

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

### North Fork Eel River

The North Fork Eel River is tributary to the Eel River and consists of about 35.5 stream miles. It flows southwesterly, entering the Eel River at about stream mile 96.4. The North Fork is formed by the confluence of two headwaters forks, the East and the West, that are discussed under separate headings in this chapter. The river drains an area of about 286 square miles (DFG 1997).

A watershed analysis of the North Fork Eel River states that the river likely supported two runs of steelhead historically, a winter and a spring run. This report estimates that the river supported a total of about 6,930 steelhead prior to 1860. This figure was derived from an estimated density of 150 fish per mile. The report states, “Numbers may have been higher historically due to better habitat conditions” (USFS 1996, p. 104).

A 32-mile section of the North Fork Eel River was surveyed during the summer of 1968. During the survey steelhead were present in the lower and upper sections of the river, but were not observed in a long stretch of river from about 0.5 miles downstream of the Asbill Creek confluence to the confluence with Salt Creek. In part of this section, between Asbill and Hulls creeks, surveyors noted “There was not suitable salmonid nursery or resident trout habitat” (DFG 1968a).

An inventory of anadromous fish resources is included in a 1965 California Fish and Wildlife Plan. In its description of the North Fork Eel River, the inventory stated that the watershed contained a total of 83 miles of steelhead habitat and supported a run of 5,000 steelhead. It was also noted that the watershed “...receives only an insignificant amount of use by...steelhead anglers” (DFG 1965). The run size estimation method is not provided.

Two sections of the North Fork Eel River were surveyed in 1973. No salmonids were observed in the lower section, which stretched from about 0.5 miles upstream of the mouth to the Mina Road bridge. However, surveyors noted that steelhead yearlings had been observed in this section earlier in the year. This stream section was noted to exhibit high water temperatures, but contained “some suitable spawning and nursery conditions.” Several large boulders had entered the river due to a landslide near Split Rock and created waterfalls that were “...undoubtedly causing problems in fish migration” (DFG 1973a). In the second section surveyed in 1973 (from Hulls Creek to Salt Creek), *O. mykiss* fingerlings were “scarce.” Spawning areas in this section were described as “more than adequate for the limited amount of rearing habitat” and surveyors wrote, “Due to extremely high water temperatures, the North Fork Eel has limited potential for either anadromous or resident fish” (DFG 1973b).

The North Fork Eel River was examined in 1973 as part of a study of water temperature conditions in the Eel River system. In the lower 26.5 miles of river, salmonids “were only observed in areas of cool spring upwelling or cool tributary inflow” (Kubicek pers. comm.). For example, approximately 50 salmonids up to eight inches in length, representing three age classes, were observed at the bottom of a thermally stratified pool near Mina, a few fingerlings were observed in cool bottom waters of pools between Mina and Asbill Creek, and several fingerlings and yearlings were observed in a cool stretch of river created by the inflow of Asbill Creek (Kubicek pers. comm.).

Staff from USFS surveyed a section of river from the Salt Creek confluence upstream to the confluence of the East and West Forks in 1980 and noted, “This stream appears to receive only minor utilization by anadromous fish as very few fish, 1 adult steelhead,

and no redds were observed.” Good winter and spring habitat conditions were reported, but surveyors noted that a lack of riparian vegetation, high water temperatures, and low flows made the mainstem North Fork Eel River “inhospitable” during the summer and fall (USFS 1980a).

A total of 8.6 stream miles of the North Fork Eel River, located downstream of Salt Creek, were surveyed in 1982. Surveyors observed *O. mykiss* but noted, “The low numbers of trout are not indicative of the type of salmonid habitat observed during the survey” and found “numerous pool/riffle reaches that appeared to be ideal trout habitat” (Reneau 1982).

In 1984 staff from DFG inspected the waterfall barrier near Split Rock and found it to be a total barrier to fish passage, noting, “Not only was the water velocity found to be high, but a break in step (without benefit of a jump pool) contributed to the passage problem.” About 20 adult steelhead were observed near the base of the falls, with some engaging in spawning activities and others attempting to jump the falls. The fish were thought to be winter-run steelhead (DFG 1984). It was speculated that the falls was formed during the major floods that occurred in 1964 (DFG 1992).

