

HISTORICAL PERSPECTIVE

REDWOOD CREEK FISHERY

From the earliest accounts, beginning about 1890, Redwood Creek was said to have supported a substantial salmonid fishery. Although unsupported by records, personal reflections on the magnitude of the runs vividly express this. Early settlers recall so many salmon going up lower Redwood Creek during peak runs that it was difficult to decide which one to spear or recall filling horse drawn wagons with gill netted salmon (B. White; F. King). In the past, "hundreds of thousands" of fish were in the creek (Davison). Sometimes fish could be heard from Orick splashing through shallow riffles, backs out of the water (Lipton). King salmon 50 - 60 pounds could be caught in Redwood Creek's estuary, north slough area and ~~lods~~ averaged 8 - 12 pounds. Sometimes walking along Boyes Creek or Lost Van Creek one could hardly stand the stench from hundreds of salmon carcasses along the banks (Davison). Personal accounts such as these support the belief that a substantial fishery once existed and "current" fish runs are far below those which occurred 70 - 80 years ago (USFWS).

Historically, the Redwood Creek watershed supported king salmon, coho salmon, steelhead and coastal sea-run cutthroat trout with ~~king~~ king salmon spawning primarily in the main stem of Redwood Creek or Prairie Creek and the other species spawning in tributaries. Resident rainbow and cutthroat trout were found in the upper reaches of the basin and some tributaries ^{reference} 1. Canoe-fish, Pacific lamprey, Roundlet sucker, sculpin, and three-spined stickleback were also indigenous. Some of these fish once provided local Indians with their primary protein source (USFWS).

The anadromous fishery of the Redwood Creek watershed has experienced a substantial reduction (since pristine times) as a result of natural and man-induced conditions. During the last two decades, the most notable reductions have occurred to the chinook salmon fishery with an estimated 70 - 80% decline and the coho fishery with a 60% decline. Although extensively supported ^(60%?) by hatchery programs, the comparably more resilient steelhead fishery has realized a 50% decline. The historic coastal sea-run cutthroat fishery is virtually non-existent in Redwood Creek. These estimates have been deduced from records available at the Humboldt County's Prairie Creek Fish Hatchery (S. Sanders, personal communication).

1875 - 1900

Very little information was revealed for the latter quarter of the 19th century. However, reference was generally made to large runs of fish and especially king salmon up to 50 - 60 pounds. The local Indians used (gill) nets and spears to catch salmon on the lower creek (B. White). In about 1897 - 1898, Eunice White netted 40 salmon from an abandoned channel, then called Savage slough, which connected to Strawberry Creek near its confluence with Redwood Creek (B. White). She used a dug-out canoe to set the net and a horse drawn sled to haul the fish back to their camp to clean and cure.

1900 - 1925

For the first quarter of the 20th century somewhat more information is available on the watershed and its fishery. The mouth of Redwood Creek is known to have closed off to the ocean during low flows (B. White, Davison); yet there was enough filtration through the sand to keep the water level in

the lagoon down (B. White). B. White suggests this was before the creek's sediment plugged up the sand. In the early 1900s, Eunice White recalled the rains did not come until late December one year and the mouth remained closed until then (B. White). A few days before the rains, she saw seagulls feeding near the mouth of Redwood Creek and noticed salmon eggs on the beach, suggesting the salmon could not wait any longer and spawned where the creek's water was seeping out of the sand. A 1909 railroad map of the Orick Valley indicates that during high tides the Redwood Creek estuary was 70-80 acres in size (B. Blakenship). When the mouth opened the salmon moved upstream rapidly (B. White). When it rained for several days, the water got murky, not muddy like it does now (B. White). Peter Kring caught a lot of kings with gill nets and would use a horse drawn wagon to haul the catch (F. Kring). In 1919, Ada Kring caught a 65 pound salmon (F. Kring). On Thanksgiving day in 1911, a dozen hookbills (cond^s) were trying to spawn on (most) every riffle on Str^{ee}low Creek, near Gold Bluffs Road (R. Davison).

