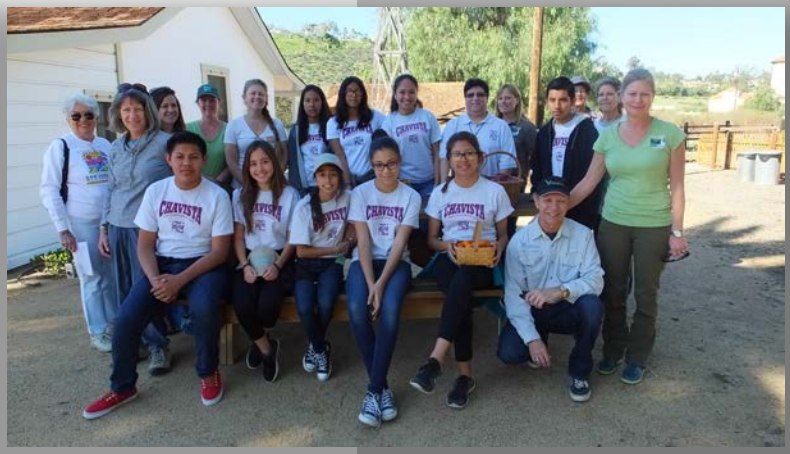
Sikes Adobe
Historic Farmstead

WATERSHED EXPLORERS



Contents

OVERVIEW

Led by the San Dieguito River Park, students learn what it was like to be a pioneering family in San Diego and the importance of the natural environment in daily living. At Sikes, students participate in a series of activities designed to teach them about daily life in the late 1800s including gardening, making butter, and 19th century laundry. Students also learn about the importance of water to the pioneers and test the quality of the water from the farmstead's on-site well.

Objectives

Students will:

- learn about the role water and the San Dieguito River play in agriculture in the San Pasqual Valley;
- learn about the role the San Pasqual Valley played in early California history, such as the Mexican-American War;
- learn about and gain an appreciation for the difficulties and challenges of the lives of pioneer farming families in the San Pasqual Valley, such as the Sikes family; and
- learn how the family coped with water issues throughout the seasons.

California Performance Expectations & Dimensions

Note: This program can assist with meeting the following Performance Expectations and Dimensions from California's Next Generation Science Standards (NGSS).

Grades 6-8: MS-ESS3-1; MS-ESS3-2; MS-ESS3-3; MS-ESS3-4; MS-ESS3-5; MS-LS2-1; S-LS2-2; MS-LS2-3; MS-LS2-4; MS-LS2-5.

Grades 9-12: HS-LS2-6; HS-LS2-8; HS-LS4-6; HS-ESS2-5; HS-ESS3-1; HS- HS-ESS3-4; HS-ESS3-6.

