= Little Butte Creek =

Little Butte Creek is a 17 @-@ mile @-@ long (27 km) tributary of the Rogue River in the U.S. state of Oregon . Its drainage basin consists of approximately 354 square miles (917 km2) of Jackson County and another 19 square miles (49 km2) of Klamath County . Its two forks , the North Fork and the South Fork , both begin high in the Cascade Range near Mount McLoughlin and Brown Mountain . They both flow generally west until they meet near Lake Creek . The main stem continues west , flowing through the communities of Brownsboro , Eagle Point , and White City , before finally emptying into the Rogue River about 3 miles (5 km) southwest of Eagle Point .

Little Butte Creek 's watershed was originally settled by the Takelma , and possibly the Shasta tribes of Native Americans . In the Rogue River Wars of the 1850s , most of the Native Americans were either killed or forced onto Indian reservations . Early settlers named Little Butte Creek and nearby Big Butte Creek after their proximity to Mount McLoughlin , which was known as Snowy Butte . In the late 19th century , the watershed was primarily used for agriculture and lumber production . The city of Eagle Point was incorporated in 1911 , and remains the only incorporated town within the watershed 's boundaries .

Large amounts of water are diverted from Little Butte Creek for irrigation , water storage , and power generation . Canal systems deliver the water to nearby Howard Prairie Lake and the Klamath River watershed , Agate Lake , and the Rogue Valley .

Despite being moderately polluted , the creek is one of the best salmon @-@ producing tributaries of the Rogue River . Coho and Chinook salmon migrate upstream each year ; however , several dams hinder their progress . A fish ladder was built in 2005 to help fish swim past a dam constructed in Eagle Point in the 1880s , but was destroyed by flooding just three months later . It was rebuilt in 2008 . Restoration of a 1 @.@ 3 @-@ mile (2 @.@ 1 km) artificially straightened section of the creek in the Denman Wildlife Area was completed in 2011 .

= = Course = =

Little Butte Creek begins in the Cascade Range near Mount McLoughlin and Brown Mountain . It flows generally west over approximately 17 miles (27 km) to its confluence with the Rogue River . There are two main forks of Little Butte Creek : the North Fork and the South Fork . The South Fork 's headwaters are at 5 @,@ 713 feet (1 @,@ 741 m) above sea level , while the North Fork 's headwaters are considerably lower at 4 @,@ 638 feet (1 @,@ 414 m) . They meet each other at 1 @,@ 647 feet (502 @.@ 0 m) , creating the main stem itself . Little Butte Creek 's mouth is at 1 @,@ 204 feet (367 @.@ 0 m) above sea level , giving the creek an overall gradient of approximately 25 feet per mile (4 @.@ 7 m / km) .

The north fork begins at Fish Lake , near Mount McLoughlin . It flows west , collecting only minor tributaries , before merging with the south fork . The south fork 's headwaters are just south of the 7 @,@ 311 @-@ foot @-@ tall (2 @,@ 228 m) Brown Mountain . The Pacific Crest Trail passes through this area . It flows west , receiving Beaver Dam Creek and Dead Indian Creek on the left bank . Beaver Dam Creek drains approximately 28 square miles (73 km2) , and Dead Indian Creek has a watershed of about 22 square miles (57 km2) . The Dead Indian Soda Springs are on Dead Indian Creek , about a mile south of its confluence with the south fork . The south fork then turns northwest , collecting water from Lost Creek on the left , near the Lost Creek Bridge , built in 1919 . Lost Creek drains about 17 square miles (44 km2) .

Just after the two forks merge about 15 miles (24 km) northeast of Medford , Little Butte Creek receives Lake Creek on the left bank , flowing through the community of the same name at river mile (RM) 17 or river kilometer (RK) 27 . Lake Creek drains 15 square miles (39 km2) . The main stem is crossed by South Fork Little Butte Creek Road in Lake Creek . Water is diverted here into the Joint System Canal for storage in Agate Lake and to provide irrigation for the Medford region . A few miles west , the creek receives Salt Creek and Lick Creek on the right bank , which have watersheds of 17 and 16 square miles (44 and 41 km2) , respectively . Oregon Route 140 crosses the creek at RM 10 (RK 16) .

