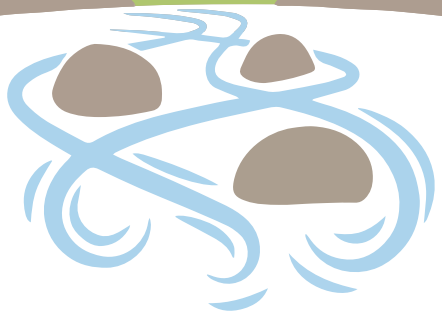

PART 3

Watershed Characteristics

3.1 Overview and Quick Facts

Lake Casitas

Photo courtesy of Michael McFadden

3.1 Overview and Quick Facts

"Watershed Characterization," Part 3 of this plan, provides an overview of the current physical, biological, hydrological, and social conditions of the Ventura River watershed. Prepared with the latest available technical data and information and input from a multi-stakeholder review, the Watershed Characterization is intended to help all stakeholders, including water managers, policy makers, regulators, residents, businesses, and students, better understand the watershed and its many interdependent relationships.

The characterization is data-rich—featuring photos, maps, graphics and explanatory sidebars—but is intended to be engaging and easily understandable by lay readers. Each section includes a list of the key documents on that topic where readers can find more detailed and technical information.

Aerial View of Ventura River Watershed Looking Downstream

3.1.1 Quick Facts

Location: The Ventura River watershed is located in southern California, in western Ventura County, with a small section in the northwest corner located in eastern Santa Barbara County. At 226 square miles, it is the smallest of the three major watersheds in Ventura County, which are the Ventura River, Santa Clara River, and Calleguas Creek watersheds.

Table 3.1.1.1 Ventura County's Major Watersheds

	Square Miles	Acres
Ventura River	226	144,833
Calleguas Creek	343	219,520
Santa Clara River	1,634	1,045,760

Figure 3.1.1.1 Location Map

The watershed is fan-shaped: It measures 18 miles north to south, is 17 miles at its widest point and 1.3 miles wide at its narrowest point, the estuary.

Table 3.1.1.2 Quick Facts

Main Tributaries & Subwatersheds	Matilija Creek, North Fork Matilija Creek, San Antonio Creek, Cañada Larga Creek, Coyote Creek
Jurisdictions	Of the watershed area in Ventura County: County of Ventura (49.1%), US Forest Service (47.7%), City of Ojai (1.9%), City of Ventura (1.2%). A small corner of the watershed is in Santa Barbara County (3.9% of the entire watershed).
Population	44,140
Headwaters	Transverse Ranges
Mouth	Pacific Ocean (Santa Barbara Channel)
Length	33.5 miles (16.2 miles of main stem, plus 17.3 miles of Matilija Creek headwaters)
Area	226 sq. mi., 144,833 acres
Average Annual Precipitation	15.46" (lower watershed) 21.31" (middle watershed) 35.17" (upper watershed)
Median Annual Precipitation	14.12" (lower watershed) 19.20" (middle watershed) 28.74" (upper watershed)
Discharge	Average – 65 cubic feet per second (cfs); Maximum – 63,600 cfs (1978)
Elevation	Highest: 6,010 ft. Lowest: sea level

The Ventura River runs through the center of the watershed, draining numerous tributaries along a 33.5-mile run from its headwaters in the Transverse Ranges to the Pacific Ocean. The main stem of the Ventura River originates at the junction of Matilija Creek and North Fork Matilija Creek, 16.2 miles from the Pacific Ocean.

Subwatersheds: The Ventura River is fed by five significant tributaries that form "subwatersheds" nested within the larger Ventura River watershed. These tributaries, and subwatersheds, include Matilija Creek, North Fork Matilija Creek, San Antonio Creek, Cañada Larga Creek, and Coyote Creek. Ridges form the rims of these subwatersheds. The main stem of the Ventura River forms a sixth subwatershed.

Subwatershed Relationships

Subwatersheds exhibit the same intra-relationship dynamics as the larger watersheds of which they are part. For example, groundwater levels in the San Antonio Creek subwatershed affect streamflow in the San Antonio Creek, which can affect the creek's water quality and availability of instream habitat for fish. Subwatersheds also have inter-relationships with the larger watershed. For example, the quality of water in San Antonio Creek ultimately affects the quality of water in the Ventura River watershed's estuary.

