### Steelhead/rainbow trout resources of the South Fork Eel River

## South Fork Eel River

The South Fork Eel River is tributary to the Eel River and consists of about 104 stream miles. It flows north from headwaters about five miles south of Laytonville, through Mendocino and Humboldt Counties, entering the Eel River about 40.5 miles upstream from the Pacific Ocean. The river drains an area of about 689 square miles (DFG 1997a). Benbow Dam is located on the South Fork Eel River near the town of Benbow, about 40 miles upstream from the Eel River confluence. A fish ladder is in operation on the dam.

Steelhead were planted in the South Fork Eel River as early as 1938. Stocking records from DFG indicate that 50,000 steelhead were stocked in the river on one date in 1938 (DFG 1938a). A hatchery that operated on Cedar Creek was responsible for several years of plantings that contributed significantly to the South Fork Eel River steelhead run. In 1958 and 1959 planted fish contributed 10.8 and 10.4 percent of the steelhead run over Benbow Dam, respectively (DWR 1974). A 1998 report on the impacts of the Potter Valley Project noted that most of the steelhead planting that took place in the Eel River drainage between 1956 and 1965 was done in the South Fork, and steelhead planting continued in the South Fork until 1995 (PG&E 1998).

Staff from DFG surveyed several areas of the South Fork Eel River from 1938 through 1941. "Good" spawning areas and "excellent" pools and shelter were noted in several areas during these surveys and juvenile steelhead were present (DFG 1938b, DFG 1938c). A 1938 DFG survey report notes logging impacts on the South Fork, "Large sections of the stream banks are caved in with gravel bars over-grown with willows forming large, silt covered still pools more favorable to catfish and sunfish than to trout and salmon. Formerly large redwoods (as judged by stumps) came right to rivers edge and held the banks firm. Now, there are greater floods, higher temperatures, poorer oxygen, and lower water in summer" (DFG 1938d).

Several large sections of the South Fork Eel River and its tributaries were surveyed in 1959. A summary of this survey describes the relative abundance of steelhead observed in the river and notes, "Juvenile and yearling production of steelhead and silver salmon appeared to be greatest in the Branscomb area where streams are narrow, better shaded and water is colder than in the lower drainage" (DFG 1959a, p. 2). Surveyors also noted substantial salmonid populations from the Branscomb area downstream to Horseshoe bend, but found that the numbers of fish decreased from this point downstream to the mouth of the South Fork. The summary found that many South Fork Eel River tributaries had been impacted by logging practices and that fish habitat was affected by erosion and log jams.

An inventory of anadromous fish resources was included in a 1965 California Fish and Wildlife Plan. In its description of the South Fork Eel River, the inventory stated that the watershed contained a total of 428 miles of steelhead habitat and supported an annual spawning run of 34,000 steelhead. (The basis for the estimate is not provided in the plan.) It was also noted that winter steelhead runs in the South Fork experienced "considerable angling pressure" and that fish populations were affected by low summer flows and high water temperatures (DFG 1965).

Salmon and steelhead runs were counted at Benbow Dam from at least 1938 through 1969. The largest numbers of steelhead were counted in the early 1940s, when over 20,000 fish were recorded for several years. Fewer fish were counted from 1964 through 1969, and annual counts ranged from 9,283 to 2,358 steelhead during that time period (Nygren 1969).

The South Fork Eel River was examined in 1973 as part of a study of water temperature conditions in the Eel River system (Kubicek 1977). During this study, many fingerling and yearling salmonids up to five inches in length were observed in the section of the South Fork Eel River located downstream of Myers Flat, several fingerling and a few juvenile salmonids up to eight inches in length were observed scattered between Myers Flat and the Ten Mile Creek confluence, and fingerling and yearling salmonids up to five inches in length were abundant upstream of Ten Mile Creek. A few 12-inch trout were observed near Elder Creek, and six trout over 20 inches in length, which may have been summer steelhead, were observed two miles below Elder Creek (Kubicek pers. comm.).

In a 1992 report on the distribution of summer steelhead, Weldon Jones describes observations of summer steelhead that took place in the South Fork Eel River from the 1930s until the 1960s. These fish were thought to spend the summer in deep pools between the Wilderness Lodge and Rattlesnake Creek; however, Jones noted that "The run was reported as never being large" (DFG 1992a, p. 4). He also stated that anecdotal reports of summer steelhead in the South Fork Eel River were still heard occasionally around the time the report was published, in 1992.

Staff from DFG conducted a stream inventory of the headwaters of the South Fork Eel River (upstream from the Mud Creek confluence) in 1996. Juvenile and YOY *O. mykiss* were sampled during the survey and surveyors noted that cattle grazing was damaging the stream banks and impacting water quality in the section surveyed (DFG 1996a).

Staff from DFG completed the "Eel River Salmon and Steelhead Restoration Action Plan" in 1997. In this report the section of the South Fork Eel River between Indian Creek and Salmon Creek is described as containing "...harsh summer conditions for the relatively few juvenile salmonids that use it" but offers "important rearing habitat for juvenile salmonids" in the mainstem upstream of the East Branch South Fork (DFG 1997a, p. 22). The section upstream of the East Branch also was said to contain spawning habitat. Fish habitat in the South Fork Eel River has been impacted by high sedimentation levels, specifically resulting from cattle grazing, logging, and the presence of Highway 101, which follows the river and is considered a source of erosion. The Action Plan stated that steelhead populations in the South Fork have declined steadily since 1900, particularly in response to the flood events of 1955 and 1964, and steelhead numbers were considered "...well below historic levels" when the plan was written in 1997 (DFG 1997a, p. 22).

## Cabin Creek

Cabin Creek is tributary to the South Fork Eel River and consists of about one stream mile. It flows southeasterly, entering the South Fork about 0.9 miles upstream from the Eel River confluence.

A 1983 DFG status report of California Wild and Scenic Rivers lists the number of stream miles accessible to anadromous species in tributaries of the Eel River. In this report the Cabin Creek is listed as containing 0.5 miles of stream accessible to steelhead (DFG 1983a). The report notes that this number represents the stream miles "open to fish passage" and "is not a measure of habitat availability or habitat quality" (DFG 1983a, p. H-45). The distribution estimates were made by examining DFG fisheries files and USGS maps.

## **Bull Creek**

Bull Creek is tributary to the South Fork Eel River and consists of about 13.6 stream miles. It flows northeasterly, entering the South Fork at about stream mile 1.9. The entire 41 square mile Bull Creek watershed is within Humboldt Redwoods State Park.

Bull Creek was surveyed in the 1930s and steelhead were noted to be present around 1934 and in 1938. One survey reports that steelhead were planted in the creek annually with undetermined success and describes natural propagation as "considerable" (DFG 1938e, DFG ca. 1934a). A 1937 memo states, "...Bull Cr. normally runs dry for 3 or 4 mi. above the mouth during the summer, so that only a few pools are left. It usually goes dry about July... many salmon and steelhead run up Bull Cr." (DFG 1937).

A 1960 DFG memo states, "Our records show that [Bull Creek] was a good anadromous fishery in 1937. It was fair in 1952, but was deteriorating in 1954, due to upstream logging erosion" (DFG 1960a).

A 1960 memo written by DFG staff describes the damage caused to Bull Creek by the combination of logging, a fire, and a large flood in 1955. The letter mentions that adult steelhead were present in 1956 but states, "The possibility of restoring a sizeable salmon and steelhead run in Bull Creek appears to be remote" (DFG 1960b).

Steelhead rescues took place in Bull Creek in 1973-74 in relation to a stream alteration project and a stream diversion. The fish rescued were YOY and juveniles (DFG 1973, DFG 1974a).

Bull Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system (Kubicek 1977). During this study, several fingerling salmonids were observed in the lower three miles of Bull Creek, and a few yearlings and two-year-old individuals up to seven inches in length, two of which were yellowish-colored (heat stressed), were observed in Bull Creek just above its mouth (Kubicek pers. comm.).

Sampling was conducted in Bull Creek in 1982 in order to estimate the salmonid population in the creek. A population of 7,710 steelhead was estimated to be present in the lower 7.65 miles of Bull Creek at that time (DFG 1982a).

A section of Bull Creek from the headwaters downstream to the Panther Creek confluence was surveyed in 1987. "Very heavy" siltation was observed in this section of the creek and spawning habitat was described as "nonexistent" (Harral 1987).

Staff from DFG conducted stream inventories of three sections of Bull Creek in 1991. Juvenile and YOY *O. mykiss* were observed throughout the creek during these surveys (CCC 1991a, CCC 1991b, CCC 1991c).

A study site in Bull Creek was used in a 1995 study of sculpin ecology in the Eel River watershed. The paper describes the creek as "highly degraded" and attributes this damage to logging activities that removed canopy cover, caused landslides, and increased sediment input to the stream (Brown 1995, p. 330).

Staff from NMFS conducted sampling in several Eel River tributaries as part of a salmonid habitat restoration evaluation and monitoring project. Reports of this sampling indicate that steelhead were observed in Bull Creek in 1998 and 1999 (DFG 1999a, DFG 2000a).

# Cow Creek

Cow Creek is tributary to Bull Creek and consists of about two stream miles, much of which is intermittent. It flows south, entering Bull Creek about two miles upstream from the South Fork Eel River confluence.

Salmonids were observed in Cow Creek during DFG surveys in 1961 and 1963 (Gallagher 1961a, Huston 1963). During a 1963 survey, spawning and rearing habitat was observed, but the report noted, "This stream and its pools are not large enough to support a native population of trout" (Huston 1963).

Staff from DFG surveyed Cow Creek in 1974 and observed salmonid fry in the lower half mile of the stream. The survey report noted that the upper reaches were choked with log jams and slides (DFG 1974b).

Cow Creek was surveyed again 1984 and several adult steelhead were observed in the stream. Surveyors observed good salmonid habitat in the stream, including "excellent" spawning areas "throughout the entire drainage" (DFG 1980a).

Staff from DFG conducted a stream inventory of Cow Creek in 1991. During the survey four juvenile and YOY *O. mykiss* were sampled at a site about 0.2 miles upstream from the mouth of the creek (CCC 1991d). The inventory report recommended treating sources of fine sediment.

Staff from NMFS conducted sampling in several Eel River tributaries as part of a salmonid habitat restoration evaluation and monitoring project. Reports of this sampling indicate that steelhead were observed in Cow Creek in 1998 and 1999 (DFG 1999a, DFG 2000a).

### Connick Creek

Connick Creek is tributary to Bull Creek and consists of about two miles of intermittent stream. It flows north, entering Bull Creek about 2.4 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted a stream survey of Connick Creek in 1961. "Salmonids" were observed in the stream and it was noted to have "good" nursery potential, "adequate" shelter, and "good" spawning gravel (Gallagher 1961b).

Connick Creek is mentioned in a 1980 DFG field note. The note states that, "Annual streamflow appeared to be insufficient to support anadromous fish" (DFG 1980b).

## Calf Creek

Calf Creek is tributary to Bull Creek and consists of about 1.3 miles of intermittent stream. It flows south, entering Bull Creek about 2.7 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Calf Creek in 1980. At that time the creek seeped into the ground about 2,000 feet upstream from Bull Creek. The report states, "It has no mouth and is of no value to anadromous fish" (DFG 1980c).

# Miller Creek

Miller Creek is tributary to Bull Creek and consists of about 1.4 stream miles. It flows north, entering Bull Creek about 2.8 miles upstream from the South Fork Eel River confluence.

Staff from DFG observed Miller Creek in 1980 at a point approximately 500 feet upstream from the mouth. A field note states, "Annual streamflow appeared to be insufficient to support anadromous fish" (DFG 1980d).

# Harper Creek

Harper Creek is tributary to Bull Creek and consists of about 1.8 stream miles. It flows south, entering Bull Creek about 3.7 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Harper Creek in 1964 and observed numerous "trout" ranging from 1.5 to 4.0 inches in length. Spawning areas were noted to be "abundant" in the stream. Food and shelter were described as "plentiful" (Hyra 1963).

Staff from DFG conducted a stream inventory of Harper Creek in 1991. Juvenile and YOY *O. mykiss* were captured in the lower 0.6 miles of the stream, downstream from a series of log debris accumulations that formed suspected barriers (CCC 1991e). The report recommended treating sources of fine sediment.

Forest Service staff conducted electrofishing surveys in the Bull Creek drainage in 2001. Harper Creek was sampled and *O. mykiss* captured during these surveys (USFS 2001).

## **Squaw Creek**

Squaw Creek is tributary to Bull Creek and consists of about 3.4 stream miles. It flows north, entering Bull Creek about four miles upstream from the South Fork Eel River confluence.

Squaw Creek is mentioned in a 1960 memo regarding anadromous fish populations in the Bull Creek watershed. In this letter, DFG biologist Eugene German reports that he observed adult steelhead and spawning redds in Squaw Creek in 1958 (DFG 1960b).

Staff from DFG surveyed Squaw Creek in 1974 and noted that, "Spawning had taken place in the entire survey area." Salmonid fry, resident trout, as well as salmon and steelhead redds were observed throughout the creek (Grunert 1974).

Squaw Creek was surveyed in 1980 and salmonid fry as well as "resident trout" were observed in the creek. The survey report also noted that local park officials have reported spawning runs of steelhead. The characteristics of Squaw Creek are described as "excellent for all phases of salmonids" (DFG 1980e).

Staff from DFG conducted a stream inventory of Squaw Creek in 1991. Four sites were electrofished during the survey and YOY and/or juvenile *O. mykiss* were collected at each site (CCC 1991f). The inventory report recommended treating sources of fine sediment.

Staff from NMFS conducted sampling in several Eel River tributaries as part of a salmonid habitat restoration evaluation and monitoring project. Reports of this sampling indicate that steelhead were observed in Squaw Creek in 1998 and 1999 (DFG 1999a, DFG 2000a).

### Albee Creek

Albee Creek is tributary to Bull Creek and consists of about 1.8 stream miles. It flows south, entering Bull Creek about 5.2 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Albee Creek in 1974 and observed salmonid fry in the lower half of the creek and resident trout in the upper section. A log jam located a half mile upstream from the mouth was preventing further anadromous migration. The survey report also notes that the Albee Creek watershed had been logged and was "recovering" (DFG 1974c).

No fish observations are noted in a 1980 survey report regarding Albee Creek. The report does note "plentiful" rearing habitat and "good" spawning habitat (DFG 1980f). Stocking records reveal that Albee Creek was stocked with steelhead in 1982 (DFG 1982b).

Staff from DFG conducted a stream inventory of Albee Creek in 1991. *Oncorhynchus mykiss* was collected at two electrofishing sites during the survey, both within half a mile of the mouth of the creek (CCC 1991g). The report noted that the stream's high gradient and log debris accumulations make fish passage difficult and recommended treating sources of fine sediment.

## Mill Creek

Mill Creek is tributary to Bull Creek and consists of about 1.8 stream miles. It flows south, entering Bull Creek about 6.1 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Mill Creek in 1974. Salmonid fry were observed in the lower section of the stream and resident trout in the upper section. According to the survey report, only the lower half mile of the creek is accessible to anadromous fish (DFG 1974d).

Stocking records indicate that staff from DFG planted steelhead in Mill Creek in 1982 (DFG 1982c). No fish were observed during visits to Mill Creek in 1983, 1988, and 1989 (DFG 1983b, Light 1988, McCubbrey 1989).

Staff from DFG conducted a stream inventory of Mill Creek in 1991. Juvenile and YOY *O. mykiss* were collected at two sampling sites during the survey (CCC 1991h). The inventory report recommended treating sources of fine sediment, including those related to the road system. Field notes indicate that staff from DFG visited Mill Creek in 1998 and 1999. No fish were observed during these visits (Retherford 1999, Retherford 1998).

# Cuneo Creek

Cuneo Creek is tributary to Bull Creek and consists of about 2.9 stream miles. It flows east, entering Bull Creek about 7.4 miles upstream from the South Fork Eel River confluence. Upstream of the north and south forks, the mainstem of Cuneo Creek is sometimes referred to as Middle Fork Cuneo Creek.

Steelhead presence was documented in Cuneo Creek in the 1930s. One survey notes that "intermittent" stocking occurred in the creek and another describes several habitat characteristics as "good" (DFG 1938f, DFG ca. 1934b).

Staff from DFG surveyed Cuneo Creek in 1974. During this survey young salmonids were observed in the "middle fork" and the creek was said to have "good spawning grounds for a small population of fish" (DFG 1974e).

Cuneo Creek was surveyed again in 1980. Spawning and rearing habitat was found to be "very scarce" downstream of the confluence with the north and south forks, but "plentiful" upstream. Salmonid fry were observed in the upstream section (DFG 1980g).

Staff from DFG conducted a stream inventory of Cuneo Creek in 1991. Three sites were electrofished in the creek and juvenile and/or YOY *O .mykiss* were collected at the three locations (CCC 1996a). The inventory report recommended increasing canopy and treating sources of fine sediment.

Forest Service staff conducted electrofishing surveys in the Bull Creek drainage in 2001. Juvenile and YOY *O. mykiss* were sampled in Cuneo Creek during these surveys (USFS 2001).

# North Fork Cuneo Creek

North Fork Cuneo Creek is tributary to Cuneo Creek and consists of about 1.8 stream miles. It flows southeasterly, entering Cuneo Creek about 0.7 miles upstream from the Bull Creek confluence.

Field notes and stream surveys documented *O. mykiss* presence in North Fork Cuneo Creek in 1974, 1980, and 1983 (DFG 1974e, DFG 1980g, DFG 1983c). A 1980 stream survey report described the creek as containing "plentiful" spawning and rearing habitat (DFG 1980g).

Staff from DFG conducted a stream inventory of North Fork Cuneo Creek in 1991. Juvenile and YOY *O. mykiss* were collected at one sampling site and observed at other locations during the survey (CCC 2002a). The inventory report recommended increasing canopy and treating sources of fine sediment.

Forest Service staff conducted electrofishing surveys in the Bull Creek drainage in 2001. Juvenile and YOY *O. mykiss* were sampled in North Fork Cuneo Creek during these surveys (USFS 2001).

#### South Fork Cuneo Creek

South Fork Cuneo Creek is tributary to Cuneo Creek and consists of about 1.4 stream miles. It flows northeasterly, entering Cuneo Creek about 0.9 miles upstream from the Bull Creek confluence.

Fish were not observed during a 1974 survey that included South Fork Cuneo Creek. The report stated that this creek "...has little to no suitable habitat present due to continuous cascades" (DFG 1974e).

South Fork Cuneo Creek was surveyed in 1980 and no fish were observed. The survey report noted that the stream's banks were steep and unstable and that some rearing habitat was available, although spawning habitat was "very scarce." Rehabilitation was not recommended for this stream due to the "intensive effort and time required" (DFG 1980g).

Staff from DFG conducted a stream inventory of South Fork Cuneo Creek in 1991. About 0.2 stream miles were surveyed, one site was electrofished, and no fish were observed (CCC 1991i).

Staff from USFS conducted electrofishing surveys in the Bull Creek drainage in 2001. South Fork Cuneo Creek was sampled and one juvenile *O. mykiss* was sampled during these surveys (USFS 2001).

#### **Burns Creek**

Burns Creek is tributary to Bull Creek and consists of about 1.7 stream miles. It flows northeasterly, entering Bull Creek about 8.4 miles upstream from the South Fork Eel River confluence.

A stream survey of Burns Creek was conducted in 1980. Salmonid observations are not noted in the report, which states, "Areas suitable for anadromous fish spawning were very limited" (DFG 1980h).

Sampling was conducted in Burns Creek in 1990 as part of a fish population study of the Bull Creek drainage. During this study "rainbow trout" were collected in Burns Creek (Brown 1991a).

Staff from DFG conducted a stream inventory of Burns Creek in 1998. Juvenile salmonids, including YOY *O. mykiss* were observed during the survey. The report recommended increasing riparian vegetation and addressing sources of stream bank erosion in the creek (DFG 1998a).

