wetlands and beach nourishment. For example, Ventura has conducted beach nourishment at Surfer's Point.

Carbon Sequestration

Carbon sequestration is the process by which atmospheric carbon dioxide is taken up by trees, grasses, and other plants through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils (USDA 2016). Carbon sequestration has become an increasingly popular technique for cities to implement in order to reduce the amount of CO₂ in their local communities. There are several techniques and methodologies communities can implement to capture and store CO₂, including but not limited to afforestation, reforestation, carbon farming, increasing vegetation (including coastal plants), bioenergy, ocean fertilization and, wetland restoration¹. Carbon sequestration has become an increasingly popular methodology not only to reduce CO₂, but to increase local biodiversity. Carbon sequestration techniques can also help increase a community's resilience to climate change impacts such as increased temperatures, risk of wildfires, and severe flooding events.

In 2018, the Ventura County Climate Hub (VC Climate Hub) set forth CO₂ reduction policy and goal suggestions for the Ventura County Climate Action Plan. The VC Climate Hub created Goal B to increase biological sequestration on forested lands in the County. Within Goal B, the organization has set forth 13 policy suggestions to help achieve successful carbon sequestration. These include; afforestation, forest restoration, protection and addition of urban trees, and wetland restoration. Many of these methodologies are applicable to Ventura such as afforestation in the city's hillsides, additional urban trees, and wetland restoration along the city's marshes and estuaries.

Existing Conditions

Physical Habitat

Ventura has a Mediterranean climate characterized by warm, dry summers and cool, moist winters. The varied habitats found in the city have enabled a mix of animal and plant species to flourish in the community. There are four primary habitats found in the city, including hillsides, rivers/water features, oceans/beach habitat, and barrancas.

Hillsides

The northern edge of the city is largely composed of rolling hillsides made up of smaller geographic and biological features such as incised drainages, ridgetops, and narrow flat valleys. Vegetation along these foothills is primarily comprised of coastal oak woodlands, southern oak woodlands, annual grasses with scattered pockets of coastal sage scrub, and remnant riparian corridors. The Hillside Management Program adopted in 1978 contains standards, guidelines, and a formal review process for proposed development along the hillsides. The city strives to preserve open space, including the hillsides and has a strong desire for hillside restoration and habitat protection.

¹ Afforestation: Introducing trees to an area that has not been previously forested or planted on.

Reforestation: Introducing trees to an area that has been previously forested on.

Carbon Farming: Practices that improve the rate at which CO₂ is removed from the atmosphere and converted to organic matter such as plant material.

Bioenergy: Renewable source of energy that is produce from plants and animals.

Ocean fertilization: Adding nutrients to the upper layers of the ocean to stimulate phytoplankton activity to reduce atmospheric CO₂ levels.

Wetland Restoration: Modification of former or degraded wetlands using physical, chemical, or biological methods to return it to its natural functions.

Rivers/Water Features

The city is bordered by two prominent rivers, the Ventura River and the Santa Clara River, and has several natural water features within its boundaries. The Ventura River abuts the western edge of the city and flows south to the Pacific Ocean. The Santa Clara River abuts the southern edge of the city and flows to the Ocean from the Santa Clara River Valley. Both rivers are primarily undeveloped open space and are large biological habitats for many species. Special status species that have been identified along or near these rivers include the, California Red Legged Frog, Least Bell's Vireo, Tidewater Goby, Two-striped Gartersnake, and West Pond Turtle²². Additionally, the rivers provide recreational opportunities through its bicycle trails and pedestrian pathways along the river's edge. Well-developed riparian communities found along the Ventura and Santa Clara rivers have a wide variety of plant species, such as the Arroyo willow, Western sycamore, Cottonwoods, and White elder.

In addition to riverways, coastal freshwater marshes are found along the upper ends of the Santa Clara and Ventura rivers within city limits. Coastal freshwater marshes can also be found at the Alessandro Lagoon, at the mouth of the San Jon Barranca, and at the end of Kalorama Canyon Drain. These coastal freshwater marshes are largely productive biological habitats and are used as resting and feeding areas for migratory and residential shorebirds and waterfowl. Special status species such as the Marsh Milk-vetch, Western Pond Turtle, and Tricolor Blackbird are found along these marshes and river mouths in the city.

Beaches/Ocean Habitat

Ventura has approximately seven miles of beach and is both a large biological and recreation area. The city's beaches that line the Pacific Ocean provide opportunity for a wide variety of recreational and commercial activity. The city's beach areas are also home to several sub-ecosystems. Scarce dune habitat and beach vegetation such as coastal sage scrub provide areas for nesting, foraging, and mating for several wildlife species. Special status species such as Coulter's saltbush, California Legless Lizard, and the Western Snowy Plover are prominent species found along the city's beaches, dunes, and saltwater inlets.