In 1991, U.C. Davis researchers completed a four-year study of the Eel River watershed. The report of this study noted that the barrier on the North Fork Eel River at Split Rock had been modified in order to improve fish passage in the river. Fish sampling also was performed during this study in 1989 and 1990, and *O. mykiss* was collected at several locations in the North Fork Eel River (Brown 1991).

A watershed analysis of the North Fork Eel River, published in 1996, states, “The winter steelhead run is the most dominant anadromous fish run in the North Fork Eel River” (USFS 1996, p. 107). This study identified high turbidity and high water temperatures as “the most critical issues for water quality in the North Fork Eel River” (USFS 1996, p. 107). It also noted that cattle grazing impacted the watershed in the past, but had been reduced greatly.

Staff from DFG completed the “Eel River Salmon and Steelhead Restoration Action Plan” in 1997. The authors noted, “The mainstem North Fork Eel River provides harsh summer conditions for the relatively few juvenile salmonids that use it” (DFG 1997, p. 24). And important spawning and rearing habitat was found to exist mainly in tributaries. Fish habitat in the watershed was said to be affected by road development, water diversions, cattle grazing, and logging practices. The Action Plan stated that steelhead populations in the North Fork had 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 1997, p. 24).

Several reports indicate that while winter-run steelhead continue to use the North Fork Eel River, summer steelhead may now be extirpated from the drainage. In a 1975 report entitled “The status of spring-run steelhead (*Salmo gairdneri*) in the Eel River system” the author, Larry Puckett, wrote, “Spring-run steelhead have been observed in the past in the North Fork Eel River... however, they have not been observed there in recent years” (DFG 1975, p. 6). In 1992 the Humboldt Chapter of the American Fisheries Society published a report identifying the risk of extinction in 49 salmon and steelhead stocks. In this report, summer steelhead in the North Fork Eel River were designated as “high risk of extinction.” High risk stocks were defined by populations that “showed continuing spawner declines with fewer than 200 adults” (Higgins 1992). The 1996 North Fork Eel River Watershed Analysis cites USFS data as indicating that, “Isolated sightings of summer steelhead occurred as late as 1990...but overall the run is in danger of extinction” (USFS 1996, p. 107). In 1995 testimony regarding timber harvest plans in the Yager

Creek watershed, fisheries biologist Patrick Higgins stated, “Elsewhere in the Eel River drainage, Black Butte River and North Fork Eel River summer steelhead have gone extinct” (Higgins 1995, p. 2).

### **Wilson Creek**

Wilson Creek is tributary to the North Fork Eel River and consists of about 6.7 stream miles. It flows south, entering the North Fork Eel River about 4.1 miles upstream from the Eel River confluence.

Staff from DFG surveyed Wilson Creek in 1938 and did not observe *O. mykiss*. However a report of the survey notes, “Trout reported present below station.” “Fair” spawning areas and “good” pools and shelter were observed in the creek (DFG 1938a).

Wilson Creek is mentioned in a 1973 survey report from a DFG survey of the North Fork Eel River. According to the survey report, “many steelhead yearlings” were seen in this creek in July of 1973 and “additional spawning and nursery areas may exist” in this creek (DFG 1973).

### **Horse Creek**

Horse Creek is tributary to the North Fork Eel River and consists of about 1.6 stream miles. It flows north, entering the North Fork Eel River about five miles upstream from the Eel River confluence.

A DFG memo summarizes the results of salmonid sampling conducted from 1998-2002 on Round Valley Indian Reservation lands. Horse Creek was among the creeks sampled and the memo states, “Steelhead were found in all streams in all years.” Sampling was only conducted on the tribal lands in the watershed (DFG 2002).

### **Asbill Creek**

Asbill Creek is tributary to the North Fork Eel River and flows north, entering the North Fork Eel River about 5.4 miles upstream from the Eel River confluence. The creek has two forks that join about 0.5 miles upstream from the Asbill Creek/North Fork Eel River confluence. The East and West forks consist of about 3.4 and 3.2 stream miles, respectively.

Asbill Creek was examined in 1973 as part of a study of water temperature conditions in the Eel River system. During this survey, “several fingerlings and yearlings” were observed in the creek (Kubicek 1977).

