Land and Resource Use

The Outlet Creek Basin was occupied by Pomo Native Americans when the first European settlers arrived in the early 1840s. The Pomo had five villages located in the Basin: Mato, located northwest of Sherwood; Kulakai, south of Sherwood; Bakau, at Little Lake; Tsamomda, west of Willits and Shotsiu, east of Willits. The Pomo community referred to the area as "moldy ground." The area now known as Little Lake Valley was referred to as "splash with the toes" presumably referring to the seasonal flooded, lake-like conditions.

The occupation of the area by the Pomo was dynamic, changing with the demands of population and social structures. The Basin provided abundant food including deer, bear, fish, acorns, bulbs, and seeds. The land was not farmed, but was managed. Fires were a common management tool used to clear brush and grass for improved flower and bulb production. The burning also improved forage for deer, berry production, and acorn yields. Upon the arrival of the western migrants in the 1850s, the area began to be managed for agriculture with some timber production on the western side of the Little Lake Valley. Little Lake Valley was used to grow grain and hay and the surrounding foothills were used for cattle grazing. By the 1860s, the Pomo tribes had been displaced from the Outlet Creek Basin by the white settlers.

Early Land Use- 1800s

In 1855, brothers Sam and Harry Baechtel drove a herd of cattle up from Marin County in search of permanent grazing land and found Little Lake Valley. They were the first settlers in the valley, although A.E. Sherwood had settled Sherwood Valley, 10 miles to the northwest in l853. Sam Baechtel mentioned that there were about 300 Native Americans who shared the valley, dividing it north and south. Evidently the Baechtel's got along well with the Native Americans because the later generations remembered Native Americans working on the Baechtel's ranch and an Indian sweat house being across the road from their house. The population of Mendocino County grew as settlers had worked their way through the mines in the Sierras or wanted to avoid the drought conditions in the foothills and valley and were moving west in search of work and homesteading.

Timber harvest of old growth Douglas-fir and redwood began during the mid-1800s. The first logging methods used horse and oxen teams to move logs. Streambeds were frequently used as skid paths to move logs down slope. Fire was used extensively to reduce slash during logging and in attempts to convert conifer forest to grazing land after harvesting operations.

The early settlers were self-sufficient and grew their own produce, raised their own meat, fruit and potatoes. What they didn't grow could be purchased at the local mercantile. The first water-powered sawmills were built on Willits Creek by the Blosser brothers in 1860. William James built the first grist mill in the valley. In 1865, Kirk Brier built a store to the north of Hiram Willits' land and the town of Willitsville grew up around it. By the end of the 1860s, Willitsville was connected to other parts of California by the stage line and the railroad lines were well under construction.

The Blosser Brothers mill changed hands and was enlarged in 1877. For the first two years the mill processed ~3,000,000 board feet of lumber, mostly redwood. The town of Little Lake had sprung up on Baechtel land and consisted of a store, a meeting house, a blacksmith shop and a saloon. By l888, Willitsville was incorporated into the city of Willits and had an estimated population of 720. Lumbering joined farming as the main financial and employment sources in the valley. During this period the tanbark industry flourished.

In 1892, the California Northwestern Railroad Company began scouting out locations along their routes for an egg taking station and hatchery under the direction of Colonel LaMotte. In 1897, facilities were open on Gibson Creek in the Russian River System and Outlet Creek. Lahontan cutthroat trout from Lake Tahoe were planted in just about every stream along the railroad line. The steelhead trout of Outlet Creek were prized by fishermen for their size and fight. Steelhead trout eggs collected from Little Lake were grown out in the Gibson Creek hatchery and planted throughout Outlet Creek Basin, parts of the Big and Russian River Basins and possibly Lagunitas Creek. Later, trout eggs from the Shasta and/or McCloud strains were grown out at the hatchery and planted in Outlet Creek and other watersheds in Mendocino County until the facilities were closed in 1920.

Prior to the development of the railroad lines, the north end of Little Lake Valley was a lake with no defined creek channels. Sometime around 1910, the lake was drained and the north end of the valley was developed for potato production, however, the lake continued to flood during the winter season.

In 1901, the Northwestern Railroad reached Willits and the Northwestern Redwood Company's Diamond D mill was built at what is now known as the Brooktrails Lodge site. The Northwestern Redwood Company had purchased most of the Sherwood, Mill and Willits creek drainages. Old growth redwood and Douglas-fir were actively being harvested in the upper reaches of Sherwood, Mill, Willits, Curly Cow and Rowes creeks. A large crowd gathered to greet the Skunk Line between Fort Bragg and Willits when the line was completed in 1911. Northwestern completed the line to Eureka in 1914 making Willits the center point of the line between San Francisco and Eureka.

The Diamond D mill transported lumber utilizing the two Northwestern Pacific rail lines, the Sherwood extension that ran from Willits to the Diamond D mill and beyond to Sherwood Valley, and the line from Willits south to the Bay Area. During the 1920s, logging slowed, the Blosser brothers and Diamond D mills closed. The local ranchers and cowboys started Frontier Days which was centered on the Rodeo. With the onset of the Great Depression of the 1930s, most of the large commercial sawmills on the North Coast area closed their doors with only the small circular mills continuing to operate. The gasoline powered crawler tractors made their appearance in the North Coast area in the 1930s, though logging was largely inactive. The first large steam mill was built in 1942 near Blosser Lane by the Sage Land and Timber Company.