## Slide Creek

Slide Creek is tributary to Bull Creek and consists of about 1.5 stream miles. It flows northeasterly, entering Bull Creek about 9.4 miles upstream from the South Fork Eel River confluence.

A survey of Slide Creek was conducted in 1980. The report does not describe any salmonid observations, however it notes that the "...usable stretch of stream is already being used by anadromous fish." Rearing habitat was called "plentiful" and spawning habitat was said to be available in the lower section of the creek (DFG 1980i).

Staff from DFG conducted a stream inventory of Slide Creek in 1992. Young-of-year *O. mykiss* were observed at two sampling sites within the creek. The report recommends addressing sources of stream bank erosion in the creek (CCC 1992a).

# Bull Creek tributary 1 (Brians Creek)

An unnamed tributary to Bull Creek, also known as Brians Creek, consists of about 0.9 stream miles. It flows northeasterly, entering Bull Creek about 9.7 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted a stream survey of this unnamed tributary in 1980. One six inch "resident salmonid" was observed in the lower 0.25 miles of the stream during this survey. The report notes that the stream has, "Relatively low spawning and rearing habitat for anadromous fishes" and states that it should be managed for resident trout (DFG 1980j).

Datasheets indicate that staff from DFG conducted biological sampling in Brians Creek in 1992. These datasheets report a total of five YOY and juvenile *O. mykiss* were collected in Brians Creek in July 1992 (DFG 1992b).

# **Bull Creek tributary 2**

An unnamed tributary to Bull Creek consists of about 1.8 stream miles draining a basin of about 0.6 square miles (CCC 1992b). The creek flows west, entering Bull Creek immediately upstream from the Brians Creek confluence. The watershed is owned by the State of California and managed by Humboldt Redwoods State Park.

This Bull Creek tributary was inventoried in summer 1992. The inventory report noted few pools that offered high quality habitat, and recommended controlling sediment input into the creek. Canopy cover also was found to be below desirable levels, and re-vegetation was recommended. Young-of-year *O. mykiss* were observed in several locations upstream to about stream mile 1.2 (CCC 1992b).

### Panther Creek

Panther Creek is tributary to Bull Creek and consists of about 1.7 stream miles. It flows northeasterly, entering Bull Creek about 11.2 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Panther Creek in 1980 and noted that salmonid fry were "plentiful" in the lower section of the stream. Spawning and rearing habitat for salmonids also were deemed plentiful during the survey. Planting of riparian vegetation was recommended in order to lower stream temperatures (DFG 1980k).

Staff from DFG conducted a stream inventory of Panther Creek in 1992. Juvenile and YOY steelhead were sampled during electrofishing near the mouth of the creek and YOY were also observed further upstream (CCC 1991j). The inventory report recommended controlling sediment input into the creek.

# Panther Creek tributary 1 (West Fork Panther Creek)

An unnamed tributary to Panther Creek consists of about 1.7 stream miles. It flows northeasterly, entering Panther Creek about 0.2 miles upstream from the Bull Creek confluence.

Staff from DFG conducted a stream inventory of West Fork Panther Creek in 1991. Three sites were electrofished and YOY and juvenile steelhead were sampled at two sites, both located within 0.2 miles of the creek mouth. Stream bank erosion at multiple locations was noted to contribute sediment to the creek (CCC 1991k).

# Panther Creek tributary 2 (South Fork Panther Creek)

An unnamed tributary to Panther Creek consists of about one stream mile. It flows north, entering Panther Creek about 0.7 miles upstream from the Bull Creek confluence.

Staff from DFG conducted a stream inventory of South Fork Panther Creek in 1991. Surveyors observed YOY salmonids at several locations in the stream (CCC 1991l). The report noted that "good" water temperatures, flow regimes, and rearing habitat were present but fish passage was limited by the creek's high gradient. Treatment of fine sediment sources was recommended.

### Preacher Gulch Creek

Preacher Gulch Creek is tributary to Bull Creek and consists of about 1.7 stream miles. It flows southwesterly, entering Bull Creek about 11.3 miles upstream from the South Fork Eel River confluence.

A 1980 field note reports observations of Preacher Gulch made by DFG staff that year. Observations indicated that the creek was "of little use to anadromous fish" due to poor bottom composition, poor shade canopy, and lack of pools or spawning areas (DFG 1980l).

Staff from DFG conducted a stream inventory of Preacher Gulch in 1992. Young-of-year salmonids were observed in the creek during this survey. The report recommended addressing sources of stream bank erosion (CCC 1993a).

### Decker Creek

Decker Creek is tributary to the South Fork Eel River and consists of about two stream miles. It flows northeasterly, entering the South Fork at about stream mile 2.4.

Staff from DFG conducted a stream inventory of Decker Creek in 1992. Juvenile and YOY *O. mykiss* were sampled at three sites in the stream. The report notes that fish passage is a problem in this creek due to its high gradient (CCC 1992c).

Staff from USFS conducted electrofishing surveys in the Bull Creek drainage in 2001. Decker Creek was sampled and juvenile and YOY *O. mykiss* were collected during these surveys (USFS 2001).

### Corner Creek

Corner Creek is tributary to the South Fork Eel River and consists of about 1.3 stream miles. It flows northeasterly, entering the South Fork at about stream mile three, just north of the town of Weott.

A 1983 DFG status report of California Wild and Scenic Rivers lists the number of stream miles accessible to anadromous species in tributaries of the Eel River. In this report the Corner Creek is listed as containing 0.5 miles of stream accessible to steelhead (DFG 1983a). The report notes that this number represents the stream miles "open to fish passage" and "is not a measure of habitat availability or habitat quality" (DFG 1983a, p. H-45). The distribution estimates were made by examining DFG fisheries files and USGS maps.

# Canoe Creek

Canoe Creek is tributary to the South Fork Eel River and consists of about 4.3 stream miles. It flows northeasterly, entering the South Fork at about stream mile 6.6.

In 1938 staff from DFG surveyed Canoe Creek and observed "abundant" YOY steelhead. Spawning areas were described as "good" and "excellent" pools and shelter were observed (DFG 1938g). Staff from DFG rescued *O. mykiss* from Canoe Creek in 1940 (DFG 1941a).

Canoe Creek was surveyed in 1977 and 1980. Juvenile salmonids were observed both years, and YOY *O. mykiss* were also observed in 1977. Good spawning and rearing areas were also observed and the 1980 survey describes Canoe Creek as "an excellent salmonid producer" (DFG 1980m, Garaas 1977).

Staff from DFG conducted a stream inventory of Canoe Creek in 1992. Young-of-year salmonids and some four-inch fish were observed at several locations in the creek (CCC 1992d). Canopy cover was found to be below desirable levels and the inventory report recommended re-vegetation as well as treatment of sediment sources.

A site in Canoe Creek was used in a 1995 study of sculpin ecology in the Eel River watershed. The paper describes the creek as "a relatively pristine tributary" that flows through redwood forest and is surrounded by California State Parks land (Brown 1995).

Staff from NMFS conducted sampling in several Eel River tributaries as part of a salmonid habitat restoration evaluation and monitoring project. Reports of this sampling indicate that steelhead were observed in Canoe Creek in 1998 and 1999 (DFG 1999a, DFG 2000a).

### Coon Creek

Coon Creek is tributary to the South Fork Eel River and consists of about 1.7 stream miles. It flows northeasterly, entering the South Fork at about stream mile 8.2.

Staff from DFG conducted a stream inventory of Coon Creek in 1993. Young-of-year *O. mykiss* were observed about 0.2 miles upstream of the mouth of the creek. The stream is described as containing "good conditions for rearing fish." Canopy cover was found to be below desirable levels and the report recommended re-vegetation, along with treating sources of fine sediment. A point about 0.7 miles upstream from the mouth was identified as the upstream limit to anadromy due to an increase in gradient (CCC 1993b).

## **Bridge Creek**

Bridge Creek is tributary to the South Fork Eel River and consists of about 1.4 stream miles. It flows south, entering the South Fork at about stream mile 12.4.

In 1938 staff from DFG surveyed Bridge Creek and noted that steelhead ranging from 1.5 to 2.5 inches in length were "abundant." The creek was said to contain "excellent" spawning gravels and "good" pools and shelter (DFG 1938h). Staff from DFG rescued *O. mykiss* from Bridge Creek in 1939 (DFG 1940a).

A 1963 DFG memo states, "Shelter, gravel and nursery area seem to be adequate in [Bridge Creek]. The lower and upper portions of the drainage have been logged in past years, but the lower portion of the stream passes through a virgin stand of redwoods" (DFG 1963).

Staff from DFG conducted stream inventories of Bridge Creek in 1992 and 1993. Juvenile and YOY *O. mykiss* were observed during both surveys (CCC 1992e, CCC 1993c). During the 1993 survey, a point about one mile upstream from the mouth was identified as the limit to anadromy due to an increase in gradient.

## Elk Creek

Elk Creek is tributary to the South Fork Eel River and consists of about 4.4 stream miles. It flows west, entering the South Fork at about stream mile 12.7.

In 1938 staff from DFG surveyed Elk Creek and observed steelhead ranging from 1.5 to 3.0 inches in length. The survey report notes "good" pools and shelter, "abundant" fish foods, and "good" spawning areas in the creek (DFG 1938i). Staff from DFG rescued *O. mykiss* from Elk Creek in 1939 (DFG 1940a).

Salmonids were observed in Elk Creek in 1962 during a DFG survey. Fish were said to be limited to the lower section of the creek due to barriers created by logging debris (Anonymous 1962a). A 1963 memo called Elk Creek "...a small tributary to the South Fork of the Eel River" with "...a history of heavy use...by salmon and steelhead trout..." (DFG 1963).

During a 1977 survey of Elk Creek, YOY steelhead were observed downstream of a log jam barrier and "resident rainbow trout" were observed upstream. The survey report noted "good to excellent" spawning and nursery areas in Elk Creek, with particularly good habitat in the central and upper portions (DFG 1977a).

Staff from DFG conducted a stream inventory of Elk Creek in 1992. Juvenile and YOY *O. mykiss* were observed at several locations (CCC 1992f). The report noted that spawning gravels were limited to few areas in the creek and recommended treating sources of fine sediment.

## **Dry Creek**

Dry Creek is tributary to the South Fork Eel River and consists of about 1.2 stream miles. It flows west, entering the South Fork at about stream mile 15.5.

Staff from DFG rescued O. mykiss from Dry Creek in 1952 (DFG 1953).

### Salmon Creek

Salmon Creek is tributary to the South Fork Eel River and consists of about 12.6 stream miles. It flows east, entering the South Fork at about stream mile 17. A waterfall on Salmon Creek, located at about stream mile 7.1, is a complete barrier to anadromous fish (DFG 1952a).

Surveys conducted in the 1930s note the presence of steelhead and rainbow trout in Salmon Creek (DFG 1938j, DFG ca. 1934c). According to one report steelhead have been stocked in the creek with "fair success" and natural propagation "should be considerable" (DFG ca. 1934c).

Field notes from 1952 describe Salmon Creek upstream of the falls. They state that "ample water" and "good spawning gravel" exist in this section of the creek, but "The stream is totally barren of fish life above the falls" (DFG 1952a).

Field notes document the presence of steelhead and "salmonids" in Salmon Creek in the late 1960s and early 70s (DFG 1969a, Hurt 1968, Miller 1971). In 1969 a total of 28 steelhead, ranging from 0.9 to 5.8 inches in length, were collected by electrofishing.

Salmon Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study, a few fingerling and yearling salmonids were observed (Kubicek 1977).

Stocking records indicate that steelhead were planted in Salmon Creek in 1983 (DFG 1983d). Staff from the Eel River Salmon Restoration Project operated a downstream migrant trap in Salmon Creek during the spring of 1986 and 1988. Steelhead YOY and age 1+ fish were collected during both years (ERSRP 1986, PCFFA 1988).

Staff from DFG conducted a stream inventory of Salmon Creek in 1992. The creek was surveyed from the mouth to the South Fork Salmon Creek confluence. Juvenile and YOY *O. mykiss* were observed in this section (CCC 1992g). The inventory report recommended increasing canopy and treating fine sediment sources.

## Mill Creek

Mill Creek is tributary to Salmon Creek and consists of about 1.6 stream miles. It flows south, entering Salmon Creek at about stream mile 2.6.

Staff from DFG surveyed Mill Creek in 1938 and observed "young steelhead" near the mouth. The stream was said to be "too small" for stocking and a diversion dam was noted about 0.25 miles upstream from the mouth (DFG 1938k).

### South Fork Salmon Creek

South Fork Salmon Creek is tributary to Salmon Creek and consists of about 5.8 stream miles. It flows north, entering Salmon Creek at about stream mile 5.3.

A creek referred to as "East Fork Salmon Creek" was examined in 1955 to determine the effects of logging activities. The creek described is believed to be South Fork Salmon Creek. During the investigation, staff from DFG found that the creek had not been sufficiently cleaned-up after logging operations. While fish were observed in upstream and downstream locations, water quality conditions were said to prevent fish presence in the affected area (DFG 1955).

A 1971 field note documents sampling that was conducted in South Fork Salmon Creek. *Oncorhynchus mykiss* ranging from 1.8 to 5.8 inches in length were collected and unstable stream banks were observed (DFG 1971a).

Staff from DFG conducted a stream inventory of South Fork Salmon Creek in 1996. Young-of-year salmonids were observed at several locations during the survey (DFG 1996b). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy.

### **Hacker Creek**

Hacker Creek is tributary to South Fork Salmon Creek and consists of about 1.4 stream miles. It flows northeasterly, entering South Fork Salmon Creek at about stream mile 3.5.

Staff from DFG rescued O. mykiss from Hacker Creek in 1939 (DFG 1940a).

## **Butte Creek**

Butte Creek, also known as Bear Butte Creek, is tributary to the South Fork Eel River and consists of about 2.6 stream miles. It flows north, entering the South Fork at about stream mile 18.1.

Staff from DFG rescued *O. mykiss* from Butte Creek in 1939 (DFG 1940a). Field notes indicate that *O. mykiss* was consistently observed in Butte Creek during the 1960s (DFG 1960c, DFG 1969b, Wilkins 1968). A 1962 stream survey notes that only the lower one mile of stream is accessible to anadromous fish (Gallagher 1962a).

Butte Creek was inspected in March 1974, during an evaluation of a proposed stream clearance operation. One adult steelhead and two redds were observed at that time (DFG 1974f).

In 1980, Butte Creek was surveyed by staff from DFG and "salmonids" were found in the stream. The survey report noted that, "Both spawning and rearing habitats were of excellent quality and were plentiful" (DFG 1980n).

Staff from DFG conducted a stream inventory of Butte Creek in 1993. Juvenile and YOY *O. mykiss* were collected at one of two sites electrofished during the survey. No fish were observed upstream of a 12 foot falls location about 1.7 miles upstream from the mouth (CCC 1993d). The inventory report recommended treating sources of fine sediment, including those related to the road system, and increasing canopy.

## Coon Creek

Coon Creek is tributary to the Butte Creek and consists of about 1.5 stream miles. It flows north, entering Butte Creek about 0.5 miles upstream from the South Fork Eel River confluence.

In 1962, Coon Creek was surveyed and salmonids were not observed. The survey report described spawning gravel and nursery potential as "fair." It also noted that the lower half of the creek basin had been logged in the past and the upper half was being logged at the time of the survey (Gallagher 1962b).

Coon Creek was surveyed again in 1980 by staff from DFG. According to the survey report, "Spawning and rearing habitats were plentiful and of excellent quality." Salmonid fry were observed in the creek (DFG 1980o).

### Fish Creek

Fish Creek is tributary to the South Fork Eel River and consists of about 2.8 stream miles. It flows southwesterly, entering the South Fork at about stream mile 19.5.

A 1938 DFG survey noted "young steelhead" in Fish Creek and deems there to be "Good [spawning] areas in main stream bed" (DFG ca. 1938). Staff from DFG rescued *O. mykiss* from Fish Creek in 1939 (DFG 1940a).

A 1969 field note reported the results of electrofishing conducted in Fish Creek. During this sampling, steelhead YOY were collected downstream of the Highway 254 culvert but not upstream, and the culvert was said to be a total passage barrier (DFG 1969c).

Staff from DFG surveyed Fish Creek in 1980. No observations of salmonids are noted in the report, which states, "...salmonid rearing habitat was not plentiful" (DFG 1980p).

Staff from DFG conducted stream inventories of Fish Creek in 1993 and 1999. Electrofishing was only conducted in 1993, when YOY and juvenile *O. mykiss*, as well as individuals to about 10 inches in length, were collected (CCC 1993e). Young-of-year salmonids were observed from the streambanks in 1999 (DFG 1999b). In these surveys the Avenue of the Giants culvert is described as a "possible" or "selective" barrier.

## South Fork Eel River tributary 1 (Lloyd Creek)

An unnamed tributary to the South Fork Eel River consists of about 1.5 stream miles. It flows west, entering the South Fork at about stream miles 20.2. On the Belcher Atlas of Humboldt County, compiled in 1922, this creek is labeled as Lloyd Creek (Beltcher Abstract and Title Company Unknown).

Staff from DFG surveyed this tributary in 1938 and observed YOY steelhead. Pools and shelter in the creek were described as "fair" and it was noted to become dry in an area located about 60 yards upstream from the highway crossing (DFG 1938l).

### **Anderson Creek**

Anderson Creek is tributary to the South Fork Eel River and consists of about 1.1 stream miles. It flows southwesterly, entering the South Fork at about stream mile 22.

Staff from DFG surveyed Anderson Creek in 2000 and did not observe salmonids. A portion of the stream was dry and an accumulation of debris at the Avenue of the Giants culvert was thought to create a barrier to migrating salmonids (DFG 2000b).

A 2002 field note, written by staff from the Pacific States Marine Fisheries Commission, describes the Avenue of the Giants culvert near the mouth of Anderson Creek and states that it is expected to be a total passage barrier except during flood events. In the surveyor's opinion, "...Anderson Creek is not an anadromous creek" (Pecharich 2002).

# Ohman Creek

Ohman Creek is tributary to the South Fork Eel River and consists of about 2.6 stream miles. It flows west, entering the South Fork at about stream mile 23.

Staff from DFG surveyed Ohman Creek in 1938 and observed "abundant" young steelhead between 1.5 and 2.5 inches in length. An impassable falls was noted about 200 yards upstream from the mouth of the creek, above which trout were "planted" and had become residualized (DFG 1938m). Staff from DFG rescued *O. mykiss* from Ohman Creek in 1940 (DFG 1941a).

Fish sampling was performed throughout the Eel River watershed in 1989 and 1990 as part of a four-year study conducted by researchers at UC Davis. During this sampling, *O. mykiss* were observed in Ohman Creek (Brown 1991b).

Staff from DFG conducted a stream inventory of Ohman Creek in 1992. Biological sampling was not conducted during the survey and no salmonid observations are included in the report. The report notes that a 15 foot waterfall, located about 0.3 miles upstream from the mouth of the creek, is a barrier to anadromous fish (CCC 1992h). The inventory report noted that canopy cover was below desirable levels, and re-vegetation was recommended.

### Hooker Creek

Hooker Creek is tributary to the South Fork Eel River and consists of about 1.2 stream miles. It flows east, entering the South Fork at about stream mile 24.4.

A 1983 DFG status report of California Wild and Scenic Rivers lists the number of stream miles accessible to anadromous species in tributaries of the Eel River. In this report the Hooker Creek is listed as containing 0.5 miles of stream accessible to steelhead (DFG 1983a). The report notes that this number represents the stream miles "open to fish passage" and "is not a measure of habitat availability or habitat quality" (DFG 1983a, p. H-45). The distribution estimates were made by examining DFG fisheries files and USGS maps.

## Dean Creek

Dean Creek is tributary to the South Fork Eel River and consists of about 7.1 stream miles. It flows west, entering the South Fork at about stream mile 27.6.

During a 1938 survey of Dean Creek, staff from DFG observed "many" YOY *O. mykiss*. The survey report notes "extensive" natural propagation, "good" pools and shelter, and "excellent" spawning areas in the creek (DFG 1938n).