INTRODUCTION

The San Dieguito River Watershed

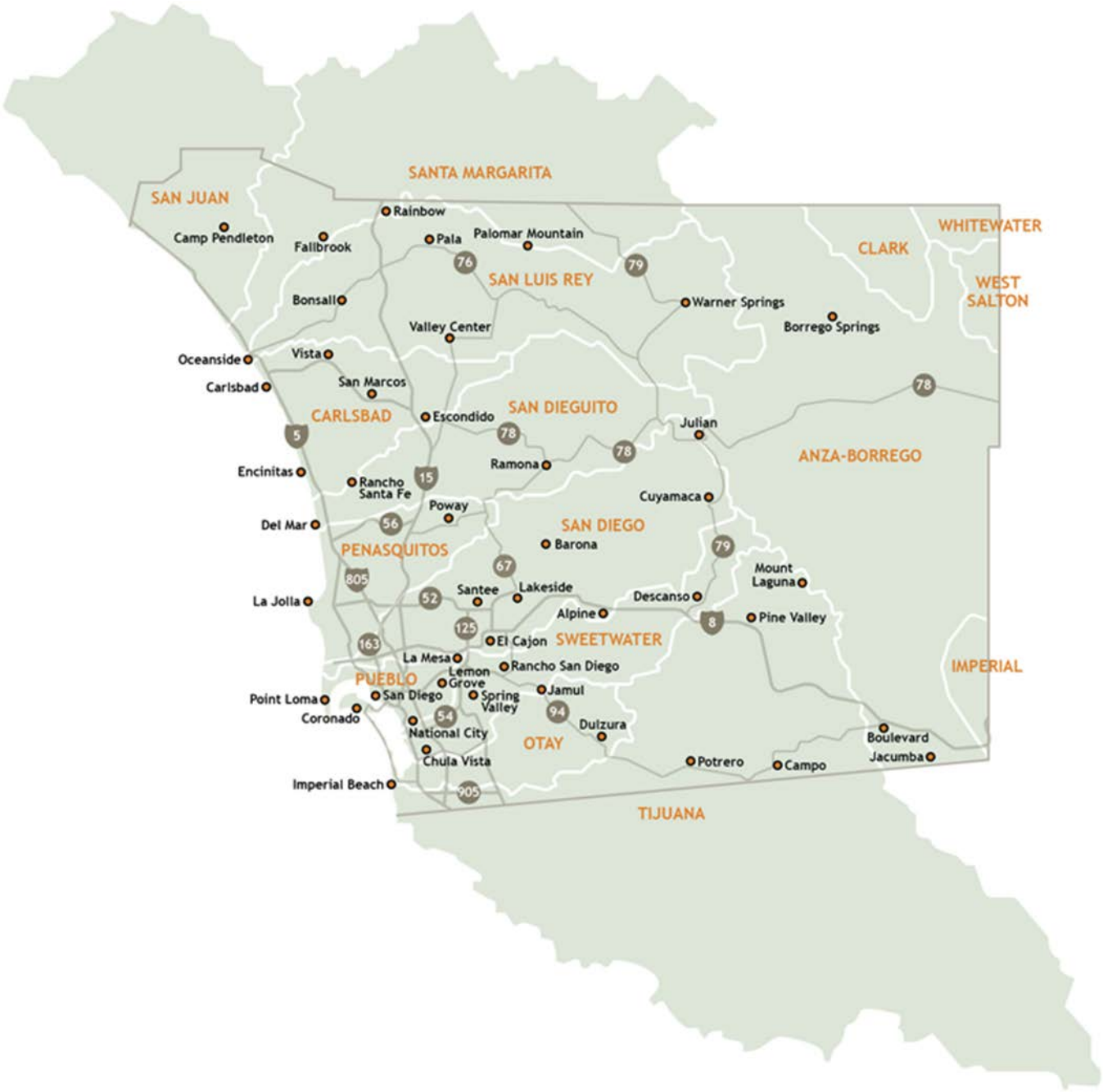
When it rains, the falling water runs downhill off the land into nearby creeks, rivers, and lakes. If you were to follow a raindrop from the mountains to the ocean, you would be following the raindrop through a watershed. A watershed is the area of land and water bodies that collect rainwater. A watershed includes the mountains, valleys, and flatlands, as well as water flowing above ground and underground (groundwater) in creeks, rivers, and aquifers. Most watersheds eventually end at the coast, often at an estuary open to the ocean. Flowing water connects all of the communities in a watershed, and what happens upstream affects those living downstream.

Did you know that you live in a watershed? We all do. Do you know which one you live in? If you live between Julian and Del Mar you probably live in the San Dieguito River Watershed. This watershed starts at Volcan Mountain near Julian and stretches 55 miles through portions of Julian, Wynola, Santa Ysabel, Ramona, Poway, Rancho Bernardo, Escondido, Del Dios, Santa Fe Valley, Rancho Santa Fe, Fairbanks Ranch, San Diego and Del Mar through the San Dieguito Lagoon to the Pacific Ocean.

In terms of land area, the majority of the watershed (79.8%) is within the unincorporated area of San Diego County. The San Dieguito River Watershed is presently divided into vacant/undeveloped (54%), parks/open space (29 %), and urban (18%) land uses. Nearly half of the vacant land area is open to future development, most of which is zoned for residential use. The current watershed population is approximately 125,000; however, this level is projected increase to over 210,000 residents by 2020.