Increased demand for timber products – 1950s

Rail line construction included massive cut and fill excavation along roadbeds that followed along side of Broaddus, Long Valley and Outlet creeks. Riparian vegetation was permanently removed along the railroad right-of-ways. Although wood trestles were built over larger watercourses, smaller watercourses were crossed by wood and earth fill, which later failed. The introduction of the steam donkey by the turn of the century reduced ground impacts by cable pulling large logs from fixed locations, but allowed much more widespread forest harvest. These operations did not disturb the ground to the extent of post-war tractor operations characterized by large-scale side-slope excavations and skid trail networks.

The Northwestern Redwood Company lands were purchased by Firco in 1950s. Firco operated until the mid-1960s, harvesting in the Sherwood, Mill and Willits creek drainages, as well as in the Moore Creek drainage, located in the Pine Mountain area on the east side of Little Lake Valley. After two of the company's principals were killed in a plane crash in Canada, Firco began selling off its holdings, some of which became the Brooktrails subdivision.

Increased demand for lumber products during the 1950s coincided with the widespread deployment of heavy tractors that were greatly improved by technology gained during World War II. Early versions of the D-8 tractors, using refined track mounts and suspension systems and powered by diesel engines, were ideally suited for moving large diameter logs over difficult terrain. This equipment was readily maneuverable, enabling large areas to be harvested in short time periods. Rail line networks were quickly abandoned and diesel powered log trucks transported logs along seasonal roads. Roads often followed the stream channel to enable down slope skidding. Many roads had steep gradients designed to access the side slopes. Skid trails frequently followed or crossed stream channels. Landings were often located in or adjacent to watercourses. Across steep terrain, skid trails cut deep into the side-slopes, creating a terraced effect.

The greatest impacts from timber harvest to the Basin appear to have followed World War II. The end of World War II brought another wave of demand for forest products to the North Coast as a post-war economy accommodated the housing needs of returning GIs and their families. The old growth loggers and mills for the redwood timber were long gone and had touched a relatively small portion of the drainage during the first logging eras. But with the advent of reliable log trucks, the diesel tractor, and a voracious demand for structural lumber, the previously inaccessible Douglas-fir patches were harvested. Many small sawmills were distributed across the landscape, and the Douglas-fir of inland Mendocino County provided the resources to bring money and create jobs within the region. In about 25 years, nearly all old growth fir was gone. By 1964, tractor harvesting had continued at an active pace in most of the timbered areas in the Basin.

The lack of erosion control facilities throughout areas of the Eel River System and Outlet Creek Basin, coupled with the uncontrolled installation of fills and failure to remove fills adjacent to watercourses, left the land

vulnerable to large storm events. Intense prolonged runoff during large storm events in the mid-1950s and 1960s caused erosion from down cutting, slides, and washing of soil and debris into watercourses. The residual effects are still observed in some areas today. One local resident (Smith pers. comm. 2004) recalls that between 1957 and 1960, he saw at least one logjam on Willits Creek that was ~50 feet wide and 100 yards long. The 1955 flood deposited large amounts of debris and sediment aggrading creeks throughout the Basin. At the south end of the valley, sediment accumulated near the confluences of Haehl, Baechtel, and Broaddus creeks. The creeks were all straightened, channelized and leveed along property lines and were relocated into one stream called Outlet Creek, which flows into and out of Little Lake Valley (Ford pers. comm. 2004). It appears that prior to the channelization, the original Broaddus and Baechtel creek streambeds ran parallel to the new Outlet Creek channel, but were further west. The original Broaddus and Baechtel creek channels are now called the Outlet overflow (Ford 2004). It is probable that the high ground between the two adjacent Broaddus and Baechtel creeks functioned as a floodplain.

In the early 1960s, the upslope areas was harvested and developed. Considerable amounts of sediment were deposited into the creeks from the 1964 flood event, ultimately settling out at the north end of the valley. The creeks began aggrading again, and by the 1980s streambed elevations were higher than the adjacent meadows. Juvenile coho and steelhead trout began rearing in the meadows where water temperatures reached 80˚F, and the fish died (Jones pers. comm. 2004).

In areas of the Basin where ranching has been the dominant use, logging was frequently followed by prolonged cattle grazing. This reduced, and in many locations prevented, conifer reestablishment altogether. Grassland became permanently established throughout the more compacted ground. In addition, removal of Douglas-fir in mixed conifer forests converted these stands to tanoak and madrone, especially in burned areas. Prolonged cattle grazing in riparian areas after harvest prevented timely reestablishment of canopy cover over fish-bearing watercourses, elevating stream temperatures.

Logging operations slowed again in 1973. Selection method harvests were predominant. By this time, tractor-yarding methods had changed to maintain equipment exclusion zones and minimum vegetation retention standards adjacent to watercourses per the 1973 Zberg-Nedjly Forest Practice Act. New road locations were moved upslope, but the practice of using existing un-surfaced roads located near watercourses continued.

In the early 1980s, the DFG funded barrier and sediment removal projects to define channels for upstream migration of adult salmonids and downstream migration of juvenile salmonids in the stream channels running through Little Lake Valley. Although this work was effective it requires regular maintenance since the channelization in mainstem Outlet Creek and its various tributaries has effectively eliminated natural stream processes and flood plain function in many portions of the Basin.

