

Russian River Renovation

By Don Vachini

The controversial Warm Springs Project might be just the medicine needed to get this river back on its feet.

Looking at the rivers greenish gently-paced flow, one does not immediately notice its underlying problems. Once it was famous for its numerous runs of steelhead which graced its waters, providing a healthy winter fishery. Due to excellent habitat throughout, the river offered a fantastic year-round potpourri of fishing activity.

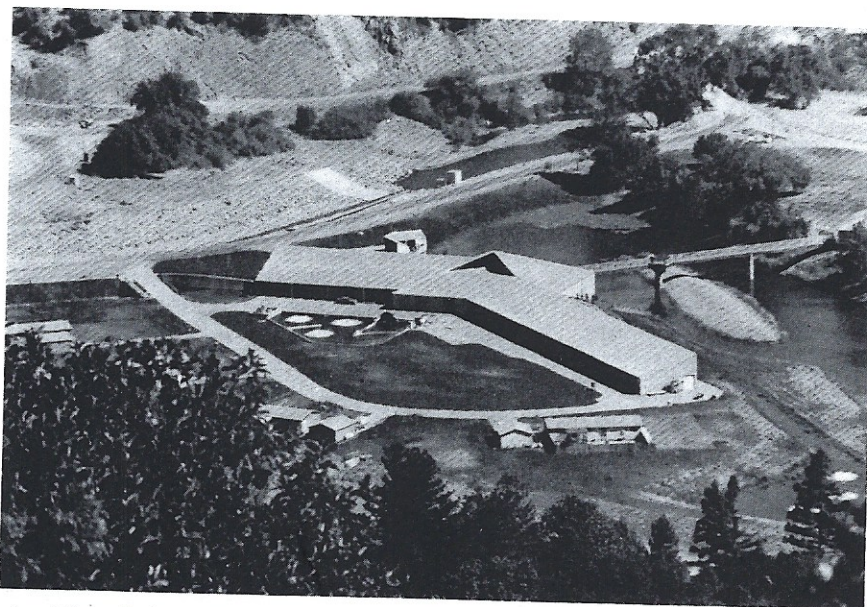
However, siltation, pollution, reduced flows, increased water temperature and irrigation diversions have combined over the years to contribute to its recent title of a "dying river." Throw in two consecutive drought years and the rivers fish population, especially the anadromous species, has been

literally brought to its knees, staggering from the combination of blows.

In addition to the steelhead and salmon (the river supports or has supported minimal runs of silvers and kings) there are striped bass and shad. These anadromous species are joined by resident gamefish to include largemouth and smallmouth bass, catfish, sturgeon, crappie, bluegill, and green sunfish. Like many large rivers, it also supports a list of "undesirables" to include carp, squawfish and suckers.

The Russian River heads in the low mountains north of Redwood Valley and meanders roughly 100 miles to enter the ocean at Jenner-by-the-Sea. Several tributary creeks of various sizes contribute to its flow.

Prior to 1958, the river was a free flowing wonder



Warm Springs Hatchery is the first such facility housed completely under one roof. Dry Creek is in the background.

throughout its course. Laden with an abundance of spawning gravel and protective forest cover, it provided ideal fish habitat especially for steelhead and resident trout. Even when shoddy logging practices created some siltation in its upper courses, winter flooding cleansed the river, providing a flushing effect from headwaters to ocean. Things couldn't have been better as nature provided well. People came from far and near to sample, among other things, its famed fall and winter steelheading.

After Coyote Dam was completed in 1959, things started going downhill in the Russian (the dam is actually on the East Fork of the Russian River, a major tributary to the main river). The structure (forming Lake Mendocino) was created as a water source for parts of Sonoma and Marin counties as well as to control land devastating floods. The dam caused a substantial decrease in the rivers flow which cut down on the cleansing effect. To make matters worse, when water was released from the lake, it was drawn directly off the bottom and heavily laden with silt. When flow was shut down it was done so suddenly, allowing the silt to settle instead of being washed to sea.

Below Coyote Dam, increased irrigation also contributed to diminish river flow, usually during the crucial summer months. Many fish migrating downstream were trapped in small pools and met their end at the hands of opportunistic predators or warm temperatures.