[In the early 1920s, so many salmon carcasses were along Boyes Creek and Lost Van Creek, you could not stand to walk along the creek for the smell (R. Davison).] *this is already mentioned? (in 1st paragraph, 2nd page)*

Between 1900 - 1925, commercial fishing occurred at the mouth of Redwood Creek, and supplied the Eureka fish markets (USEWS). No data exists regarding the magnitude of the runs or catch (USEWS). Bud Thomas (Eureka Fish Marketing Association) confirms no data or records are available.

Considerable information is available for the years 1925 - 50. It appears that as the area's human population increased, more people fished the creek and Redwood Creek became recognized as productive fishing stream by the locals.

During the late 1920s - 1930s, nets were used in the lower portions of Redwood and upstream near the Tall Trees Grove. Burt Robinson and local Indians are believed to have netted, brined and smoked salmon near the Tall Trees Grove during the late 1920s (Davison). It seems likely that they used the same brine pit in the redwood log which can be seen there today. In 1930, a (gill) net placed in the north slough by Edward White and Joe Frey caught 21 king salmon during the 10 - 15 minutes required to set the net (Davison).

By the early 1930s sport fishing for king salmon began to gain considerable attention on Redwood Creek. Numerous personal accounts for the 1930s referred to large runs of big king salmon in the Redwood Creek watershed. The Hendriksen's family began offering rowboats for rent for fishing on Redwood Creek in the early 1930s (Barlow). The Hufford family rented rowboats in the north slough, but the date is unknown. The north (Huffords) slough always had good runs of fish and was a good place to troll (P. Zuber, Barlow). King salmon could be caught up to where the county road crosses the slough (Barlow, P. Zuber), but few cohos were caught in the north slough (Dipton). In the early 1930s, Mrs. Barlow a teacher at the Orick school, counted ten to twelve salmon passing at once beneath the 101 bridge.

In 1936, Dick Davison caught three salmon exceeding 100 pounds (Davison).

Between 1937 - 1945, sport fishing for king salmon on lower Redwood Creek was very good (Tipton). A favorite fishing spot was along the cliffs near the mouth and neck of the north slough where a deep hole formed with a slow eddy (Tipton; P. Zuber). Thirty-five to forty pound kings were caught there regularly. The same went for both forks of the north slough but usually the north fork was best (Tipton). Trolling from a row boat with a spinner and spoon with light weight produced large King salmon (P. Zuber; Barlow). A king salmon estimated between 65 - 75 pounds was caught by Ada Kring (Tipton). The hole at the mouth of Prairie Creek was also a good fishing hole and about 20 feet deep. A 62 pound king was caught there in the 1940s (McNamara). Up to about 1946, King salmon weighing 20 - 45 pounds could be caught in the estuary north slough area. Large coastal sea-run cutthroat trout up to 4 - 6 pounds could be caught also.

The 1930s were also a period when "no law existed north of Trinidad" and spear fishing parties were held on Redwood Creek (Davison). "Hundreds of thousands" of fish were in the creek at times (Davison). When the mouth first opened, many kings would be in the creek and it was difficult to decide which one to spear (B. White). Spear fishing continued until about 1946 (F. Kring, Davison). Occasionally, between 20 - 30 of the local ladies gathered at a riffle on lower Redwood Creek at night to spear salmon (F. Kring). This was done at night to avoid the game warden (F. Kring). In 1940, a few of the Orick men plowed open the mouth of Redwood Creek to encourage salmon to enter the creek (Tipton). As they expected salmon became excited and entered the creek, and at least one of them speared salmon upstream later that day (Tipton).

1950 - 1976

Redwood Creek in the 1950s was a premium anadromous fishery stream (Pendo). During May, July, and November of 1952, and July 1953 the California Department of Fish and Game did population sampling on Redwood. See appendix for records. The November report indicates that the Redwood Creek mouth broke for the first time on November 3, 1952. By 9:00 a.m. on November 6th, 18 anglers (9 boat and 9 shore) had taken 11 king salmon. Three of these fish were in the 25 - 30 pound class, 6 were grisle, and two estimated at 10 - 15 pounds. These fish were caught approximately 400 yards from the mouth (California Fish and Game).