Dean Creek was surveyed in 1962 and "hundreds" of steelhead ranging from one to eight inches were observed. The stream was noted to have "excellent" spawning areas, but very little shelter and few nursery areas (DFG 1962a). A 1963 DFG memo states, "Excellent and abundant spawning area exists along [Dean Creek], but streamside cover is scarce due to logging operations…" (DFG 1963).

A 1980 stream survey report described Dean Creek as "...a good producer of anadromous fish." Salmonid fry were observed and spawning areas were found throughout the creek during the survey (DFG 1980q).

Staff from DFG conducted a stream inventory of Dean Creek in 1992. During electrofishing, steelhead ranging from about 1.8 to 9.4 inches FL were sampled at a site located about 4.6 miles upstream from the mouth of the creek (CCC 1992i). The

inventory report noted that canopy cover was below desirable levels and recommended re-vegetation, along with treating fine sediment sources.

# South Fork Eel River tributary 2 (Wood Creek)

An unnamed tributary to the South Fork Eel River, known as Wood Creek, consists of about 1.9 stream miles. It flows southeasterly, entering the South Fork at about stream mile 27.8.

Staff from DFG conducted a stream inventory of Wood Creek in 2002. Seventeen sites in Wood Creek were electrofished during the survey and YOY *O. mykiss* were collected at nine sites. A total of three age 2+ *O. mykiss* were collected (DFG 2002a). The inventory report recommended treating sources of fine sediment.

## Leggett Creek

Leggett Creek is tributary to the South Fork Eel River and consists of about 3.5 stream miles. It flows south, entering the South Fork at about stream mile 28.8.

A 1938 DFG survey of Leggett Creek noted "common" *O. mykiss* between 1.5 and three inches in length. There was said to be "very extensive" natural propagation and "excellent" spawning areas (DFG 1938o).

A local landowner documented two decades of unsuccessful efforts to clear logs from Leggett Creek that were deposited through logging operations and through flooding. In 1975, the stream "had not seen a fish in years" due to debris jams preventing access, according to the account (Vleck 1988).

Staff from DFG conducted stream inventories of Leggett Creek in 1992 and 1995. Both reports note that 5,188 steelhead yearlings were planted in Leggett Creek in 1990 (CCC 1992j, CCC 1995a). Juvenile *O. mykiss* were sampled by electrofishing during the 1992 survey. Electrofishing was not conducted in 1995, but the stream inventory report noted observations of *O. mykiss in* that year. Both inventory reports recommended treating sources of fine sediment in the creek.

## Redwood Creek (Pollock Creek)

Redwood Creek is tributary to the South Fork Eel River and consists of about 9.2 stream miles. It flows northeasterly, entering the South Fork at about stream mile 30 near the town of Redway. The section of Redwood Creek upstream from its confluence with China Creek is referred to as Pollock Creek in some documents.

A 1938 DFG Redwood Creek survey noted "common" to "abundant" steelhead between 1.5 and four inches in length. The survey report noted "extensive" natural propagation of the fish, "excellent" spawning areas, and "good" pools and shelter in the creek (DFG 1940b). Fish rescue work was conducted on multiple Eel River tributaries in 1939. A total of 510 steelhead were rescued from Redwood Creek that year (DFG 1940a).

"Abundant salmonids" were observed during an undated survey of Redwood Creek, which was likely conducted around 1962. The survey report states, "This stream should contribute significantly to the Eel River fishery" (Anonymous ca. 1962).

Redwood Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study, fingerling and yearling salmonids up to 6 inches in length were found to be abundant (Kubicek 1977).

Redwood Creek was surveyed in 1984 from the mouth to eight miles upstream and salmonids, including *O. mykiss*, were abundant throughout that section. "Good" spawning gravels were observed in some sections and bank stabilization was recommended for the lower section (DFG 1984a).

Staff from DFG conducted stream inventories of Redwood Creek in 1993 and 1998. A total of five sites were electrofished in 1993, including three sites in the "Pollock Creek" section, and YOY and juvenile *O. mykiss* were collected (CCC 1993f, CCC 1993g). Sampling was not conducted in 1998, but salmonids were observed during the survey (DFG 1998b). Inventory reports recommended treating sources of fine sediment and increasing canopy cover. Sampling was conducted in upper Redwood Creek in 1998, 1999, and 2000 as part of the North Coast California Anadromous Salmonid Project. Juvenile and YOY *O. mykiss* were collected by electrofishing in Redwood Creek during all three sampling years (DFG 1998c, DFG 2000c, DFG 2001a).

# Seely Creek

Seely Creek is tributary to Redwood Creek and consists of about 1.6 stream miles. It flows south, entering Redwood Creek about 2.1 miles upstream from the South Fork Eel River.

Seely Creek was surveyed in 1961 and salmonid fry were observed throughout the creek at that time. The report notes the presence of spawning gravel and good shelter in the stream. According to local workers encountered during the survey, the stream has been "extensively used by salmon and steelhead" (Reno 1961).

### Somerville Creek

Somerville Creek is tributary to Redwood Creek and consists of about 1.8 stream miles. It flows north, entering Redwood Creek about 4.5 miles upstream from the South Fork Eel River.

Staff from DFG surveyed Somerville Creek in 1938. The report states, "Steelhead fish of season common" (DFG 1938p).

Staff from DFG conducted a stream inventory of Somerville Creek in 1993. According to the report, staff from the Eel River Salmon Restoration Project observed steelhead spawners in the creek in December 1987 and January 1988. Juvenile and YOY *O. mykiss* were sampled during electrofishing in 1993 (CCC 1993h). The inventory report recommended increasing canopy cover, treating sources of fine sediment, and excluding cattle from the creek to avoid trampling and effects from defectation.

## Miller Creek

Miller Creek is tributary to Redwood Creek and consists of about three stream miles. It flows south, entering Redwood Creek about 5.2 miles upstream from the South Fork Eel River.

Miller Creek was surveyed in 1961 and "abundant salmonid fry" were observed. This survey report noted that spawning gravel in the stream appeared "good," and cover and shelter were "abundant" (Anonymous 1961).

Staff from DFG surveyed Miller Creek in 1982. The presence of "adequate" spawning gravel and rearing habitat was noted in the creek. One salmonid fry was observed, along with the remains of an adult salmonid and the head of an adult coho salmon (DFG 1982d).

Staff from DFG conducted a stream inventory of Miller Creek in 1993. *Oncorhynchus mykiss* YOY were observed throughout the creek and collected at two electrofishing sites (DFG 1993a). The inventory report recommended treating sediment sources related to the road system.

### China Creek

China Creek is tributary to Redwood Creek and consists of about 2.4 stream miles. It flows east, entering Redwood Creek about six miles upstream from the South Fork Eel River.

China Creek was surveyed in 1962 and numerous salmonid fry were observed, in addition to fish up to eight inches in length. According the report, "China Creek should contribute significantly to the Redwood Creek fishery" (Anonymous 1962b). A 1963 DFG memo states, "Suitable spawning gravel is abundant throughout the portion of the stream surveyed" and notes impacts from past logging operations (DFG 1963).

Sampling was conducted in China Creek during a 1993 salmonid population assessment of the Redwood Creek drainage. A total of seven juvenile steelhead were collected in the creek (DFG 1993b).

Staff from DFG conducted stream inventories of China Creek in 1993 and 1998. Biological sampling was not conducted during either survey. However, streamside observations "indicated the presence of...steelhead" during the 1993 inventory and "juvenile salmonids" were observed throughout the creek in 1998 (CCC 1993i, DFG 1998d). The 1998 inventory report notes that water temperature may limit the fishery and recommends increasing canopy, along with treating sources of fine sediment.

## China Creek tributary (Twin Creek)

An unnamed tributary to China Creek, known as Twin Creek, consists of about one stream mile (CCC 1993j). It flows south, entering China Creek about 1.2 miles upstream from the Redwood Creek confluence.

Staff from DFG conducted a stream inventory of Twin Creek in 1993. Four YOY *O. mykiss* were collected at the single sampling site, located about 0.2 miles upstream from the mouth of the creek (CCC 1993j). The inventory report recommended treating sources of fine sediment in the creek, including those related to the road system.

# **Dinner Creek**

Dinner Creek is tributary to China Creek and consists of about 1.1 stream miles. It flows north, entering China Creek about 1.3 miles upstream from the Redwood Creek confluence.

In 1985, eight steelhead redds and one live fish were observed in Dinner Creek by DFG staff. These observations took place within a 0.25 mile section of the creek, downstream from the county road crossing (McLeod 1985).

Staff from DFG conducted a stream inventory of Dinner Creek in 1993. Juvenile and YOY *O. mykiss* were sampled at two electrofishing sites, both within 0.4 miles of the mouth of the creek (CCC 1993k). The inventory report recommended treating sources of fine sediment. A 1995 field note documents an inspection of Dinner Creek by DFG staff. No fish were observed during the survey although one redd of undetermined origin was seen (Jahn 1995).

## South Fork Eel River tributary 3

This creek consists of about 1.5 stream miles flowing west to enter the South Fork Eel River about one mile north of the town of Garberville.

A 1938 stream survey called pools and shelter "excellent" in the unnamed tributary. Steelhead YOY and one individual five inches in length were noted (DFG 1938l).

# Bear Canyon Creek

Bear Canyon Creek is tributary to the South Fork Eel River and consists of about two stream miles. It flows west, entering the South Fork at about stream mile 33.3, just north of the town of Garberville.

Staff from DFG conducted stream inventories of Bear Canyon Creek in 1992 and 1999. Electrofishing was conducted in 1992 and YOY and juvenile *O. mykiss* were collected. Juvenile salmonids were observed by streambank observation in 1999 (CCC 1992k, DFG 1996c).

# South Fork Bear Canyon Creek

South Fork Bear Canyon Creek is tributary to Bear Canyon Creek and consists of about 1.3 stream miles. It flows north, entering Bear Canyon about 0.7 miles upstream from the South Fork Eel River.

Staff from DFG conducted stream inventories of South Fork Bear Canyon in 1992 and 1999. Young-of-year, age 1+, and age 2+ salmonids were observed during the 1992 survey. Surveyors observed juvenile salmonids during the 1999 survey. The species of salmonid was not identified during either survey (CCC 1992k, DFG 1999c).

# Connick Creek

Connick Creek is tributary to the South Fork Eel River and consists of about 2.2 stream miles. It flows east, entering the South Fork at about stream mile 34.3.

Connick Creek was surveyed in 1980 and 1981 by staff from DFG. Both survey reports noted the presence of high quality habitat for the spawning and rearing of anadromous fish and stated that the creek should receive high priority for rehabilitation work (DFG 1980r, DFG 1981a).

Staff from DFG conducted a stream inventory of Connick Creek in 1993. Juvenile and YOY *O. mykiss* were sampled during the survey (CCC 1993l). The inventory report recommended treating sources of fine sediment and increasing canopy cover.

## Sproul Creek (Sprowl, Sprowel)

Sproul Creek is tributary to the South Fork Eel River and consists of about 7.8 stream miles. It flows north, entering the South Fork about 2.3 miles downstream from Benbow Dam.

A 1938 DFG survey of Sproul Creek states, "Loney Ellis of Garberville says that Sprowl Cr. was a good fishing creek several years ago, but has played out in past few years" (DFG 1940c). Steelhead YOY were observed in the lower 200 yards of the creek.

Field notes describe the conditions in Sproul Creek in 1952, noting that the creek was "literally choked with log jams, caused by logging operations." Steelhead were present in the creek at the time (DFG 1952a).

A 1967 survey report states, "...in [Sproul Creek's] upper regions are large areas of silt and mud overlying the gravel bottom due mainly to logging operation in the area which have permitted erosion of the hillsides" (Anonymous 1967). The report also noted problem with road crossings and logs jams associated with logging. According to the survey, "Numerous salmonids ranging from an inch to six inches were observed on both forks of the stream from the mouth to the upper regions."

Sproul Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study Sproul Creek was noted to be "well shaded with redwoods and streamside vegetation" and "several fingerling salmonids" were observed (Kubicek 1977).

Staff from DFG inspected Sproul Creek in 1986 in order to assess storm damage and document steelhead spawning activity. Steelhead redds were observed both upstream and downstream of the West Fork Sproul Creek confluence during the survey. Eight steelhead adults and numerous YOY were also observed (DFG 1986a).

A study of the spawning and rearing conditions in Sproul Creek was conducted by DFG biologists in 1990. The study concluded that Sproul Creek was "severely degraded by sedimentation" and noted that timber harvest and road building were likely to be the main human activities causing this problem (DFG 1990a).

A downstream migrant trapping program was conducted in Sproul Creek in 2000 by the Eel River Salmon Restoration Project. Numerous juvenile and YOY steelhead were sampled in Sproul Creek, just upstream of the West Fork Sproul Creek confluence, over 110 days of trapping. The report describes Sproul Creek as "...an excellent producer of...steelhead, arguably one of the best tributaries in the South Fork Eel River Basin" (Vaughn 2000, p. 5).

Staff from DFG conducted a stream inventory of Sproul Creek in 2004. Nine sites were electofished, ranging from 0.5 to 6.1 miles upstream from the mouth. Juveniles and YOY *O. mykiss* were noted at all sites (CCC 2004a). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy, along with treating sources of fine sediment.

Staff from the Eel River Salmon Restoration Project conducted trapping in the South Fork of Sproul Creek for 21 days in April of 2007 and captured a total of 21 YOY and 317 age 1+ steelhead (Vaughn pers. comm).

# Little Sproul Creek

Little Sproul Creek is tributary to Sproul Creek and consists of about 1.8 stream miles. It flows southeasterly, entering Sproul Creek about 0.5 miles upstream from the South Fork Eel River confluence.

Little Sproul Creek was surveyed in 1938. The report states, "...near mouth: steelhead fish of season common" (DFG 1940d).

A 1961 DRG survey of Little Sproul Creek states, "There are approximately 1,200 lineal yards of riffle area available to anadromous fish. The gravel appears to be very good for spawning purposes. Nursery potential seems to be good" (DFG 1961a). The report recommended removing log jams and accumulated debris.

A 1989 field note documents sampling conducted in Little Sproul Creek that year by DFG staff. A total of 126 YOY and juvenile *O. mykiss* were collected (DFG 1989a).

Staff from DFG conducted stream inventories of Little Sproul Creek in 1995 and 2004. Steelhead fry and juveniles were observed during the 1995 survey (DFG 1996d). In 2004, YOY, age 1+, and age 2+ *O. mykiss* were sampled by electrofishing (CCC 2004b). An unnamed tributary to Little Sproul Creek, located near the headwaters, was also surveyed in 2004 and YOY and juvenile *O. mykiss* were found to be using the tributary (CCC 2004c).

## Warden Creek

Warden Creek is tributary to Sproul Creek and consists of about 1.8 stream miles. It flows southeasterly, entering Sproul Creek about 2.5 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted stream inventories of Warden Creek in 1992 and 2004. Juvenile and YOY *O. mykiss* were sampled in the creek in 1992 (CCC 1992l). *Oncorhynchus mykiss* identified as YOY, age 1+, and age 2+ were collected in 2004 (CCC 2004d). The 2004 report includes a recommendation to evaluate a culvert near the mouth of the creek for fish passage.

# West Fork Sproul Creek

West Fork Sproul Creek is tributary to Sproul Creek and consists of about 5.1 stream miles. It flows southeasterly, entering Sproul Creek about four miles upstream from the South Fork Eel River.

Staff from DFG inspected Sproul Creek in 1986 in order to assess storm damage and document steelhead spawning activity. Forty-two steelhead redds were observed during the survey (DFG 1986a). Numerous field notes report the results of salmonid population sampling conducted by DFG staff in West Fork Sproul Creek from 1985 through 1997. These notes indicate that steelhead were consistently sampled in the creek during that time period (DFG 1989b, DFG 1997b).

West Fork Sproul Creek was sampled in 1999 and 2000 as part of a study of coho salmon in the north coast area. Steelhead were collected in West Fork Sproul Creek during both sampling years (DFG 2000d, DFG 2001b).

Staff from DFG conducted a stream inventory of West Fork Sproul Creek in 2004. Young-of-year and age 1+ *O. mykiss* were sampled at numerous locations throughout the creek during this survey (CCC 2004e). The inventory report notes that water temperature may limit the fishery and recommends treating sources of fine sediment.

Staff from the Eel River Salmon Restoration Project conducted trapping in West Fork Sproul Creek for 21 days in April of 2007 and captured a total of 116 YOY and 142 age 1+ steelhead (Vaughn pers. comm).

# West Fork Sproul Creek tributary 1

An unnamed tributary to West Fork Sproul Creek consists of about 0.9 stream miles. It flows north, entering West Fork Sproul about 2.8 miles upstream from the Sproul Creek confluence.

Staff from DFG conducted a stream inventory of this tributary in 2004. Eleven sites were electrofished during the survey and YOY *O. mykiss* were collected at nine sites. Two age 1+ *O. mykiss* also were observed (CCC 2004f). The survey ended about 0.6 miles upstream from the mouth of the creek, where a log debris accumulation completely blocked the channel.

## West Fork Sproul Creek tributary 2 (East Branch West Fork Sproul Creek)

An unnamed tributary to West Fork Sproul Creek, sometimes referred to as East Branch West Fork Sproul Creek, consists of about one stream mile. It flows south, entering West Fork Sproul about 3.8 miles upstream from the Sproul Creek confluence.

Staff from DFG conducted a stream inventory of the East Branch West Fork Sproul Creek in 1992. Young-of-year *O. mykiss* were collected at two of the three sites electrofished during the survey, including at one site located almost one mile upstream from the mouth of the creek (CCC 1992m). The inventory report recommended treating sources of fine sediment.

Staff from DFG conducted a stream inventory of this tributary in 2004. Five sites were electrofished and YOY *O. mykiss* were collected at three (CCC 2004g).

## Sproul Creek tributary

An unnamed tributary to Sproul Creek consists of about 1.1 stream miles. It flows east, entering Sproul Creek about 5.4 miles upstream from the Sproul Creek confluence.

Staff from DFG conducted stream inventories of this unnamed tributary in 1992 and 2004. Juvenile and YOY *O. mykiss* were sampled by electrofishing in 1992 (CCC 1992n). One site, located near the mouth of the tributary, was sampled in 2004 and YOY *O. mykiss* were collected (CCC 2004h).

# Cox Creek

Cox Creek is tributary to Sproul Creek and consists of about two stream miles. It flows southwesterly, entering Sproul Creek about 5.8 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted stream inventories of Cox Creek in 1993 and 2004 (CCC 1993m, CCC 2004i). Juvenile and YOY O. mykiss were sampled by electrofishing in 1993. Two O. mykiss were collected in 2004 and additional unidentified salmonids were observed, including one five-inch long fish.

## Sawmill Creek

Sawmill Creek is tributary to the South Fork Eel River and consists of about 0.9 stream miles. It flows north, entering the South Fork about 1.7 miles downstream from Benbow Dam.

Sawmill Creek surveys in 1939 note the presence of "common" steelhead between 1.75 and two inches in length. Spawning areas were deemed to be "good" (DFG 1939a, DFG 1939b).

A 1983 DFG status report of California Wild and Scenic Rivers lists the number of stream miles accessible to anadromous species in tributaries of the Eel River. In this report Sawmill Creek is listed as containing one mile of stream accessible to steelhead (DFG 1983a). The report notes that this number represents the stream miles "open to fish passage" and "is not a measure of habitat availability or habitat quality" (DFG 1983a, p. H-45). The distribution estimates were made by examining DFG fisheries files and USGS maps.

## East Branch South Fork Eel River

The East Branch South Fork Eel River is tributary to the South Fork Eel River and consists of about 20 stream miles. It flows northwesterly, entering the South Fork via Benbow Lake at about stream mile 40. The river ends at the confluence of Elkhorn and Cruso Cabin creeks.