Staff from DFG conducted a stream inventory of Asbill Creek in 1996. The survey covered the lower 0.5 miles of Asbill Creek and “YOY salmonids” were observed. The species of fish was not noted in the survey report (DFG 1996a).

In 1995 DFG staff observed juvenile steelhead in West Fork Asbill Creek up to stream mile 0.5 (Jones 1995). A DFG memo summarizes the results of salmonid sampling conducted from 1998-2002 on Round Valley Indian Reservation lands. Asbill Creek was among the creeks sampled and the memo states, “Steelhead were found in all streams in all years.” Sampling was conducted from the mouth upstream 0.75 miles, including 0.25 miles of one of the forks (DFG 2002).

### **Bear Canyon Creek**

Bear Canyon Creek is tributary to the North Fork Eel River and consists of about 2.7 stream miles. It flows west, entering the North Fork Eel River about 8.6 miles upstream from the Eel River confluence.

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 Bear Canyon Creek (Brown 1991).

### **Hulls Creek**

Hulls Creek is tributary to the North Fork Eel River and consists of about 18 stream miles. It flows northwesterly, entering the North Fork Eel River about 15.4 miles upstream from the Eel River confluence.

Stocking records indicate that Hulls Creek was stocked with hatchery and rescued steelhead several times in 1938. The rescued steelhead came from Short Creek, a tributary to the Middle Fork Eel via Mill Creek (DFG 1938b).

Staff from DFG surveyed Hulls Creek in 1938 and noted that YOY steelhead were “common” in the vicinity of Hulls Valley Creek. “Good” spawning areas, “good” pools and shelter, and “abundant” fish foods also were noted (DFG 1938c).

The lower 1.5 miles of Hulls Creek were surveyed in 1972. Juvenile steelhead were present but “scarce” and limited spawning areas were found in the surveyed section. High water temperatures also were said to be limiting the nursery potential of the creek (DFG 1972).

A section of Hulls Creek between Horse Canyon and Lost Cabin creeks was surveyed by DFG staff in 1986. According to the report, this section of the creek supported a population of resident rainbow trout but was inaccessible to anadromous fish due to several boulder barriers. The survey states that Hulls Creek is “considered to be a major tributary to the North Fork of the Eel River” (DFG 1986).

Staff from DFG conducted a stream inventory of Hulls Creek in 1995. Juvenile and YOY *O. mykiss* were found during electrofishing at three sampling stations located between stream miles 0.1 and 6.5 (DFG 1995). The inventory report recommended increasing canopy cover and treating sources of fine sediment in the creek.

### **Casoose Creek**

Casoose Creek is tributary to Hulls Creek and consists of about eight stream miles. It flows southwesterly, entering Hulls Creek about 2.5 miles upstream from the North Fork Eel River confluence.

Staff from BLM surveyed Casoose Creek in 1977 and observed *O. mykiss* ranging from 1.5 to 8.0 inches in length. The fish were described as “resident rainbow trout” but the report noted, “...the area down towards Hulls Creek could be used by migrating steelhead...” The report also noted the presence of a 40-foot high waterfall downstream of the Antone Creek confluence and stated, “The only section of stream in this drainage area which had enough water to sustain any fishery was the area below the falls” (BLM 1977a).

Staff from DFG conducted a stream inventory of Casoose Creek in 1995. The lower one mile of the creek was surveyed and “numerous steelhead” were observed, ranging from 2 to 12 inches in length (PCFWWRA 1995).

### **Antone Creek**

Antone Creek is tributary to Casoose Creek and consists of about 3.6 stream miles. It flows south, entering Casoose Creek about 3.8 miles upstream from the Hulls Creek confluence.

Staff from BLM surveyed Antone Creek in 1977 and did not observe fish. The survey report stated, “This creek provides no suitable habitat for fish.” A lack of water and numerous jams and falls were observed (BLM 1977b).

### **Lynch Creek**

Lynch Creek is tributary to Casoose Creek and consists of about three stream miles. It flows south, entering Casoose Creek about 4.2 miles upstream from the Hulls Creek confluence.