Willits is rapidly becoming a bedroom community for areas with greater job opportunities in southern Mendocino and Sonoma counties due to relatively inexpensive housing prices. Local employment remains based on agricultural activities such as timber and vineyards, and ranching with tourism emerging as new economic forces.

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to construct a new segment of U.S. 101 that would bypass the City of Willits in Mendocino County. The project is being proposed to reduce delays, improve safety, and achieve a “C” Level of Service for interregional traffic. The Willits Bypass project has been programmed for $116 million for capital improvements in the State Transportation Improvement Plan. Start of construction is scheduled for 2007. The Mendocino Council of Governments included its entire $17.3 million share of 1998 Regional Improvement Program funds for the project.

Fire History

Fire was used extensively by Native Americans to manage the landscape, thereby reducing the chance of and subsequent impacts of wildfires, increasing plant and animal productivity, and improving the flow of springs by maintaining a sub-climax condition. Following a fire, newly sprouting varieties of brush, grasses, and forbs

provided highly nutritious growth attractive to browsing animals, such as deer and elk. Numerous species of lily which were used extensively by the Pomo, such as brodiaea, soap plant, camas, and various mariposa lilies (*Calochortus sp*.) also emerged after a fire. Berry, seed and acorn crops were also improved by fire, in addition to those plants used for basket making. In chaparral, small game species such as quail and jackrabbits were found in larger numbers in burned areas than in unburned areas. In forests, frequent ground fires of low intensity were common and resulted in removing diseased trees, reducing competition, and reducing expansive crown fires. Such forests were characterized by uneven-aged stands (Lewis 1973).

Fire was also used extensively in all portions of the Basin by early homesteaders and ranchers prior to logging activities to create and maintain grazing lands for livestock. Smith (pers. comm. 2004) recalls that between 1912 and 1915, his grandfather was paid 2 cents for every fir tree he girdled by fire near what is known today as the Shamrock Ranch.

Fire has played a major role in shaping the vegetation, especially in the west portions of the Basin. Young hardwood stands of madrone and bay are particularly vulnerable fuels to fires. Fires have occurred in all three subbasins and 38,387 acres were burned. The Strong Mountain fire was the largest recent fire which burned 20,619 acres on the west side of the Outlet Creek Basin (Figure X. Fire History of the Outlet Creek Basin).

Roads

The first roads in the basin were originally horse drawn wagon routes following the Pomo Native American trails. These trails evolved into railroad lines and then into modern day County roads and the State Highway system. Roads were developed near and/or in streams and on top of old railroad beds, which accessed timber and rural housing Little regard was given to the effects on geologic terrane, such as erosion.

The Upper Eel Total Maximum Daily Load (TMDL) lists roads as the third source of fine sediment contribution to in stream habitat (EPA 2004). The Eel River is also listed as a 303(d) sediment impaired waterbody.

The Outlet Creek Basin has an estimated 400 miles of roads with a density of 2.48 miles of road per square mile (Table X). The Northern and Southern subbasins have the most roads, with 122.1 and 187.1 miles, respectively. The overall road density in the basin is in the low range when compared to other North Coast Basins, such as the Gualala, Albion, Big rivers; however, this is an artifact of incomplete roads data. The highest overall road density was in the Southern Subbasin. Roads were divided into five classes:

- Class 1: Primary Routes,
- Class 2: Secondary Routes,
- Class 3: Thoroughfares,
- Class 4: Residential Roads, and
- Class 5: Four wheel drive and hiking trails.

Residential roads (Class 4), which are unimproved and unpaved, make up 80% of all of the roads and are the most common road type in every subbasin. This road type also had the highest road density - ranging from 1.34 to 2.41 miles of road per square mile.