Stocking records indicate that the East Branch South Fork Eel River was regularly stocked with *O. mykiss* from 1931 to 1939 (DFG 1936, DFG 1939c). The East Branch South Fork Eel River is mentioned in a set of notes made in 1938 from talking to local residents and landowners. At the time, the foreman of a local ranch reported that "many steelhead... run up the East Branch" (Anonymous 1938).

A 1934 DFG survey report states, "East branch is one of the best trout streams in this section especially in early season it is fished heavy for about 7 miles upstream." It adds, "It is not uncommon to catch 10 to 12 inch trout in upper and middle reaches" (DFG 1934).

During a 1938 stream survey steelhead ranging from 1.5 to 5.0 inches in length were said to be "abundant" about three miles upstream from the mouth. The survey report notes "extensive" natural propagation, "good" pools and shelter, and "excellent" spawning areas in the creek (DFG 1938q).

The East Branch South Fork Eel River was sampled in 1966 as part of a study of the downstream migration of anadromous fish in the Eel River drainage. The sampling site was located three miles upstream from the mouth of the river and steelhead were regularly collected from June through August, 1966 (DFG 1976a).

The East Branch South Fork Eel River was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study "several fingerling salmonids" were observed in cool-water pockets in the creek (Kubicek 1977).

Staff from DFG conducted a stream inventory of the East Branch South Fork Eel River in 1993. Electrofishing revealed YOY and juvenile *O. mykiss* at four sites, including some fish up to about eight inches fork length (CCC 1993n). The inventory report

recommended increasing canopy, treating sources of fine sediment, and excluding cattle from the creek to avoid trampling and effects from defecation.

### **Buck Mountain Creek**

Buck Mountain Creek is tributary to the East Branch South Fork Eel River and consists of about 3.2 stream miles. It flows south, entering the East Branch South Fork at about stream mile 3.1.

Buck Mountain Creek was surveyed in 1961 and "many salmonid fry" were observed. Fish that were caught were identified as steelhead. The survey report describes "very good" spawning and nursery conditions but notes, "Erosion is becoming a serious problem" (Kruse 1961).

A 1966 survey of Buck Mountain Creek notes the presence of *O. mykiss* ranging from two to six inches in length. It also states that a logging road has caused damage to the creek bed and reduced the creek's carrying capacity (DFG 1966).

Staff from DFG surveyed Buck Mountain Creek in 1981. Juvenile salmonids were abundant during the survey and "high quality habitat" was noted. The report recommends log jam removal to improve habitat in the creek (DFG 1981b).

## **Squaw Creek**

Squaw Creek is tributary to the East Branch South Fork Eel River and consists of about 2.7 stream miles. It flows southwesterly, entering the East Branch South Fork at about stream mile 4.6.

Staff from DFG surveyed Squaw Creek in 1938. Steelhead are listed as a species present in the creek and spawning areas are described as "good" at a survey station at about stream mile 0.25 (DFG 1938r). Steelhead were said to congregate in pools upstream from the mouth, which was dry.

Steelhead fry were abundant in the lower portion of Squaw Creek during a 1962 survey. The report notes that spawning areas in the lower 1.5 miles of stream have been destroyed by a logging road (Gallagher ca. 1962).

Squaw Creek was surveyed again in 1981 by staff from DFG. While salmonid fry were abundant in one area, the report notes a lack of sufficient spawning or rearing habitat, and "poor condition of the drainage" (DFG 1981c).

## Horse Pasture Creek

Horse Pasture Creek is tributary to the East Branch South Fork Eel River and consists of about 1.4 stream miles. It flows north, entering the East Branch South Fork at about stream mile five.

Staff from DFG surveyed Horse Pasture Creek in 1962. The report notes "little spawning area available to anadromous fish." Numerous salmonids were observed, but the species was not identified. The survey report concludes, "Leave this stream as it is, as little can be done to improve its condition due to the large amount of boulders in the streambed and channel" (Gallagher 1962c).

### Rancheria Creek

Rancheria Creek is tributary to the East Branch South Fork Eel River and consists of about 1.9 stream miles. It flows southwesterly, entering the East Branch South Fork at about stream mile 5.7.

Staff from DFG surveyed Rancheria Creek in 1938 and noted "a good number of young steelhead" as well as "some trout" seven to eight inches in length. The report characterizes the pools, shelter, and spawning areas in the creek as "good" (DFG 1939d).

Rancheria Creek was surveyed again in 1962 and "An extremely large number" of salmonids ranging from one to eight inches in length were observed in the lower mile of the stream. One fish was collected and identified as a steelhead. While "good" spawning and nursery habitat was observed, the report notes that the number of fish was higher than would be expected given the size of the stream and its habitat (Kenney 1962).

## Rays Creek

Rays Creek is tributary to the East Branch South Fork Eel River and consists of about 3.3 stream miles. It flows southwesterly, entering the East Branch South Fork at about stream mile 6.9.

A 1939 DFG survey noted a local landowner's account of "a relatively small number" of trout in Rays Creek. Perennial flow also was ascribed to the creek and "good" spawning areas (DFG 1939e).

A 1983 DFG status report of California Wild and Scenic Rivers lists the number of stream miles accessible to anadromous species in tributaries of the Eel River. In this report Rays Creek is listed as containing 0.2 miles of stream accessible to steelhead (DFG 1983a). The report notes that this number represents the stream miles "open to fish passage" and "is not a measure of habitat availability or habitat quality" (DFG 1983a, p. H-45). The distribution estimates were made by examining DFG fisheries files and USGS maps.

# Tom Long Creek

Tom Long Creek is tributary to the East Branch South Fork Eel River and consists of about 6.8 stream miles. It flows west, entering the East Branch South Fork at about stream mile 8.9.

Tom Long Creek was inspected in 1956 and an earthen dam constructed at a mill on the creek was found to constitute a total barrier to migration. The surveyor noted that Tom Long Creek, "...would appear to be an excellent steelhead spawning stream" (DFG 1956).

Staff from the Bureau of Land Management (BLM) surveyed a section of Tom Long Creek in 1975. Rainbow trout were observed in the creek and it was noted to have sufficient spawning gravel to support fish populations (BLM 1975a).

Tom Long Creek was surveyed in 1981 by staff from DFG. Several salmonid fry were observed in the creek. The report concluded, "...Tom Long Creek be managed for resident trout only due to the lack of suitable spawning and rearing habitat for anadromous fish" (DFG 1981d).

Staff from DFG conducted a stream inventory of Tom Long Creek in 1993. Juvenile and YOY *O. mykiss* were sampled in the creek. One five-inch "steelhead" was observed about 2.9 miles upstream from the mouth (CCC 1993o). The inventory report recommended controlling sediment input into the creek. Canopy cover also was found to be below desirable levels, and revegetation was recommended.

## Cruso Cabin Creek

Cruso Cabin Creek is tributary to East Branch South Fork Eel River and consists of about 2.3 stream miles. It flows west, entering the East Branch South Fork at about stream mile 20.

During a 1993 stream inventory, staff from DFG surveyed the East Branch South Fork Eel River up to the confluence of Cruso Cabin and Elkhorn Creeks. The report notes that YOY salmonids were observed in Cruso Cabin Creek, but the location of this observation is unclear (CCC 1993n, p. 25).

## Elkhorn Creek

Elkhorn Creek is tributary to the East Branch South Fork Eel River and consists of about 2.2 stream miles. It flows north, entering the East Branch South Fork at about stream mile 20.

Staff from BLM surveyed a section of Elkhorn Creek in 1975. No fish were observed during the survey and the report noted that a large falls prevented anadromous access to the survey section. Low streamflow was said to limit available habitat for resident trout (BLM 1975b).

During a 1993 stream inventory, staff from DFG surveyed the East Branch South Fork Eel River up to the confluence of Cruso Cabin and Elkhorn Creeks. The report notes that YOY salmonids were observed in Elkhorn Creek, but the location of this observation is unclear (CCC 1993n, p. 25).

### Fish Creek

Fish Creek is tributary to the South Fork Eel River and consists of about 1.5 stream miles. It flows north, entering the South Fork at the upstream end of Benbow Lake, at about stream mile 41.4.

Staff from DFG surveyed Fish Creek in 1980. No salmonid observations are noted in the survey report, which describes numerous log and debris dams. The report states that Fish Creek "...should be managed for resident trout above obstruction #10" which is a boulder roughs area located about 0.9 miles upstream from the creek mouth (DFG 1980s).

Staff from DFG conducted a stream inventory of Fish Creek in 1994. During the survey *O. mykiss* YOY were sampled at an electrofishing site located about 956 feet upstream from the mouth of the creek. Young-of-year salmonids also were observed about one mile upstream and the report notes that landowners have reported spawning salmonids in the lower reaches of the creek (CCC 1994a). The inventory report recommended controlling sediment input into the creek. Canopy cover also was found to be below desirable levels, and re-vegetation was recommended.

# **Durphy Creek**

Durphy Creek is tributary to the South Fork Eel River and consists of about 2.4 stream miles. It flows east, entering the South Fork at about stream mile 46.6.

Staff from DFG surveyed Durphy Creek in 1938 and found YOY steelhead to be "abundant" in a "dead-end" pool located 150 feet upstream from the mouth of the creek. A warden from Richardson Grove State Park reported that "usually many" steelhead run up the lower two miles of the creek and the section downstream of Highway 101 sometimes dries up (DFG 1938s).

During a 1961 survey of Durphy Creek salmonids were observed from the mouth of the stream to a barrier located about 400 yards downstream of the first tributary. The creek was noted to have some "excellent" spawning area, but only "fair" nursery potential and a lack of shelter (Gallagher 1961c). A 1963 memo notes the need for "stream clearance work" due to logging operations in the watershed (DFG 1963).

Durphy Creek was surveyed in 1980 by staff from DFG. Unstable stream banks and numerous slides were observed in the stream and spawning habitat was noted to be limited. However, the survey report concluded that Durphy Creek "...would most likely make a good salmonid stream" if it could be rehabilitated (DFG 1980t).

Staff from DFG conducted a stream inventory of Durphy Creek in 1993. Steelhead fry were sampled during electrofishing in the creek (CCC 1993p). Canopy cover was found to be below desirable levels, and re-vegetation was recommended, along with treating sources of fine sediment.

# **Durphy Creek tributary**

An unnamed tributary to Durphy Creek consists of about 0.8 stream miles. It flows south, entering Durphy Creek about 1.2 miles upstream from the South Fork Eel River.

Staff from DFG conducted a stream inventory of this unnamed tributary to Durphy Creek in 1993. A 13 foot waterfall located about 0.4 miles upstream from the mouth of the creek was noted to comprise a total passage barrier. No fish were observed upstream of this barrier, but YOY *O. mykiss* were sampled further downstream (CCC 1993p). The inventory report recommended treating sources of fine sediment and increasing canopy cover.

### Hartsook Creek

Hartsook Creek is tributary to the South Fork Eel River and consists of about 1.5 stream miles. It flows east, entering the South Fork at about stream mile 47.5.

Staff from DFG conducted stream inventories of Hartsook Creek in 1994 and 1999. Electrofishing was conducted in 1994 and *O. mykiss* YOY and juveniles were collected at two sites. Recommendations made in the report include replacing the culvert under Highway 101 and treating sources of fine sediment (CCC 1994b). Young-of-year salmonids were observed from the streambanks during the 1999 inventory (DFG 1999d).

### Milk Ranch Creek

Milk Ranch Creek is tributary to the South Fork Eel River and consists of about 2.3 stream miles. It flows west, entering the South Fork at about stream mile 49.

Fish rescue work was conducted on multiple Eel River tributaries in 1940. A total of 100 steelhead were rescued from Milk Ranch Creek that year (DFG 1941a).

Staff from DFG conducted a stream inventory of Milk Ranch Creek in 1993. Juvenile and YOY *O. mykiss* were sampled by electrofishing. No fish were observed upstream of a seven foot plunge located about 0.8 miles upstream from the mouth of the creek and this was thought to be the upstream limit of anadromy (CCC 1993q). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy.

## Low Gap Creek

Low Gap Creek is tributary to the South Fork Eel River and consists of about 2.9 stream miles. It flows east, entering the South Fork at about stream mile 49.5.

Staff from DFG surveyed Low Gap Creek in 1938 and observed YOY *O. mykiss*. "Extensive" natural propagation and "good" spawning areas are noted in the report (DFG 1938t).

Low Gap Creek was surveyed in 1968 and YOY salmonids were observed. There was a lack of water in the creek during the survey, but the stream bed indicated "good potential for spawning" (DFG 1968a).

During a 1980 survey of Low Gap Creek staff from DFG observed one adult steelhead and additional juvenile salmonids. The creek was said to be "excellent for all life phases of salmonids" (DFG 1980u).

Staff from DFG conducted a stream inventory of Low Gap Creek in 1993. Juvenile and YOY *O. mykiss* were sampled. A 20 foot waterfall located about 1.9 miles upstream from the mouth was identified as a barrier to fish passage. The report notes that, "Spawning gravels on Low Gap Creek are limited to relatively few reaches." It recommended treating sources of fine sediment and increasing canopy cover (CCC 1993r

### **Indian Creek**

Indian Creek is tributary to the South Fork Eel River and consists of about 12.8 stream miles. It flows northeasterly, entering the South Fork at about stream mile 52.

Stocking records indicate that that *O. mykiss* were stocked in Indian Creek in the 1930s. Records report 10,000 steelhead planted in 1939 and 6,100 rainbow trout planted in 1933 (DFG 1933, DFG 1939f).

Indian Creek was surveyed in 1938 and steelhead YOY observed in the lower section. Natural propagation was said to be "very extensive" and spawning areas described as "excellent" (DFG 1938u).

Staff from DFG surveyed Indian Creek in 1968 and steelhead and rainbow trout were observed. "Good" spawning and nursery conditions were observed in the lower creek, but decreased in quality further upstream (DFG 1968b).

Several barriers in Indian Creek were inspected in 1986 and the creek was noted to contain "very good spawning and rearing habitat." Barrier removal was recommended to improve access to high quality habitat (CCC 1986).

Staff from DFG conducted a stream inventory of Indian Creek in 1993. Juvenile and YOY *O. mykiss* were collected at two electrofishing sites and observed at multiple locations up to about 11 miles upstream from the mouth. In the upper reaches, fish were noted to likely be resident due to their coloration (CCC 1993s). The inventory report noted spawning gravels were limited to few reaches, and recommended controlling sediment input into the creek. Canopy cover also was found to be below desirable levels, and re-vegetation was recommended.

# Jones Creek

Jones Creek is tributary to Indian Creek and consists of about 2.4 miles of intermittent stream. It flows south, entering Indian Creek about 2.2 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Jones Creek in 1968 and observed steelhead ranging from two to three inches in length. The creek was said to be "in good shape" with "good" nursery conditions and "good to excellent" spawning areas (Anonymous 1968).

Staff from DFG conducted a stream inventory of Jones Creek in 1993. Juvenile and YOY *O. mykiss* were sampled during electrofishing. The report states that spawning gravels are limited in the creek (CCC 1993t).

## Parker Creek

Parker Creek is tributary to Indian Creek and consists of about 1.7 miles of intermittent stream. It flows south, entering Indian Creek about 3.1 miles upstream from the South Fork Eel River confluence.

Parker Creek was inspected in conjunction with a 1968 survey of Moody Creek. Survey notes state that only 0.5 miles of Parker Creek is accessible to anadromous fish due to a 25 foot falls. Steelhead were observed downstream of these falls in 1968 (DFG 1968c).

# **Moody Creek**

Moody Creek is tributary to Indian Creek and consists of about one stream mile. It flows north, entering Indian Creek about 6.7 miles upstream from the South Fork Eel River confluence.

Moody Creek was surveyed in 1968 by staff from DFG. Steelhead two to four inches in length were present and "good" spawning conditions were observed in the lower mile of the creek. A large amount of logging debris was noted and the report states that the creek has "much potential but will require a great deal of work" (DFG 1968c).

During a 1979 survey of Moody Creek fingerling and mature steelhead, including a pair that may have been spawning, were observed in the stream. The survey report describes the creek as, "A fair spawning stream with severe erosion, sun cover and barrier problems, but with good potential" (Gienger 1979).

Moody Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1987 with steelhead collected downstream of a barrier and rainbow trout collected upstream (DFG 1988).

Staff from DFG conducted a stream inventory of Moody Creek in 1993. Juvenile and YOY *O. mykiss* were collected during electrofishing in the creek (CCC 1993u). The report recommended treating sources of fine sediment, including those related to the road system.

### Sebbas Creek

Sebbas Creek is tributary to Indian Creek and consists of about 3.1 stream miles. It flows south, entering Indian Creek about 7.3 miles upstream from the South Fork Eel River confluence.

Sebbas Creek was surveyed in 1979 and several salmonids including one 18-inch *O. mykiss* were observed. The report notes that "excellent spawning gravel and nursery potential" were present over the whole stream, but numerous log jams were limiting access by anadromous fish (Clark 1979b).

Staff from DFG conducted a stream inventory of Sebbas Creek in 1993. Juvenile and YOY *O. mykiss* were sampled by electrofishing at three sites (CCC 1993v). The inventory report recommended treating sources of fine sediment.

Sebbas Creek was inspected in 2002 in relation to a timber harvest plan in the area. A memo regarding this inspection states that yearling steelhead were observed just upstream of an unnamed tributary to Sebbas Creek, located about 1.5 miles upstream from the Indian Creek confluence. Yearling steelhead were also observed in a 300 foot reach of the unnamed tributary, downstream of a natural passage barrier (Moore 2002).

### Coulborn Creek

Coulborn Creek is tributary to Indian Creek and consists of about 0.8 stream miles. It flows south, entering Indian Creek about 8.1 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted a stream inventory of Coulborn Creek in 1993. Juvenile and YOY *O. mykiss* were collected at three electrofishing sites (CCC 1993w). The inventory report noted several log debris accumulations that created possible passage barriers and recommended treating sources of fine sediment, including those related to the road system.

# **Anderson Creek**

Anderson Creek is tributary to Indian Creek and consists of about 5.3 miles of intermittent stream. It flows west, entering Indian Creek about 9.5 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Anderson Creek in 1968 and observed steelhead from two to ten inches in length, with highest abundance in the lower two miles. Logging debris was impacting habitat in the creek and the report stated, "With the creek cleaned it could offer some very good spawning water for migratory fish" (DFG 1968d).

Steelhead fingerlings were observed during a 1979 survey of Anderson Creek. Access for anadromous fish was being limited by barriers caused by logging debris, but the stream was described as having "excellent potential" (DFG 1979).

Staff from DFG conducted a stream inventory of Anderson Creek in 1993. One site was electrofished, located about 4.6 miles upstream from the mouth, and steelhead ranging from about 2.5 to 8.0 inches in length were captured (CCC 1993x). The inventory report recommended treating sources of fine sediment.

# Piercy Creek

Piercy Creek is tributary to the South Fork Eel River and consists of about 1.6 stream miles. It flows east, entering the South Fork at about stream mile 52.2.

Piercy Creek was surveyed in 1938 and the lower 250 yards of the creek was found to be dry. Steelhead YOY were observed further upstream (DFG 1938v).

Staff from DFG surveyed Piercy Creek in 1968 and observed steelhead ranging from four to six inches in length. The creek was noted to have "good" spawning and nursery areas in the lower half, and fewer spawning areas in the upper portion (DFG 1968e). During a 1977 survey of Piercy Creek only one juvenile steelhead was observed. The survey report states, "Logging in the area has limited the stream's full potential as a productive salmonid stream" (DFG 1977b).

Piercy Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1985 and steelhead were collected (DFG 1988). Staff from DFG conducted a stream inventory of Piercy Creek in 1990. Juvenile and YOY *O. mykiss* were collected at five sites during electrofishing in the creek (CCC 1990a). The inventory report recommended stream bank stabilization and re-vegetation to prevent further erosion in the watershed.

## **Standley Creek**

Standley Creek is tributary to the South Fork Eel River and consists of about 4.7 stream miles. It flows northeasterly, entering the South Fork at about stream mile 53.3.