During the 1953 - 1954 period, Redwood Creek regularly produced 35 - 40 pound salmon for sport fisherman and many 50 pound fish (M. Seldan, M. Pendo). Not only were there large runs but these were very large fish.

In 1955 - 1956, king salmon to 50 - 60 pounds could be caught in Redwood Creek and the ~~conos~~ averaged 8 - 12 pounds. It was "nothing to catch a silver to 18 pounds" (Miguel).
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Good fishing holes were found along the cliff near the mouth (Miguel, Tipton, P. Zuber, others) and where Prairie Creek enters Redwood Creek (Miguel, Tipton, Pelroy). This hole was about 15 - 20 feet deep (Pelroy, Modrow) and was called "the salmon hole" (McGill). Early in the year, during the salmon runs, sea-run cutthroat up to 6 pounds could be caught (Miguel). King salmon were the most sought after fish (Miguel) even with good runs of conos, sea-run cutthroat and steelhead in the creek. In a stream survey California Fish and Game conducted in 1956, Redwood Creek was considered to be an excellent spawning stream (USFWS).

into conos both singular & plural, like trout? or chinook?

Until about 1960 sport fishing was allowed within 200 feet of the mouth. In 1960 California Department Fish and Game ordered a fishing closure at the mouth because the mouth was opened prematurely, and many salmon were slaughtered-pitchforked, clubbed and shot (Tipton).

During the 1960s, Redwood Creek is said to have supported more coho than king salmon (Miguel). Coho entered Redwood in good numbers and averaged from 8 - 12 pounds, and it was common to catch one to 18 pounds (Miguel). Kings weighing 25 - 30 pounds could be caught while casting spoon on lower Redwood Creek from the shore (P. Zuber). By 1962 - 1963, king salmon to 40 pounds could still be caught (Pelroy Barlow). California Fish and Game records indicate they seined Redwood Creek on October 30, 1963 for king salmon spawners for Prairie Creek Hatchery.

→ did he say that in the 50's too. previous page

In October 1965 the California Department of Fish and Game published the California Fish and Wildlife Plan. By extrapolating data from other streams, they estimated the number of spawners in Redwood Creek per year at 5,000 King salmon, 2,000 Silver salmon and 10,000 Steelhead. According to local residents and occasional observations by Department personnel, this represented a drastic decline from former years.

In the spring of 1967 (Barlow) and April 1973 (California Fish and Game) large runs of candlefish occurred in Redwood Creek. The 1973 run migrated to above Tom McDonald Creek and probably got as far as Bridge Creek (California Fish and Game). From about 1975 to 1979 the salmon sport fishery was generally poor (Miguel;Combs) and few fish were caught (Pelroy). In 1977 only about 80 adult king and 10 silver salmon returned to the

natchery (Combs). During November of 1978, many king salmon were slaughtered on Redwood Creek. After the mouth of the creek was prematurely opened, salmon trapped in the low water were pitchforked, clubbed, snagged, etc. (Times Standard).

DESCRIPTION OF REDWOOD CREEK

Some imagination is needed to picture how Redwood Creek once looked. From historic photos and personal accounts, stream side vegetation and spruce are known to have lined Redwood Creek. Spruce also covered the island near the mouth of Redwood Creek (P. Zuber; Davison). Accounts from the late 1890s refer to an old meander channel, called Savage Slough, located near Strawberry Creek's confluence with Redwood Creek (White). From at least 1900, the mouth of Redwood Creek is known to have closed off to the ocean during periods of low flow (Davison). During the same period, when the creek flooded, it overflowed at least partially, into the north slough, (B. White). A 1909 railroad map of the Orick Valley shows the configuration of the Redwood Creek estuary/lagoon and indicated it covered 70 - 80 acres during high tide (Blankenship). Some photographs of lower Redwood Creek from 1915 and later show a large estuarine area connected by a well-defined channel to the north slough, with a channel along the cliff exiting to the ocean (Photos - Davison; Modrow; G. A. Zuber).