The creek turns southwest , flowing through Eagle Point . Four bridges span the stream in Eagle Point : East Main Street , Loto Street , and the Antelope Creek Bridge near RM 5 (RK 8) , and Oregon Route 62 at RM 4 (RK 6) . Near RM 3 (RK 5) , Little Butte Creek receives Antelope Creek on the left . Antelope Creek is its largest tributary , draining 58 square miles (150 km2) . Agate Lake on Dry Creek is in the Antelope Creek watershed . At RM 1 @.@ 5 (RK 2 @.@ 4) the creek is crossed by Agate Road . It then flows into the Rogue River 132 miles (212 km) from its mouth at the Pacific Ocean . Little Butte Creek 's mouth is in the Denman Wildlife Area , approximately 3 miles (5 km) southwest of Eagle Point , and about a mile southeast of Upper Table Rock .

= = = Discharge = = =

The United States Geological Survey monitored the flow of Little Butte Creek at seven different stream gauges : two on the south fork , three on the north fork , and two on the main stem . The first opened in 1908 at the newly constructed Fish Lake Dam on the north fork , while the last opened in 1927 near the Big Elk Ranger Station on the south fork . By 1989 , all seven were closed . The data recorded by the lowermost gauges of both forks and the main stem are listed below .

= = Watershed = =

Little Butte Creek drains approximately 373 square miles (966 km2) of southern Oregon . Elevations range from 1 @,@ 204 feet (367 @.@ 0 m) at the mouth of the creek to 9 @,@ 495 feet (2 @,@ 894 m) at the summit of Mount McLoughlin , with an average of 3 @,@ 496 feet (1 @,@ 066 m) . Forest accounts for about 65 percent of the total area of the watershed , while 32 percent is farmland . The remaining three percent is within the Eagle Point city limits . Forty @-@ eight percent of the watershed is federally owned , 50 percent is privately owned , and Eagle Point accounts for the remaining two percent . Over 10 @,@ 000 people live within the watershed 's boundaries .

The region experiences a Mediterranean climate . Temperatures average from 90 ° F (32 ° C) in the summer to 20 ° F (? 6 @.@ 7 ° C) in the winter . The average precipitation in the area ranges from 19 inches (480 mm) in the lower regions to over 50 inches (1 @,@ 300 mm) in the upper reaches . July through October are the driest months , while December through April are the wettest . Thirty @-@ four percent of the surface runoff in the watershed is collected from rain , 31 percent from rain on snow , and 35 percent from snowmelt .

The two main geologic regions in the Little Butte Creek watershed are the High Cascades and the western Cascades . The western Cascades make up the western two thirds of the watershed , generally below 4 @,@ 800 feet (1 @,@ 500 m) in elevation . Steep , rugged canyons are common in this region . The lower stretches of the watershed contain soils such as decomposed lavas , clay , and gravel . The High Cascades compose the eastern third of the watershed , including volcanoes such as Brown Mountain and Mount McLoughlin , and lava plateaus . In some places , streams descend over 300 feet per mile (60 m / km) . Nearby watersheds include two Rogue River tributaries ? Big Butte Creek to the north and Bear Creek to the south ? and small Klamath River tributaries to the east .

As of 2003 , there were 581 water rights recorded in the watershed , with 394 of them related to irrigation . Four hundred sixty @-@ six water diversions were also recorded . In the summer , many streams are over @-@ appropriated , leading to frequent water shortages along the lower portion of the creek .