County growth blossomed and in doing so escalated the sewage problems for the river. Effluent released from treatment plants caused some pollution especially during summer low flow.

With decreased flow, there follows an increase in water temperature. Thus, less than ideal conditions occurred earlier in the season as flow diminished sooner. The slower the flow, the less oxygenation capacity can be delivered.

Since the river depends largely on rainfall, (it is not a snow-fed drainage), a heavy winter usually meant good flow would continue over the summer. A dry winter resulted in an early low flow. There were, however, always enough "good" winters to offset the "bad." A reduction in this overall flow took its toll over 18-19 years.

The drought years of 1976 and 1977 increased the already poor odds mounting against the fish, both resident and anadromous, as the river was a mere trickle for two years. Even worse, many of the incubating tributary creeks dried up totally or in part and many immature steelhead were destroyed.



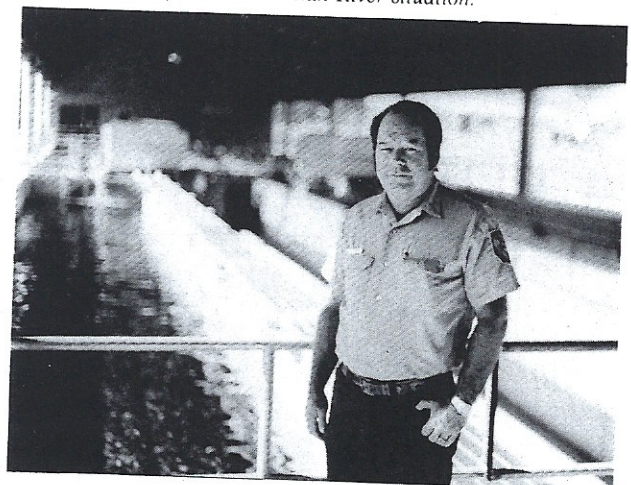
The spillway and entrance to the fish ladder are still under construction.

During this span, the spawners lucky enough to get upstream were denied access to their natal waters. Forced to spawn over gravel laden with silt, the eggs probably never hatched or the fry perished due to inadequate conditions. Many trapped steelies were caught by predators, fishermen, or illegal snaggers, rendering another notch in an already downward descending fishery. Though the river wasn't "dead" (steelhead, striped bass, and shad were still caught, but in very small numbers), the term "dying" certainly was pertinent.

There is small wonder that when another dam was proposed, it met with such strong opposition. A friend of mine, upon hearing of the proposal stated, "Fool me once, shame on you. Fool me twice, shame on me!" No one wanted another Corps of Engineers boondoggle. At this time (the early '70's) many fishermen believed that this dam would be the rivers death knell.

Initially conceived in 1937 to combat the massive floods in Dry Creek valley, Warm Springs Dam was

Don Estey, DFG manager of the hatchery, figures that the cold, clear flows from the dam will somewhat improve the Russian River situation.





When the dam is full, water can be drawn from four different levels of the lake, enabling the water temperature to be regulated for the use below.

finally authorized by Congress in 1962. Actual work began in 1967 and, after stormy court-fought battles from 1974 through 1978, continues toward its completion date in 1983.

Warm Springs Dam is located at the confluence of Warm Springs Creek and Dry Creek, about 12 miles from the main Russian River. Dry Creek, a major tributary of the river, meets the Russian just south of the town of Healdsburg.

A variety of sportsmen, environmental, and concerned citizens groups opposed the Warm Springs project. The main complaints centered on 4 general areas:

The dams structure was not earthquake-safe. "There are seismic inadequacies in the dams structure itself," said Ted Wellman of the Marin Conservation League, "which are still unacceptable."

Increased population density was forecast. "The water stored behind the dam, in itself, is growth inducing," stated Wellman.

The lake would inundate Indian relics and gravesites.

The dam and resulting lake would cause a loss of fish and wildlife habitat that is irreplaceable. In Wellman's words, "...you don't replace lost spawning ground with a fish hatchery!"

From 1974 to 1978 court battles and construction delays were common. As of May 17, 1978, the opposition last gasp efforts met with defeat and the project construction heads toward completion sometime in 1983-84.

