West Fork West Walker River

Mono County, California

2007 Stream Habitat Survey Report

Prepared By:

Carson Ranger District: Humboldt-Toiyabe National Forest

Introduction

The West Fork of the West Walker River occurs in Mono County, California within the proposed Hoover Wilderness area. The river flows approximately 9.86 miles in a northeasterly direction until it flows into the West Walker River just upstream of Roosevelt Lake. The entire length of the West Fork of the West Walker River occurs on National Forest Lands and is managed by the Humboldt-Toiyabe National Forest, Bridgeport Ranger District. The survey of the West Fork of the West Walker River began at its confluence with the West Walker River and continued upstream to a location near Emigrant Pass.

Purpose and Need

The 1995 Lahontan Cutthroat Trout Recovery Plan recommended that an ecosystem management plan be developed for the Walker River Basin in order to both determine objectives for the future desired conditions of the watershed, and to create strategies for achieving these objectives. In 1998 a Walker River Basin Recovery Implementation Team was organized to develop strategies for Lahontan cutthroat trout (LCT) restoration and recovery efforts in the Walker River Basin. In August 2003 the recovery team completed a Short-Term Action Plan for Lahontan Cutthroat Trout Recovery in the Walker River Basin. The short-term action plan outlines specific tasks to be completed within five years. Some of the tasks that were identified include: (1) identifying and evaluating fish passage and existing barriers within the Walker River Basin, (2) developing a watershed analysis of the physical components of the Walker River Basin, and (3) initiating habitat surveys to evaluate potential LCT introduction streams and validating against existing LCT inhabited streams.

The Walker River Basin historically provided an estimated 595 miles of stream habitat (Kling and Mellison 2008) and 49,400 acres of lake habitat for the native Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*). Populations of these salmonids within the watershed were interactive and interconnected, and therefore these metapopulations likely had high genetic diversity and were capable of long-term persistence through adverse conditions.

Within the Walker River basin, LCT currently occupy one stream that is within their historic range; By-Day Creek. Lahontan cutthroat trout have also been introduced into the formerly fishless headwaters of five other Walker River basin streams; Wolf Creek, Silver Creek, Mill Creek, Slinkard Creek, and Murphy Creek. Together, LCT within these 6 streams occupy approximately 17 miles of stream habitat, approximately 2.9% of the total miles that LCT presumably occupied historically.

The primary causes for the decline of LCT include: (1) reduction and alteration of stream discharge, (2) alteration of stream channels and morphology, (3) degradation of water quality, (4) reduction of lake levels and concentrated chemical components in natural lakes, and (5) introductions of non-native fish species. The Walker River Basin is primarily inhabited by non-native salmonid species that include but are not limited to:

Rainbow Trout (*Oncorhynchus mykiss*), Brook Trout (*Salvelinus fontinalis*), and Brown Trout (*Salmo trutta*). These competitive and aggressive introduced fish have displaced the endemic LCT. A small native population of LCT can be found in By-Day Creek part of the East Walker River system.

Long term survival and recovery of LCT with the Walker River Basin will require sustained cooperation and effort from multiple federal and state agencies, including the Forest Service and personnel of the Humboldt-Toiyabe National Forest. Gaining information through immediate action can aid in prioritizing future objectives for the restoration of LCT. The 2007 Walker River watershed surveys are being conducted to gain information about streams in the basin, and furthermore to provide an inventory of potential fish habitat for LCT. The surveys include the tasks of identifying potential fish passage barriers and evaluating physical characteristics that pertain to the success of the native LCT. Should recommendations be made to reintroduce LCT, these surveys can provide baseline information for future management of the fishery. The West Fork of the West Walker River was surveyed on June 18th and 19th and on July 1st, 2007 by Joel Ingram and Kevin Rybacki of the Carson and Bridgeport Ranger Districts: Humboldt-Toiyabe National Forest.

Methods and Materials

Forest Service personnel surveyed the West Fork of the West Walker River by hiking the watercourse in an upstream manner. Interesting and relevant features were documented, photographed, and recorded into a GPS unit. These features included but were not limited to: road crossings, fish sightings, permanent fish barriers, seasonal fish barriers, tributaries, springs, beaver dams, areas of erosion concern, grazing impacts, etc.