= = Flora and fauna = =

The flora in the Little Butte Creek watershed is predominately temperate coniferous forest , which makes up approximately 65 percent of the total area . The lower regions are covered with chaparral , and the upper regions by fir forests . The chaparral region is inhabited by oaks such as garry oak and California black oak , with an understory of buckbrush and manzanita . Coast douglas @-@ fir ,

sugar pine , ponderosa pine , California incense @-@ cedar , and white fir are the most common trees found in the mixed coniferous forest . Shasta red fir , white fir , and the noble fir grow in the higher elevations of the watershed . Mountain hemlock , lodgepole pine , Sitka mountain @-@ ash , and squashberry also grow in this region . Chinquapin can be found around Fish Lake . The most common species of plants above 6 @,@ 000 feet (1 @,@ 800 m) near the tree line on Mount McLoughlin and Brown Mountain include whitebark pine , mountain hemlock , Coast Range subalpine fir , heather , and mountain heather .

Many species of birds have been spotted in the Little Butte Creek region . Twenty @-@ two species are known to breed in the chaparral region , including several species of wrens , blackbirds , and sparrows . The mixed coniferous forest is home to white @-@ headed woodpeckers , pygmy nuthatches , green @-@ tailed towhees , northern pygmy @-@ owls , Vaux 's swifts , winter wrens , and MacGillivray 's warblers . The American coot has also been spotted in several places along the creek . Williamson 's sapsuckers , black @-@ backed woodpeckers , gray jays , and hermit warblers frequent the higher elevations . The near @-@ threatened olive @-@ sided flycatcher and Cassin 's finch also live in this area . Eurasian three @-@ toed woodpeckers and Clark 's nutcrackers have been spotted near the tree line . The endangered Townsend 's big @-@ eared bat is known to live in the watershed .

Little Butte Creek is known to be one of the best salmon producing tributaries of the Rogue River , and is also one of only a few streams in the Upper Rogue watershed to support salmon populations . The most common anadromous fish inhabiting the creek include chinook and coho salmon , and sea @-@ run cutthroat trout . The Southern Oregon / Northern California Coast Coho Salmon Evolutionary Significant Unit is listed as threatened (2011) . Coho salmon are known to spawn in 46 miles (74 km) of streams in the Little Butte Creek watershed . An estimated 35 @,@ 131 Coho salmon lived in the creek in 2002 . Resident fish include coastal cutthroat trout , sculpins , rainbow trout , and brook trout .

= = History = =

The Little Butte Creek area was originally settled by the Takelma , and possibly the Shasta tribe of Native Americans . The first non @-@ indigenous settlers arrived in the Eagle Point region in 1852 . Little Butte Creek was named by the early settlers for its close proximity to Mount McLoughlin (also known as Snowy Butte) , as was nearby Big Butte Creek . Due to conflicts with the Rogue River Indians , Major J. A. Lupton gathered 35 men from Jacksonville on October 8 , 1855 , and attacked the Native Americans near the mouth of Little Butte Creek , killing about 30 of them . Lupton was also killed , and eleven of his men were injured . On December 24 of the same year , Captain Miles Alcorn discovered and attacked a Native American camp on the north fork , killing eight . On Christmas the following day , another band of Native Americans were attacked near Little Butte Creek 's mouth ; some fled , while the rest were either captured or killed .

By the late 1850s , the land was primarily used for agriculture and lumber in the upper regions . A sawmill was constructed on the north fork in the 1870s . In 1901 , the Sunnyside Hotel was built by Alfred Howlett on the banks of the creek in Eagle Point . Eagle Point was later incorporated in 1911 , and remains the only incorporated town in the watershed . In 1917 , manganese ore was discovered near the confluence of South Fork Little Butte Creek and its tributary , Lost Creek . Mined nodules consisted of approximately 55 percent manganese and weighed up to 50 pounds (23 kg) . Cinnabar was also discovered in the area . In 1922 , the 58 @-@ foot @-@ long (18 m) Antelope Creek Covered Bridge was constructed on Antelope Creek . It was moved to Little Butte Creek in Eagle Point in 1987 .