The dam is 74% complete (though still not earthquake sound according to Wellman), the increased

growth issue has been sidestepped and the Indians somewhat satisfied. "Much time and money was spent re-locating many Indian graves and artifacts," stated Doug Saul of the Army Corps of Engineers, Natural Recourses Division.

To compensate for the loss of anadromous spawning habitat documented in a preliminary Environmental Impact Report (EIR), a state fish hatchery was constructed." According to Federal law, anytime salmon or steelhead habitat or access is impaired compensation must take place," said Don Estey, a Department of Fish and Game employee in charge of Warm Springs Fish Hatchery. "This is usually in the form of a hatchery."

Whether or not the Warm Springs project is right or wrong is not the issue now. The project (dam, lake recreation facilities, and hatchery) is moving toward completion, and an attempt to evaluate the future effect of the facility on the Russian River must be made.

Warm Springs Fish Hatchery was completed before the winter of 1980 and turned over to the Fish and Game Department for management. There are a couple of unique features about this hatchery, the newest in California. One is that the facility is completely under one roof, the first such structure of this status in the state. "The roof eliminates a significant loss from bird predation." Estey mentioned, "as well as helps to keep the water temperature cool during the summer months."

The incoming water undergoes an ultra-violet light treatment to prevent and control disease to fish living there.

The primary purpose of the hatchery is to maintain (and increase) the runs of steelhead and salmon that would be lost as a result of the dam. Though salmon are mentioned Estey emphasizes that "...steelhead is the main concern at this time." The hatchery has the capacity to raise 300,000 steelhead in addition to 200,000 kings and 110,000 silver salmon.

Though not operating at full load now, Estey figures it will take at least 5 years to establish any significant runs of steelhead back to the hatchery, which is equipped with holding tanks, fingerling tanks and raceways.

To raise anadromous fish at this, and any other facility, requires water-plenty of it and at the right temperature. At this point in time the dam is not quite ready to hold much water and this is a concern of not only Estey, but Jack White, Information Officer in the Department of Fish and Game office at Yountville. "We have to have enough water to carry us through the summer months until the rains come. Right now, we are in danger," he said. "The water flow is minimal and with it the temperature becomes critical. We had to release thousands of smolts 4-5 months early due to lack of water." These fish, mostly immature steelies, were released throughout the Russian River drainage. As the lake holds more and more water in coming years, this problem will be eliminated.

When the dam is full of water, 2 past problems will be solved with a well thought out system. There is a multi-level tunnel set up that can draw water from 4 different levels of the lake, which will provide the following results:

Water temperatures can be controlled before it enters the hatchery. Water of different temperatures can be mixed together in a central shaft to achieve the desired degree.

No mud or silt is removed from the lake because no water is drawn from the bottom.

Thus, the water removed will not only be cold but silt free, preventing a Coyote Dam situation from developing here.

While minimum flow is established at 25 cfs (cubic feet per second) for Dry Creek (below the hatchery), Estey estimates an average flow of 50-75 cfs most of the time. 150 cfs would be a maximum flow, probably in winter. The lake is designed to hold enough water for recreation use, drinking purposes and hatchery management.

While not part of the original purpose, the cold, clear water will aid the Russian River temperature, flow and probably some sewage problems. "At this point in time (September), the water conditions in the river are questionable at best," according to Estey. "Increased flow at a cold temperature could conceivably improve the situation."