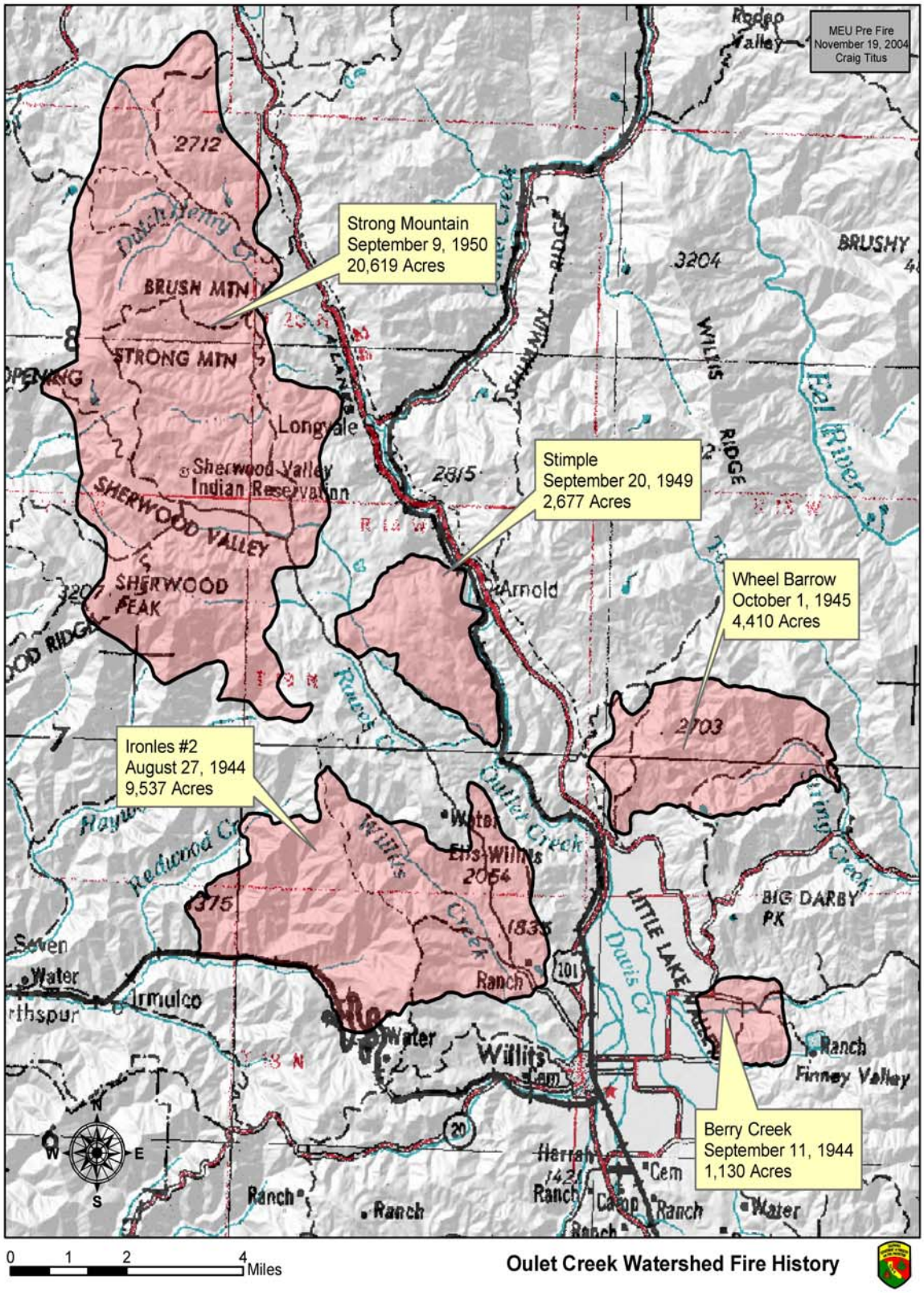

Figure X. Fire History of the Outlet Creek Basin

Table X. Miles and Density by Road Classification (Data for the roads classification, miles, and density were calculated from the USGS and Teale Data Center (1996) based on 100K quads)

Subbasin	Total Length in Miles						Length in Miles per Square Mile					
	Class 1	Class 2	Class 3	Class 4	Class 5	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Total

Northern	7.2	8.2	0	82.5	24.2	122	0.11	0.13	0	1.34	0.39	1.97
Middle	8.0	0	0	78.8	3.7	90	0.23	0	0	2.32	0.11	2.66
Southern	10.0	7.2	3.0	159.7	7.2	187.1	0.15	0.11	0.05	2.41	0.10	2.82
Basin	25.2	15.4	3.0	321	35.1	400	0.16	0.10	0.02	1.98	0.22	2.48
Total %	6	4	>1	80	9	100	7	3	>1	81	8	100

Data does not take into account legacy logging roads, skid trails, ranch and rural residential roads built after 1996, nor does it recognize the miles of roads decommissioned after 1996.

Most (63%) of the roads in the basin are located on soft geology (Table X). However, the highest road density occurs on very soft geology located in the Southern Subbasin.

Table X. Geologic Terrane and Road Density

Subbasin	**Total Length in Miles**					**Length in Miles per Square Mile**				
	Alluvium Very Soft	**Franciscan Soft**	**Coastal Belt Soft-Medium**	**Pilocene Medium**	**Total**	**Alluvium Very Soft**	**Franciscan Soft**	**Coastal Belt Soft-Medium**	**Pilocene Medium**	**Total**
Northern	3.2	109.6	9.3	0	122.1	3.0	1.6	2.1	0	6.7
Middle	1.7	54.5	34.2	0	90.4	5.4	>2	2.8	0	10.2
Southern	34.6	95.6	49.3	14.9	194.4	3.1	3.9	4.9	3.2	12.0
Basin	39.6	253.0	92.9	14.9	400.4	11.5	2.1	3.5	3.2	20.8
Total %	9.9	63.2	23.2	3.7	100	55	10	17	15	100

The majority of roads in the basin are unimproved and unpaved located on very soft to soft-medium geology. This creates a high potential for road surface erosion. Class 4 and 5 roads on Alluvium, Franciscan, and Coastal Belt have the highest potential for surface erosion. Classes 1-3 have the lowest potential regardless of the geology.

Table X. Impact Analysis of Road Classification, Road Density, and Geologic Terrane.