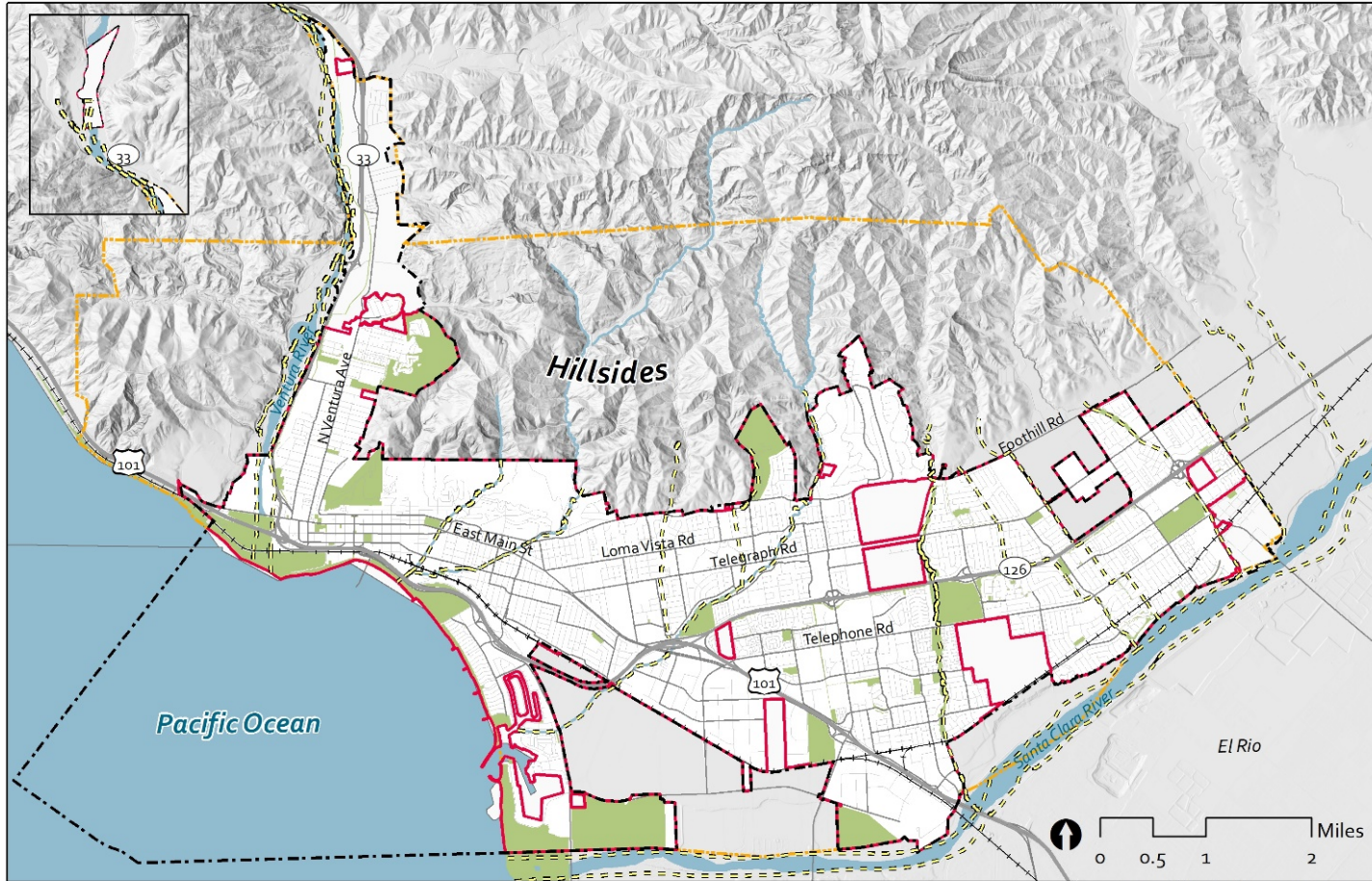
Barrancas

Barrancas are incised drainage channels, or often referred to as seasonal watercourses. Several Barrancas traverse through the city, draining from the foothills to either the Pacific Ocean or the Santa Clara River. Several smaller barrancas drain into the Arundell Barranca before it further drains into the Pacific Ocean. Along the barrancas are several sub-ecosystems largely dominated by plant species such as eucalyptus trees that provide raptor habitat and other plant species such as willows and castor bean trees. Barrancas that have not been formally channelized provide wildlife habitat and movement corridors for a variety of species.

The city's physical habitat features are shown in Figure 1.

