

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

STREAM SURVEY

File form No.....

DATE: September 4, 1969

NAME: Mark West Creek COUNTY: Sonoma

STREAM SECTION: Entire FROM: Headwaters TO: confluence with LENGTH: 29 mi.
Russian River

TRIBUTARY TO: Russian River hence the Pacific Ocean TWP: 8N R: 9W SEC: 31.

OTHER NAMES: Unknown RIVER SYSTEM: Russian River

SOURCES OF DATA: Data were obtained through the personal observations of Keith Himmelrick and Jim Michaels, and from talks with local residents..

<u>EXTENT OF OBSERVATION</u> Include: Name of Surveyor, Date, Etc
<u>LOCATION</u>
<u>RELATION TO OTHER WATERS</u>
<u>GENERAL DESCRIPTION</u>
Watershed Immediate Drainage Basin Altitude (Range) Gradient Width Depth Flow (Range) Velocity Bottom Spawning Areas Pools Shelter Barriers Diversions Temperatures Food Aquatic Plants Winter Conditions Pollution Springs
FISHES PRESENT AND SUCCESS
OTHER VERTEBRATES
FISHING INTENSITY
OTHER RECREATIONAL USE
ACCESSIBILITY
OWNERSHIP POSTED OR OPEN
IMPROVEMENTS
PAST STOCKING
GENERAL ESTIMATE
RECOMMENDED MANAGEMENT
SKETCH MAP
REFERENCES AND MAPS

EXTENT OF OBSERVATION - Mark West Creek was surveyed on July 22, 23, 24 and 25 by Keith Himmelrick and Jim Michaels. The stream was surveyed on foot, except for one mile of swamp and a 1/8 mile section upstream from the mouth, which were surveyed from a truck, with frequent stops for closer observation.

LOCATION - Mark West Creek traverses Sonoma County in a general east to west direction and empties into the Russian River approximately 5% miles east of Guerneville.

RELATION TO OTHER WATERS - Mark West Creek is an important drainage of the Santa Rosa Valley and of the mountains to the east of the valley. The stream is an important tributary to the Russian River, contributing both summer and winter flows. The stream was discharging at approximately 4.16 c.f.s. during the time of the survey.

GENERAL DESCRIPTION:

WATERSHED - The topography was mountainous in the headwaters, becoming a flat valley near the mid section and turning to low hills near the mouth. The vegetative cover of the watershed near the headwaters and mouth was characterized by oaks, bays, redwoods, Douglas fir, maples, Horse Chestnut, and madrone trees, Manzanita brush was prevalent in the headwaters. The vegetative cover of the Santa Rosa Valley was characterized by pasture land, orchards, and vineyards.

IMMEDIATE DRAINAGE BASIN - Mark West Creek drains an area of approximately 40 square miles. The basin was a steep "V" shaped canyon

near the headwaters, turning to open valley upon reaching the Santa Rosa Valley and then a wide "U" shaped canyon upon discharging into the Russian River. The stream was characterized by an incised channel near the headwaters and a bowl shape channel in the mid and lower sections of the stream. Streamside vegetation was comprised of willows, oaks, bays, alders, blackberries, maples, and a few redwoods. Approximate 75% of the stream was sheltered.

ALTITUDE - The altitude ranged from approximately 1800' above sea level near the headwaters to approximately 40' above sea level near the mouth.

GRADIENT - The streambed dropped an average of approximately 61 ft. per mile. Gradient was near zero through the valley section and near the Russian River.

WIDTH - Width ranged from approximately one foot wide to 300' wide, and averaged approximately 14' wide. The swamp area averaged approximately 150-200 in width. The section of stream downstream from the swamp averaged approximately 20' in width.

DEPTH - Depth ranged from approximately 2" to 10' and averaged approximately 1.4 ft. in depth. The section of stream downstream from the swamp area averaged approximately 3' in depth.

FLOW - Flows were taken at three points along the stream.

1. Flow taken near headwaters approximately 200' downstream from the St. Helena Road bridge on 7/25/69 at 1630 hours. A flow of approximately 1.41 c.f.s. was recorded with the pigmy meter. Air temperature was 70 degrees F. and water temp. was 68°F.
2. Flow taken near the mid section approximately 100' downstream from Slusser Road bridge on 7/24/69 at 1730 hours. A flow of approximately 1.10 c.f.s. was recorded with the pigmy meter. Air temp. was 74°F., and water temp. was 72°F.
3. A flow taken near the mouth approximately 10' upstream from the confluence with the Russian River, on 7/25/69 at 1345 hours. A flow of approximately 4.16 c.f.s. was recorded with the pigmy meter. Air temp was 70°F., and water temp. 74°F.