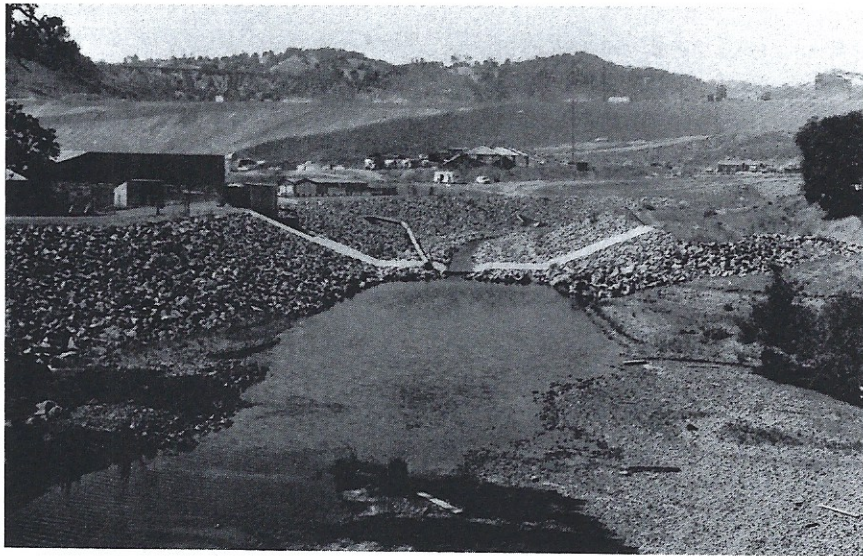
The ideal water temperature drawn from the lake will be 55-58° for hatchery use, and will reach 60-63° by the time it enters the main river. "This will help somewhat," maintains Estey, "since the summer (water) temperature approaches 70° at places in the lower river.

Behind the dam, Lake Sonoma will be formed. The lake, holding 381,000 acre feet of water, will be planted and managed as a warmwater fishery.

Apparently as much advance thought is going into



Warm Springs Hatchery, the newest one in the state, is designed to accommodate the public as well as salmon and steelhead.



Looking up Dry Creek, with the fish hatchery to the left and the face of the dam in the background. Lake Sonoma will be formed behind the dam.

the lakes fish management as possible. According to the DFG biologists, the lake is to be stocked with largemouth and spotted bass, redear sunfish, black and white crappie and channel catfish.

The largemouth bass was selected because of its large size and popularity among bass fishermen, the spotted bass because of its prolific spawning and wide range.

The redear sunfish was chosen because it is less susceptible to stunting than other members of the sunfish family.

Both species of crappie will be introduced since there is to be an abundance of underwater cover.

Channel catfish were chosen due to their fast growth and gamey nature.

The Army Corps of Engineers has opted not to strip the grass and woodland structure in the lake, providing instant structure and habitat for the fish of Lake Sonoma—a very smart environmental consideration. Many previous lakes have had all living flora removed before filling with water. This is now recognized as a mistake by fishery biologists, so Lake Sonoma will be at an advantage.

Due to the expert planning of the warmwater fishery, there is little wonder that both ardent bass fishermen and fishery biologists alike feel that this impoundment will be one of the best in California when fully established.

Russian River renovation doesn't cease with the addition of fish and stable water flow. Some other steps are being taken to bring the river back to respectability and beyond.

A fish ladder is being built at Healdsburg's

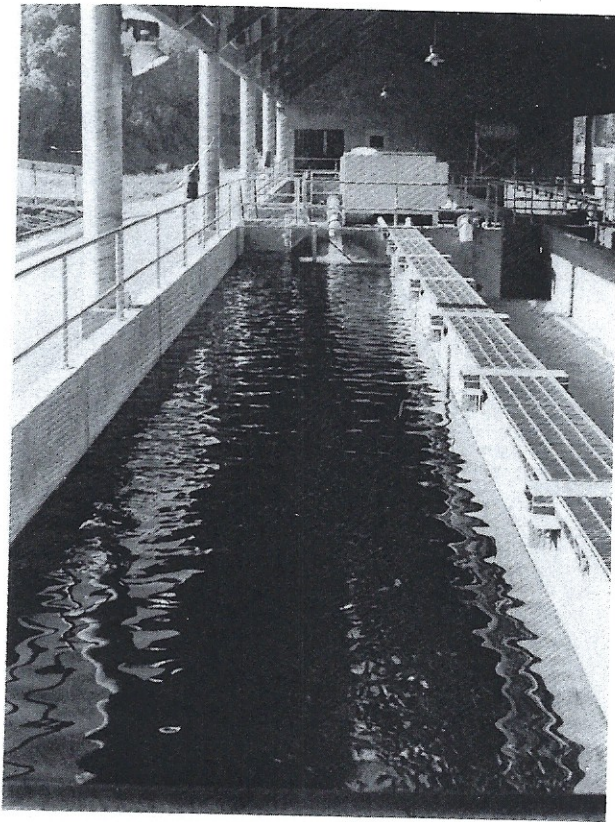
Memorial Dam, a persistent blockage to upstream migration. This will allow anadromous fish to easily negotiate their way upstream at any water level. Ladders are also proposed at several of the summer dam sites downstream such as at Rio Nido and Wohler. These dams, in part, are also blamed for the decrease in shad runs, since their runs upstream are more affected by these dams.