Lynch Creek is mentioned in a 1977 BLM report regarding creeks in the “Big Butte” study area. The report notes a ten-foot falls at the mouth of Lynch Creek and states that the creek “offers no suitable fish habitat” (Anonymous 1977).

### **Red Rock Creek**

Red Rock Creek is tributary to Casoose Creek and consists of about 2.6 stream miles. It flows northwesterly, entering Casoose Creek about 5.2 miles upstream from the Hulls Creek confluence.

Red Rock Creek is mentioned in a 1977 BLM report regarding creeks in the “Big Butte” study area. The report mentioned that flows in Red Rock Creek were less than 0.1 cfs and stated that the creek “offers no suitable fish habitat” (Anonymous 1977).

### **Peterptor Creek**

Peterptor Creek is tributary to Red Rock Creek and consists of about 2.5 stream miles. It flows southwesterly, entering Red Rock Creek about 0.5 miles upstream from the Casoose Creek confluence.

Peterptor Creek is mentioned in a 1977 BLM report regarding creeks in the “Big Butte” study area. The report stated that this creek has “intermittent pools” and “no suitable fish habitat.” No fish were observed in the creek (Anonymous 1977).

### **Horse Canyon Creek**

Horse Canyon Creek is tributary to Hulls Creek and consists of about 3.8 stream miles. It flows northwesterly, entering Hulls Creek about 2.8 miles upstream from the North Fork Eel River confluence.

Staff from DFG conducted a stream inventory of Horse Canyon Creek in 1996. Juvenile and YOY *O. mykiss* were observed during the survey. A waterfall located about 0.8 miles upstream from the mouth was described as the upstream limit of anadromy and “native rainbow trout” were observed upstream of the falls (PCFWWRA 1996a).

### **Brin Canyon Creek**

Brin Canyon Creek is tributary to Horse Canyon Creek and consists of about 3.1 stream miles. It flows west, entering Horse Canyon Creek about 0.3 miles upstream from the Hulls Creek confluence.

Staff from DFG conducted a stream inventory of Brin Canyon Creek in 1996. Young-of-year *O. mykiss* were observed during the survey. “Mature rainbow trout” also were noted in the creek. A 40-foot waterfall was located about 0.5 miles upstream from the mouth and all fish observations took place downstream from the waterfall (PCFWWRA 1996b). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy.

### **Who Who Creek**

Who Who Creek is tributary to Hulls Creek and consists of about 0.6 stream miles. It flows east, entering Hulls Creek about 8.3 miles upstream from the North Fork Eel River confluence.

Staff from the USFS captured juvenile steelhead while sampling in the lower 0.25 miles of Who Who Creek between 1968 and 1972 (Barney 1972).

Staff from DFG conducted a stream inventory of Who Who Creek in 1996. One juvenile *O. mykiss* was observed during the survey, about 0.3 miles upstream from the mouth of the creek. This fish was described as “possibly a native fish” (PCFWWRA 1996c). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy, along with treating sources of fine sediment. The report also noted that fish passage in the creek is difficult due to a steep gradient.

### **Hulls Valley Creek**

Hulls Valley Creek is tributary to Hulls Creek and consists of about 1.6 stream miles. It flows north, entering Hulls Creek about 9.1 miles upstream from the North Fork Eel River confluence.

Staff from DFG surveyed Hulls Valley Creek in 1938. About 0.5 miles upstream from the mouth, 100 steelhead ranging from two to five inches were observed in one pool. The report noted the presence of “good” spawning areas, “good” pools and shelter, and “abundant” food for fish (DFG 1938d).

In 1995 DFG staff electrofished three sites in Hulls Valley Creek. Juvenile steelhead were collected, although the location is unclear (Mullins *et al.* 1995)

### **Red Mountain Creek**

Red Mountain Creek is tributary to the North Fork Eel River and consists of about 6.7 stream miles. It flows west, entering the North Fork Eel River about 20.6 miles upstream from the Eel River confluence.

In 1996, staff from USFS and BLM conducted a watershed analysis of the North Fork Eel River. The report states that Red Mountain Creek and the West Fork North Fork Eel River contained the highest juvenile steelhead densities of the tributaries surveyed in 1995 (USFS 1996). Staff from DFG conducted a stream inventory of Red Mountain Creek in 1996. Juvenile and YOY salmonids (including *O. mykiss*) were observed and described as “abundant” (CCC 1996a). The inventory report recommended increasing canopy and treating fine sediment sources.

