

**CALIFORNIA DEPARTMENT OF FISH AND GAME
STREAM SURVEY**

File form _____ No. _____

NAME: Salmon Creek **COUNTY:** Sonoma approx.

STREAM SECTION: _____ **FROM:** Mouth **TO:** Headwaters **LENGTH:** 13 mi.

TRIBUTARY TO: Pacific Ocean **TWP:** 6N **R:** 11W **SEC:** 22

OTHER NAMES: None **RIVER SYSTEM:** Salmon Creek

SOURCES OF DATA: Personal survey and information gained from local residents.

EXTENT OF OBSERVATION
Include: Name of Surveyor, Date, Etc.
LOCATION
RELATION TO OTHER WATERS
GENERAL DESCRIPTION
Watershed
Immediate Drainage Basin
Altitude (Range)
Gradient
Width
Depth
Flow (Range)
Velocity
Bottom
Spawning Areas
Pools
Shelter
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Temperatures
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FISHES PRESENT AND SUCCESS
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OTHER RECREATIONAL USE
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POSTED OR OPEN
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GENERAL ESTIMATE
RECOMMENDED MANAGEMENT
SKETCH MAP
REFERENCES AND MAPS

EXTENT OF OBSERVATION - Salmon Creek was surveyed from the junction with Pacific Ocean to the headwater, approximately one mile west of the town of Occidental in T7N, R10W, Section 33. The survey was accomplished by vehicle, with numerous spot checks of the creek. The area from Highway 1 east to the Bodega Bay Public Utility Dam, a distance of approximately 3/4 mile, was not observed. The extreme headwater, approximately 1/2 mile above the creek junction with Bittners Road of Occidental was not observed. The lower half-mile of Pepperwood Gulch, Finley Creek, Coleman Creek, Joy Creek, and Tanner Creek were walked out on foot. This survey was conducted on April 29, 1964, by Weldon Jones.

LOCATION - Salmon Creek is located on the western slope of the Coastal Range mountains. It heads in the rugged fir and redwood covered slopes, approximately two miles west of the town of Occidental, and approximately 13 miles west of the town of Santa Rosa. Salmon Creek flows in a southwesterly direction through the towns of Freestone and Bodega to enter the Pacific Ocean approximately one mile north of Bodega Bay.

RELATION TO OTHER WATERS - Salmon Creek is a separate drainage and is the largest stream between Bodega Bay and the Russian River. Salmon Creek contributes spawning and nursery area for silver salmon, steelhead and/or rainbow trout, as well as a highway for these fish spawning in the tributaries known as Pepperwood Gulch, Finley Creek, Coleman Creek, Joy Creek and Tanner Creek.

GENERAL DESCRIPTION -

Watershed and Immediate Drainage Basin - Salmon Creek heads in the mountainous terrain approximately 1-1/2 miles west of the town of Occidental and flows in a southwesterly direction to enter the Pacific Ocean approximately one mile north of Bodega Bay. The upper stream above Section 11, T7N, R10W, is heavily wooded with redwood and fir. The area below this down to a point near Chenoweth Mill is of very slight gradient and extensively cultivated for crops that are primarily used for dairy cattle. Below Chenoweth Mill the stream again enters a canyon section until it opens into a lagoon near the Pacific Ocean.

Altitude -

Gradient - Above Section 11, T6N, R10W, gradient was approximately two to five feet per 100 feet of stream length. The gradient was considered less than two feet per 100 feet of length below this point.

Width - Ranges from two feet in the headwater to approximately 40 feet on the lagoon the mouth; averages approximately five to eight feet.

Depth - Ranges from zero to ten feet. Depth of the lagoon was not determined. The stream above the lagoon averages approximately two inches to ten inches.

Flow - Ranges from approximately .5 cfs in the stream near Occidental to approximately 1.9 cfs at the Bodega Utility and Water District Dam, located just above the lagoon.

Velocity - Rapid in the headwater down to Section 12, T6N, R10W. Below this point, the stream flow is slow. In Section 22, T6N, R10W, the flow again speeds up and is considered rapid down to the lagoon, T6N, R11W, mid-point of Section 14.