In 1930, the banks of Redwood Creek were well vegetated and dropped off steeply (M. Taggart). Many holes and small log jams were along the lower portion (M. Taggart). Between 1935 - 1940 the lower portion of the north slough was about 20 feet deep (B. White). During the same period, an extensive estuary/lagoon and wetland area existed on Redwood Creek (Photos-Davison). These photos show overwash during high tides and seas, and the outlet channel migrated south along the beach during low flows (Photos-Davison; G. A. Zuber).

In about 1935, the Hendricksens began renting boats behind the Shoreline

Deer for use on Redwood Creek (Modrow, Barlow). When the tides were right, a rowboat could be rowed almost up to the Highway 101 bridge (B. White). Seals were seen up to the 101 bridge (Antonioni). Where Prairie Creek enters Redwood Creek the hole was between 15 - 20 feet deep until at least 1940 (Modrow).

Until about 1950 the creek remained much the same, the deep hole near the mouth along the cliff and the hole at the mouth of Prairie Creek remained deep (Tipton; Taggart; Modrow). The creek bed had many holes, stumps, and rocks (Haygood). As vegetation and the steep streambanks were affected by the floods, the holes began to fill and the creek's channel became undefined (Taggart). Before the 1953 flood, the bed of Redwood Creek was narrow and quite deep. It was not until the 1955 flood that the creek bed started widening (Haygood). Floods of 1950 - 1953 created considerable streambank damage, and the Army Corps of Engineers began to place emergency rip-rap along portions of Redwood Creek (Barlow). Major floods occurred in 1955, 1964 and 1965, washing enormous amounts of material into the mainstem, filling pools and widening the channel (USFWS). The 1964 flood filled in the fishing hole some at the confluence of Redwood Creek and Prairie Creek, though it did not really change until the dike was built and channel modifications were completed in 1968 (Miguel).

In 1960, while analyzing possible impacts from the Corps of Engineers' flood control project, the USFWS warned that the channel bottom would be affected by construction activity and that the removal of snags, boulders and stream side vegetation consisting of willow, alder, cottonwood, blackberry vines and forbes would adversely affect fish habitat and valuable rearing areas

for young steelhead and salmon (USFWS). In 1968, the Corps of Engineers completed a stream channelization and levee construction project on the lower 3.4 miles of Redwood Creek. This action destroyed 50 - 75% of the estuarine portion of the stream and resulted in the reduction in the overall productivity of the creek ecosystem (USFWS).

Logging operations began in the basin in the 1850's, but did not become extensive until after World War II during the building boom of the 1950's. Clear-cutting practices in the basin exposed highly erodible soils on steep slopes resulting in increased siltation in the creek and its tributaries.

Aerial photographs taken in 1947 show 30 land slides on Redwood Creek. Aerials taken in 1973 revealed 341 slides. Measurements over a four^{year?} period ^{- if so, which years?} near the mouth at Orick indicated that the stream transported 8,000 tons per square mile of suspended sediment. According to USGS this was the greatest measured load per area of any stream of comparable size in the United States. " In view of existing habitat conditions in Redwood Creek, it is surprising that a sport fishery exists at all" (USFWS, 1975).

The 1965 California Fish and Wildlife Plan discussed some critical factors in the habitat. They claimed that as with many of the smaller coastal streams, sand bars usually form at the mouth of Redwood Creek each summer. The mouth did not open until the first good rain fall, thereby limiting the entrance migration of anadromous species. On occasion, fish were not able to ascend the river for a long period of time. Even from the estuarine area, the natural flow of the main stem was so low at times that upstream migration was seriously hampered. They also claimed that although logging debris constituted some impairment of tributary streams, the general overall

condition of the basin in this respect was good. Natural falls occurred on four tributary streams but did not block any appreciable amount of anadromous fish habitat and although logging had affected the productivity of the Redwood Creek drainage, the limiting factor appeared to be the extremes in natural flows (CDF&G).