Fish rescue work was conducted on multiple Eel River tributaries in 1940. A total of 2,095 steelhead were rescued from Standley Creek that year (DFG 1941a).

Standley creek was surveyed in 1968 by staff from DFG. The report described the creek as "...an excellent stream with great potential for migrating fish." Observations of steelhead and rainbow trout were noted (DFG 1968f).

During a 1976 DFG survey of Standley Creek YOY and yearling steelhead were sampled by electrofishing. Two adult steelhead also were observed along with several salmonid spawning redds. The creek was described as "excellent," however some damage caused by logging and road building was observed (DFG 1976b).

Standley Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1985 and steelhead were collected (DFG 1988).

Staff from DFG conducted a stream inventory of Standley Creek in 1992. Juvenile and YOY *O. mykiss* were collected during electrofishing (CCC 1992o). The inventory report noted that canopy cover was below desirable levels, and re-vegetation was recommended. Treatment of fine sediment sources was also recommended.

# McCoy Creek

McCoy Creek is tributary to the South Fork Eel River and consists of about 4.4 stream miles. It flows west, entering the South Fork at about stream mile 54.9.

Staff from DFG surveyed McCoy Creek in 1938. Steelhead one to two inches in length were described as "common" (DFG 1938w). Stocking records indicate that McCoy Creek was stocked with a total of 23,000 steelhead in 1938 (DFG 1938x).

Young-of-year and juvenile steelhead, some up to five inches in length, were observed in McCoy Creek in 1968. The creek was described as "in good condition," but poor nursery conditions in the upper reaches were noted to be a "major problem" (DFG 1968g).

Staff from BLM surveyed a section of McCoy Creek in 1975. Rainbow trout were observed at the mouth of North Fork McCoy Creek. Low summer water flows were observed, as well as high quantities of spawning gravel that would be available at higher flows (BLM 1975c).

McCoy Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1985 and steelhead were collected (DFG 1988).

Staff from DFG conducted a stream inventory of McCoy Creek in 1995. One site, located about 244 feet from the South Fork Eel River confluence, was electrofished and seven YOY and juvenile steelhead were collected (CCC 1995b). The inventory report recommended treating fine sediment sources, including those related to the road system.

### North Fork McCoy Creek

North Fork McCoy Creek is tributary to McCoy Creek and consists of about 2.2 stream miles. It flows south, entering McCoy Creek about two miles upstream from the South Fork Eel River.

Staff from DFG conducted a stream inventory of North Fork McCoy Creek in 1995. Juvenile and YOY steelhead were observed during the survey (DFG 1995a). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy.

### Bear Pen Creek

Bear Pen Creek is tributary to the South Fork Eel River and consists of about 2.9 stream miles. It flows northeasterly, entering the South Fork at about stream mile 56.6.

Staff from DFG surveyed Bear Pen Creek in 1968 and observed juvenile steelhead. The survey report stated, "Bear Pen is being used strongly by migrating fish," and recommended litter clearance in the upper sections to improve habitat (DFG 1968h).

During a 1988 inspection of Bear Pen Creek "one live smolt" and two salmonid skeletons were seen, though the species of these fish was not identified. The creek was noted to have "good spawning and rearing habitat" but was limited by log debris barriers (Griffin 1988).

Staff from DFG conducted a stream inventory of Bear Pen Creek in 1992. Juvenile and YOY steelhead were collected at an electrofishing site located about 158 feet upstream from the mouth of the creek. Young-of-year fish also were observed up to three miles upstream from the mouth (CCC 1991m). Canopy cover was found to be below desirable levels, and re-vegetation was recommended, along with treatment of fine sediment sources. Staff from DFG observed juvenile steelhead in Bear Pen Creek in 1999 (Harris 1999).

### **Cub Creek**

Cub Creek is tributary to Bear Pen Creek and consists of about 0.5 stream miles. It flows north, entering Bear Pen Creek about 1.7 miles upstream from the South Fork Eel River confluence.

Cub Creek was inspected in November 2003 and found to have no observable flow and numerous potential barriers present. No salmonids were found in the pools that contained water (DFG 2003).

### Red Mountain Creek

Red Mountain Creek is tributary to the South Fork Eel River and consists of about 5.2 stream miles. It flows west, entering the South Fork at about stream mile 57.7.

Staff from DFG surveyed Red Mountain Creek in 1938 and observed "good" spawning areas and YOY and/or juvenile *O. mykiss*. Local residents reported steelhead runs in the creek (DFG 1938y).

During an undated survey of Red Mountain Creek, likely conducted during the 1960s, 14 adult steelhead were observed spawning in the creek. The creek was noted to have extensive spawning areas, but a lack of summer nursery areas (DFG 1967).

Red Mountain Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1985 and steelhead were collected (DFG 1988).

Staff from DFG conducted a stream inventory of Red Mountain Creek in 1997. Juvenile and YOY *O. mykiss* were observed and captured during electrofishing. The report notes that a waterfall located about 5.5 miles upstream from the mouth represents the upstream limit of anadromy in the creek (CCC 1997). Canopy cover was found to be below desirable levels and re-vegetation was recommended, along with treatment of fine sediment sources.

### Wildcat Creek

Wildcat Creek is tributary to the South Fork Eel River and consists of about two stream miles. It flows northeasterly, entering the South Fork at about stream mile 59.9.

Steelhead up to four inches in length were found to be "in good supply" in Wildcat Creek during a 1968 stream survey. The survey report states that the creek is "...used very highly by migratory fish and offers them good spawning conditions." Removal of logging debris was recommended in the upper sections (DFG 1968i).

Wildcat Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1985 and 1987 and steelhead were collected both years (DFG 1988).

Staff from DFG conducted a stream inventory of Wildcat Creek in 1992. Juvenile and YOY *O. mykiss* were sampled by electrofishing (CCC 1992q). The report recommended treating fine sediment sources.

# **Bridges Creek**

Bridges Creek is tributary to the South Fork Eel River and consists of about 2.8 stream miles. It flows west, entering the South Fork at about stream mile 61.2.

Fish rescue work was conducted on multiple Eel River tributaries in 1940. A total of 1,850 steelhead were rescued from Bridges Creek that year (DFG 1941a).

Bridges Creek was surveyed in 1968 and noted to be "in good shape where water is present." A mile-long section of creek was dry at the time. However, steelhead were "abundant" in the pools and spawning areas were "excellent" at the mouth of the creek, but decreasing in quality further upstream (DFG 1968j).

Bridges Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study, many fingerling salmonids were observed in the lower portion of the stream (Kubicek 1977).

Bridges Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1985 and steelhead were collected (DFG 1988). Bridges Creek was surveyed as part of a 1990 study of salmonid resources in Mendocino County Rivers. The creek was surveyed three times during January and February of 1990 and no fish or redds were observed. The report states, "The stream was considered too steep with few deep holes to be provide quality spawning areas" (DFG 1990b).

Staff from DFG conducted a stream inventory of Bridges Creek in 1994. Juvenile and YOY steelhead were sampled during electrofishing, including 199 fish that were collected at one site, located about 0.3 miles upstream from the creek's mouth (CCC 1993y). The inventory report recommended treating fine sediment sources and increasing canopy cover.

## Dora Creek

Dora Creek is tributary to the South Fork Eel River and consists of about 1.3 stream miles. It flows west, entering the South Fork at about stream mile 62.1.

During a 1968 stream survey, staff from DFG noted that "Dora Creek terminates about two hundred yards from the mouth with a thirty foot falls." Steelhead were observed in the stream "in moderate abundance" downstream of the falls (DFG 1968k).

### Mill Creek

Mill Creek is tributary to the South Fork Eel River and consists of about 2.1 stream miles. It flows northeasterly, entering the South Fork at about stream mile 63.6.

Staff from DFG surveyed Mill Creek in 1968 and noted that anadromous fish only had access to about 0.3 miles of the creek due to a 30-foot falls. Two-inch steelhead were observed in "moderate abundance," presumably downstream of the falls (DFG 1968l).

Mill Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1986 and steelhead were collected (DFG 1988).

Staff from DFG conducted a stream inventory of Mill Creek in 1992. Juvenile and YOY *O. mykiss* were collected at two electrofishing sites located within 0.2 miles of the mouth of the creek. Canopy cover was found to be below desirable levels, and re-vegetation was recommended (CCC 1992r). In 2000, sampling was conducted to determine salmonid distribution with land owned by Mendocino Redwood Company. During this sampling, nine YOY *O. mykiss* were collected from Mill Creek (MRC 2000).

## **Rock Creek**

Rock Creek is tributary to the South Fork Eel River and consists of about 2.7 stream miles. It flows south, entering the South Fork at about stream mile 65.6.

Staff from DFG surveyed Rock Creek in 1968 and noted that steelhead were "present but very limited." Spawning areas were noted to be "very limited" and the creek's high gradient upstream of the lower 0.75 miles also reduced the available habitat (DFG 1968m).

Fish sampling was performed throughout the Eel River watershed in 1989 and 1990 as part of a four-year study conducted by researchers at UC Davis. During this sampling, *O. mykiss* were observed in Rock Creek (Brown 1991b).

NOTE: South Fork Eel River tributaries upstream from Rock Creek are considered to be "upper" South Fork streams and are depicted on Figures 8 and 9 following this chapter.

#### **Hollow Tree Creek**

Hollow Tree Creek is tributary to the South Fork Eel River, consists of about 19.5 stream miles, and drains a watershed of about 42 square miles (CCC 2003a). It flows north, entering the South Fork at about stream mile 68.1, southwest of the town of Leggett.

Staff from DFG surveyed Hollow Tree Creek in 1940. Steelhead presence was noted, including the observation of one 25 inch adult. The surveyor, Leo Shapovalov, described the surveyed section of Hollow Tree Creek as "...the most beautiful stream I have seen in the Eel R. drainage" (DFG 1940e).

Hollow Tree Creek was surveyed again in 1968 and steelhead were observed "in abundance." At the time, the creek appeared to be "in excellent shape" with a "constant good flow of water" and "excellent" spawning areas and nursery conditions (DFG 1968n).

Hollow Tree Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek and steelhead were collected in 1983 and 1986-88 (DFG 1988).

Staff from DFG conducted stream inventories on sections of Hollow Tree Creek in 1990 and 1991. Steelhead YOY and juveniles were collected by electrofishing during both surveys (CCC 1990b, CCC 1991n). The 1990 survey took place upstream of the Huckleberry Creek confluence and, according the to the 1991 report, restoration activities were completed in that creek section according to recommendations made in 1990. The 1991 report states that "Hollow Tree Creek is an important producer of salmonids in the Eel River System."

Hollow Tree Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and YOY *O. mykiss* were collected during all sampling years (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted stream inventories on sections of Hollow Tree Creek in 2002 and 2003. Biological sampling was not conducted during either survey, but both reports note observations of juvenile salmonids (CCC 2002b, CCC 2003a).

## **Mule Creek**

Mule Creek is tributary to Hollow Tree Creek and consists of about 1.8 stream miles. It flows southeasterly, entering Hollow Tree Creek about 9.2 miles upstream from the South Fork Eel River confluence.

Mule Creek was surveyed by DFG staff in 1968. A 30-foot falls located about 0.3 miles upstream from the creek mouth was said to block fish passage, while steelhead were observed downstream of the falls (DFG 1968o).

Staff from DFG conducted a stream inventory of Mule Creek in 1992. Young-of-year steelhead were observed downstream of the falls. The inventory report recommended treating sources of fine sediment related to the road system (CCC 1992s). In 2000, sampling was conducted to determine salmonid distribution on land owned by Mendocino Redwood Company. During this sampling, YOY and juvenile *O. mykiss* were collected from Mule Creek (MRC 2000).

#### Middle Creek

Middle Creek is tributary to Hollow Tree Creek and consists of about two stream miles. It flows north, entering Hollow Tree Creek about 9.3 miles upstream from the South Fork Eel River confluence.

The lower 0.25 miles of Middle Creek was surveyed in 1968. A field note reports that many log jams were present and no fish were observed in this section (DFG 1968p).

Staff from DFG also inspected Middle Creek in 1980. At this time a 50-foot natural falls was observed about 400 feet upstream from the mouth of the creek (DFG 1980v).

Staff from DFG conducted a stream inventory of Middle Creek in 1992 and again noted the presence of a large natural falls. Young-of-year steelhead were observed downstream of the falls (CCC 1992t). The inventory report noted several sites of stream bank erosion and recommended treating sources of fine sediment, including those related to the road system.

Sampling was conducted in 1995, 1996, and 2000 in Middle Creek during fish distribution studies. *Oncorhynchus mykiss* were not found during these sampling events (Louisana-Pacific 1997, MRC 2000).

# Islam John Creek

Islam John Creek is tributary to Hollow Tree Creek and consists of about 1.7 stream miles. It flows southwesterly, entering Hollow Tree Creek about 11.5 miles upstream from the South Fork Eel River confluence.

Islam John Creek was surveyed by staff from DFG in 1968 and noted to have "good spawning potential." No fish were observed and an eight-foot waterfall near the mouth was cited as possibly precluding passage. The report states, "Fish introduction might be possible with correction of falls blockage" (DFG 1968q).

Staff from DFG conducted a stream inventory of Islam John Creek in 1992. No salmonid observations are noted in the report and the falls near the mouth of the creek are described as a "probable barrier." Canopy cover was found to be below desirable levels and re-vegetation was recommended, along with treatment of fine sediment sources (CCC 1992u). Sampling was conducted in 1995, 1996, and 2000 in Islam John Creek during fish distribution studies. *Oncorhynchus mykiss* were not found during these sampling events (Louisana-Pacific 1997, MRC 2000).

#### Lost Man Creek

Lost Man Creek is tributary to Hollow Tree Creek and consists of about 1.3 stream miles. It flows west, entering Hollow Tree Creek about 11.7 miles upstream from the South Fork Eel River confluence.

A 1968 stream survey report for Lost Man Creek notes the presence of 20-foot falls near its mouth. A lack of water above the falls also indicated that "fish survival would be in doubt" (DFG 1968r).

Staff from DFG conducted a stream inventory of Lost Man Creek in 1992. A series of bedrock falls located about 100 feet from the mouth of the creek was considered to be a passage barrier. The inventory report noted, "Good water temperature and flow

regimes exist in the stream and it offers good conditions for rearing fish," although *O. mykiss* was not observed (CCC 1992v). Juvenile steelhead were observed 33 feet from the stream mouth in 1992 (Monroe & Cleckers, 1992). Sampling was conducted in 1994, 1995, 1996, and 2000 in Lost Man Creek during fish distribution studies. *Oncorhynchus mykiss* were not found during these sampling events (Louisana-Pacific 1997, MRC 2000).

#### Walters Creek

Walters Creek is tributary to Hollow Tree Creek and consists of about 1.5 stream miles. It flows west, entering Hollow Tree Creek about 12.5 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Walters Creek in 1968 and observed steelhead "in good supply." The fish were mostly two to three inches in length, with some up to five inches. These fish were also observed downstream of the Eastside Road culvert and the report concluded, "Walters Creek is a short creek that has good potential for spawning but is presently not able to be used due to the listed barriers" (DFG 1968s).

Staff from DFG conducted a stream inventory of Walters Creek in 1992. Young-of-year steelhead and some seven to eight inch fish were observed downstream of a culvert. In this report the culvert is described as being located about 0.4 miles upstream from the creek mouth, upstream from the Lost Pipe Creek confluence (CCC 1992w). The report recommended treating sources of fine sediment, including sediment sources related to the road system.

Walters Creek was sampled from 1994-96 during fish distribution studies. Young-of-year, age 1+, and age 2+ *O. mykiss* were collected during the sampling (Louisana-Pacific 1997). In 2000, sampling was conducted to determine salmonid distribution within land owned by Mendocino Redwood Company. During this sampling, one juvenile *O. mykiss* was collected from Walters Creek (MRC 2000).

# Lost Pipe Creek

Lost Pipe Creek is tributary to Walters Creek and consists of about 0.6 stream miles. It flows west, entering Walters Creek about 0.2 miles upstream from the Hollow Tree Creek confluence.

Staff from DFG surveyed Lost Pipe Creek in 1968 and observed steelhead within the lower 0.25 miles of the creek. Further upstream water flows and fish presence decreased. Lost Pipe Creek was described as a "...short...usable creek for migratory fish." Spawning habitat was said to be limited by litter and debris in the creek bed (DFG 1968t).

Lost Pipe Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and YOY *O. mykiss* were collected in 1995, 1996 and 2000 (Louisana-Pacific 1997, MRC 2000).

#### Bear Creek

Bear Creek is tributary to Hollow Tree Creek and consists of about 1.4 stream miles. It flows east, entering Hollow Tree Creek about 13.8 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted a stream inventory of Bear Creek in 1992. Three sites were electrofished and juvenile and/or YOY *O. mykiss* were captured at each site (CCC 1992x). Bear Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and YOY *O. mykiss* were collected during all sampling years (Louisana-Pacific 1997, MRC 2000).

### Redwood Creek

Redwood Creek is tributary to Hollow Tree Creek and consists of about 1.2 stream miles. It flows northeasterly, entering Hollow Tree Creek about 14.5 miles upstream from the South Fork Eel River confluence.

Redwood Creek was surveyed by DFG staff in 1968 and YOY steelhead were found to be "abundant" in the lower section of creek. The creek was said to become "slow and stagnant" upstream of the South Fork and spawning areas also decreased in quality near the South Fork confluence (DFG 1968u).

Staff from DFG inspected log jams in Redwood Creek in 1980. The lower half mile of the creek was surveyed and no salmonids were observed. "Little to no spawning gravel" was present and surveyors wrote, "This stream has only marginal value as nursery habitat for salmonids due to questionable water quality" (DFG 1980v).

Redwood Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1983 and YOY steelhead were collected (DFG 1988).

Staff from DFG conducted a stream inventory of Redwood Creek in 1991. Juvenile and YOY *O. mykiss* were collected at two of the four sites electrofished in the creek. No fish were observed upstream of a bedrock cascade located about 0.6 miles upstream from the mouth and barrier modification was recommended (CCC 1991o). Redwood Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and/or YOY *O. mykiss* were collected during all sampling years (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Redwood Creek in 2003. Four sites were surveyed for fish presence and YOY or juvenile *O. mykiss* were observed at each site. Sampling sites ranged from 225 feet to about 2.8 miles upstream from the mouth (CCC 2003b). The inventory report recommended treating sources of fine sediment related to the road system.

### South Fork Redwood Creek

South Fork Redwood Creek is tributary to Redwood Creek and consists of about 1.8 stream miles. It flows north, entering Redwood Creek about 0.6 miles upstream from the Hollow Tree Creek confluence.

Staff from DFG conducted a stream inventory of South Fork Redwood Creek in 1991. Electrofishing was not conducted in the creek and no salmonids were observed during the survey. A bedrock chute on the mainstem of Redwood Creek, located about 300 feet downstream of the South Fork Redwood Creek confluence, was thought to be preventing anadromous fish access to South Fork Redwood Creek (CCC 1991p). South Fork Redwood Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and YOY *O. mykiss* were collected during all sampling years (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of South Fork Redwood Creek in 2003. One YOY and one juvenile steelhead were observed in the creek during the survey (CCC 2003c). The inventory report recommended treating sources of fine sediment, including those related to the road system.

### **Bond Creek**

Bond Creek is tributary to Hollow Tree Creek and consists of about 3.8 stream miles. It flows southwesterly, entering Hollow Tree Creek about 15.8 miles upstream from the South Fork Eel River confluence.

Steelhead fry and fish up to five inches in length were observed during a 1968 survey of Bond Creek. According to survey report the creek has "...good spawning and nursery conditions and good potential for use by migratory fish. "Large and intensive" log jams were present and removal was recommended (DFG 1968v).

Bond Creek was surveyed in 1980 and *O. mykiss* were "abundant." The survey report states, "Bond Creek currently provides good spawning and nursery areas for RT-SH both resident and anadromous" (DFG 1980w).