Bottom - In the headwater above Section 11, T6N, R10W, gravel comprises nine percent the bottom, with silt and sand, each, of about five percent. Below Section 11, a sandstone clay bottom becomes predominant and comprises almost 90 percent of the stream bottom, gravel the remaining ten percent, down to a point of approximately the Freestone School. Below this point for approximately two miles, the bottom changes to one predominantly composed of sand and silt. Below this point, or at approximately the Watson School, down to the town of Bodega, sandstone clay type bottom becomes predominant again. Sandstone clay is approximately 50 percent of the bottom, with gravel approximately 30 percent, sand 13 percent, and rubble the remaining five percent. Below the town of Bodega down to the lagoon, midway in Section 14, the amount of gravel increases to approximately 60 percent, sandstone clay decreases to approximately 20 percent, sand is approximately 15 percent, and rubble is five percent. The lagoon below this point appears to have a bottom comprised equally of sandstone clay, sand, and organic material.

Spawning Areas - The better spawning areas were found above the falls located in Section 11, T6N, R10W, and in the tributaries of Finley Creek, Coleman Creek, Joy Creek and Tanner Creek, and in that section of river above the lagoon and below the town of Bodega. Of the area between Bodega and Section 11, only approximately five to ten percent is available to spawning. The area above Section 11 is approximately 50 to 90 percent spawnable. Spawning area comprises approximately 30 percent of the area below Bodega and above the lagoon. Finley Creek, Coleman Creek and Tanner Creek have approximately 60 to 70 percent of the lower half mile suitable for spawning.

Pools - Good pool development throughout the entire stretch of stream surveyed. Above Section 11 in the headwater the pools range from two to seven feet wide and were approximately two inches to three feet deep. The pools in the mid area throughout the sandstone clay type bottom and sand bottom were considerably wider, ranging from approximately four to 20 feet wide with a depth of approximately six inches to four feet. The pools below this area and down to the junction with the lagoon were approximately four to 20 feet wide and ranged from two inches to approximately four feet in depth. Pool to riffle area ratios appear to be approximately two to one throughout.

Shelter - Abundant throughout the upper and lower areas. In the mid area near Valley Ford and Freestone Road, shelter was considered quite poor. Shelter in the upper area comprised of overhanging banks, alders, fallen logs, some slash, and an overhead canopy of fir and redwood. Below this point down approximately one mile below the town of Freestone, shelter was mainly composed of willows and alders, with blackberries and nettles also present. Down in the area below Bodega, the size of the alders increased, some redwoods and fir were present, and cottonwoods were also observed.

Barriers - One natural sandstone barrier approximately ten feet high was found in the stream above the town of Freestone in approximately the NE $\frac{1}{4}$, Section 11, T6N, MOW. This ten foot falls was found to be a complete barrier. No fish were found above. A small five foot falls was located about 30 feet below, and approximately one mile above these natural falls was found a flashboard dam, which acted as a barrier. The flashboard dam was constructed with a ten foot sill approximately two feet above the water line to the lower end of the flashboard. The boards were presently in. The mailbox numbers on the road opposite this small flashboard dam are 2389 and 2515.

Diversions - The Bodega Bay Public Utility District operates a flashboard type dam approximately one and a half miles above Tidewater. Many of the ranches maintain small pumps capable of diverting water for irrigational purposes throughout the stream length.

Temperatures - Air 66°F and water 50°F at 10:30 a.m. in the vicinity of the sandstone falls on April 29, 1964. A water temperature of 60°F and an air temperature of 68°F was recorded at the town of Freestone at 12:00 on the same date. An air temperature of 55°F and a water temperature of 58°F was recorded at the small bridge at the Junction of Valley Ford and Freestone Road at 2:00 p.m. on this date.

Food - Appeared to be sufficient throughout most of the stream surveyed, although the area in the vicinity of Watson School and the junction of Valley Ford and Freestone Roads up a short distance, appeared to be quite low in insect life, as well as fishlife.