In a Stream Damage Survey conducted in 1966 by the CDF&G, 64 miles of stream were listed as severely damaged with 75 - 100 percent of the bottom covered by silt (USFWS). Sedimentation resulted in cemented spawning gravels. Fine sediments reduced intragravel dissolved oxygen concentrations which can delay egg hatching and increase egg and alevin mortality as a result of entombment. Increased summer temperatures also limit juvenile survival.

In 1972 a survey of the entire stream by the Department of Fish and Game and the National Park Service concluded that Redwood Creek was not suitable as a trout stream. Steelhead production was severely limited and salmon production was reduced. The upper 10 miles was choked with logging debris, collapsed bridges and sediment. In the remainder of the stream, alluvial deposits up to 30 feet deep were observed. About 5 percent of the original stream bank was buried or eroded. About 60 percent of the adjacent slopes were unstable or sliding. Approximately 80 percent of the immediate watershed had been logged in a manner detrimental to the stream. The production of fish and fish food organisms was extremely limited by the lack of pools and shelter, the great amount of fine sediments in the stream bottom, and by the unstable nature of the streambed (CDF&G, 1973).

FISHING TECHNIQUES

Spear fishing was one of the first methods to catch fish from in the Redwood Creek drainage (B. White; R. Davison). Local Indians initially used spears but as pioneering settlers established, they also began to use spears (B. White; R. Davison). Even though "no law (existed) north of Trinidad", by 1925 spear fishing was illegal except for the Indians (Davison). The spear fishing tradition was continued by non-Indians occasionally until about 1950 (Davison; F. Kring). As recent as 1978, the spear has been replaced by the pitchfork on Redwood Creek (newspaper).

Nets were also used on lower Redwood Creek during the late 1900s (B. White). Local Indian families originally caught fish with nets (B. White). Gill nets were used by white settlers until at least 1920 (F. Kring). It is unknown if dip nets, baskets, or seines were ever used on Redwood Creek.

Some fish were caught with a hand line (F. Kring) however, most fish were taken with rod and reel after 1925. A crude version of today's level wind reel and a heavy, stiff wooden rod was used for trolling and bait fishing (P. Zuber). Braided line and "cat gut" for leader were first used (P. Zuber). Later, conventional monofilament and steel leader was used to prevent the large king salmon from fraying the line (Miguel).

For king salmon, trolling a spinner, spoon, or hooked bait fish from a rowboat was the best way to fish the Redwood Creek lagoon and north slough (P. Zuber, G. & A. Zuber, McNamara, F. Kring, Tipton, others). Small gas trolling motor^s were used by the 1940s, but generally were not well received by the locals (McNamara).

Drift fishing worms or egg clusters (roe) above tidewater often produced king salmon, cutthroat or steelhead. The deep holes created by log jams or where Prairie Creek enters Redwood Creek are often still fished with roe(Tipton).

PRAIRIE CREEK EGG COLLECTING STATION AND HATCHERY - 1928 - PRESENT

Between 1891 and 1989 the U.F. Fish Commission maintained an egg collecting station on Redwood Creek (California Fish and Game; U.S. Fish and Wildlife Service). No information has been found concerning the location or operation of the station.

During the summer and fall of 1927, a survey of north coastal streams was made to find one suitable for collecting coast cutthroat trout eggs. A site was selected on Prairie Creek, Humboldt County, just below its junction with Lost Man Creek and 1928 saw the construction of traps and a temporary hatchery. Heavy rainfall and consequent soft, muddy ground made the work difficult. But by the middle of November the racks were completed. The installation was ready to collect cutthroat and steelhead eggs by the following spring. Water for the 30 eyeing troughs was taken from Lost Man Creek through about 2,500 feet of 12-inch flume. During the first season, 208,000 silver salmon and 1,400,000 steelhead eggs were taken.