### **Lightfoot Creek**

Lightfoot Creek is tributary to the North Fork Eel River and consists of about 2.1 stream miles. It flows west, entering the North Fork Eel River about 23.3 miles upstream from the Eel River confluence.

Staff from DFG conducted a stream inventory of Lightfoot Creek in 1996. Electrofishing was not conducted during the survey, but “The surveyors observed what appeared to be resident rainbow trout throughout the entire survey length” (PCFWWRA 1996d). The inventory report noted slope failures and aggradation, as well as intermittent flows in sections of the stream.

### **Rock Creek**

Rock Creek is tributary to the North Fork Eel River and consists of about 3.9 stream miles. It flows southwesterly, entering the North Fork Eel River about 26.4 miles upstream from the Eel River confluence.

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 1991).

Staff from DFG conducted a stream inventory of Rock Creek in 1996. No salmonid observations were noted during the survey. The report noted that bedrock falls became common and flow was almost non-existent about 0.4 miles upstream from the mouth of the creek (PCFWWRA 1996e). Treating fine sediment sources and increasing canopy cover was recommended.

### **Salt Creek**

Salt Creek is tributary to the North Fork Eel River and consists of about 10.4 stream miles. It flows north, entering the North Fork Eel River about 28 miles upstream from the Eel River confluence.

Stocking records indicate that a total of 10,000 steelhead were stocked in Salt Creek in 1939 (DFG 1939a). In an August 1940 memo, a DFG warden reports that the lower 1.5 miles of Salt Creek was drying up and steelhead ranging from two to eight inches in length were stranded in the creek. The memo states “...between 700 and 1,000 fish could be rescued from this part of the stream” (DFG 1940).

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 Salt Creek (Brown 1991).

### **Hoaglin Creek**

Hoaglin Creek is tributary to Salt Creek and consists of about 3.6 stream miles. It flows east, entering Salt Creek about 3.1 miles upstream from the North Fork Eel River confluence.

Staff from BLM surveyed a section Hoaglin Creek near its headwaters in 1977 and did not observe fish. The creek was dry and “no suitable stream conditions” were seen, including in areas that were spot checked downstream of the surveyed section (BLM 1977c).

Staff from DFG conducted a stream inventory of Hoaglin Creek in 1996. Juvenile and YOY salmonids were observed in the creek but their species was not identified. The fish were observed downstream of a bedrock chute located about 0.6 miles upstream from the mouth, which appeared to comprise a fish passage barrier (DFG 1996b). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy. Limited amounts of spawning gravel were also noted.

### **Yellowjacket Creek**

Yellowjacket Creek is tributary to the North Fork Eel River and consists of about 2.5 stream miles. It flows west, entering the North Fork Eel River about 28.5 miles upstream from the Eel River confluence.

Staff from DFG conducted a stream inventory of Yellowjacket Creek in 1996. Young-of-year rainbow trout were observed during the survey. No fish were observed upstream of a 20-foot waterfall located about 0.6 miles upstream from the mouth of the creek (CCC 1996b). The inventory report recommended increasing canopy in the creek.

### **Cox Creek**

Cox Creek is tributary to the North Fork Eel River and consists of about four stream miles. It flows southwesterly, entering the North Fork Eel River about 30.3 miles upstream from the Eel River confluence.

Staff from DFG conducted a stream inventory of Cox Creek in 1996. Juvenile and YOY salmonids, including some six to ten-inch “trout,” were observed during the survey. Stream flow became almost non-existent near the confluence of Tub Creek, about 1.7 miles upstream from the mouth of Cox Creek (PCFWWRA 1996f). The inventory report noted that water temperature may limit the fishery and recommended treating sources of fine sediment.

### **Kettenpom Creek**

Kettenpom Creek is tributary to the North Fork Eel River and consists of about 5.7 stream miles. It flows northeasterly, entering the North Fork Eel River about 32 miles upstream from the Eel River confluence.

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 Kettenpom Creek (Brown 1991).