Staff from DFG conducted a stream inventory of Bond Creek in 1991. Upstream of a point about 1.8 miles from the mouth the stream dried up and consisted of stagnant pools. Juvenile and YOY *O. mykiss* were collected during electrofishing downstream of this point. Canopy cover was found to be below desirable levels, and re-vegetation was recommended (CCC 1991q). Bond Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and YOY *O. mykiss* were collected during all sampling years (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Bond Creek in 2003. Fourteen sites were surveyed for fish presence and YOY or juvenile (age 1+ and age 2+) were observed at 12 sites (CCC 2003d). The inventory report recommended treating fine sediment sources, including those related to the road system.

#### Michaels Creek

Michaels Creek is tributary to Hollow Tree Creek and consists of about 2.7 stream miles. It flows west, entering Hollow Tree Creek about 17.1 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Michaels Creek in 1981 and observed limited numbers of steelhead fry. According to the report, "The creek offers good-excellent spawning areas but lack of water during summer offers poor nursery conditions" (DFG 1968w). Good habitat conditions were noted during a 1981 survey of Michaels Creek and a "large population of juvenile steelhead" was present in one section. Available habitat was limited by log and debris barriers and damage caused by feral pigs in the upper section (DFG 1981e). The survey report indicates that the creek contributes "important summer streamflow" to Hollow Tree Creek.

Michaels Creek was sampled during salmonid distribution studies in 1994-96 and 2000. Juvenile and YOY *O. mykiss* were collected during all sampling years (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Michaels Creek in 2003. Nine sites were surveyed for fish presence and YOY steelhead, and some age 1+, were observed at all but one site (CCC 2003e). The inventory report noted the presence of several fish habitat improvement structures and recommended evaluation of their effectiveness.

# Lynch Creek

Lynch Creek is tributary to Michaels Creek and consists of about 0.9 stream miles. It flows north, entering Michaels Creek about 0.3 miles upstream from the Hollow Tree Creek confluence.

Staff from DFG surveyed Lynch Creek in 1968 and steelhead were observed in the lower 0.25 miles of the creek in small numbers. Spawning areas were described as "good" but the creek suffered from a lack of water during the summer and was "extremely badly littered the entire length" (DFG 1968x).

Sampling was conducted in 1996 and 2000 in Lynch Creek during fish distribution studies. Juvenile and YOY *O. mykiss* were collected in 1996 but no fish were found in 2000 (Louisana-Pacific 1997, MRC 2000).

#### **Doctors Creek**

Doctors Creek is tributary to Lynch Creek and consists of about 0.7 stream miles. It flows west, entering Lynch Creek about 0.2 miles upstream from the Michaels Creek confluence.

Sampling was conducted in 1994, 1995, 1996, and 2000 in Doctors Creek during fish distribution studies. Juvenile and/or YOY O. mykiss were collected every year that sampling took place (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Doctors Creek in 2003. The lower 0.3 miles of the creek was surveyed and salmonids were observed up to a bedrock sheet located 1,300 feet upstream from the mouth which may have been acting as a barrier (CCC 2003f).

## Waldron Creek

Waldron Creek is tributary to Hollow Tree Creek and consists of about two stream miles. It flows northeasterly, entering Hollow Tree Creek about 18 miles upstream from the South Fork Eel River confluence.

Waldron Creek was surveyed in 1968 by staff from DFG and juvenile steelhead were observed. Spawning areas were "spotty" and the creek was described as "in fair condition" (DFG 1968y).

Staff from DFG conducted a stream inventory of Waldron Creek in 1991. Young-of-year steelhead were observed during the survey and the report stated that juvenile steelhead were also observed during sampling that took place in 1988 and 1989 (CCC 1991r).

Sampling was conducted in Waldron Creek in 1994, 1995, 1996, and 2000 during fish distribution studies. Juvenile and/or YOY *O. mykiss* were collected every year that sampling took place (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Waldron Creek in 2002. Small numbers of YOY and juvenile steelhead were captured during electrofishing (CCC 2002c). The inventory report recommended treating sources of fine sediment, including those related to the road system.

### Bear Pen Creek

Bear Pen Creek is tributary to Hollow Tree Creek and consists of about 0.6 stream miles. It flows east, entering Hollow Tree Creek about 19.2 miles upstream from the South Fork Eel River confluence.

Sampling was conducted in 1994, 1995, 1996, and 2000 in Bear Pen Creek during fish distribution studies. *Oncorhynchus mykiss* were not found during these sampling events (Louisana-Pacific 1997, MRC 2000).

## **Huckleberry Creek**

Huckleberry Creek is tributary to Hollow Tree Creek and consists of about 1.8 stream miles. It flows northeasterly, entering Hollow Tree Creek about 19.7 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Huckleberry Creek in 1968 and observed juvenile steelhead. The creek was described as "in fair condition," although spawning conditions were poor in some areas due to siltation (DFG 1968z).

Huckleberry Creek was surveyed again in 1981 and *O. mykiss* ranging from one to six inches were observed. Fish were "very abundant" downstream of Little Bear Wallow Creek but absent upstream of the tributary (DFG 1981f). Staff from DFG conducted a stream inventory of Huckleberry Creek in 1990. Juvenile and YOY *O. mykiss* were found during electrofishing. The report recommended modification of a culvert located about 1.1 miles upstream from the mouth of the creek (CCC 1990c).

Sampling was conducted in 1994, 1995, 1996, and 2000 in Huckleberry Creek during fish distribution studies. Juvenile and/or YOY *O. mykiss* were collected every year that sampling took place (Louisana-Pacific 1997, MRC 2000).

### **Bear Wallow Creek**

Bear Wallow Creek is tributary to Huckleberry Creek and consists of about 1.5 stream miles. It flows northwesterly, entering Huckleberry Creek about 0.7 miles upstream from the Hollow Tree Creek confluence.

Staff from DFG conducted a stream inventory of Bear Wallow Creek in 1990. Juvenile and YOY *O. mykiss* were found during electrofishing (Frederick 1990). The inventory report noted several log debris accumulations and recommended their removal in order to improve fish passage.

Sampling was conducted in Bear Wallow Creek in 1994, 1995, 1996, and 2000 during fish distribution studies. Juvenile and/or YOY *O. mykiss* were collected every year that sampling took place (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Bear Wallow Creek in 2002. A few YOY and juvenile steelhead were captured during electrofishing in the creek (CCC 2002d). The report recommended treating sources of fine sediment.

#### Little Bear Wallow Creek

Little Bear Wallow Creek is tributary to Huckleberry Creek and consists of about 0.8 stream miles. It flows southeasterly, entering Huckleberry Creek about 0.9 miles upstream from the Hollow Tree Creek confluence.

Sampling was conducted in Bear Wallow Creek in 1994, 1995, 1996, and 2000 during fish distribution studies. Juvenile *O. mykiss* were collected in 1994 and YOY were collected in 1996 and 2000 (Louisana-Pacific 1997, MRC 2000)

#### **Butler Creek**

Butler Creek is tributary to Hollow Tree Creek and consists of about 2.8 stream miles. It flows southwesterly, entering Hollow Tree Creek about 20.5 miles upstream from the South Fork Eel River.

Staff from DFG surveyed Butler Creek in 1968 and observed steelhead and "possibly native rainbows." The stream had "generally good" spawning areas and a mostly constant flow of water (DFG 1968aa).

Butler Creek was surveyed in April and May of 1979. "Numerous fingerlings" were observed during both surveys. In the April survey report the stream is described as "in horrible shape in the lower portion," although "excellent" spawning gravel was observed throughout and the creek was deemed capable of supporting many fish after clean-up (Sprehn 1979l). Similar conclusions were reached in May and the stream survey report describes Butler Creek as "an important part of the headwaters of Hollow Tree Creek" (Clark 1979a). A stream clearance project was conducted in Butler Creek in 1978-80. The project involved the removal of log jams and planting of riparian vegetation (DFG 1981g).

Butler Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1983 and steelhead were collected (DFG 1988).

Sampling was conducted in Butler Creek in 1994, 1995, 1996, and 2000 during fish distribution studies. Juvenile and/or YOY *O. mykiss* were collected every year that sampling took place (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Butler Creek in 2002. Young-of-year and juvenile steelhead were collected during electrofishing (CCC 2002e). The inventory report recommended treating sources of fine sediment related to the road system.

# **Butler Creek tributary**

An unnamed tributary to Butler Creek consists of about 1.2 stream miles. It flow southwesterly, entering Butler Creek about one mile upstream from the Hollow Tree Creek confluence.

Staff from DFG conducted a stream inventory of this unnamed tributary to Butler Creek in 2002. Fish described as "juvenile salmonids" were observed at several locations in the creek, although species was not identified (DFG 2002b). The report recommended treating sources of fine sediment related to the road system.

#### Mitchell Creek

Mitchell Creek is tributary to Hollow Tree Creek and consists of about 0.9 stream miles. It flows southwesterly, entering Hollow Tree Creek in its headwaters, about 21.5 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Mitchell Creek in 1968 noted, "Steelhead are present where the flow is maintained near the mouth, although in limited supply." The low summer flows were said to limit the *O. mykiss* population and the creek was described as "...a short (1 mile in length) creek offering good spawning areas and could greatly be improved by the clearance of the litter" (DFG 1968ab).

#### Cedar Creek

Cedar Creek is tributary to the South Fork Eel River and consists of about 11 stream miles. It flows southwesterly, entering the South Fork at about stream mile 70.

Stocking records indicate that Cedar Creek was stocked with 10,000 steelhead in 1938 and 5,000 in 1939 (DFG 1939g). Staff from DFG surveyed Cedar Creek in 1938 and observed steelhead from two to five inches in length. The fish were "common" and "good" spawning areas were observed in the stream (DFG 1938z).

Staff from DFG surveyed Cedar Creek in 1941. "Good" or "fair" spawning areas were observed throughout the creek and two to three-inch trout were observed in the "East Branch" of Cedar Creek (i.e. mainstem Cedar Creek upstream from the North Fork confluence) (DFG 1941b). According to a 1993 report, DFG operated a fish hatchery at the mouth of Cedar Creek from 1949 to 1964 and more than 400,000 steelhead were released during its operation (CCC 1993z).

Cedar Creek was surveyed again by staff from DFG in 1968. During the survey steelhead fry were observed in the lower section and rainbow trout were observed five miles from the mouth and further upstream. Cedar Creek was described as "...an excellent creek for migrating and/or non-migrating fish" (DFG 1968ac).

Staff from BLM surveyed Cedar Creek in 1975 and observed *O. mykiss* throughout the stream. The survey report stated, "Cedar Creek provides three miles of excellent habitat for resident rainbow trout and spawning anadromous fish." Severe stream bank erosion was seen in some areas and may have been due to logging and cattle grazing activities (BLM 1975d).

Cedar Creek was sampled as part of a study of salmon and steelhead populations in Mendocino County. A summary table indicates that sampling was performed in the creek in 1983 and steelhead were collected (DFG 1988).

Staff from DFG conducted a stream inventory of Cedar Creek in 1993. Juvenile and YOY *O. mykiss* were sampled at two electrofishing sites during the survey (CCC 1993z). The inventory report noted that spawning gravels were limited to few reaches and fish passage was difficult due to the stream's steep gradient. It recommended increasing canopy cover and treating sources of fine sediment.

## Cedar Creek tributary

An unnamed tributary to Cedar Creek consists of about 0.5 stream miles. It flows south, entering Cedar Creek about 0.3 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed this unnamed tributary to Cedar Creek in 1941 and observed two-inch steelhead about 50 feet upstream from the mouth. It was described as "Too small to be a fishing stream" (DFG 1941c).

#### North Fork Cedar Creek

North Fork Cedar Creek is tributary to Cedar Creek and consists of about 0.9 stream miles. It flows south, entering Cedar Creek about 7.4 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed a small section near the mouth of North Fork Cedar Creek in 1941. Young-of-year "trout" were observed and described as "naturally propagated." Good spawning areas were present, but the creek had "insufficient flow" for stocking (DFG 1941d).

North Fork Cedar Creek was surveyed again in 1968. Steelhead fry and fish up to eight inches were found "in good supply." Good spawning and nursery conditions were found throughout the creek and "a good flow of water is maintained" (DFG 1968ac).

#### Little Cedar Creek

Little Cedar Creek is tributary to Cedar Creek and consists of about 0.6 stream miles. It flows north, entering Cedar Creek about 8.2 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Little Cedar Creek in 1968 and rainbow trout up to six inches long were observed. The stream was described as, "A short creek which offers no use for migratory fish but which has a fair supply of native rainbow trout." A 12-foot falls at the mouth was cited as preventing use by anadromous fish (DFG 1968ad).

#### Big Dann Creek

Big Dann Creek is tributary to the South Fork Eel River and consists of about 3.5 stream miles. It flows southwesterly, entering the South Fork at about stream mile 70.4.

Stocking records indicate that Big Dann Creek was stocked with 5,000 steelhead in 1939 (DFG 1939h). Big Dann Creek was surveyed in 1959. *Oncorhynchus mykiss* averaging three inches in length were "present but not abundant" in the creek. A large school of *O. mykiss* was observed in a pool at the confluence of Big Dann Creek and the South Fork Eel River (DFG 1959a).

Staff from DFG surveyed Big Dann Creek in 1968 and observed juvenile steelhead. An eight foot falls located at approximately stream mile 3.0 was identified as the upstream limit of anadromy. The survey report states, "Stream condition is fairly good for natural propagation although fish abundance is limited" (DFG 1968ae).

In 1975 staff from BLM surveyed a section of Big Dann Creek located about two miles upstream from the South Fork Eel River confluence and observed rainbow trout. The report noted that 20-foot falls located at some point downstream of the survey section blocked passage by anadromous fish. Surveyors also noted "severe erosion problems caused by poor logging practices" in the upper reaches of Big Dann Creek (BLM 1975e).

Big Dann Creek was surveyed as part of a 1990 study of salmonid resources in Mendocino County Rivers. The creek was surveyed five times from November 1989 to February 1990 and no fish were observed. Two redds were observed and were assumed to be steelhead redds. The creek was noted to contain steep terrain and low water levels (DFG 1990b).

#### Little Dann Creek

Little Dann Creek is tributary to Big Dann Creek and consists of about 1.2 stream miles. It flows west, entering Big Dann Creek about 0.4 miles upstream from the South Fork Eel River confluence.

Little Dann Creek is mentioned in a field note written in 1960. The note states that a warden reported "Numerous steelhead seen spawning in Big Den, Little Den and in Bridges Creeks" (DFG 1960d). The description indicates that "Little Den" is the same as "Little Dann" Creek.

Staff from DFG surveyed Little Dann Creek in 1968. The report states that the creek was "non-usable due to a 30 foot falls at the mouth" and was intermittent upstream of the falls (DFG 1968af).

Staff from BLM surveyed sections of Little Dann Creek in 1972 and 1975. The 1972 report cites the large falls near the mouth as a complete barrier although a few fish were observed upstream of the falls at that time. The stream is described as "...only a minor producer, at best, and then only for resident fishes" (BLM 1972). No fish were observed in 1972. However, the survey report states that the surveyed section (upstream of the second road crossing) could become habitable for trout if erosion problems were addressed (BLM 1975f).

## **Grizzly Creek**

Grizzly Creek is tributary to the South Fork Eel River and consists of about 0.7 stream miles. It flows southwesterly, entering the South Fork at about stream mile 71.6.

Staff from DFG surveyed Grizzly Creek in 1968 and found it to be "...non-usable by migratory fish due to a 25' falls at the mouth." Upstream of the falls the stream had a steep gradient and was "not suitable for fish" (DFG 1968ag).

Staff from BLM surveyed Grizzly Creek in 1975. Surveyors found that, "No fish were present and little potential exists for fisheries development" (BLM 1975g).

## Low Gap Creek

Low Gap Creek is tributary to the South Fork Eel River and consists of about two stream miles. It flows north, entering the South Fork at about stream mile 72.7.

Staff from DFG surveyed Low Gap Creek in 1968 and observed steelhead. Fish were "limited in abundance" but the creek was in "good condition" with spawning areas in the lower section, excellent shelter, and good nursery conditions in the lower and upper sections (DFG 1968ah).

During a 1979 survey of Low Gap Creek two fish carcasses were observed but species was not identified. Several log jam barriers were present and the creek was described as "...excellent quality for steelhead and salmon spawning grounds, if the blockages are removed" (Sprehn 1979a).

Staff from DFG conducted a stream inventory of Low Gap Creek in 1990. Steelhead YOY and juveniles were collected at all five electrofishing sites (DFG 1990c). The inventory report recommended re-vegetation in order to stabilize stream banks and provide canopy cover.

Staff from DFG surveyed Low Gap Creek in 1995. Six YOY steelhead were captured (Flosi 1995).

### Little Low Gap Creek

Little Low Gap Creek is tributary to Low Gap Creek and consists of about one stream mile. It flows east, entering Low Gap Creek about 0.6 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Little Low Gap Creek in 1968 and found that the creek was "non-usable." This condition was attributed to a steep gradient and debris in the creek (DFG 1968ai).

#### Rattlesnake Creek

Rattlesnake Creek is tributary to the South Fork Eel River and consists of about 11 stream miles. It flows west, entering the South Fork at about stream mile 74.3.

Staff from DFG surveyed Rattlesnake Creek in 1939 and observed two dead adult steelhead as well as "infrequent" YOY steelhead. Downstream of the confluence with Mad Creek, Rattlesnake Creek was noted to have a number of steep falls and cascades which were suspected of limiting passage at low flow (DFG 1939i).

In 1953 Rattlesnake Creek was stocked with a total of 253 rescued steelhead. These fish had been rescued from an unnamed tributary to Tenmile Creek (DFG 1954).

Staff from DFG surveyed Rattlesnake Creek in 1968 and observed steelhead from two to eight inches in length. According to the survey report, "This creek offers excellent water for the migratory fish as a good flow is maintained throughout. At present no improvements are needed" (DFG 1968aj).

Rattlesnake Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. Fingerling salmonids were observed in the creek just upstream of its mouth and about 3.5 miles upstream. During the temperature study Rattlesnake Creek was found to contribute warm water to the South Fork Eel River which created potentially lethal conditions for salmonids (Kubicek 1977).

Staff from DFG conducted a stream inventory of Rattlesnake Creek in 1993. Young-of-year, age 1+, and age 2+ steelhead were electrofished and observed in the creek. The report recommended increasing canopy and treating sources of fine sediment (CCC 1993aa). Data sheets indicate that electrofishing took place in Rattlesnake Creek in 1995 with the intent of characterizing fish passage through the Highway 101 culvert at Spy Rock Road. Steelhead were captured during the sampling and the data sheet states, "This culvert does not appear to have been a barrier to steelhead during the 1994/95 winter migration." The culvert is located about eight miles upstream from the South Fork Eel River confluence (DFG 1995b). No steelhead were observed in Rattlesnake Creek during carcass surveys conducted in 1999 and 2000 by DFG staff (Harris 2000Squaw Creek

# **Squaw Creek**

Squaw Creek is tributary to Rattlesnake Creek and consists of about 0.6 stream miles. It flows south, entering Rattlesnake Creek about 0.8 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Squaw Creek in 1968. The survey report states that the creek was "obliterated" during construction of Highway 101 and "...was probably too steep to support many fish before the fill was placed there" (DFG 1968ak).

Staff from BLM surveyed Squaw Creek in 1975 and did not observe fish. Their report notes that the creek was dry for 0.5 miles upstream of the freeway and had "poor trout habitat" (BLM 1975h).

### **Measly Creek**

Measly Creek is tributary to Rattlesnake Creek and consists of about 1.2 miles of intermittent stream. It flows south, entering Rattlesnake Creek about 1.2 miles upstream from the South Fork Eel River confluence.

Measly Creek was surveyed by staff from DFG in 1968. At the time it was noted to be "...impassable due to steep gradient beginning at mouth and continuing to present freeway construction" (DFG 1968al).

