

Human Uses of the San Lorenzo River Watershed

Early History

Blessed with a picturesque mountain setting, abundant natural resources, and an equitable climate, the San Lorenzo Watershed has long attracted human settlement. The early day settlers came here to utilize the available pasture, timber, and limestone resources. Today these uses continue, along with the quarrying of construction materials and the growing of agricultural crops. Yet the largest current demand on these lands is for the construction of rural homes.

The first residents of the San Lorenzo Watershed were the Ohlone Indians. Unlike subsequent residents, they did not significantly interfere with natural processes. Their numbers were small and their population density low. They hunted deer and other game, fished, and gathered various plant foods. Their "villages" moved from place to place seasonally, in order to keep in close proximity to their various seasonal food sources. Fires were sometimes set in the grasslands in order to encourage the growth of seed-bearing annuals and facilitate hunting. Yet overall, their impact on the environment was extremely light.

The discovery and naming of the San Lorenzo River by the Portola expedition in 1769 ushered in the Spanish Period of Watershed development. Mission Santa Cruz was laid out on a coastal bluff overlooking the river in 1791. The Spanish culture relied on adobe rather than wood, and there was little exploration or utilization of the mountain forests. The Spaniards centered their development in the coastal grasslands for theirs was an economy based on cattle. Cattle were chiefly valued for their hides and tallow. These commodities were sold to sailing vessels which traded along the California coast. In 1828, the Santa Cruz Mission reported stock consisting of 3,700 horned cattle, 8,300 sheep, and 900 horses.

The Mission also introduced agriculture to the watershed, and crop seeds shipped over from Spain also contained the Mediterranean weeds such as Common Mustard, and Wild Radish, which are now widespread throughout the state. The introduction of European grasses, such as Wild Oats and Soft Brome, also occurred at this time, and overgrazing allowed them to replace the native California perennial grasses. This replacement of valuable native grasses by less-desirable alien species was the first of many adverse impacts to result from unwise human use of the Watershed.

In 1848, gold was discovered in California, and the rush to the goldfields that followed caused significant land use changes in the Watershed. Cattle acquired new worth (as steak for hungry miners) and the County census for 1850 showed 15,901 head. This number is higher than the count for any subsequent census year through 1950. The demand for food also led to an increase in farming. Wheat and potatoes were two of the crops being raised. A severe drought occurred in 1864-65, killing many cattle, and accentuating the trend toward farming.

Logging

During the 1860's through the 1890's, logging was the major use of the San Lorenzo Watershed. Logging had begun in the 1830s but did not have a major impact until the 1860s. In 1864, 28 sawmills were operating in the big Basin-San Lorenzo Valley. By 1899, Boulder Creek was the fifth largest shipper of timber in the Country.

Early-day logging techniques were very hard on the environment. Clearcutting was common, and included the understory Madrones and Tan Oaks. The former was burnt for charcoal, while bark from the latter was used for the tanning industry. After the removal of the broadleaf trees, the conifers were cut, to be followed by a most-destructive practice—burning. To clear the bark from the logs and thin the shrub growth to facilitate log removal, a fire was set. This first fire in itself was no problem since the trees could and would sprout from the base. But after removal of the logs by ox team, another fire was set, and since these fires were uncontrolled, they would burn surrounding areas as well. The result was a sequence of fires that would kill the growing sprouts and saplings, allow invasion of shrubs, and delay natural reforestation. Burning plus severe soil erosion at times so damaged the land that it could no longer support trees. In other areas the forest did not return until a long successional sequence of brushland to woodland to forest had occurred.

In addition to large scale disturbance of terrestrial plant and animal life, stream fisheries were also severely impacted. The procedures used in transporting logs to the mill accelerated erosion. As a general rule, pole roads were laid out in stream bottoms or drainage swales, and no attempts were made to control the resulting erosion. Gullies of these early-day operations are still visible throughout the Watershed. Landslides and slumps were often precipitated by these logging practices, especially when skid trails following canyon bottoms undercut steep bank. Many of today's mapped landslide deposits probably date from this period.