Aquatic Plants - Some filamentous green algae was observed in the midsection of the stream. Some elodea was also noted in this area.

Winter Conditions - The upper area appears to be capable of moderate, heavy winter runoff.

Pollution - From the town of Freestone to approximately Watson School, the creek assumed a dystrophic color and displayed odors of dairy cattle excretion. No fish were observed in this section of stream. Below this point the stream gradually cleared and the odors disappeared. A few fish were seen below Watson School and the coloration of the stream generally cleared near the town of Bodega, but was still noticeable in the canyon as far down as Finley Creek. No open sources were noted, but may exist.

Springs - Some springs were noted in the upper area and area below the town of Bodega, but were not considered numerous

FISHES PRESENT AND SUCCESS - Rainbow trout and/or steelhead, as well as silver salmon are present in this drainage. No fish were observed above the barrier located in Section 11 of T6N, R10W, nor were any fish observed in that section of stream from Watson School upstream to within one-half mile of the Freestone School. The reason for this latter void area is believed to be dairy pollution. The largest number of fish observed were in that section of stream from just above Freestone to Sandstone Falls and in the main stream below Bodega, as well as the tributaries of Finley Creek, Coleman Creek, Joy Creek, and Tanner Creek. The majority of the fish observed appeared to be young silver salmon, approximately 1-1/2 inches to 2 inches in length. Approximately 20 percent of the anadromous fishes appear to be young rainbow and/or steelhead of approximately one to two inches in length. Overall the population of anadromous fishes averaged approximately 50 to 100 fish per 100 feet of stream. These young fish appeared to be in prime condition. Steelhead and/or rainbow trout of approximately four to eight inches were observed in the main stream and tributaries below the town of Bodega.

OTHER VERTEBRATES - None other than the normal stream complement, although a surprising number of turtles were found in the mid area of this stream.

FISHING INTENSITY - Unknown, but believed to be quite light. Streamside trails and refuse left by fishermen were all but nonexistent.

OTHER RECREATIONAL USE - None known.

ACCESSIBILITY - The mouth of the stream is accessible by way of Highway 1. Approximately one to 1-1/2 miles of the lower stream above Highway 1 is accessible only by foot. Above this point county and private roads parallel the stream up to the town of Occidental. Above Bittner Road, the stream (approximately one to two miles) is accessible only by foot.

OWNERSHIP - The lower lagoon is owned by the State of California and is known as the Sonoma Coast State Park Headquarters. Above this point the stream flows through private land.

IMPROVEMENTS - No stream improvements have been noted, although consideration should be given to improving that section of stream known as the Falls, in Section 11, T6N, R10W. Other improvements necessary include the cleanup of dairy pollution in the mid area of this stream.

PAST STOCKING - None known.

GENERAL ESTIMATE - Salmon Creek is a small stream of rather mild gradient, of which the mid and lower areas are utilized for agriculture. The stream supports a good population of steelhead and/or rainbow trout, as well as silver salmon. However these fishes are restricted in area because of dairy pollution in the mid area and a natural bedrock falls in the headwater reduces the available spawning and nursery area. The sandstone clay bedrock bottom of the mid and lower-mid sections of Salmon Creek reduce the available spawning area of the stream. However, that found elsewhere in the stream and tributaries more than makes up for this deficit.

RECOMMENDED MANAGEMENT - This stream should be managed as a silver salmon and steelhead nursery and spawning stream. Attempts should be made to modify the falls to facilitate fish passage to the estimated 2-1/2 to three miles of good spawning and nursery areas above. The problem of dairy pollution in the mid area should be eliminated. The small flashboard dam located approximately one mile above the natural bedrock falls should be modified to facilitate fish passage by this point.

SKETCH MAP - See attached.

REFERENCES AND MAPS - State of California Department of Natural Resources, Division of Forestry, Sonoma County, 1956. This map was found to contain some errors. Salmon Creek does not flow through the town of Occidental and past Camp Meeker, but another stream does flow down the other side from a point near Occidental toward Camp Meeker and continues downstream in a northwest direction.

WEJ/aew