Staff from BLM surveyed Measly Creek in 1975. Their report states, "No fish are present in the stream and little potential exists for future habitation" (BLM 1975i).

## Wilson Creek

Wilson Creek is tributary to Rattlesnake Creek and consists of about 0.8 stream miles. It flows south, entering Rattlesnake Creek about 1.8 miles upstream from the South Fork Eel River confluence.

In a 1968 field note DFG staff wrote, "Wilson Creek is non-usable for migratory fish due to steep gradient" (DFG 1968am). Staff from BLM surveyed a section of Wilson Creek in 1975 and did not observe fish. The survey report noted, "Little potential for fisheries development" (BLM 1975j).

#### Foster Creek

Foster Creek is tributary to Rattlesnake Creek and consists of about 2.7 stream miles. It flows south, entering Rattlesnake Creek about 2.7 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Foster Creek in 1968 and observed a "good supply" of steelhead. It was described as "...a very clean and usable creek for migratory fish offering good spawning with a good flow maintained" (DFG 1968an).

Foster Creek was surveyed again in 1979 and appeared to be in "excellent condition" with "good quality and abundant" spawning gravel. No fish were observed during the survey (Sprehn 1979m).

Staff from DFG inspected Foster Creek in 1986 in relation to a proposed dam site on the creek. An observation of two adult steelhead confirmed the presence of anadromous fish in the creek (DFG 1986b).

Staff from DFG conducted a stream inventory of Foster Creek in 1993. Juvenile and YOY steelhead were captured at two electrofishing sites (CCC 1993ab). The report recommended treating sources of fine sediment, including those related to the road system, and increasing canopy cover.

### **Mad Creek**

Mad Creek is tributary to Rattlesnake Creek and consists of about one stream mile. It flows north, entering Rattlesnake Creek about 3.2 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Mad Creek in 1968. They found the creek inaccessible to anadromous fish "...due to a 10 foot falls at the mouth originating from the culvert under U.S. 101" (DFG 1968ao).

### Elk Creek

Elk Creek is tributary to Rattlesnake Creek and consists of about 2.3 stream miles. It flows north, entering Rattlesnake Creek about three miles upstream from the South Fork Eel River confluence.

In 1953 Elk Creek was stocked with a total of 15,384 rescued steelhead. These fish had been rescued from nearby Tenmile Creek and unnamed tributaries to Tenmile Creek (DFG 1954). A 1959 DFG memo reports that in March of that year steelhead were observed attempting to enter the fish ladder on a highway culvert in Elk Creek. It was thought unlikely that fish would be able to pass through the culvert (DFG 1959b).

Electrofishing was conducted both upstream and downstream of the Highway 101 culvert in October 1968 and *O. mykiss* were found at both locations (DFG 1968ap). During a subsequent survey of Elk Creek in November 1968 no fish were observed, but the creek had a "good flow of water and good spawning conditions" (DFG 1968aq).

Elk Creek was surveyed by DFG staff in 1971 and found to support "a fair-sized population of rainbow trout." The fish observed were thought to be resident (DFG 1971b).

Staff from DFG inspected the highway 101 culvert on Elk Creek in 1984 and noted that alterations had been made to improve fish passage. However it continued to be a barrier to some salmonids and additional alterations were recommended (DFG 1984b).

Staff from DFG conducted a stream inventory of Elk Creek in 1993. Juvenile and YOY steelhead were collected during electrofishing at two sites. The point where the creek forks about 2.4 miles upstream from the mouth is described as the upstream limit of anadromy (CCC 1993ac). The report recommended controlling fine sediment input into the creek, including treating sources of sediment related to the road system.

## **Cummings Creek**

Cummings Creek is tributary to Rattlesnake Creek and consists of about 0.8 stream miles. It flows south, entering Rattlesnake Creek about 4.3 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Cummings Creek in 1968 and observed steelhead "in good abundance" downstream of a 30 foot falls located about one mile from the mouth. Resident fish were observed upstream of the falls and the creek had "good spawning water for migratory fish" (DFG 1968ar).

Staff from BLM surveyed a portion of Cummings Creek and an unnamed tributary in 1975. This survey report stated that "rainbow trout" were present in Cummings Creek between the Highway 101 crossing and the tributary located about one mile upstream (BLM 1975k).

Cummings Creek was surveyed as part of a 1990 study of salmonid resources in Mendocino County Rivers. No fish were observed in Cummings Creek; however local residents reported that steelhead spawned in the creek (DFG 1990b).

Staff from DFG conducted a stream inventory of Cummings Creek in 1993. One site was electrofished and one 6.7 inch (FL) steelhead was collected (CCC 1993ad). The report recommended treating sources of fine sediment.

# Twin Rocks Creek

Twin Rocks Creek is tributary to Rattlesnake Creek and consists of about 1.9 stream miles. It flows southwesterly, entering Rattlesnake Creek about 4.7 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Twin Rocks Creek in 1968 and observed two to four inch steelhead "in good abundance." According to the survey report, "Twin Rock Creek offers 2 miles of good water" (DFG 1968as).

Staff from DFG conducted a stream inventory of Twin Rocks Creek in 1993. Two sites were electrofished and YOY and juvenile steelhead were collected. The report recommends treating sources of fine sediment (CCC 1993ae). Twin Rocks Creek was inspected in 1999 in relation to a proposed water diversion in the watershed. During the inspection YOY fish believed to be steelhead were observed in the creek near the confluence with Rattlesnake Creek (SWRCB 1999).

#### **Grapewine Creek**

Grapewine Creek is tributary to Rattlesnake Creek and consists of about 1.3 stream miles. It flows southwesterly, entering Rattlesnake Creek about 6.2 miles upstream from the South Fork Eel River confluence.

Staff from DFG surveyed Grapewine Creek in 1968 and observed two to four inch steelhead "in good numbers." The creek was characterized as "...a short creek with a small flow but which offers some good water for migratory fish" (DFG 1968at).

Staff from DFG surveyed Grapewine Creek in 1976 soon after the construction of an earth fill dam which formed a totall passage barrier about 0.75 miles upstream from the mouth of the creek. *Oncorhynchus mykiss* ranging from one to ten inches in length were present both upstream and downstream of the dam, which blocked anadromous access to about one mile of habitat. The creek supported "a good population of juvenile steelhead" (DFG 1976c).

Staff from DFG conducted a stream inventory of Grapewine Creek in 1993. Juvenile and YOY steelhead were captured at one electrofishing site, located 87 feet upstream from the confluence with Rattlenake Creek. The survey ended at a point about 0.8 miles upstream from the mouth, where surveyors noted, "Channel dry, steep, full of large boulders. Clearly a fish barrier" (CCC 1993af). The report recommended treating sources of fine sediment.

# Surveyors Canyon Creek

Surveyors Canyon is tributary to the South Fork Eel River and consists of about 1.2 stream miles. It flows east, entering the South Fork at about stream mile 79.6.

Staff from BLM surveyed Surveyors Canyon in 1975 and did not observe fish. The survey report states, "Numerous rock and log falls prohibit steelhead use and makes the stream uninhabitable by rainbow trout" (BLM 1975l).

### Tenmile Creek

Tenmile Creek is tributary to the South Fork Eel River and consists of about 22 stream miles draining a basin of about 63.5 square miles (CCC 1996b). It flows northwesterly, entering the South Fork at about stream mile 82.1.

Stocking records indicate that Tenmile Creek was stocked with 7,000 steelhead in 1939 (DFG 1939j). Staff from DFG surveyed Tenmile Creek in 1940 and noted steelhead presence, including the observation of one 25-inch adult. "Excellent" spawning areas were noted (DFG 1940f).

Steelhead were rescued from Tenmile Creek in 1951 and 1953. A total of 2,250 steelhead were rescued in 1951 and 9,221 steelhead were rescued in 1953 (DFG 1952b, DFG 1954). Tenmile Creek was surveyed in 1959. *Oncorhynchus mykiss* ranging from two to five inches were "very common" in a stream section midday between the mouth of the creek and Camp Seabow, about 2.2 miles upstream (DFG 1959a).

Tenmile Creek was sampled in 1966 as part of a study of the downstream migration of anadromous fish in the Eel River drainage. The sampling site was located about six miles north of Laytonville and steelhead were regularly collected from March through July, 1966 (DFG 1976a).

Tenmile Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study "a few fingerling salmonids" were observed just above the mouth of Tenmile Creek and about eight miles upstream (Kubicek 1977).

Staff from DFG conducted a stream inventory of Tenmile Creek in 1996. Three sites were electrofished and YOY, age 1+, and age 2+ *O. mykiss* were collected (CCC 1996b). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy, along with treating sources of fine sediment.

#### **Peterson Creek**

Peterson Creek is tributary to Tenmile Creek and consists of about 1.3 stream miles. It flows north, entering Tenmile Creek at about stream mile 2.9.

Staff from DFG conducted electrofishing in Peterson Creek during a 1996 stream inventory of Tenmile Creek. Sampling was conducted about 200 feet upstream from the mouth of the creek and seven YOY *O. mykiss* were collected (CCC 1996b).

### **Grub Creek**

Grub Creek is tributary to Tenmile Creek and consists of about 0.9 stream miles. It flows south, entering Tenmile Creek at about stream mile 4.1.

Staff from DFG surveyed Grub Creek in 1969. Steelhead fry and juveniles up to six inches were observed. According to the report, Grub Creek and its tributary (Cold Creek) "...are currently supporting a substantial fish population" (DFG 1969d).

### Cold Creek

Cold Creek is tributary to Grub Creek and consists of about 1.3 stream miles. It flows east, entering Grub Creek about 0.9 miles upstream from the Tenmile Creek confluence.

Staff from DFG included observations of a tributary to Grub Creek in a 1969 survey, the tributary referred to is believed to be Cold Creek. Steelhead were observed in this tributary "in good supply." However, according to the survey report, "The tributary offers only fair spawning areas because of increased gradient and predominate size of bottom [substrate]" (DFG 1969d).

## Steep Gulch Creek

Steep Gulch Creek is tributary to Tenmile Creek and consists of about 2.4 stream miles. It flows west, entering Tenmile Creek at about stream mile 6.9.

In 1968 electrofishing was conducted immediately upstream and downstream of the Highway 101 culvert on Steep Gulch Creek. Juvenile steelhead were captured at both locations and ranged from 1.5 to three inches (DFG 1968au).

Staff from DFG surveyed Steep Gulch in 1969. The entire length of the creek was dry during the survey and no fish were observed, however good spawning areas and shelter were noted. The report states, "At times when a flow is present Steep Gulch would offer at least 1.5 miles of good spawning areas" (DFG 1969e).

### Streeter Creek

Streeter Creek is tributary to Tenmile Creek and consists of about 3.6 stream miles. It flows east, entering Tenmile Creek at about stream mile 8.4.

In 1961 staff from DFG inspected Streeter Creek in relation to a proposed water development on the creek. A memo states, "Streeter Creek is an important salmon-steelhead stream tributary tributary to Ten-Mile Creek." About 2,000 YOY and juvenile *O. mykiss* were observed in the creek during the July 1961 inspection (DFG 1961b).

Staff from DFG surveyed Streeter Creek in 1969 and observed steelhead "in good supply." The fish ranged from fry to six inches in length and the creek had "...3 miles of usable water for spawning purposes with excellent nursery conditions present" (DFG 1969f).

Staff from DFG conducted a stream inventory of Streeter Creek in 1994. Juvenile and YOY *O. mykiss* were captured at four electrofishing sites during the survey (DFG 1994a). The inventory report recommended increasing canopy in the lower reaches of the creek, treating sources of fine sediment, and excluding cattle from the creek to avoid trampling and effects from defectation.

#### Lewis Creek

Lewis Creek is tributary to Tenmile Creek and consists of about 1.8 stream miles. It flows southwesterly, entering Tenmile Creek at about stream mile 9.3.

In 1968 electrofishing was conducted immediately upstream and downstream of the Highway 101 culvert on Lewis Creek. Seventeen *O. mykiss* were found downstream of the culvert and one was found upstream. The culvert was described as a barrier to upstream migration and the fish found upstream was described as a resident rainbow trout (DFG 1968av).

Staff from DFG surveyed Lewis Creek in 1969 and observed "very few" steelhead, ranging from fry to individuals of three inches in length. Good spawning and nursery conditions were observed and log jam removal was recommended (DFG 1969g).

Staff from DFG conducted a stream inventory of Lewis Creek in 1994. Young-of-year *O. mykiss* were captured at two electrofishing sites, located 0.3 and 0.9 miles upstream from the mouth of the creek. The inventory report cites the end of the anadromous reach as a point about 1.3 miles upstream from the mouth (DFG 1994b). The report recommended increasing treating sources of fine sediment and excluding cattle from the creek to avoid trampling and effects from defectation.

## **Big Rock Creek**

Big Rock Creek is tributary to Tenmile Creek and consists of about 4.6 stream miles. It flows northeasterly, entering Tenmile Creek at about stream mile 9.5.

Staff from DFG surveyed Big Rock Creek in 1969 and observed steelhead "in good abundance" ranging from fry to individuals of five inches in length. According to the report, "Both spawning and nursery conditions enable this creek to support a good population of fish" (DFG 1969h).

Staff from DFG conducted a stream inventory of Big Rock Creek in 1994. Juvenile and YOY *O. mykiss* were captured during electrofishing. A 15-foot waterfall at the base of Big Rock, about four miles upstream from the creek's mouth, appeared to be a natural barrier and resident rainbow trout were observed further upstream (CCC 1994c). The inventory report recommended increasing canopy in the lower reaches of the creek and treating sources of fine sediment.

#### Wilson Creek

Wilson Creek is tributary to Tenmile Creek and consists of about two miles of intermittent stream. It flows west, entering Tenmile Creek at about stream mile 11.2.

Staff from DFG surveyed Wilson Creek in 1961 and noted that 99 percent of the stream was dry during the survey. Young-of-year *O. mykiss* were observed, though success was described as "...poor because of the low flow conditions." The survey report stated, "This stream is of minor importance as a steelhead spawning and nursery area of the South Fork of the Eel River system" (DFG 1961c).

Wilson Creek was surveyed in 1969 and lacked water in its entire length. However, *O. mykiss* were present in some small pools near the creek mouth and the creek was said to contain about one mile of good spawning habitat when water was present (DFG 1969i).

In 1990, Wilson Creek was electrofished upstream and downstream of the Highway 101 culvert. One six-inch steelhead was captured upstream of the culvert inlet and the creek was said to contain "good upstream spawning and rearing habitat" (DFG 1990d).

## **Mud Springs Creek**

Mud Springs Creek is tributary to Tenmile Creek and consists of about 3.2 stream miles. It flows east, entering Tenmile Creek at about stream mile 13.

Staff from DFG surveyed Mud Springs Creek in 1969 and observed steelhead "in fair numbers" ranging from fry to individuals of six inches in length. The survey report documented "...excellent nursery conditions, good cover, and a good flow." Fewer fish than expected were observed and the report stated, "There is no obvious reason for the creek not supporting a larger population of fish" (DFG 1969j).

Staff from DFG conducted a fisheries inventory in Mud Springs Creek in 1979. Steelhead were observed during the survey (Cherr and Griffin 1979).

#### Little Case Creek

Little Case Creek is tributary to Tenmile Creek and consists of about 3.4 stream miles. It flows east, entering Tenmile Creek at about stream mile 13.2. No fisheries information was found for Little Case Creek. The creek is included to provide context for fisheries information applying to a tributary.

### Mill Creek

Mill Creek is tributary to Little Case Creek and consists of about 3.9 stream miles. It flows east, entering Little Case Creek about 0.9 miles upstream from the Tenmile Creek confluence.

Staff from BLM surveyed Mill Creek in 1975 and observed rainbow trout throughout the creek ranging from one to six inches in length. The survey report stated, "This stream provides excellent habitat for resident rainbow trout. Ample amounts of high quality gravel make Mill Creek valuable as a salmon and steelhead spawning area" (BLM 1975m).

# Cahto Creek

Cahto Creek is tributary to Tenmile Creek and consists of about 5.1 stream miles. It flows northeasterly, entering Tenmile Creek at about stream mile 14.7.

Staff from DFG surveyed Cahto Creek in 1957 and did not observe fish due to muddy water, although a warden considered the creek to be "a fair steelhead stream." Good spawning and rearing habitat was noted downstream of the "Mast Mill" (DFG 1957).

Cahto Creek was surveyed in 1969 and *O. mykiss* YOY were observed "in fair numbers." According to the survey report, "Cahto Creek supplies about 3 miles of good spawning stream" (DFG 1969k).

Staff from DFG conducted a stream inventory of Cahto Creek in 1996. Juvenile and YOY *O. mykiss* were captured by electrofishing (DFG 1996e). The inventory report recommended excluding cattle from the creek to avoid trampling and effects from defectation.

# Barnwell Creek

Barnwell Creek is tributary to the South Fork Eel River and consists of about 1.4 miles of intermittent stream. It flows east, entering the South Fork at about stream mile 83.7.

Staff from DFG surveyed Barnwell Creek in 1969 and observed two to four inch steelhead in "fair" abundance. "Fair to good" spawning areas were observed and the creek maintained a good flow of water. However, a steep gradient was said to limit access to the upper reaches (DFG 1969l).

Staff from DFG conducted a stream inventory of Barnwell Creek in 1992. Electrofishing was not conducted during the survey, but YOY salmonids were observed at two spots within 0.3 miles of the mouth of the creek (CCC 1992y). The inventory report recommended treating sources of fine sediment and modifying several log debris accumulations.

#### Fox Creek

Fox Creek is tributary to the South Fork Eel River and consists of about 1.6 stream miles. It flows west, entering the South Fork at about stream mile 84.5.

Staff from DFG surveyed an unnamed tributary to the South Fork Eel River in 1938. The creek surveyed is thought to be Fox Creek, due to the description of its location "at Wilderness Lodge." The survey report noted the presence of a dam on the creek and a water diversion that "…takes all water except leakage" (DFG 1938aa).

Fox Creek was surveyed in 1959. *Oncorhynchus mykiss* ranging from 1.5 to 2.0 inches in length were observed about 50 feet upstream from the mouth (DFG 1959a).

Staff from DFG surveyed Fox Creek in 1969 and observed two to four inch steelhead in "fair to poor" abundance. Success, condition, and natural propagation of the fish was described as "fair" and the creek was "in good shape" (DFG 1969m).

Staff from DFG conducted a stream inventory of Fox Creek in 1992. No fish observations are noted in the report and a "major sediment problem" was present at one point in the stream. About 0.7 miles upstream from the mouth the stream gradient became steep and flows became intermittent (CCC 1992z). Researchers from the University of California conducted electrofishing in Fox Creek in 1995. During the sampling three age classes of juvenile steelhead were found (DESPM 1995).

#### Elder Creek

Elder Creek is tributary to the South Fork Eel River and consists of about 4.4 stream miles. It flows west, entering the South Fork at about stream mile 86.4.

Staff from DFG surveyed Elder Creek in 1938 and noted that YOY steelhead were "common" at a station located 150 feet upstream from the mouth. "Fair" spawning areas were observed (DFG 1938ab).

Staff from DFG surveyed Elder Creek in 1969 and observed steelhead "in good numbers." According to the survey report, "An excellent flow is maintained and 3 miles of good spawning stream is available" (DFG 1969n).

Elder Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this study, many fingerling salmonids were observed in this stream (Kubicek 1977).

Staff from BLM surveyed Elder Creek in 1975 and observed low densities of rainbow trout ranging from one to three inches in length. The report noted a lack of spawning material that appeared to be limiting the trout population (BLM 1975n).

Elder Creek was sampled in 1983 as part of a DFG report on the status of salmon and steelhead in California Wild and Scenic Rivers. Juvenile steelhead were collected and "...were found to number more than 200 fish per 30-meter (98.4 feet) station." Elder Creek was described as a "Pristine Stream" (DFG 1987).