Logging continues in the County today, but now is under strict regulation. Today, County regulations require prevention of all significant erosion and stream siltation, and limit the number of trees that can be taken to 60 percent of the larger trees in the stand. In 1975, Timber Harvest permits were issued for only 211 acres in the San Lorenzo watershed. The subdivision of forested parcels, and the development of rural housing in upland areas of the watershed are all working to the detriment of the continuation of logging as a commercial enterprise.

Following the lumberman of the 1870's, 1880's, and 1890's, came the farmer who converted former forest lands to grasslands or agricultural lands. The forest soils of the San Lorenzo Watershed are, however, largely unsuited for agricultural crops, and most of these early-day efforts were abandoned. The only significant agriculture existing the Watershed today is Christmas tree farming. Sizeable acreages atop Ben Lomond Mountain and Castle Rock Ridge are devoted to this perennial crop. The impact of pesticides or fertilizers from these areas on the Watershed is, as of yet, undetermined.

Mineral Resources

Lime burning was one of the earliest industries established in the San Lorenzo Watershed. Manufacturing of lime was begun by Davis and Jordan in 1853. By 1878, the manufacture of lime was one of Santa Cruz County's most important industries, with the County consistently supplying over one-third of the total state production. Most of this production was from the San Lorenzo Watershed, quarries being centered around the Felton and Santa Cruz areas. At one time there were at least nine different kilns in operation. The quarry operations impacted the environment primarily through landscape and stream alteration, increased turbidity of streamflows, and the use of forest trees and shrubs to fuel the kilns. Their impact on the Watershed, though sometimes locally severe, was not widespread. By 1943 only two limestone companies were still in existence and today none are functioning. Limestone quarrying, however, is still going on outside the Watershed; most notably by the Lone Star Cement Plant in the Liddell Creek drainage.

The mineral resources of the San Lorenzo Watershed are limited primarily to the structural materials lime, limestone, sand, gravel, and crushed rock. No significant deposits of metals are known from the area. Though petroleum is a mineral resource known from other areas of the Santa Cruz Mountains, it has never been successfully developed in Santa Cruz County. Historically, oil seeps were known from at least two locations along the San Lorenzo River. The discovery of oil in Moody Gulch near Alma, Santa Clara County, in 1870's, led to exploration in the San Lorenzo Watershed. Many unsuccessful wildcat wells were dug. In the Bear Creek drainage some of the abandoned wells (probably dating from the 1930's and 1940's) were not properly capped off, and today are discharging saline water into upper layer groundwater aquifers.

The only significant mineral extraction presently occurring in the Watershed is the production of crushed rock, sand, and gravel for the construction industry. The Santa Margarita Sandstone is a geologic formation of loosely consolidated sands that are exceptionally well-suited for construction purposes. Utilization of these resources began in the 1920's and 1930's and is continuing today with four active quarries being located within the watershed. Only one rock quarry operation currently exists, and it is located on the east slope of Ben Lomond Mountain, where it prepares granite for construction purposes.

The use of advanced technology and consequently higher production rates enables the quarry operation of today to have a much greater impact on the environment than did the early-day limestone operations. In the quarried areas, vegetation, wildlife, underground aquifers, soils, and drainage channels are permanently altered or eliminated. Quarries use a large amount of water for washing the quarried materials, and the potential exists for serious erosion and siltation problems. The Santa Margarita sand hills are largely restricted in occurrence to the San Lorenzo Watershed. This landform is especially valuable to the Watershed because it is a major groundwater recharge area; it supports an ecologically-unique Ponderosa Pine Community not found elsewhere in the County, it contains a large portion of the rare and endangered plant species known from the County, and it contains a soil type which is highly erodible when disturbed. For all of those reasons, quarrying is of special significance for watershed management planning.