Fish passage barriers were noted and categorized into one of four categories: natural-permanent, natural-seasonal, artificial-permanent, and artificial-seasonal. A permanent barrier is categorized as an obstacle, waterfall, or drop in excess of 5ft that would prevent passage of fish year-round (specifically LCT). A stadia rod was used to measure barriers where applicable. Some permanent barriers may actually act as seasonal barriers and some seasonal barriers may actually act as a permanent barrier.

Results

Approximately 9.86 miles of the West Fork West Walker River were surveyed from its confluence with the West Walker River to its headwaters near Emigrant Pass. Throughout the survey of the West Fork of the West Walker River the most prevalent feature documented were fish barriers, which were found throughout the river. Sixteen of these barriers were classified as natural-permanent and are located at Sites 3, 6, 7, 8, 10, 11, 13, 14, 16, 26, 27, 28, 32, 34, 39, and 40. There was also one natural-seasonal barrier located at Site 5. The second most abundant feature documented were the presence of tributaries that added flow to the river. There were fourteen tributaries identified along the stream and they are located at Sites 2, 4, 12, 15, 17, 18, 21, 22, 23, 29, 31, 35, 37, and 38. Ford trail crossings were documented at Sites 19, 24, 36, and one pedestrian bridge

crossing was documented at Site 25. During the survey fish were seen throughout the drainage but were specifically documented at Sites 33 and 41. A single campsite was located at Site 30 and an erosion concern was documented at Site 20. A photo point of the stream characteristics was taken at Site 9. The average stream gradient of the West Fork West Walker River between Sites 1 and 42 is 5.5%. The identified potential fish habitat between Sites 1 and 5 and between Sites 16 and 26 has an average stream gradient of 2.5%.