Impact Analysis of Road Classification, Road Density, and Geologic Terrane					
Geologic Terrane	**Class 1**	**Class 2**	**Class 3**	**Class 4**	**Class 5**
Quaternary Alluvium (Very Soft)					
Miles	**5.29**	**0.78**	**1.91**	**31.02**	**0.14**
% of Basin	**1.3%**	**0.2%**	**0.5%**	**7.8%**	**<0.1%**
Miles per Square Mile	**0.43**	**0.06**	**0.15**	**2.50**	**0.10**
Central Belt (Soft)					
Miles	**7.96**	**12.08**	**1.11**	**202.44**	**29.37**
% of Basin	**2.0%**	**3.0%**	**0.3%**	**50.6%**	**7.3%**
Miles per Square Mile	**0.07**	**0.10**	**0.01**	**1.71**	**0.23**
Coastal Belt (Soft-Medium)					
Miles	**9.92**	**1.10**	**0.00**	**76.23**	**5.60**
% of Basin	**0.1%**	**0.3%**	**0.0%**	**19.1%**	**1.4%**
Miles per Square Mile	**0.37**	**0.04**		**2.85**	**0.20**
Pilocene-Pleistocene Valley Fill (Medium)					
Miles	**2.03**	**1.51**	**0.00**	**11.33**	**0.00**
% of Basin	**0.5%**	**0.4%**	**0%**	**2.8%**	**0%**
Miles per Square Mile	**0.44**	**0.33**		**2.47**	

Total subbasin roads = 400 miles, 2.48 miles/square mile
Blue categories have the lowest potential for road surface erosion (8.6%). Orange categories have medium potential for surface road erosion (2.8%). Magenta categories have the highest potential for surface erosion (86.3%). Road surface erosion is a source of fine sediment that can be delivered to streams, which is deleterious to fish habitat.

Figure X shows a high density of unimproved, residential roads close to stream channels located on Franciscan and Alluvium geology in the Southern Subbasin. These roads have a high potential for contributing fine sediment to stream channels. The Northern and Middle subbasins also have roads within close proximity to the stream channel; however, the road density is lower in these subbasins.

Residential roads located on Central Belt and Alluvium terrane located in the Southern Subbasin should be the highest priority for improvements and decommissioning followed by those in the Middle and Northern subbasins. Whenever possible reprioritization should be considered in conjunction with other projects requiring similar heavy equipment, materials, and staffing.

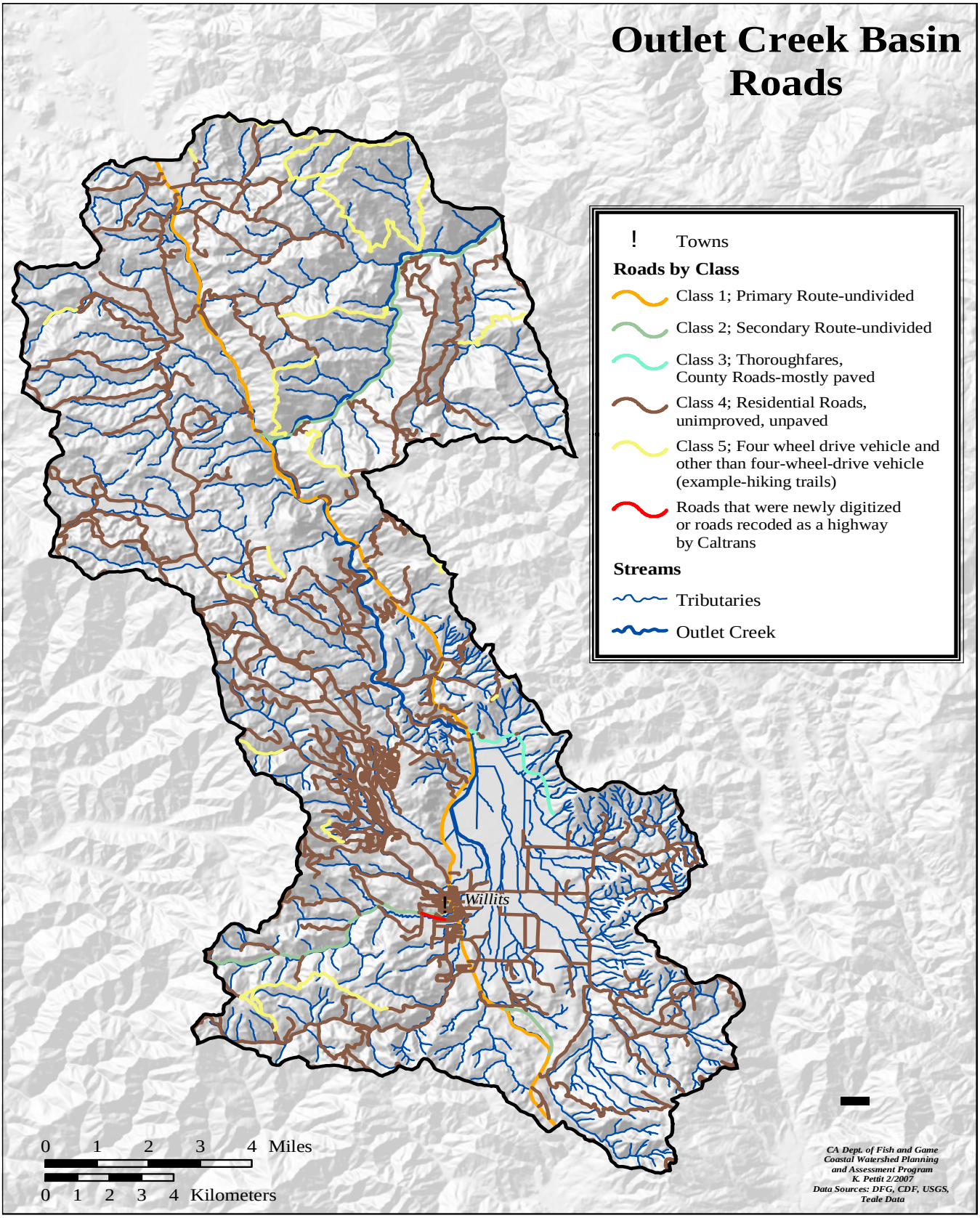

Figure X. Road Classification and locations in the Outlet Creek Basin.