= = = Diversions and dams = = =

Some of the water in the Little Butte Creek watershed is diverted to irrigate the Rogue Valley and to supplement Bear Creek , both roughly 15 miles (24 km) to the southwest . In the late 19th century , a large number of orchards were planted near Ashland . They were initially irrigated by Bear Creek ;

however , there was not enough water to satisfy the orchards ' needs . In 1898 , the Fish Lake Water Company was established to solve the problem . The company proposed the enlargement of Fourmile and Fish lakes by impounding Fourmile Creek and North Fork Little Butte Creek , respectively , and connecting them via the Cascade Canal . Construction of the temporary Fish Lake Dam began in 1902 . Around this time , construction of the Joint System Canal to the west also began . Construction of Fourmile Lake Dam started in 1906 , along with the Cascade Canal . A network of other small canals , such as Hopkins Canal and the Medford Canal , were also built in the Rogue Valley around this time . Fish Lake Dam was completed in 1908 , creating the 7 @,@ 836 @-@ acre @-@ foot (9 @,@ 666 @,@ 000 m3) reservoir .

The Cascade Canal was completed in 1915 , delivering about 5 @,@ 462 acre feet (6 @,@ 737 @,@ 000 m3) of water from Fourmile Lake in the Klamath River watershed 4 @.@ 5 miles (7 @.@ 2 km) southwest to Fish Lake in the Rogue River watershed . The temporary Fish Lake Dam was also replaced by a permanent earthfill dam . It was later modified in 1922 and 1955 . In 1996 an auxiliary spillway was added . The dam stands 50 feet (15 m) high and has a length of 960 feet (293 m) .

In 1956 , the United States Bureau of Reclamation awarded a contract to Portland , Oregon @-@ based Lord Brothers to build the Deadwood Tunnel . The tunnel was finished in 1957 . Howard Prairie Lake was completed in 1958 , and is about 18 miles (29 km) east of Ashland . Excess water is diverted from the South Fork , Beaver Dam Creek , and two of its tributaries 8 @.@ 6 miles (14 km) south into the Deadwood Tunnel to supplement the lake and the surrounding regions . Dead Indian Creek is also diverted into Howard Prairie Lake . About 21 @.@ 4 cubic feet per second (0 @.@ 606 m3 / s) annually , or about 16 @,@ 500 acre feet (20 @,@ 400 @,@ 000 m3) , was diverted into the Klamath River watershed between 1962 and 1999 .

The Howard Prairie Delivery Canal was completed in 1959 , along with Keene Creek Reservoir , Cascade Tunnel , and Greensprings Tunnel . Water from Howard Prairie Lake is diverted into the canal west to Keene Creek Reservoir , about 16 miles (26 km) east of Ashland . Nearby Hyatt Reservoir also provides water . It is then piped through the mile long Cascade Tunnel to the Greensprings Power Plant , which generates about 18 megawatts of power . Afterward , the water is conveyed from the power plant 2 miles (3 km) through the Greensprings Tunnel into Emigrant Creek , a tributary of Bear Creek . An average of approximately 38 @,@ 620 acre feet (47 @,@ 640 @,@ 000 m3) of water flows through the tunnel . The water eventually ends up in Emigrant Lake , about 8 miles (10 km) southeast of Ashland , where it either continues along Bear Creek , or is diverted for irrigation .

= = = Butte Creek Mill = = =

The Butte Creek Mill , originally named Snowy Butte Mill , was built in 1872 on the banks of Little Butte Creek about 5 @.@ 5 miles (8 @.@ 9 km) from its mouth . A diversion dam was built in the 1880s to provide water for the turbine that powers the mill . The dam was a damaging fish barrier in the watershed . In 2005 , the Rogue Basin Fish Access Team built a $ 250 @,@ 000 concrete fish ladder to allow fish to swim past the dam . A small weir made of boulders was built at the base of the ladder , creating a 9 @-@ inch (20 cm) jump between the creek and the ladder ; however , the boulders were washed away in a severe storm just three months later , making the distance between them over 24 inches (61 cm) . The weir was rebuilt in 2008 for about $ 122 @,@ 500 , with concrete instead of boulders .