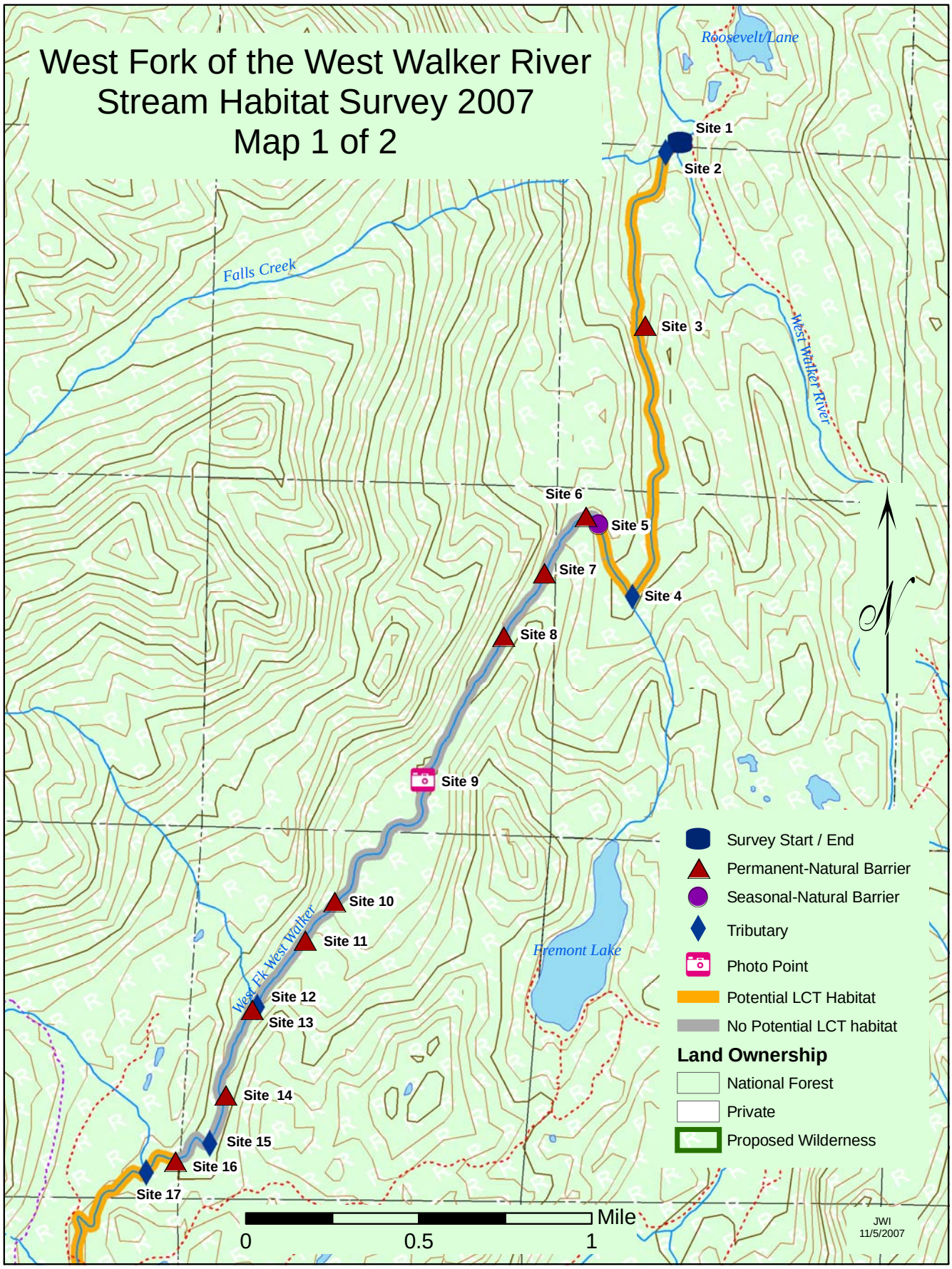
Discussion

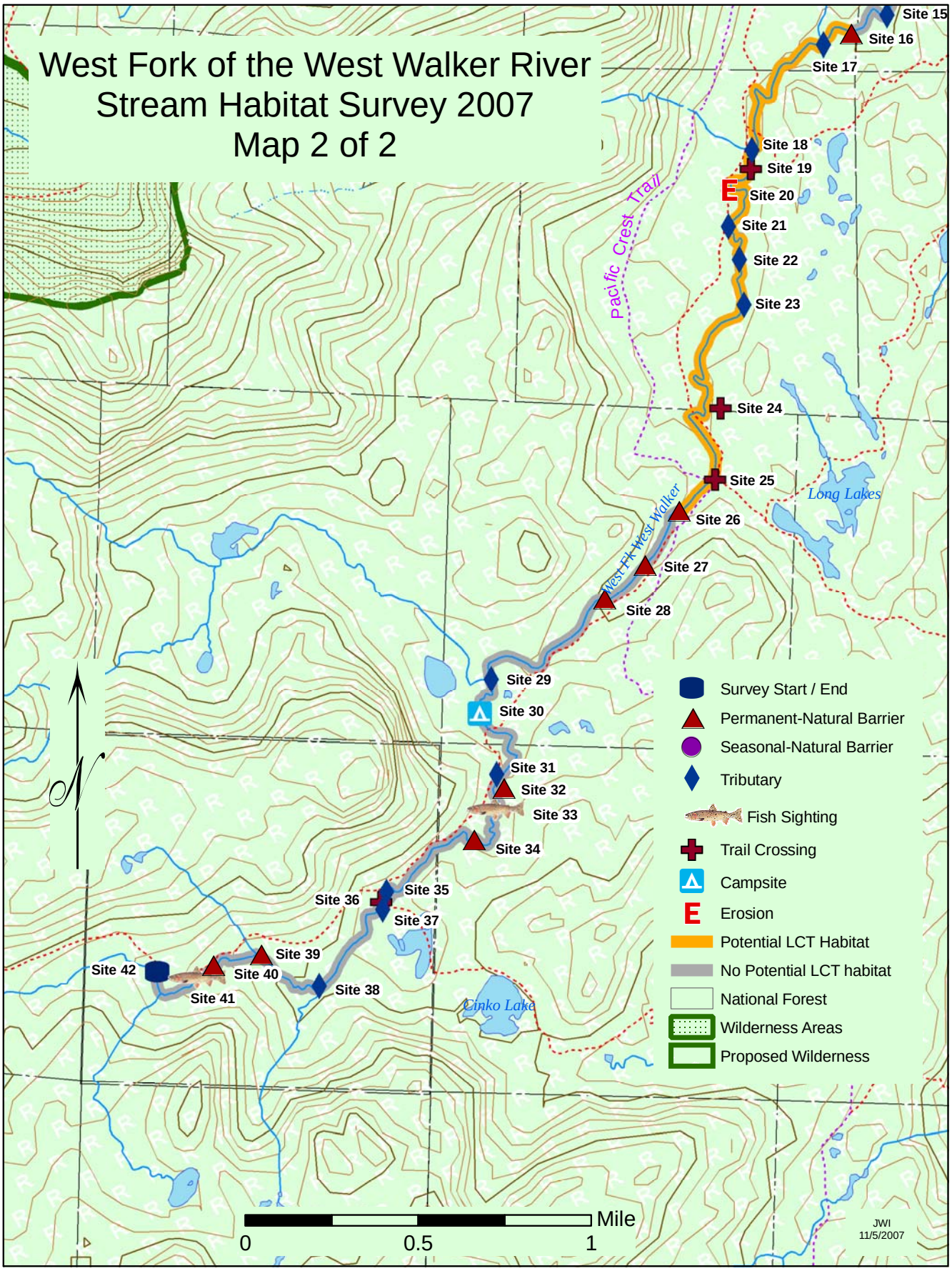
The West Fork of the West Walker River offers 3.6 miles of potential LCT habitat located between Sites 1 and 5 and between Sites 16 and 26. These two sections of stream are characterized as lower gradient, slow water meandering habitat, with deep pools and nice riffles. Although the section of stream between Sites 16 and 26 provides fish habitat, permanent fish barriers are located upstream and downstream; therefore, if LCT were restored to this section, they would be physically and genetically isolated.