There are several important natural areas within the watershed that sustain a number of threatened and endangered species. Among these are the 92,000-acre San Dieguito River Park Focused Planning Area, the 150-acre San Dieguito Lagoon, and five water storage reservoirs including Lake Hodges, Lake Sutherland, and Lake Poway.

This curriculum focuses on the San Dieguito River Watershed; however, the environmental and water-quality issues found there are pertinent to most coastal California watersheds. Click on this link to find out information on other watersheds in San Diego County. Note: See the watershed map below for the location of these watersheds.


SANTA MARGARITA
SAN JUAN
Rainbow
Camp Pendleton
Fallbrook
Pala
Palomar Mountain
WHITEWATER
CLARK
76
79
SAN LUIS REY
WEST SALTON
Bonsall
Warner Springs
Valley Center
Borrego Springs
Oceanside
Vista
San Marcos
Carlsbad
78
CARLSBAD
Escondido
SAN DIEGUITO
Julian
5
78
78
ANZA-BORREGO
Encinitas
Ramona
15
Rancho Santa Fe
Cuyamaca
Poway
Del Mar
56
SAN DIEGO
Barona
PENASQUITOS
79
67
Mount Laguna
805
Santee
Lakeside
Descanso
La Jolla
52
Alpine
Pine Valley
8
125
El Cajon
SWEETWATER
163
La Mesa
Rancho San Diego
IMPERIAL
Lemon Grove
PUEBLO
Point Loma
San Diego
Spring Valley
Jamul
Coronado
54
94
Dulzura
National City
OTAY
Boulevard
Chula Vista
Potrero
Campo
Jacumba
Imperial Beach
905
TIJUANA

Sikes Adobe

Established around 1870, and featuring one of the area's oldest adobe homes from the American era, the Sikes Adobe Historic Farmstead is a remarkable survivor of San Diego's rural history and, as such, plays a special role to play in preserving the legacy of old California.

The Sikes Family

Zenas Sikes' obituary says that he and his wife Eliza moved to Santa Clara from Ohio in a covered wagon after they married in 1853. However, research indicates that Eliza, who was born in Ohio, moved to California with her stepmother Clarissa Burrell and arrived in January 1853. They came west around Cape Horn on the ship "Westward Ho" to join her stepfather Lyman Burrell, who had come west overland in 1849 to become a gold miner.

The Sykes (Sikes) family has been documented back to Massachusetts in the 1600s, but they had moved to Michigan by 1837. Zenas appears to have left Michigan in March 1850 with three brothers, arriving in California five months later. Census records of 1852 list Zenas and his brothers Charles, Loring, and Samuel as living in Santa Clara County, California.

In July 1853, Zenas and Eliza married in California. In 1868, they purchased a 2,400-acre portion of the former Rancho San Bernardo for $2,500. By 1872, they moved onto their property with their six children and built a one-room adobe structure to live in. Additional rooms in the Greek revival style, popular during the Victorian era, were soon added to the one room structure. These additions were of wood, not adobe. Based on letters written by Eliza, we know that the farmhouse reached its final outer dimensions by 1881.

Zenas Sikes died in surgery in April 1881 as a result of being kicked by a horse on his leg twice. Eliza used part of resulting the life insurance payments to remodel the house extensively and to upgrade the furnishings. She also continued the wheat farming business.

The family's fortunes slowly declined in the decade after Zenas' death. Wheat became less profitable as competition grew and the land became less fertile. The family began a dairy operation. Debts piled up and, in 1897, the property was sold to August Barnett for $10 to pay off the mortgages he held on the property. In 1917, the house was purchased along with the buildings in the

Bernardo community as part of the Lake Hodges Dam Project, initiated by Col. Ed Fletcher.