Fish History and Status

Fishery Resources

Chinook and coho salmon and winter-run steelhead trout inhabit the Outlet Creek Basin. There are 16 known fish species; four are native and anadromous, and fourteen are freshwater with six species being native and eight species being non-native species (Table X).

Table X. Anadromous, native, and non-native fish species of the Outlet Creek Basin

Common Name	***Scientific Name***
Anadromous	
Chinook (king) salmon	*Oncorhynchus tshawytscha*
Coho (silver) salmon	*Oncorhynchus kisutch*
Steelhead trout	*Oncorhynchus mykiss*
Pacific lamprey	*Lampetra tridentata*
Native	
Brook lamprey	*Lampetra richardsoni*
Rainbow trout	*Salmo gairdneri*
California roach	*Hesperoleuctus symmetricus*
Threespine stickleback	*Gasterosteus aculeatus*
Non-Native	
Sacramento pike minnow	*Ptychocheilus grandis*
Bluegill	*Lepomis macrochius*
Green sunfish	*Lepomis cyanellus*
Small mouth bass	*Micropterus dolomieui*
Large mouth bass	*Micropterus salmoides*
Golden shiner	*Notemigonus crysoleucas*
Brown bullhead	*Ictalurus nebulosus*
Sacramento sucker	*Catostomus occidentalis*

History of the Salmonid Populations

Native American sustenance to Commercial Fishery (Pre-Europeans- 1920)

According to Baumhoff (1958), the size of Native American tribes on the north coast of California was determined by the abundance of salmon in the group's territory rather than the abundance of acorns or other foods. The numerous villages around the Eel River System and the five tribes of Pomo living in Little Lake Valley support the notion that the salmon and steelhead trout populations were healthy and productive prior to European colonization in the 1840s and the canneries on the lower Eel in the 1850s.

Also supporting the idea of large salmonid populations is the fact that the Eel River was the second most important salmon producer in California. The fall run of salmon on the lower Eel River began to be commercially fished in 1853. By the close of the decade there were seven packing plants which supplied cured fish to the miners and townspeople of northwestern California as well as for export. By the 1880s, the fish canning industry became unprofitable due to the lack of salmon on both the Eel and the Sacramento rivers (McEvoy1986). In January 1893, the Ferndale Enterprise's Cannery Section recounted the following:

"The gradual disappearance of the salmon is something that should cause concern on this coast and the salmon will soon be extinct in California waters unless adequate measures are taken to protect and restock the streams. There is no mystery in the cause of the decline of the salmon. The fish have been mercilessly hunted [for canning] and the Cutting Packing Company superintendent, Mr. Witherbee, says there is no stream on the Pacific Coast that is fished as closely as the Eel River. He thinks that the salmon run for the Eel River is a thing of the past."

By 1900, folks involved with salmon industry began to realize the seriousness of the decline of salmon populations in the Eel River system. This decline was likely observed in the basins draining into the Eel River such as the Van Duzen, North Fork, South Fork, Middle Fork, and Outlet Creek. During the 1920s, the commercial salmon fishery was depleted to the point that fishermen were not making any money. Thousands of Humboldt County citizens petitioned the legislature to close the Eel River to netting to save the remnant salmon

runs as a "tourist attraction". By 1926, commercial fishing in the Eel River ended although sport fishing continued. In less than 75 years, the Eel River's once healthy and productive salmonid populations were history.

With the Outlet Creek Basin being a headwater stream of the Eel River System, we are lead to assume that it also had healthy and productive salmonid populations and experienced a similar decline from the 1840s-1926. Due to the Basin's inland location and gradient, we also assume that steelhead trout were the most numerous salmonid historically present, followed by Chinook salmon. Coho salmon were probably always the least abundant species.

The history of steelhead in the Outlet Creek Basin from 1892-1920 has been reconstructed via newspaper articles from 1892-1920 (Table X). All the articles located have been included. No records were found mentioning Chinook (King) or coho (Silver) salmon. The articles only discussed steelhead, Lahontan, and Shasta-McCloud trout species. This may support the notion that only a few Chinook and coho salmon were entering the Outlet Creek Basin during this time period or it may simply mean that folks were only interested in writing about steelhead trout. The Outlet Creek strain of steelhead trout appears to have been large in size and enjoyable to catch. Steelhead juveniles from Outlet Creek were out planted in tributaries to the Big and Russian Rivers, and other tributaries in Marin County.

Table X. Recorded events and location of the Outlet Creek Basin 1892-1920.