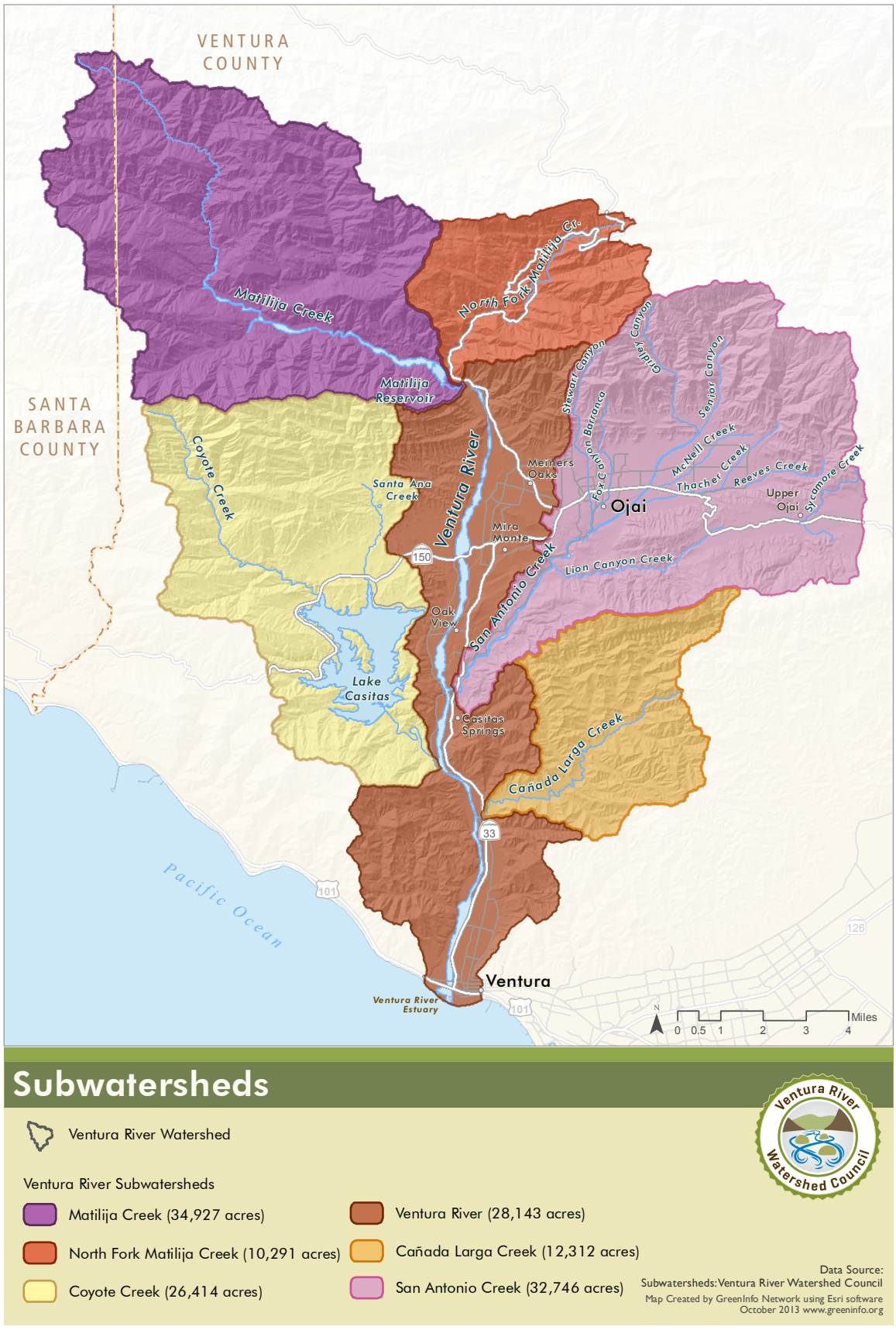

Figure 3.1.1.2 Subwatersheds Map

Land Use and Demographics: Conditions in the watershed remain natural and undeveloped, with 57% of its land area in protected status. Most of the watershed's primary streams and drainages are unchannelized, though two dams—Casitas and Matilija Dams—and three levees—Ventura River, Casitas Springs, and Live Oak—have modified natural hydrologic patterns.