Farming

The Sikes and their neighbors became founders of a community of pioneer farmers that settled the former Rancho San Bernardo in the 1870s. They developed the region into productive agricultural lands that supported a rural society. Settlement of this agricultural area was critical to the infant city of San Diego. Farmers were desperately needed to feed the expanding urban population and provide markets for local business.

Farmers in the region prospered largely as a result of grain cultivation. During initial settlement, pioneer farmers needed a product that could be quickly and cheaply produced. Grains could be planted quickly with little initial investment and offered a quick cash return at the end of the season.

Wheat was first planted on a large scale in the Central Valley during the late 1860s. It became the largest and most profitable crop in California between 1860 and 1893. California winter wheat quickly gained the reputation as premium wheat by millers in England, Ireland, and parts of Europe by the 1870s. Known abroad as "California white velvet", the wheat was harvested in the summer and could be shipped thousands of miles with little degradation. The quality was unusually hard and dry, making it suitable for long maritime transport around Cape Horn.

The Town of Bernardo

The Town of Bernardo was a small town site located about 2,000 feet east of the Sikes Farmhouse on the main road between San Diego and the northern regions of present-day San Diego County. The town consisted of about a half-dozen buildings that included a general store, blacksmith shop, and Grange Hall. The town served a community of about 400 people in outlying areas.

The official founding of the community of Bernardo occurred on December 3, 1872 when a post office was established at the Sikes Farmstead with Zenas Sikes as postmaster. Zenas was the first master of the Bernardo Grange, a local chapter of a national fraternal association of farmers. The Grange was also important in the social life of the community, organizing picnics and balls.

The general store at Bernardo was a landmark in the region for 40 years, serving as the main commercial outlet for Valley Center, Rincon del Diablo (present-day Escondido), San Pasqual, Bernardo, and Poway areas. The establishment of Escondido in the late 1880s caused the gradual decline of the general store and the town. Bernardo continued to exist as a community until the construction of the Lake Hodges Dam in 1918. By that time, the City of Escondido had become the dominant market town in northern San Diego County. The site of the store and the post office was purchased as part of the Lake Hodges reservoir.

Water Quality

Human population growth and development throughout San Diego County has led to significant habitat loss and a reduction in watershed ecosystem services. As water flows through our neighborhoods, it picks up pollution from yards (fertilizers and pesticides), streets (oil and grease), and walkways (trash and pet poop), and carries the pollutants throughout the watershed.

Today's polluted water no longer encounters the cleaning services that wetlands used to provide. Over the past 200 years, nearly 85% of Southern California's wetlands have been destroyed. With fewer wetlands, the job for those that remain is bigger and more challenging. Too much pollution and trash can overwhelm wetlands' cleansing abilities and destroy their usefulness. This disrupts the lives of the plants and animals living there, and ultimately affects the health of habitats throughout the watershed.

Ecosystem health is crucial to ecosystem services. Scientists and technicians use different tests to measure a watershed's health, just like doctors use different tests to measure your health. One way to determine the health of a watershed is to monitor the water quality.

Almost everything we do affects water quality. When the physical, chemical and biological components of water are altered, it causes the watershed to become unhealthy. There are a number of different measureable characteristics of water that can give us clues to a watershed's health including ambient measurements (temperature, pH and dissolved oxygen) and pollutants (nitrate and phosphate). As you visit the different sites included in this program, you will observe and record these measurements to determine water quality and overall health of the San Dieguito Watershed.

Since everyone lives in a watershed, everyone affects the quality of the water. We all have a responsibility to protect our limited freshwater resources and the

ecosystem services they provide. By caring for and protecting our watershed, we're helping care for the ocean as well. It's critical that we keep the water in our watersheds flowing clean and healthy.

ACTIVITIES

1. Mule Hill Hike (45 minutes)

Students hike the Mule Hill section of the Coast to Crest Trail from Sikes Adobe east towards the historic site of the Battle of Mule Hill. Along the way they observe their surroundings and learn about the natural history and historic importance of the area.