Date	*Source*	*Finding*	*Analysis*
1892 April	*Ukiah Republican Press*	*"Outlet Creek egg collecting station location is a very fine one, capable, in ordinary years, to supply all the needs of this section of country. With the hatchery and the egg station, the waters will soon be the Mecca of the votaries of rod and reel. Very fine catches are already reported this season, notwithstanding it being an off year."*	*Outlet Creek maintains a healthy and productive steelhead trout population. No information exists to analyze whether the steelhead population has been effected by the declines observed in the salmon populations in the Eel River. Fishermen described having experienced "off" years.*
1897 April	*Mendocino Dispatch Democrat*	*To enhance the local fishery and entice tourists to "ride the rails" to Mendocino County and vacation at area fishing resorts and cabins, the California Northwestern Railroad will open an egg taking station near Outlet Creek, know for its large steelheads. These steelheads will be placed in county streams for added angler enjoyment".*	*The reputation of the phenomenal steelhead fishing around Willits was being used to draw folks to the area for recreation. There was a desire to increase the population, but it is unknown if this was related to an increase in fishing effort, a decrease in steelhead population, or another reason.*
1897 November	*Ukiah Republican Press*	*Col. La Motte secured what he believes to be a good location to erect weirs and hurdles to secure more eggs for the upcoming season. San Francisco and North Pacific Railway Company's supplemental station established across the "outlet" to Little Lake.*	*The adult spawning steelhead population is large enough to be easily caught for egg extraction. The steelhead of Outlet Creek were known to be large and robust which may indicate that this strain grew fast, matured late, and headed for sea at a late age. These three characteristics would be an advantage to an anadromous species with a migration of up to 160 miles.*
1897 December	*Ukiah Republican Press*	*"Colonel La Motte is impatiently awaiting the rise in the stream on which the station is located. The weirs are in position across the outlet to Little Lake, about five miles north of Willits. According to statements made by settlers near the station the run of steelheads up to Little Lake is phenomenal, and the colonel expects to secure all the eggs necessary to keep the local hatchery running during the season."*	*The adult spawning steelhead run began after mid-December and peaked afterward. The population was easily caught because all of the fish had to move through the narrow portion of Outlet Creek into Little Lake to continue the upstream migration. The steelhead population was probably quite numerous since this run was being used to plant streams throughout Mendocino and Sonoma county streams.*
1904 October 21	*Mendocino Dispatch Democrat*	*"Col. La Motte has now distributed all the fish of this year's hatching in the head waters of the streams (Willits Creek and James Creek [Big River Watershed]). On Saturday, Monday and Tuesday he distributed 72,000 each day and on Wednesday 84,000 were sent out This finishes the work of the season, over 1,000,000 having been distributed." Juvenile fish planting completed for the year.*	*Steelhead juveniles of Outlet Creek genetic stock were planted in Outlet Creek and Big River Basins.*
1906 June 22	*Ukiah*	*Juvenile steelhead trout from the Outlet Creek egg*	*Steelhead stock from Outlet Creek were planted in many*

	Republican Press	*taking station were planted in Robinson Creek (84,000); Dry Creek (72,000); Lagunitas Creek (70,000); Sebastopol Creek (10,000); Ackerman Creek (70,000); Petaluma Creek (25,000); and Orr Creek (70,000). He still had a goodly number left which he is disposing of as fast as possible. A record number will be planted this year." In only one year, a total of 401,000 fish were planted in creeks in Mendocino, Sonoma and Marin counties.*	*creeks located in Mendocino, Sonoma and Marin counties and likely in many other stream near California Northwestern Railroad lines.*
1913	*Ukiah Republican Press*	*Gibson Creek Hatchery taken over by the DFG Commission, but was still managed by Col. La Motte. Half-million small rainbow trout of the Shasta-McCloud strains from State Hatchery at Sisson planted in local streams.*	*Shasta-McCloud strain of rainbow trout outplanted in Mendocino County.*
1920	*Ukiah Republican Press*	*Egg taking station and hatchery closed.*	*With most of the nearby and accessible timber harvested the mills closed making the railroads obsolete and with it went the way to transport fish.*

The U.S. Fish and Wildlife Service (1955-59) and the annual salmonid counts over Benbow Dam on the South Fork Eel River (1938-1962) estimated the average spawning run of Chinook at 69,000, coho at 30,000 and steelhead at 115,000 for the entire Eel River System. Using the Eel River's estimated salmonid spawning run to create estimates for Outlet Creek is unreliable and unscientific. With this said, the Outlet Creek Basin makes up less than 4% of the total Eel River System, so an estimate based on comparing watershed size and miles of blue line stream indicate that the Chinook spawning run was probably around 1,380, the coho around 600, and the steelhead was about 2,300 between 1938-1962. These estimates should not be viewed as recovery targets.

There is evidence that salmonid populations decreased after the 1964 flood. Historical personal accounts document that the steelhead trout juvenile population was larger prior to 1964 flood. MCRCD (1983) recorded the following statement about the Eel River: "It was at that time (pre-1964 flood) very easy to catch 25 pan-sized, 6-7 inches long (~ 2 years old) out of these holes (pools)."

Hundreds of Chinook spawners were counted in Ryan, Baechtel and Long Valley creeks (CDFG 1987-1989). Outlet Creek had nearly 1,000 spawners during 1988. In 1989-90, Nielsen et al. conducted surveyed 42.9 miles of Outlet Creek and its tributaries. The Chinook spawning population was estimated at 58-66 using the area-under-the-curve method. This was the last population estimate recorded. This estimate appears low as over 100 Chinook spawners were counted on Willits Creek on one day of survey in 2005 (Pers. comm. Harris). DFG fishery biologists who have worked in Outlet Creek and its tributaries for years estimate that the average spawning run for the past few years was about 650 for Chinook, while coho ranges from 0-25, and steelhead trout is somewhere around 1,200 (Pers. comm. Harris and Grass).