²² Special status species are species of plants and animals that require special consideration and/or protection and have been listed as rare, threatened, or endangered by federal and/or state governments.

Figure 1: City of Ventura Physical Habitats



Data provided by City of Ventura, 2008, 2019, 2020.

City of Ventura FEMA Flood Hazard

- Ventura City Limits
- Sphere of Influence
- Planning Boundary
- Green/Open Space
- Railroad
- Roadway
- Barrancas
- Water



Environmentally Sensitive Areas

Ventura has identified numerous environmentally sensitive areas within its boundaries. These areas are primarily focused around the riparian areas, which include barrancas and rivers. Estuaries and upstream regions of both the Santa Clara River and Ventura River have been identified as biologically sensitive along with numerous barrancas, the Alessandro freshwater mark, and the coastline. These environmentally sensitive areas are used for shelter, nesting, feeding, and mating areas for several species in the city. Additionally, the city's hillsides and woodland oak ecosystems are used by raptor species and are considered to be biologically sensitive.

The California Natural Diversity Database (CNDDDB) has identified two primary environmentally sensitive communities in the city: the Southern California Coastal Lagoon and the Southern Sycamore Riparian Woodland. These are briefly discussed below.

Southern California Coastal Lagoon

Coastal lagoons are formed along gentle sloping terrain and are filled by transverse processes such as currents or tides bringing in sediment. These types of lagoons often support critical sub-ecosystems and habitats such as salt marshes as evident in the city. Coastal lagoons are of high ecological productivity and are particularly sensitive to changes in sea level rise and water quality. These lagoons can be found at the mouth of the Ventura River Estuary and the Pacific Ocean.

Southern Riparian Woodland

Southern oak woodlands primarily occur in gently rolling foothills and valleys, which typically consist of large widely-spaced trees separated by extensive grasslands. Southern oak woodlands are primarily found in the public open space in the city's foothills. Southern oak woodlands and savannahs support a wide variety of bird and animal species.

Species of Concern

Along with the environmentally sensitive communities discussed above, the city has specific species of plants and animals that are of concern either at the federal, state, or local level. Rincon Consultants conducted a search through CNDDDB on July 24, 2020. Table 1 identifies protected wildlife species that have been sited within the city's planning area.

Table 1: Species of Concern

Species	Designation
Burrowing Owl	CDFW Species of Special Concern, USFWS Birds of Conservation Concern
California Legless Lizard	CDFW Species of Special Concern
California Red Legged Frog	ESA Threatened; CDFW Species of Special Concern
Crotch Bumble Bee	State Listed – Candidate Endangered
Dulzura Pocket Mouse	CDFW Species of Special Concern
Least Bell’s Vireo	State Listed – Endangered; Federally Listed – Endangered
Mexican Long-Tongued Bat	CDFW Species of Special Concern
Pallid Bat	CDFW Species of Special Concern
Tidewater Goby	ESA Endangered; CDFW Species of Special Concern
Tricolored Blackbird	CDFW Species of Special Concern; State Listed – Endangered
Two-stripe Gartersnake	CDFW Species of Special Concern
Western Mastiff Bat	CDFW Species of Special Concern
Western Pond Turtle	CDFW Species of Special Concern
Western Snowy Plover	CDFW Species of Special Concern; Federally Listed – Endangered
Ventura Marsh Milk-Vetch	State Listed – Endangered; Federally Listed – Endangered
<p>Notes:</p> <ol style="list-style-type: none"> 1. CDFW: California Department of Fish and Wildlife 2. ESA: Federal Endangered Species Act 3. USFWS: United States Fish and Wildlife Service <p>Sources: CDFW. 2019. CNDDB – Plants and Animals.</p>	

Conclusion/Issues and Opportunities

The following identifies issues and opportunities related to biological resources that can be addressed in the General Plan Update:

- Establishing and implementing policies and programs to monitor how climate change may directly impact biological resources and develop strategies to help prevent or reduce climate change impacts. Specifically, how sea level rise, erosion, and saltwater intrusion may impact various vulnerable habitats and species found in the city.
- Identifying potential opportunities for carbon sequestration to reduce the community's greenhouse gas emissions, increase biodiversity, and increase resilience to climate change impacts.
- Providing policies that balance passive recreation that occurs at the beach, along rivers, and adjacent to lagoons, while protecting the natural biological and coastal resources. Certain areas of the city such as coastal trails along wetlands and lagoons, riverheads, and the beaches experience the highest volume of human related activity and are also important primary habitats and are of high biological activity.
- Identifying outdated accompanying plans such as the Hillside Management Program (HMP) and assessing potential policies and programs included in the HMP that could be modified and/or expanded to address current needs and city resources.

References

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