2. 19th Century Laundry (20 minutes)

Students learn how to wash clothes like the Sikes family did; with a bar of soap, hot and cold water, a tub, agitator, wringer, and a lot of elbow grease - a chore made all the more laborious due to a lack of running water and a reliance on wells.

3. Gardening (30 minutes)

According to what the planting season dictates, students will go out into the orchard or kitchen garden and help plant vegetables, usually using seeds and tubers, or prune bushes, vines or fruit trees. Seeds like corn or sunflowers and tubers like potatoes are easily planted after a row or mound have been tilled and furrowed.

4. Sikes House Tour (15 minutes)

Students are led on a tour through the Sikes house to learn about everyday life as a pioneering family in the 1880s. All the artifacts in the house are in some way connected to pioneer farming life in 19th Century North San Diego County; a lifestyle which wouldn't be possible without the essential water that moves throughout the San Dieguito River watershed and irrigated their crops.

5. Churning Butter (15 minutes)

The Sikes farm included dairy cows and an adobe creamery, which provided the family and the town of Bernardo with fresh milk and butter. Students will be able to make real butter from churning cream and then venture inside the creamery to experience how sturdy adobe construction can maintain cool interior temperatures necessary for keeping dairy fresh. Milk production is an agricultural activity that has occurred within the San Dieguito River watershed for the last 140 years.

6. Water Quality Testing (30 minutes)

Students will learn about different factors that affect water quality and the health of our watershed. Working in small groups, students will collect and test water samples for dissolved oxygen, nitrates, phosphates and pH and rank the water quality on site.

VOCABULARY

agriculture: the practice of growing crops or raising animals for the purpose of food, fiber, or other uses.

archaeological site: place where ancient people were active and left behind objects that are of historical interest.

Californio: spanish speaking peoples who lived in California before statehood.

crop: type of plant or the seasonal production of plants grown by humans for food, animal feed, or fiber.

grove: a group of trees growing together.

harvest: the process or period of gathering in crops.

irrigate: supply water to plants through pipes, artificial channels, or other methods.

livestock: animals such as cows, horses, sheep, and pigs, that are raised for food and other uses.

non-native species: plants, animals, or other organisms that are brought to a new place by humans.

rancho: the spanish word for ranch; Mexican land grant.

riparian: plant habitat along wetlands adjacent to rivers and streams.

sow: to spread seeds in or on soil for growing.

staple: food that is eaten routinely, and in such quantities that it constitutes a dominant portion of a standard diet in a given people (i.e. acorns for the Kumeyaay and wheat for Europeans).

REFERENCES & SUGGESTED READINGS

Sikes Adobe Historic Farmstead

Sikes Family: http://sikes-sykesfamilies.rootsweb.com/index.htm

SDRP Website: http://www.sdrp.org/wordpress/sikes-adobe/history

San Dieguito Watershed

The San Dieguito River Watershed:

http://www.projectcleanwater.org/index.php?option=com_content&view=article&id=36&Itemid=45

San Diego Coastkeeper. San Diego Watersheds. Interactive map of water quality along watersheds, including San Dieguito: http://www.sdcoastkeeper.org/learn/swimmable/san-diego-water-quality.html

Water Quality Monitoring

U.S. Environmental Protection Agency (EPA). How's My Waterway? (searchable by location): https://www.epa.gov/waterdata/hows-my-waterway .

Water quality indicators: Biological, chemical and physical parameters. Adapted from Healthy Water, Healthy People: Water Quality Educators Guide (www.projectwet.org). Available at: https://riverxchange.files.wordpress.com/2015/09/water_quality_indicators_final.pdf

ACKNOWLEDGEMENTS

Made possible by a grant from The San Diego Foundation

Material compiled by:

The San Dieguito River Valley Conservancy
The San Dieguito River Park Joint Powers Authority
The Volcan Mountain Foundation
San Diego Archaeological Center

Material generously contributed by:

The San Elijo Lagoon Conservancy
http://www.sanelijo.org/ForTeachers

www.watershedexplorers.org • email weadmin@sdrvc.org • call 858-755-6956,