Staff from DFG conducted a stream inventory of Elder Creek in 1992. Steelhead fry and juveniles were observed during the survey (CCC 1992aa). The inventory report noted that the stream's steep gradient made fish passage difficult and recommended treating sources of fine sediment. Researchers from the University of California conducted a snorkel survey in Elder Creek in 1995. During the survey three size classes of juvenile steelhead were observed (DESPM 1995).

### Misery Creek

Misery Creek is tributary to Elder Creek and consists of about 1.2 stream miles. It flows north, entering Elder Creek about 2.3 miles upstream from the South Fork Eel River confluence.

Staff from BLM surveyed Misery Creek in 1975 and observed rainbow trout ranging from one to six inches. The creek contained "Large amounts of high quality gravel, combined with good escape cover and ample summer water flows." The lower reaches were said to be accessible to anadromous fish (BLM 1975o).

# Paralyze Canyon Creek

Paralyze Canyon Creek is tributary to Elder Creek and consists of about 2.1 stream miles. It flows north, entering Elder Creek about 2.8 miles upstream from the South Fork Eel River confluence.

Staff from BLM surveyed Paralyze Canyon Creek in 1975 and did not observe fish. According to the report, "The small flow, along with the shortage of deep pools and spawning areas, make this stream uninhabitable for trout" (BLM 1975p).

## Jack of Hearts Creek

Jack of Hearts Creek is tributary to the South Fork Eel River and consists of about three stream miles. It flows northeasterly, entering the South Fork at about stream mile 87.2.

Staff from DFG surveyed Jack of Hearts Creek in 1969 and observed steelhead "in good abundance." Good spawning areas were observed and the survey report stated, "Jack of Hearts Creek has excellent potential for migratory fish" (DFG 1969o).

Staff from DFG conducted a stream inventory of Jack of Hearts Creek in 1992. One YOY *O. mykiss* was observed during electrofishing at two sites in the creek (CCC 1992ab). Jack of Hearts Creek was sampled during salmonid distribution studies in 1996 and 2000. Juvenile and YOY *O. mykiss* were collected during both sampling years (Louisana-Pacific 1997, MRC 2000).

Staff from DFG conducted a stream inventory of Jack of Hearts Creek in 2005. A total of 36 YOY *O. mykiss* were observed during snorkel surveys (DFG 2005). The inventory report recommended treating sources of fine sediment.

## Dark Canyon Creek

Dark Canyon Creek is tributary to Jack of Hearts Creek and consists of about 0.8 stream miles. It flows south, entering Jack of Hearts Creek about 0.8 miles upstream from the South Fork Eel River confluence.

In 2003, four pools in Dark Canyon Creek were snorkeled in order to determine the presence of coho salmon. An age 1+ *O. mykiss* was observed in a pool located about 100 feet upstream from the road crossing culvert in Dark Canyon Creek (PSMFC 2003).

#### Deer Creek

Deer Creek is tributary to the South Fork Eel River and consists of about 1.4 miles of intermittent stream. It flows west, entering the South Fork at about stream mile 88.6.

Staff from DFG surveyed Deer Creek in 1969 and observed steelhead ranging from two to four inches. The survey report stated, "Deer Creek is cluttered with jams the entire length. The flow is small and fish use of this creek seems limited" (DFG 1969p).

Deer Creek was surveyed as part of a 1990 study of salmonid resources in Mendocino County Rivers. No fish or evidence of spawning was observed. During the survey local residents reported that fish had not been seen in the last two years and that "...four families now pump drinking and washing water from the creek and it dries up in late summer" (DFG 1990b).

### Little Charlie Creek

Little Charlie Creek is tributary to the South Fork Eel River and consists of about 0.7 stream miles. It flows southeasterly, entering the South Fork at about stream mile 89.7.

Staff from DFG surveyed Little Charlie Creek in 1969 and steelhead were observed ranging from fry to four inches in length. According to the survey report, "About 1 mile of Little Charlie Creek could be used by migratory fishes provided some of the jams were removed" (DFG 1969q).

Little Charlie Creek was surveyed again by staff from DFG in 1979. No fish were observed during the survey and the report states, "The stream supplies only small amounts of water to the South Fork Eel" (Sprehn 1979b).

Little Charlie Creek was surveyed as part of a 1990 study of salmonid resources in Mendocino County Rivers. No sign of anadromous fish use was observed (DFG 1990b).

#### **Dutch Charlie Creek**

Dutch Charlie Creek is tributary to the South Fork Eel River and consists of about 4.2 stream miles. It flows east, entering the South Fork at about stream mile 90.3.

Staff from DFG surveyed Dutch Charlie Creek in 1938 and noted the presence of YOY steelhead about 50 yards upstream from the mouth. Spawning areas were described as "excellent" (DFG 1938ac).

Dutch Charlie Creek was surveyed in 1959 and two-inch steelhead were "very abundant" in the creek. Shade and spawning areas were described as "very good" and a report noted that the drainage had been "extensively logged" (DFG 1959a).

In 1969 staff from DFG surveyed Dutch Charlie Creek and observed steelhead "in good supply" including many fry and a few fish five to seven inches in length. The report stated, "The creek is used by migratory fish and offers good spawning." Some siltation problems were noted (DFG 1969r).

Staff from DFG surveyed Dutch Charlie Creek in 1979 and observed adult salmon but no steelhead. According to the survey report the creek "...supplies large quantities of water to the South Fork of the Eel River" and "appears to be of good quality for salmon spawning grounds" (Sprehn 1979k).

Staff from DFG conducted a stream inventory of Dutch Charlie Creek in 1992. Juvenile and YOY *O. mykiss* were observed during electrofishing at three sites. No fish were observed upstream of a nine-foot bedrock waterfall located about 3.5 miles upstream from the mouth (CCC 1992ac). The inventory report recommended treating sources of fine sediment related to the road system and excluding cattle from the creek to avoid trampling and effects from defection.

# **Thompson Creek**

Thompson Creek is tributary to Dutch Charlie Creek and consists of about 0.5 stream miles. It flows south, entering Dutch Charlie Creek about 1.2 miles upstream from the South Fork Eel River.

The mouth of Thompson Creek was inspected by staff from DFG during a 1979 stream survey of Dutch Charlie Creek. The survey report stated, "Thompson Creek appears to be blocked to spawners at mouth" (Sprehn 1979k).

Staff from DFG surveyed Thompson Creek in 1979 and did not observe fish. According to the survey report, "This stream supplies only small amounts of water to Dutch Charlie Cr." (Sprehn 1979c).

### **Eagle Creek**

Eagle Creek is tributary to Dutch Charlie Creek and consists of about 0.8 stream miles. It flows south, entering Dutch Charlie Creek about two miles upstream from the South Fork Eel River confluence.

The mouth of Eagle Creek was inspected by staff from DFG during a 1979 stream survey of Dutch Charlie Creek. The survey report stated, "Eagle Creek mouth is apparently open to spawners" (Sprehn 1979k).

Staff from DFG surveyed Eagle Creek in 1979 and observed one unidentified fish between six and eight inches in length. The stream appeared "...suitable as a nursery area but is sparse on spawning gravel." Eagle Creek was also described as "a main contributor of water to Dutch Charlie Cr." (Sprehn 1979d).

### **Redwood Creek**

Redwood Creek is tributary to the South Fork Eel River and consists of about 2.5 stream miles. It flows north, entering the South Fork at about stream mile 91.

Staff from DFG surveyed Redwood Creek in 1938 and did not note any fish observations. However, "excellent" spawning areas, pools and shelter were observed (DFG 1938ad).

Redwood Creek was surveyed in 1959 and "fair numbers" of YOY steelhead were observed. Some "good" spawning areas were observed, though the survey report noted that extensive logging had taken place and "As a result, the stream is not as productive as it could be" (DFG 1959a, p. 8).

Steelhead were observed with "fair to poor abundance" in Redwood Creek during a 1969 survey. Surveyors found that "The lower section of this creek is excellent for migratory fish." Spawning areas were impacted by gradient, litter, and siltation in the upper sections (DFG 1969s).

Staff from DFG conducted a stream inventory of Redwood Creek in 1993. Juvenile and YOY steelhead were collected by electrofishing at two sites (CCC 1993g). The inventory report recommended treating sources of fine sediment and modifying several log debris accumulations. Staff from DFG observed steelhead in Redwood Creek during carcass surveys conducted in 1996 and 1997 (Harris,1997).

### **Rock Creek**

Rock Creek is tributary to the South Fork Eel River and consists of about 3.1 stream miles. It flows southwesterly, entering the South Fork at about stream mile 91.3.

Rock Creek was surveyed in 1959 and steelhead up to six inches in length were observed. Surveyors noted that the creek was dry at the mouth and that lower potions of the basin had been clear-cut (DFG 1959a).

Staff from DFG surveyed Rock Creek in 1969 and observed steelhead fry and native rainbow trout of six to eight inch size. The survey report stated, "Rock Creek is an excellent creek for migrating fish" (DFG 1969t).

One 18-inch adult steelhead was observed about 0.5 miles upstream from the mouth of Rock Creek during a 1979 DFG survey. Surveyors noted two boulder runs located about two miles upstream from the creek mouth that were deemed total passage barriers (Clark 1979d).

Staff from DFG conducted a stream inventory of Rock Creek in 1992. Juvenile and YOY steelhead were captured at two electrofishing sites (CCC 1992ad). The inventory report recommended treating sources of fine sediment, including sediment sources related to the road system.

### Muddy Gulch Creek

Muddy Gulch Creek is tributary to the South Fork Eel River and consists of about one mile of intermittent stream. It flows southwesterly, entering the South Fork at about stream mile 92.5.

Staff from DFG surveyed Muddy Gulch Creek in 1979. No fish were observed during the survey and surveyors concluded, "Barriers, intermittence, and lack of high quality spawning areas make this stream of little use for salmon spawning" (Sprehn 1979e).

#### Kenny Creek

Kenny Creek is tributary to the South Fork Eel River and consists of about 3.6 stream miles. It flows southwesterly, entering the South Fork at about stream mile 93.7.

Kenny Creek was surveyed in 1959 and *O. mykiss* up to five inches in length were found to be "very common." A report noted, "This appears to be a very productive stream" (DFG 1959a, p. 8).

Staff from DFG surveyed Kenny Creek in 1969 and observed steelhead fry as well as four to six inch "salmonids." According to the survey report, "Kenny Creek is in good shape and presently utilized by migratory fish" (DFG 1969u).

Kenny Creek was surveyed again in 1979 and steelhead were observed, including one female spawner. Spawning areas were described as "average for entire length" and the stream was "in excellent condition for production of fish" (Clark 1979c).

Staff from DFG conducted stream inventories of Kenny Creek in 1996 and 2005. In 1996 three age classes of steelhead were captured during electrofishing about 400 feet upstream from the mouth (DFG 1996f). In 2005 eight sites were electrofished throughout the creek and YOY *O. mykiss* were collected at seven sites (Mikus 2006). The 2005 inventory report noted that little spawning habitat was available in the creek and recommended treating sources of streambank erosion, including those related to the road system.

### **Buck Creek**

Buck Creek is tributary to the South Fork Eel River and consists of about 0.9 stream miles. It flows south, entering the South Fork at about stream mile 94.5.

Staff from DFG surveyed Buck Creek in 1969 and found the creek "non-usable for migratory fish" due to a barrier at the Branscomb Mill pond. Lack of water and logging operations were said to limit habitat upstream of the mill pond (DFG 1969v).

### Haun Creek

Haun Creek is tributary to the South Fork Eel River and consists of about 0.8 miles of intermittent stream. It flows north, entering the South Fork at about stream mile 95.4.

Staff from DFG surveyed Haun Creek in 1969 and steelhead were observed in "fair to poor" abundance. Habitat was noted to be affected by low flows, log jams, and siltation (DFG 1969w).

#### Mud Creek (Mud Springs Creek)

Mud Creek, sometimes referred to as Mud Springs Creek, is tributary to the South Fork Eel River and consists of about 4.4 stream miles. It flows southwesterly, entering the South Fork at about stream mile 95.8.

Staff from DFG surveyed Mud Creek in 1938 and noted that steelhead ranging from 1.5 to 2.5 inches in length were "abundant." Spawning areas were said to be "fair" and pools and shelter were characterized as "good" (DFG 1938ae). Mud Creek was surveyed in 1959 and YOY *O. mykiss* were present "but not abundant." Some *O. mykiss* up to five inches also were observed. High levels of siltation and turbidity were noted (DFG 1959a).

A 1962 field note describes the value of Mud Creek to anadromous fisheries. It states, "Mud Springs Creek does not appear to be of any value to steelhead...at this time because of its highly natural turbid condition" (DFG 1962b).

Staff from DFG surveyed Mud Creek in 1969 and observed steelhead with "good" abundance, success, and condition. The creek was said to be "...and excellent stream for migratory fish." A "milky substance" was noted in the water and originated from the mud springs located about 2.5 miles upstream from the mouth (DFG 1969x).

Staff from BLM surveyed Mud Creek in 1975 and observed rainbow trout, mostly in sections upstream of the mud springs. "High productivity" was noted in these upper portions of the stream, although the survey report noted, "Heavy siltation from mud springs destroys much valuable fish habitat." Erosion caused by logging and fire damage also was observed (BLM 1975q).

Staff from DFG conducted a stream inventory of Mud Creek in 1996. Young-of-year *O. mykiss* were sampled by electrofishing at two sites, located 187 feet and 2.7 miles upstream from the South Fork Eel River confluence (DFG 1996g). The inventory report notes that water temperature may limit the fishery and recommends additional temperature monitoring, along with excluding cattle from the creek to avoid trampling and effects from defecation.

### Grapevine Creek

Grapevine Creek is tributary to Mud Creek and consists of about 1.2 stream miles. It flows south, entering Mud Creek about 1.9 miles upstream from the South Fork Eel River confluence.

Staff from DFG conducted a stream inventory of Grapevine Creek in 1997. Juvenile and YOY steelhead were captured at one electrofishing site located about 0.6 miles upstream from the Mud Creek confluence (DFG 1997c). The report noted that spawning gravel was limited to few reaches and recommended treating sources of fine sediment related to the road system.

#### **Taylor Creek**

Taylor Creek is tributary to the South Fork Eel River and consists of about 1.3 stream miles. It flows southwesterly, entering the South Fork at about stream mile 96.8.

Taylor Creek was surveyed in 1959 and steelhead were "very numerous" in the lower 200 yards of the creek, downstream of a log jam. The report states, "Appears to have been a productive stream before logged-off. Considered to be of little value for spawning in upper sections" (DFG 1959a).

Staff from DFG surveyed Taylor Creek in 1969 and observed steelhead in the lower 0.25 miles of the creek and resident rainbow trout further upstream. The creek was described as "a minor tributary to the South Fork Eel River" (DFG 1969y).

Taylor Creek was surveyed again by DFG staff in 1979 and fish were not observed. The survey report noted that the stream lacked spawning areas, was intermittent, and had barriers that limited its value to fish production (Sprehn 1979f).

Staff from DFG conducted a stream inventory of Taylor Creek in 1997. Electrofishing revealed the presence of ten *O. mykiss* at a site about 0.4 miles upstream from the South Fork Eel River. In the report, a point about one mile upstream from the mouth is listed as the end of anadromy (DFG 1997d). The inventory report recommended treating sources of fine sediment.

### Bear Creek

Bear Creek is tributary to the South Fork Eel River and consists of about 1.5 stream miles. It flows southwesterly, entering the South Fork at about stream mile 97.4.

Bear Creek was surveyed in 1959. No fish observations were recorded and a report stated, "Has been extensively logged off in past, appears to have little or no fisheries value in its present condition" (DFG 1959a).

Staff from DFG surveyed Bear Creek in 1969 and observed two to four-inch steelhead in the lower 0.5 miles of the creek. The stated, "Bear Creek is a small creek offering only ½-¾ mile usable for migratory fish" (DFG 1969z).

A 1971 DFG memo states that fish passage baffles were installed on the Branscomb Road culvert on Bear Creek in 1969. According to the memo, "Salmon and steelhead utilize the stream," although logging debris was said to have diminished the potential for fish production (DFG 1971c).

Staff from DFG surveyed Bear Creek in 1986. Juvenile steelhead were observed (Jones, 1986).

#### Wise Gulch Creek (McNames Creek)

Wise Gulch Creek is tributary to the South Fork Eel River and consists of about one mile of intermittent stream. It flows southwesterly, entering the South Fork at about stream mile 98.9.

Wise Gulch Creek was surveyed by DFG staff in 1969 and is referred to in the survey report as "McNames Creek." During the survey "very few fish were observed" between the mouth of the creek and the Branscomb Road crossing, but their species was not identified. The creek was said to offer 0.5 to 0.75 miles of spawning area (DFG 1969aa).

Field notes document a 1976 survey of Wise Gulch Creek. During the survey *O. mykiss* were observed near the culvert in the lower section of the stream, but poor habitat was noted further upstream. The field notes stated, "As far as anadromous fisheries value is concerned, Wise Gulch has little value" (DFG 1976d).

### Little Rock Creek

Little Rock Creek is tributary to the South Fork Eel River and consists of about 1.8 stream miles. It flows south, entering the South Fork at about stream mile 99.9.

Staff from DFG surveyed Little Rock Creek in 1969 and observed YOY steelhead in the lower 0.5 miles of stream. A steep gradient was believed to limit fish passage above this section (DFG 1969ab).

Little Rock Creek was surveyed again in 1979 by staff from DFG. No fish were observed during the survey. The report noted, "Stream appears to be in good condition with the exception of the sparsity of usable spawning gravel" (Sprehn 1979g).

Staff from DFG conducted a stream inventory of Little Rock Creek in 1996. One site was electrofished and YOY *O. mykiss* were captured. A large bedrock cascade was observed about 0.8 miles upstream from the mouth and described as the "end of anadromy" (DFG 1996h). The report recommended treating sources of fine sediments.

#### **Section Four Creek**

Section Four Creek is tributary to the South Fork Eel River and consists of about 4.2 stream miles. It flows northwesterly, entering the South Fork at about stream mile 101.4.

Staff from DFG surveyed Section Four Creek in 1969 and observed YOY steelhead "below the forks." The creek was described as "Generally a very poor summer stream." It was said to contain about two miles of suitable spawning areas but to have poor nursery conditions and low flows (DFG 1969ac).

No fish were observed during a 1979 DFG survey of Section Four Creek. The stream was noted to be "... in excellent condition for spawning except for the absolute barrier boulder run close to the mouth" (Sprehn 1979h).

#### Windem Creek

Windem Creek is tributary to the South Fork Eel River and consists of about 1.5 stream miles. It flows south, entering the South Fork at about stream mile 101.8.

Staff from DFG surveyed Windem Creek in 1969 and two to four-inch steelhead were observed "in fair numbers." The lower 0.75 to one mile of stream was noted as accessible to anadromous fish and natural propagation was deemed "good" in this section (DFG 1969ad).

Windem Creek was surveyed again by staff from DFG in 1979 and no fish were observed; however the stream was "in good condition for steelhead spawning." Local residents reported that fish were "abundant during certain times of the year" (Sprehn 1979i).

### Middleton Creek

Middleton Creek is tributary to the South Fork Eel River and consists of about 1.1 stream miles. It flows north, entering the South Fork at about stream mile 102.1.

Staff from DFG surveyed Middleton Creek in 1969 and noted that the creek had no surface flow. However, the survey report stated that it "...should have sufficient flow during the winter and spring to allow fish passage and utilization as a spawning stream" (DFG 1969ae).

Water flows were present, but no fish were observed during a 1979 DFG survey of Middleton Creek. The report describes the creek as, "...an important stream as part of the headwaters of the Eel River." At the time of the survey Middleton Creek nearly doubled the flow of the South Fork Eel River at the confluence (Sprehn 1979j).

Staff from DFG conducted a stream inventory of Middleton Creek in 1996. No salmonid observations are noted in the stream inventory report (DFG 1996i). Canopy cover was found to be below desirable levels, and re-vegetation was recommended. Treatment of sediment sources related to the road system was also recommended.

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