

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

STREAM SURVEY

Date: September 17, 18 - 1974

NAME: LITTLE SULPHUR CREEK COUNTY: Sonoma

STREAM SECTION: Entire FROM: Headwaters TO: Mouth LENGTH: 15.6 miles

TRIBUTARY TO: Big Sulphur Creek TWP: 11 N R: 10 W SEC: 18

OTHER NAMES: None RIVER SYSTEM: Russian River

SOURCES OF DATA: Personal Observation and 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
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- Velocity
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EXTENT OF OBSERVATION - On September 17 and 18, 1974, Seasonal Aids Brad Jackson and Ron Wong surveyed on foot Little Sulphur Creek from the headwaters to the confluence with Big Sulphur Creek.

LOCATION - Little Sulphur Creek is located approximately 5 miles east of the Geyser Road/Highway 101 junction.

RELATION TO OTHER WATERS - Little Sulphur Creek is an important spawning and nursery area that contributes winter and summer flows to Big Sulphur Creek.

GENERAL DESCRIPTION -

Watershed - The watershed vegetation of Little Sulphur Creek is composed of grass-covered hillsides with madrone, oak, maple and bay trees. Little Sulphur Creek winds through narrow canyons of the Mayacmas Mountains.

Altitude - 2100 feet at the headwater, 740 feet at the mouth.

Gradient - 2 feet per 100 feet - slight.

Width - Averaged 12 feet, range 1-30 feet.

Depth - Averaged 2 feet, range 0.5 to 8 feet.

Flow - Flow ranged from 2 cfs at the confluence with Big Sulphur Creek to 1 cfs in the upper stream section. No flow observed upstream from a point approximately 1.5 miles below Pine Flat

Road. Average flow for Little Sulphur Creek was 2 cfs with a range of 0.5 - 2.5 cfs.

Velocity - Slow (less than 1 foot per second) to rapid (1 - 2 feet per second).

Bottom - Headwaters (upper section) boulders 30%, rubble 30%, gravel 30%, sand 5%, detritus 1%, silt 4%; (middle section) Pocket Ranch to Geyser Road (near Station 4) bedrock 15%, boulders 50%, rubble 15%, gravel 10%, sand 5%, detritus 3%, silt 2%; (lower section) confluence to Big Sulphur Creek to Pocket Ranch, bedrock 5%, boulders 5%, rubble 40%, gravel 40%, sand 5%, detritus 0, silt 5%.

Spawning Areas - Suitable spawning areas for steelhead/rainbow trout occurred throughout the stream. Estimates are as follows: upper section 10%, middle section 1 - 5%, lower section 10 - 20%, Total stream usable for spawning estimated at 8%. Estimated 80% is suitable for nursery areas.

Pools - Pools were frequent along the stream with a pool to riffle ratio of 2.5:1. These pools are created by the scouring action of the current, boulders and a few fallen trees. Average pool length, 30 feet (range 100 - 20 feet); average width, 12 feet (range 5 - 15 feet); average depth, 3 feet (range 2-8 feet).

Shelter - Undercut banks and boulders created the majority of the shelter for fish, with a few fallen trees accounting for the remaining shelter.

Barriers - An 8-foot high rock falls barrier was seen at Station 5 (see sketch map for station locations).

Diversions - One water diversion was observed at Station 1 and consisted of a 2-inch water pipe leading to a house, apparently infrequently used.

<u>Temperatures</u> –	9-18-74	Sta. 1	Sta. 2	Sta. 3	Sta. 4	Sta. 5
water temperature		62°F	63°F	62°F	58°F	59°F
air temperature		84°F	86°F	88°F	88°F	78°F
time		1130	1230	1330	1115	1300
	9-17-74	Sta. 6	Sta. 7	Sta. 8	Sta. 9	
water temperature		68°F	63°F	66°F	65°F	
air temperature		85°F	84°F	86°F	88°F	
time		1130	1200	1345	1500	

Average water temperature was 62°F. (range 58 - 68°F).

Average air temperature was 85°F. (range 78°- 88°F).

Food – Caddis, mayfly, stonefly, diptera, dragonfly, and damselfly nymphs and larvae, water snails (turban shells), and terrestrial insects were present. Aquatic organisms were abundant (> 25 per square foot).

Aquatic Plants – Sedges and algae was abundant in slow flowing sections.

Winter Conditions – Judging from streambed size and high water marks, winter flows significantly exceed summer flows.

Pollution – Feces from cattle were seen in and around the stream. Three car bodies and automobile parts were observed between Stations 4 and 5.

Springs – Flows from three springs enter Little Sulphur Creek at Stations 1, 2 and 3 with each contributing < 0.5 cfs. At Station 8, a 10-foot wide tributary to Little Sulphur Creek contributes 0.7 cfs. The North Branch of Little Sulphur Creek contributes 0.7 cfs. This branch has a width of approximately 6 feet. A small tributary upstream from Station 7 contributes 0.3 cfs to Little Sulphur Creek.

FISHES PRESENT AND SUCCESS – Steelhead/rainbow trout were observed throughout the stream. Salmonids appeared more abundant and successful upstream from Station 6 (100 fish per 100 feet of stream). In the lower stream section, only 20 trout per 100 feet of stream were observed. Squawfish, suckers and roach dominated the lower stream section (350 fish per 100 feet of stream) and in the headwaters (100 fish per 100 feet of stream). The average size of steelhead/ rainbow trout was 3 inches (range 2-8 inch), average size of squawfish 4 inches (range 2-5 inches), average size of suckers 2 inches (range 2-6 inches), average size of roach 2 inches (range 2-3 inches).

OTHER VERTEBRATES – Cattle, deer, turtles, frogs, newts, garter snakes, kingfishers and wild pigs were observed.

FISHING INTENSITY – Light, no fishermen observed.

OTHER RECREATIONAL USE – Swimming and hunting.

ACCESSIBILITY – Pine Flat Road crosses Little Sulphur Creek near the headwaters and a dirt road parallels the creek for approximately 1.5 miles. Geyser Road crosses the creek between Station 3 and 4 with access from the Douglas Ranch by dirt roads. From Pocket Ranch Road (dirt road just downstream of Station 8), another road crosses the creek over a floating log bridge. The mouth is accessible from Geyser Road approximately 5 miles from Highway 101.

OWNERSHIP – Private.

POSTED OR OPEN – Posted.

IMPROVEMENTS – No improvements are seen to be necessary.

PAST STOCKING – According to Mr. Douglas, owner of Douglas Ranch, Little Sulphur Creek received plants of juvenile steelhead rescued from other creeks in years past.

GENERAL ESTIMATE – Little Sulphur Creek is an important spawning and nursery area for steelhead.

RECOMMENDED MANAGEMENT – Maintain for spawning and nursery habitat for steelhead.

SKETCH MAP – Attached.

Little Sulphur Creek, Sonoma County, Twp 11N, R. 10W, Sec 18