Based on the available information and data, it appears that over the past 100 years the salmonid populations have been significantly reduced in the Outlet Creek Basin.

Distribution

Distribution relates to a species given range at the time the information was collected. Changes in fish distribution results from changes in water and habitat conditions caused by natural and human impacts on both localized and global scales. A record of absences does not preclude the possibility that salmonids were present just as a record of presence does not mean that the population is persistent.

During the 1970s up through 2000s, CDFG conducted surveys on nine streams in the Outlet Creek Basin. Over the thirty year period, Chinook and coho salmon were found on 75% and 38% of the streams surveyed, respectively. Steelhead trout were reported on 88% of the streams surveyed (Table X). Figures X-X show the distribution of the salmonid by species.

Table X. Chinook salmon, coho salmon and steelhead trout presence reported in CDFG stream surveys from 1971-2000 in the Outlet Creek Basin

Subbasin	Streams	Chinook Present	Coho Present	Steelhead Present
Northern	***5***	***4***	***0***	***5***
Middle	***2***	***2***	***2***	***1***
Southern	***9***	***6***	***4***	***8***
Basin	***16***	***12***	***6***	***14***

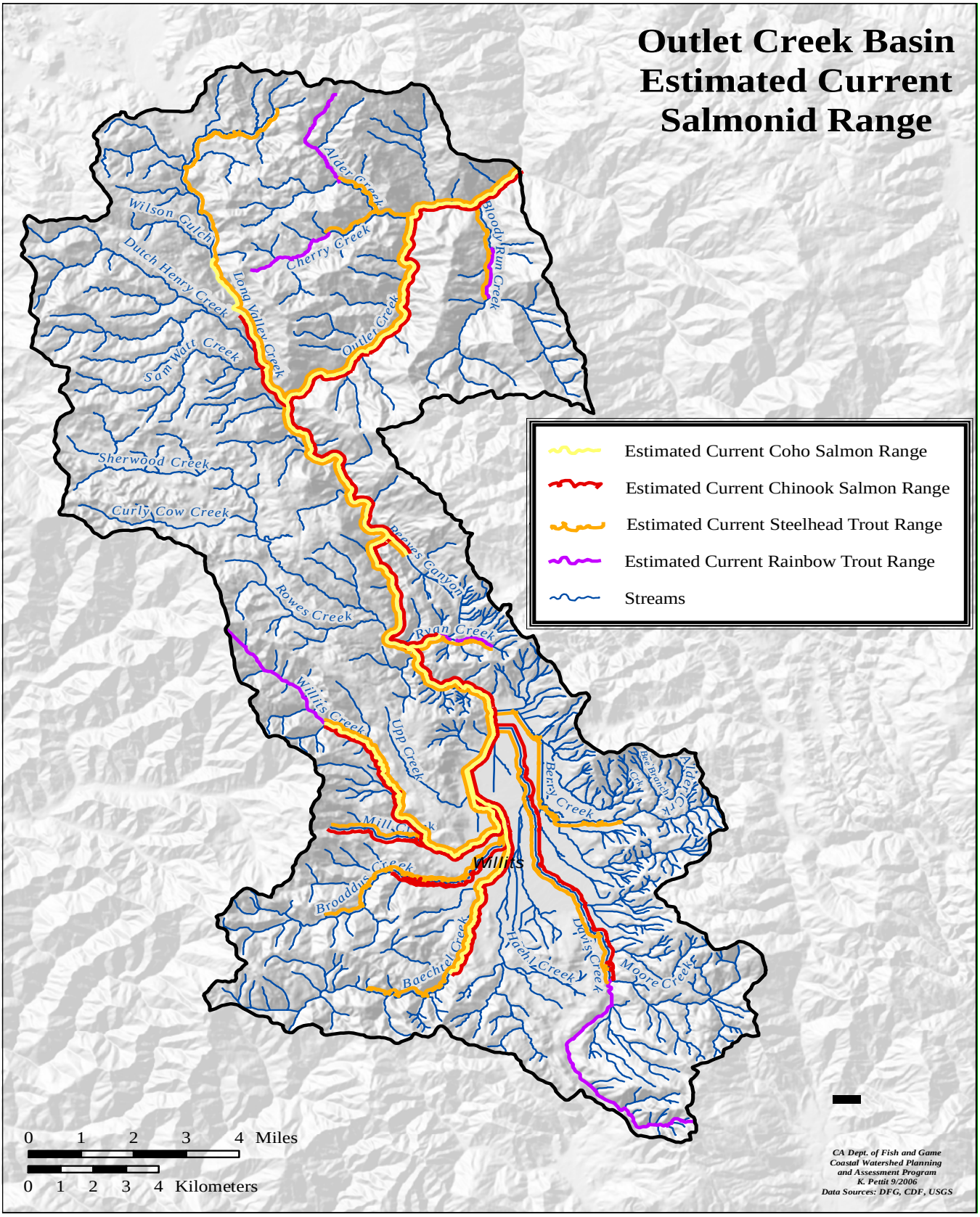

Figure X: Current salmonid distribution in the Outlet Creek Basin.