Staff from DFG conducted a stream inventory of Kettenpom Creek in 1996. Juvenile and YOY *O. mykiss* were observed during the survey. A total barrier to fish passage consisting of very large boulders and a steep gradient was present about 1.7 miles upstream from the mouth of the creek (DFG 1996c). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy.

### **Bluff Creek**

Bluff Creek is tributary to Kettenpom Creek and consists of about 7.5 stream miles. It flows southeasterly, entering Kettenpom Creek about 1.3 miles upstream from the North Fork Eel River confluence.

Stocking records indicate that Bluff Creek was stocked with steelhead in 1930, 1939, and 1941. About 5,000 fish were planted in 1930 and 1941, and approximately 10,000 were planted in 1939 (DFG 1939b, DFG 1941).

Staff from DFG surveyed Bluff Creek in 1953. During the survey, steelhead ranging from 3 to 20 inches in length were observed throughout the creek. According to the field form, these fish were “entirely” naturally propagated and the “stream has not been planted for years.” Bluff Creek was described as “An excellent spawning stream for anadromous fish” (DFG 1953).

Bluff Creek was surveyed again in 1973 by staff from DFG. The survey covered the lower 3.5 miles of the creek and fish were “abundant” throughout that section. Spawning areas also were described as “abundant” and “suitable for anadromous fish.” According to the survey report, “Bluff Creek was most likely at one time a very productive stream but due to the logging practices in this area, specifically the lack of a buffer strip, it has lost much of its productivity” (DFG 1973c).

Staff from DFG conducted a stream inventory of Bluff Creek in 1996. Juvenile and YOY salmonids were observed during the survey. A vertical drop in elevation located about 0.4 miles upstream from the mouth of the creek was thought to be a complete barrier to anadromous fish. Good habitat and resident trout were observed above this barrier (CCC 1996c). The inventory report noted that fish passage is difficult due to the creek’s steep gradient.

### **Dutchman Creek**

Dutchman Creek is tributary to the North Fork Eel River and consists of about 2.7 stream miles. It flows southwesterly, entering the North Fork Eel River about 32.2 miles upstream from the Eel River confluence.

Staff from USFS surveyed Dutchman Creek in 1979. One six-inch salmonid was observed during the survey and the creek was dry at its mouth. However, the report stated, “...it is likely that steelhead and resident rainbow make use of the habitat available in Dutchman Creek during periods of higher flows” (USFS 1979a).

### **Soldier Creek**

Soldier Creek is tributary to the North Fork Eel River and consists of about 4.7 stream miles. It flows south, entering the North Fork Eel River about 34.4 miles upstream from the Eel River confluence. Staff from DFG conducted a stream inventory of Soldier Creek in 1996. Young-of-year *O. mykiss* were observed during the survey. A point about 0.8 miles upstream from the mouth of the creek was described as the “end of anadromy” due to intermittent flows, large boulders, and a steep gradient (CCC 1996d).

The inventory report notes that water temperature may limit the fishery and recommends increasing canopy, along with treating sources of fine sediment.

### **West Fork North Fork Eel River**

The West Fork North Fork Eel River is tributary to the North Fork Eel River and consists of about 4.6 stream miles. It flows southeasterly, entering the North Fork Eel River about 35.5 miles upstream from the Eel River confluence.

The West Fork North Fork Eel River was surveyed in 1968 and rainbow trout ranging from 2 to 12 inches were observed. The stream was said to have "...spawning and nursery areas for a resident trout population" and moderate to heavy fishing pressure was noted (DFG 1968b).

Staff from USFS surveyed the West Fork North Fork Eel River in 1980. Only the lower 0.8 miles downstream of Bradburn Creek was surveyed and surveyors noted "few" *O. mykiss* of 18-24 inches in length. The creek was described as, "An anadromous fish stream with low productivity." It was said to have "ample spawning and rearing areas" but lacked shade canopy and instream cover (USFS 1980b).

Staff from DFG conducted a stream inventory of the West Fork North Fork Eel River in 1996. Juvenile and YOY salmonids were observed during the survey, including "large numbers" in some areas. These fish were noted to be "probably steelhead rainbow trout." (CCC 1995). The inventory report noted that water temperatures were "somewhat high" and recommended increasing canopy.