The northern half of the watershed lies within Los Padres National Forest. The watershed's southern half includes two cities and a number of unincorporated communities. The population is approximately 44,140, which represents just 5.4% of Ventura County's population of 823,318 residents (as of 2010 Census). The City of Ojai lies entirely within the watershed, 13 miles inland at an elevation of 746 feet. Thirteen percent of the City of Ventura lies within the watershed, adjacent to the coast and the lower stretch of the Ventura River. The population of the watershed is relatively small and the rate of growth low.

Thacher Creek, January 2005
Photo courtesy of Michael McFadden

Developed land (excluding grazing) comprises only about 13% of the total land area in the watershed. Agriculture is the dominant land use. Citrus and avocados are the primary irrigated crops grown, and a significant area of land is used for cattle grazing.

Lower Ventura River Watershed Land Uses: Urban, Oil Extraction, Agriculture

Photo courtesy of Brian Hall, by way of Santa Barbara Channelkeeper and LightHawk

Because the annual amount of rainfall received is highly variable, water supplies must be managed with caution.

Water Quality: Surface water quality is good compared with more developed watersheds in the region and has improved notably in recent decades. Despite relatively good water quality, all of the watershed's major waterbodies are on the Clean Water Act Section 303(d) list of impaired waterbodies. Between these waterbodies there are 14 different types of impairments.

Water Supply: Unlike most all of its neighbors in southern California, the Ventura River watershed truly depends upon its watershed to "shed" water. All of the water used in the watershed falls from the sky. Lake Casitas serves as the major surface water supply reservoir in the watershed and groundwater is heavily relied upon. On average, surface water comprises about 55% of the water recovered from the watershed and groundwater comprises about 45%.

Cycles of drought and flooding occur regularly. Annual rainfall in downtown Ojai has ranged from a low of seven inches to a high of 49 inches—a sevenfold variation. Because the annual amount of rainfall received is highly variable, water supplies must be managed with caution.

Ventura River, Upstream from Main Street Bridge
Photo courtesy of Santa Barbara Channelkeeper

Two small coastal watersheds flank the Ventura River watershed's lower section and are dependent on its water.

Two small coastal watersheds—the North Ventura Coastal Streams watershed and the Buenaventura watershed—flank the Ventura River watershed's lower section and are dependent on its water. Water from the Ventura River watershed is used to irrigate avocado orchards in the North Ventura Coastal Streams watershed and serves a significant population in a portion of the Buenaventura watershed that lies within the City of Ventura.

Flooding: The steep terrain of the Ventura River watershed, coupled with intense downpours that can occur in its upper portions, result in flash flood conditions where floodwaters rise and fall in a matter of hours. Major or moderate floods have occurred once every five years on average since 1933.

Habitat and Species: The watershed's rugged topography, largely undeveloped status, and Mediterranean climate combine to make for an area of exceptional biodiversity. It supports a diverse array of natural habitats, including grassland, coastal sage scrub, chaparral, oak woodlands and savannas; coniferous woodlands; riparian scrub, woodlands and wetlands; alluvial scrub; freshwater aquatic habitats; estuarine wetlands; and coastal cobble, dune and intertidal habitats. The Ventura River estuary, at the mouth of the Ventura River, is an exceptionally valuable wetland habitat and ecological resource in the watershed.

White Pelicans, Lake Casitas
Photo courtesy of Allen Bertke

The watershed is home to numerous protected species and habitats, including 137 plants and animals protected at either the federal, state, or local level. The federally endangered southern California steelhead is of particular importance, given the watershed's often dry and always variable climate. Removing Matilija Dam, in part to return access to the steelhead to spawning habitat, is a major project that is underway in the watershed. The watershed is also challenged by invasive, non-native species, such as *Arundo donax*.

Ventura River Estuary
Photo courtesy of Santa Barbara Channelkeeper

The watershed is a recreation destination for hikers, walkers, bikers, surfers, campers, fishermen, boaters, backpackers, equestrians, and birders, as well as artists, spiritual seekers, and students of natural history. Many local organizations are committed to providing the public with access to nature and nature-based recreation opportunities.