Various improvements were made by 1930, but at that time the hatchery was still considered to be experimental. Adverse climatic conditions caused doubt that the site was suitable as an egg supply. Nevertheless, the hatchery continued hatching steelhead, cutthroat trout, silver salmon and king salmon eggs then distributing the fry in waters of Humboldt and Del Norte Counties through 1936. In 1937, the hatchery was rebuilt, and had a capacity of 80 troughs and 4 tanks with a fifth tank added later.

During the 1940s, silver and king salmon and cutthroat, rainbow, and steelhead trout were produced. The installation also served as headquarters

for fish rescue work on north coastal streams. Following World War II, the water supply deteriorated because of logging operations in the watershed above. Flows decreased in summer and winter floods required expensive annual stabilization of the creek banks adjoining the hatchery property.

The old, outmoded installation required extensive repairs by 1955, so work there was largely discontinued and production was replaced by the Cedar Creek Experimental Station. Humboldt County assumed operation of the hatchery in 1957 (California Fish and Game).

STOCKING RECORDS

By 1930 the hatchery began stocking the Redwood Creek drainage, primarily Prairie Creek and Lost Man Creek. Stocking records for 1930 - 1936 obtained from California Fish and Game indicate Prairie Creek was stocked with steelhead, silver salmon, king salmon, "cutthroat salmon" and "Quinnat salmon". During the same period, Redwood Creek was stocked with rainbow trout and steelhead.

Extensive stocking of Prairie Creek occurred between 1930 and 1936, especially for silver salmon. Silver salmon stocking levels ranged from 446,570 in 1933 to 121,000 in 1936. The seven year total for this period was 2,269,224, averaging 324,174 per year. Steelhead stocking levels varied considerably, but were most extensive during 1930 - 1931 exceeding 200,000 per year. Levels ranged from 229,680 steelhead in 1930 and 43,695 in 1936. The seven year total was 718,080, averaging 102,582 per year. King Salmon stocking received less attention during this period. Stocking records indicate that no king salmon stocking occurred in 1930, 1935, and 1936. The

range was 103,840 Chinook in 1931 to 13,850 in 1932. The four year total was 217,158, averaging 54,289 per year. Stocking levels for what was termed "cutthroat salmon" ranged from 53,230 in 1931 to 22,400 in 1934. The four year total was 159,750, averaging 39,787. It is unknown what "cutthroat salmon" refers to. Likewise, 25,000 "Quinnat salmon" were stocked into Prairie Creek in 1930.

Stocking records indicate rainbow (trout) and steelhead were planted in Redwood between 1930 - 1936. In 1933 6,100 rainbow (trout) were stocked in Redwood Creek. Records imply rainbows were also stocked in 1933 and 1934, but indicate "upper", perhaps referring to the upper portions of the drainage. Steelhead stocking also occurred in Redwood Creek in 1930, 1933, 1934, and 1936. About 40,000 steelhead were stocked in 1930 and 1934, 20,000 in 1933, and 15,000 "upper" in 1936.

To avoid misconceptions and perpetuation of inaccurate information, and to save time, no attempt has been made to summarize the stocking records beyond 1936. Stocking and rescue records are available for 1938 to 1974 and are included in the appendix. Though partially incomplete, these records do offer significant information for stocking that years' brood stock. Species stocked, size, weight, total plant, and planting location are indicated. The source of the brood stock is indicated in some of the records.

For the 1967 calendar year, a Prairie Creek Fish Hatchery report indicated that year as the most productive year ever with total fish production exceeding 1,126,292 fish or 16,729 pounds of fish. No information is given to indicate where this year brood was planted. However the report does

indicate, from sport fishery creel checks, a total of 10 hatchery marked fish and 28 unmarked fish ~~ever~~ taken by sport fisherpersons. In addition returns of adult salmon to the hatchery were at an all time high with 120 hatchery marked and 20 unmarked adult silvers. Half of these fish were female and yielded 140,000 eggs. Heavy natural spawning was estimated to exceed 1,000 adults between Prairie and Lost Man Creek.

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