### **Bradburn Creek**

Bradburn Creek is tributary to the West Fork North Fork Eel River and consists of about 3.5 stream miles. It flows northeasterly, entering the West Fork North Fork Eel River about 0.6 miles upstream from the North Fork Eel River confluence.

Staff from USFS surveyed Bradburn Creek in 1980 and observed a pair of adult steelhead in the lower section and low numbers of juvenile rainbow trout throughout the rest of the creek. A set of cascading falls located about 0.25 miles upstream from the mouth was said to be a barrier to migrating fish. The creek was described as a, "Small fairly inaccessible trout stream with excellent shade canopy and instream cover, ample rearing areas, however spawning areas may be a limiting factor" (USFS 1980c).

Staff from DFG conducted a stream inventory of Bradburn Creek in 1996. Young-of-year salmonids were observed at several locations during the survey. Steep waterfalls located about 2.8 miles upstream from the creek mouth were described as the "end of andromy" (DFG 1996d).

### **Salt Creek**

Salt Creek is tributary to the West Fork North Fork Eel River and consists of about 2.9 stream miles. It flows east, entering the West Fork North Fork Eel River about 2.5 miles upstream from the North Fork Eel River confluence.

Staff from DFG conducted a stream inventory of Salt Creek in 1996. Fish were observed throughout the surveyed stream section, the lower 0.8 miles of the creek. These fish were described as "anadromous salmonids" downstream of a boulder barrier located

less than 0.1 miles from the mouth. “Native rainbow trout” were observed above the barrier (DFG 1996e). The inventory report noted several log debris accumulations and limited spawning gravels. It stated that stream’s high gradient makes fish passage difficult and recommended increasing canopy.

### **Panther Creek**

Panther Creek is tributary to the West Fork North Fork Eel River and consists of about 2.7 stream miles. It flows east, entering the West Fork North Fork Eel River about 4.6 miles upstream from the North Fork Eel River confluence.

Staff from DFG surveyed Panther Creek in 1938 and observed YOY steelhead. Spawning areas were described as “good” and fish foods were said to be “abundant” (Vestal 1938). Stocking records indicate that Panther Creek was stocked with 30,000 steelhead in 1938 and 15,000 in 1939 (DFG 1939c).

Staff from DFG conducted a stream inventory of Panther Creek in 1996. Juvenile and YOY salmonids were observed during the survey. A waterfall located about 0.3 miles upstream from the mouth was listed as a barrier and resident trout were observed upstream (CCC 1996e).

### **Bar Creek**

Bar Creek is tributary to the West Fork North Fork Eel River and consists of about 2.7 stream miles. It flows south, entering the West Fork North Fork Eel River about 4.6 miles upstream from the North Fork Eel River confluence.

Staff from DFG surveyed Bar Creek in 1938 and observed two to three-inch steelhead. “Good” spawning areas, “good” pools and shelter, and “abundant” fish foods also were noted (Shapovalov 1938).

Staff from DFG conducted a stream inventory of Bar Creek in 1996. Juvenile and YOY *O. mykiss* were observed during the survey. “Native trout” were observed upstream from a point located at about stream mile 2.6 where the creek became “too steep for anadromous fish” (PCFWWRA 1996g). The inventory report recommended treating sources of fine sediment.

### **East Fork North Fork Eel River**

The East Fork North Fork Eel River is tributary to the North Fork Eel River and consists of about 2.6 stream miles. It flows south, entering the North Fork Eel River about 35.5 miles upstream from the Eel River confluence.

Forest Service staff surveyed the East Fork North Fork Eel River in 1979 and 1980. Salmonids were described as “common” in the lower section of the creek in 1979 and *O. mykiss* were present in 1980 (USFS 1979b, USFS 1980d). The 1980 survey report describes the fork as a “Small anadromous trout stream with intermittent flows in summer and fall. Little shade canopy, instream cover and spawning areas.”

Staff from DFG conducted a stream inventory of the East Fork North Fork Eel River in 1996. Young-of-year *O. mykiss* were observed during the survey. The fish were observed downstream of a set of large boulders located at about stream mile 0.9 (PCFWWRA 1996h). The inventory report notes that water temperature may limit the fishery and recommends increasing canopy.

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