Subsurface flows were observed in various places along the section of stream between Porter Creek Road bridge and Calistoga Road bridge. Various sections of stream had subsurface flows in the section of stream from the St. Helena Road bridge to the headwaters.

VELOCITY - The velocity of Mark West Creek was rapid near the headwaters, turning to sluggish upon reaching and continuing through the Santa Rosa Valley.

BOTTOM - Bottom averaged approximately 25% gravel, 9% bedrock, 7% hardpan, 23% rubble, 21% silt and sand, 10% boulder and 5% mud.

SPAWNING AREAS - A total of approximately 2% miles of stream appeared suitable for steelhead spawning. No spawning gravels were observed downstream from Windsor Creek, due to the turbidity of the water. Numerous redds were observed at various sections of stream during the time of the survey. Being crater shaped they were believed to be lamprey redds. See map. (sic)

POOLS - Pools observed in the section of stream from headwaters to St. Helena Road bridge averaged approximately 3' deep, 15' wide, and 30' long. The section of stream from St. Helena Road bridge to the Old Redwood Highway had pools averaging in size of 15' wide, 3' deep and 30' long. The section of stream from the Old Redwood Highway to the Mark West swamp had pools averaging in size of 20' wide, 100' long, 1½deep. The section of stream from Windsor Creek to the confluence with the Russian River had pools ranging in size of approximately 20' wide, 3' deep, 150' long. Pools were numerous along the entire stream.

SHELTER - approximately 75% of the stream was sheltered by riparian vegetation. Other natural shelter areas for fish were created by fallen logs, boulders, deep pools and undercut banks.

BARRIERS - Numerous 4'-6' shoots and falls were observed near the headwaters. One 10' fall located approximately 2% miles upstream from St. Helena Road bridge appeared to be a barrier to upstream steelhead migration. Trout, believed to be resident rainbows, were observed for approximately ½ mile upstream from the barrier. Numerous log jams and flashboard dams were observed at the time of the survey. Also a dam made from fruit boxes was observed. See attached map.

DIVERSIONS - A total of six 1" div., fourteen 2" div., one 3" div., ten 4" div. and one 6" diversion were active during the survey. One 4" inactive diversion was also observed. See attached map. (sic)

Temperatures -

1. Temperatures taken near the headwaters on July 22, 1969 at 1500 hours were: air temp. 86°F., water temp. 62°F.
2. Temperatures taken at St. Helena Road bridge on July 23, 1969 at 0900 hours were: air temp. 66°F., water temp. 62°F.
3. Temperatures taken at Calistoga road on July 23, 1969 at 1030 hours were: air temp. 71°F., water temp. 64°F.
4. Temperatures taken approximately 2 miles downstream from Calistoga Road bridge on July 23, 1969 at 1330 hours were: air temp. 72°F., water temp. 72°F. to 80°F. Algae was observed to be abundant in this section of stream.
5. Temperatures taken at the confluence with Mill Creek on July 23, 1969 at 1400 hours were: air temp. 77°F., water temp. 69°F.
6. Temperatures taken at Old Redwood Highway bridge on July 24, 1969 at 1000 hours were: air temp. 77°F., water temp. 69°F.
7. Temperatures taken approximately ½ mile upstream from Mark West slough on July 25, 1969 at 1000 hours were: air temp. 69°F., water temp. 69°F.
8. Temperatures taken approximately 10' upstream from the confluence with the Russian River on July 25, 1969 at 1300 hours were: air temp. 70°F., water temp. 74°F.

FOOD - Caddisfly larvae and cases were inhabiting the stream in numbers averaging approximately 10 per 10" rock. Mayfly larvae were also observed in numbers averaging approximately 1.5 per 10" rock. Aquatic snails were observed inhabiting the stream in numbers of approximately 5 per square foot of streambed.

AQUATIC PLANTS - Filamentous algae, sword grass, cattail, bullrush, duck weed were observed at the time of survey. Aquatic plants were abundant upon the entire stream.