Also, it is possible that in future years surplus steelhead and salmon can be planted in the upper courses of the river to help re-vitalize the runs there. Several local sportsmens groups are working on that angle at this time. Warm Springs hatchery has expressed interest in this plan too. The Ukiah Rod and Gun Club currently raises a small amount of steelhead smolts for release into the river yearly.

"Warm Springs Fish Hatchery will create a vast surplus of steelhead when fully established," said Jack White, "more than it can use." Hopefully this factor will help rejuvenate bigger and better runs in the lower river.

Though steelhead has first priority, eventually the hatchery will handle King Salmon too. The Kings will be imported from the Smith River and will be winter run fish (the past runs of King Salmon in the Russian were fall run fish and the river isn't conducive to that strain now). This year there weren't many surplus Smith River Kings to be transferred to the hatchery. Estey hopes that by next year Warm Springs will also have a fair number of Kings for release. A token 10,000 are being nurtured there now.

The Kings would be re-established mainly for commercial and sport fishery purposes. They never



The roof eliminates much predation from birds and also helps to keep the water temperature cooler in the raceways and holding ponds.

were present in large numbers according to White and seemingly disappeared from the river around the late 1930's.

When asked about the long range effects of the hatchery, lake, and dam on the Russian River, Estey was quoted as saying, "Now is not the time to make comparisons. At least 5 years, and possibly 10, should pass before we look at the results."

White maintains that while the hatchery and dam weren't established to renovate the Russian River, "...it now looks as though they will have an improving effect on the river. If nothing else, it will certainly give Dry Creek new life." The lower part of the creek is dry about half the year, so with a flow of about 50 cfs, it will run freely year-long. No doubt, the stability of the flows will be helpful to both creek and river.

It seems safe to assume that whether originally intended or not, the Warm Springs project is going to have a positive impact on the Russian River in the future. The addition of steelhead (and eventually salmon) plus some habitat and stream improvements are steps in the right direction. It is quite possible the "drying river" has been given a new lease on life!

Angler / Don Vachini

WARM SPRINGS FISH HATCHERY UPDATE:

Early October the author visited Warm Springs Fish Hatchery for interviewing and photography purposes, a tragic happening occurred.

A power failure lasting 2½ hours resulted in the loss of an estimated 155,000 baby steelhead and salmon. The emergency generators failed to function, and within an hour the fish suffocated, as there was no power to circulate the water which would create sufficient oxygen.

There are various accounts of what went wrong. Federal and state officials are investigating the failure of the highly automated system. It is not known whether the accident is due to a new flaw in design or an equipment breakdown.

One thing for certain is that only about 400 fish survived. They were immediately released in Dry Creek, but their possibilities are slim.

Approximately 95,000 steelhead, 50,000 silver salmon and 10,000 king salmon (all between 4-6 inches) were lost. All of the steelhead were of native stock, which is usually best to increase the runs in a watershed (rather than fish brought on from other

areas).

The hatchery will not stock any more fish until January since none are available from other hatcheries. Hopefully, according to Jack White, DFG information office at Yountville, "The stock can be replenished during the upcoming season." This would probably be around November, but depends on the amount of rainfall. In any case, "...the whole program (of stocking steelhead and salmon in the Russian River and Dry Creek) is set back at least three years," according to White.

The loss is estimated at about \$140,000.

The normal capacity of the hatchery (when in full operation) would be three times the amount of fish lost. Had there been more fish there it could have been worse. As Jim Monical, one of four DFG employees at the hatchery, stated, "I suppose its better that it happened now than when we had a full compliment."

Only time will tell the effect of the loss. It is hoped by all that sufficient runs will materialize again this season to rebuild the lost stock.