The mill is now included on the National Register of Historic Places , and is the only gristmill in Oregon to still grind flour . It is also the oldest water @-@ powered gristmill west of the Mississippi River .

On Christmas morning , 25 Dec 2015 , the store had a fire and was considered a total loss . There are plans to rebuild . To assist in helping with the rebuild visit their website : buttecreekmill.com.

= = = Restoration = = =

Intense flooding occurred throughout the Rogue Valley in 1955 , and Little Butte Creek 's meanders in the Denman Wildlife Area between Eagle Point and the Rogue River were blamed for severe erosion . The 1 @.@ 3 @-@ mile (2 @.@ 1 km) section of the creek was subsequently bulldozed and straightened in the late 1950s and early 1960s . The straightness forced water downward instead of outward like a typical creek , scouring the stream bed down to bedrock and creating an unsuitable habitat for wild salmon . In 2007 , a plan to divert the creek back into its old meanders was proposed . The $ 700 @,@ 000 project involved building engineered riffles and log jams and adding boulders , extending the creek by approximately 3 @,@ 500 feet (1 @,@ 100 m) . It was completed in September 2011 .

= = Pollution = =

The Oregon Department of Environmental Quality (DEQ) has monitored Little Butte Creek for eight different parameters that affect water quality : temperature , oxygen saturation , pH , nutrients , bacteria , chemical contaminants such as pesticides and metals , turbidity , and alkalinity . Streams that exceed the standard level are then placed on the DEQ 303d list in accordance with the Clean Water Act . About 40 percent of the streams in the Little Butte Creek watershed were listed on the 2002 DEQ 303d list . The entire main stem exceeded the standard level for temperature , oxygen saturation , fecal coliforms (bacteria) , and turbidity . The lower 6 @.@ 5 miles (10 km) of the North Fork were listed for high temperature and elevated levels of E. coli , while the upper region was affected by chlorophyll a and pH levels . The South Fork was listed for turbidity and temperature .

Overall , high temperature is the most common problem in the Little Butte Creek watershed . This is most likely caused by water diversion and depleted riparian zones . Approximately 53 percent of riparian zones in the watershed are damaged due to agriculture or deforestation , while 43 percent are classified as healthy . Another threat to healthy riparian zones are invasive blackberries , which crowd out native vegetation and provide little shade . The resulting higher water temperatures can be very harmful to anadromous fish . High concentration of bacteria is also an issue .

In 2003 , the Little Butte Creek Watershed Council rated the health of the Little Butte Creek watershed on a scale of 1 (slightly degraded) to 5 (severely degraded) . Overall , the watershed received 2 @.@ 95 , or moderately degraded . On the Oregon Water Quality Index (OWQI) used by DEQ , water quality scores can vary from 10 (worst) to 100 (ideal) . The average for Little Butte Creek at RM 1 @.@ 4 (RK 2 @.@ 3) between 1998 and 2007 was 72 (poor) in the summer and 82 (fair) in the fall , winter , and spring .

= = Recreation = =

The Little Butte Creek watershed contains several points of interest . Popular activities in and around Fish Lake include fishing , swimming , and boating . Two campgrounds are on the banks of the lake : Doe Point and the Fish Lake Resort . Several trails in the area lead to the much larger Pacific Crest Trail . Two snowparks are on Oregon Route 140 .

The Eagle Point Golf Course is in the watershed , built in 1995 by the world @-@ renowned golf course architect Robert Trent Jones , Jr . Another course , Stone Ridge Golf Course , is near Agate Lake . The Butte Creek Mill and the Antelope and Lost Creek covered bridges are also popular attractions . Several historic structures can be found in Eagle Point , including the Eagle Point Museum , built in 1925 as the Long Mountain School , and the Walter Wood House , constructed in 1879 . The Denman Wildlife Area is at the mouth of Little Butte Creek , as is nearby TouVelle State Park .