WINTER CONDITIONS - The water level appears to rise approximately 1-1½ and filling a 15' wide channel near the headwaters during winter peak flows. The water level appears to rise 20'-25' above the level at the time of the survey, overflowing banks, near the confluence with the Russian River during peak flows.

POLLUTION - Three domestic dumps were observed on Mark West Creek. One was located approximate one mile downstream from Calistoga Road bridge. One was located approximately one mile upstream from Slusser Road, and the last was located approximately 100 yards upstream from the Wohler Road bridge. The section of stream from the swamp to the confluence with the Russian River was so turbid that water clarity was reduced to 5 inches at the time of the survey. The turbidity appeared to be caused by suspended sands and silts.

SPRINGS - Several springs were observed during the survey, contributing only minor seepage.

FISHES PRESENT AND SUCCESS - Steelhead were observed averaging 2" in the total length and ranging from ¾ to 8" total length. They inhabited the stream in numbers of approximately 60 per 100' of stream, and were observed from the headwaters to the Mark West swamp. Sculpin were observed averaging 1" and ranging from ¾-1½ total length. They appeared to inhabit the stream in numbers of approximately 5 per 100' stream and were observed from headwaters to the Calistoga Road bridge. ROACH were observed averaging 1" and ranging from ½ to 3" total length. They inhabited the stream in numbers of approximately 150 per 100' of stream, and were observed from the St. Helena Road bridge to the Mark West swamp. Green sunfish were observed averaging approximately 3" and ranging from 3-5" total length. They were observed to inhabit the stream in approximately less than 5 per 100' of stream, and were observed from

the Calistoga Road bridge to the Mark West swamp. Carp were observed averaging 14" and ranging from approximately 6"-23" total length. They inhabited the stream in numbers of approximately 2 or less per 100' of stream, and were observed from the Mark West Springs Road to the Mark West swamp. Suckers were observed averaging 1" and ranging from $\frac{1}{2}$ -16" in total length. They occupied the stream in numbers of approximately 50 per 100' of stream, and were observed from the St. Helena Road to the Mark West swamp. Gambusia were observed averaging $\frac{1}{2}$ and ranging from $\frac{1}{2}$ 1" total length. They inhabited the stream in numbers of approximately 100 per 100' of stream. No other fish but Gambusia were observed in the section downstream from the swamp to the confluence with the Russian River. This was assumed due to the observers inability to make good observations through the turbid water in this section. A small fish kill was observed from Calistoga Road bridge and continuing for approximately 2 miles downstream. A total of 45 dead steelhead rainbow trout were observed within this section. The cause of death was believed to be high water temperature and a possible lack of oxygen, since the flow is subsurface at many points along this section. No signs of pollution were observed in this area.

OTHER VERTEBRATES - Cattle, deer and quail were observed.

FISHING INTENSITY - Fishing intensity was believed to be moderate as indicated by the numerous bait containers and discarded hook packs that were observed.

OTHER RECREATIONAL USES - The stream is used for swimming by local residents.

ACCESSIBILITY - Mark West Creek is paralleled by Mark West Springs Road, St. Helena Road and River Road. It is crossed by Calistoga Road, Old Redwood Highway, Highway 101, Fulton Road, Laghlin Road, Slusser Road, Healdsburg-Trenton Road, and by Wohler Road. All these roads provide easy access to the stream by foot.

OWNERSHIP - Most of the stream appears to be privately owned.

POSTED OR OPEN - Most of the land bounding the stream appeared to be posted against trespass, hunting and fishing.

IMPROVEMENTS - No recommendation.

PAST STOCKING - Unknown.

GENERAL ESTIMATE - Mark West Creek is a major tributary to the Russian River, contributing both summer and winter flows. At the time of observation the stream was discharging approx. 4.16 c.f.s. Fair spawning and nursery areas were observed along the upper and mid sections of stream. A total of approximately 2% miles of stream appeared suitable for steelhead spawning.

RECOMMENDED MANAGEMENT - Mark West Creek should be managed as a productive steelhead spawning and nursery stream. The lower and mid sections of stream should be managed for warmwater game fish, such as green sunfish.

SKETCH MAP - Attached (sic)

REFERENCES AND MAPS - U.S.G.S. Calistoga, Healdsburg, Sebastopol and Santa Rosa Quadrangles 15' and $7\frac{1}{2}$ series.