Tourism and Recreation

Historically the tourist industry has centered around two major amenities of the Watershed; the redwoods of the San Lorenzo Valley, and the beach at Santa Cruz.

The earliest redwood resort in the Watershed was Big Tree Grove, near Felton, which opened in 1867. The South Pacific Coast Railroad which completed a mountain line from San Jose and points north to Santa Cruz in 1880, enable residents from San Francisco and Oakland to make one-day picnic trips to the San Lorenzo Valley. The line's stop at Big Trees was a popular destination. The Santa Cruz beach had previously been available to the San Francisco Bay Area by a railway line from Gilroy to Watsonville to Santa Cruz completed in 1876. The South Pacific Coast Railroad line cut several hours off the round trip travel time.

The opening of Big Basin Redwoods State Park in 1904, although outside of the Watershed itself, attracted additional visitors to the area, since Boulder Creek served as the gateway city. In 1974-75 Big Basin attracted 567,544 visitors, some of who stayed in overnight accommodations in Boulder Creek. Two other state parks now exist within the watershed boundary; Castle Rock State Park near the northern drainage divide, and Henry Cowell Redwoods State Park near Felton. The latter Park was formed in 1954 by the joining of Big Trees Groves with land donated by the Cowell family. In 1972, additional land surrounding Fall Creek was added to the Park. Attendance for 1974-75 at Castle Rock and Henry Cowell State Parks was 59,139 and 216,971, respectively. These three State Parks provide unexcelled opportunity for sightseeing, picnicking, camping, hiking, birdwatching, and nature study. Other publicly-operated recreation areas located in the Watershed are San Lorenzo City Park, DeLaveaga Park, Ben Lomond Park, San Lorenzo Valley Park, Harvey West Park, Boulder Creek Park, and Loch Lomond Recreation area. In addition, the Watershed contains several golf courses, tennis/swim clubs, and privately-owned tourist attractions.

Fishing also attracts visitors to the Watershed and is itself a major recreational activity. The main attraction is the steelhead trout/silver salmon season which runs for about 3 1/2 months in the fall and winter. The San Lorenzo River supports the only major coastal steelhead fishery south of the Russian River. The Department of Fish and Game calculated that in the period from 1970-71 to 1972-73, 157,204 angler hours were expended on winter fishing in the San Lorenzo River. At three hours per angler, this comes to about 52,400 anglers, or an average of approximately 17,467 anglers per year. In addition to the steelhead/salmon fishery, there is also a Rainbow Trout season open throughout the County during the summer. No figures are available on the extent of summer trout fishing, although it is probably significant in certain areas.

Swimming and wading are significant recreational uses of most of the Watershed's larger streams. Facilities to enhance swimming conditions range all the way from simple, makeshift rock dams built by neighborhood children to more elaborate wood dams used by youth camps and recreational districts to back up water for boating, swimming, or fishing. California Department of Fish and Game records disclose seven of these large recreational dams along the mainstem of the San Lorenzo River. Other recreational opportunities along the river are sunbathing, nature study, and wildlife observation.

The San Lorenzo Watershed contains streams and forests that provide recreation and enjoyment for County and out-of-County citizens. The ability of the streams and parklands to meet this need is being degraded by overuse and human degradation of the environment. Recreational use of the San Lorenzo River for body contact sports is, at certain places, and during certain times of the year, curtailed due to the presence of coliform bacteria at dangerously high levels. Fish-spawning areas are being lost due to siltation of the river bottom primarily caused by vegetation removal and grading from construction in the Watershed. Wildlife habitat is being destroyed by urbanization. Unless an effort is made to protect Watershed resources, many of the amenities most attractive to Watershed residents will be lost.

Sources

- *Excerpted from: Preliminary Report San Lorenzo River Watershed Planning Process, 1976, pp. 49-56.*

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