The West Fork of the West Walker River is a remote wilderness stream with many sections of the river not getting any visitors at all due to the absence of trails and the rough canyon terrain downstream of the Pacific Crest Trail crossing at Site 25. Upstream of Site 25 a trail parallels the stream and at times is located directly on the stream bank. While surveying the stream the presence of human and pack stock on this upper section was apparent. Several areas had numerous trails leading to the waters edge and the destruction of streamside vegetation was also plainly evident.

Recommendations

1. Consider the 3.6 miles of the West Fork of the West Walker River between Sites 1 and 5 and between Sites 16 and 26 as potential LCT habitat and consider the West Fork West Walker River a low candidate for restoration.


West Fork of the West Walker River
Stream Habitat Survey 2007
Map 1 of 2
Roosevelt/Lane
Site 1
Site 2
Falls Creek
Site 3
West Walker River
Site 6
Site 5
Site 7
Site 4
Site 8
Site 9
Site 10
Site 11
West Fk West Walker
Site 12
Site 13
Fremont Lake
Site 14
Site 15
Site 16
Site 17
Survey Start / End
Permanent-Natural Barrier
Seasonal-Natural Barrier
Tributary
Photo Point
Potential LCT Habitat
No Potential LCT habitat
Land Ownership
National Forest
Private
Proposed Wilderness
Mile
0
0.5
1
JWI
11/5/2007


West Fork of the West Walker River
Stream Habitat Survey 2007
Map 2 of 2
Site 15
Site 16
Site 17
Site 18
Site 19
Site 20
Site 21
Site 22
Site 23
Site 24
Site 25
Site 26
Site 27
Site 28
Site 29
Site 30
Site 31
Site 32
Site 33
Site 34
Site 35
Site 36
Site 37
Site 38
Site 39
Site 40
Site 41
Site 42
Pacific Crest Trail
West Fk West Walker
Long Lakes
Cinko Lake
Survey Start / End
Permanent-Natural Barrier
Seasonal-Natural Barrier
Tributary
Fish Sighting
Trail Crossing
Campsite
Erosion
Potential LCT Habitat
No Potential LCT habitat
National Forest
Wilderness Areas
Proposed Wilderness
N
0
0.5
1
Mile
JWI
11/5/2007

Site 1: West Fork West Walker River, Bridgeport Ranger District. Survey starts where the West Fork West Walker River flows into the West Walker River doubling it in size. This site is located at UTM: N: 4240658 & E: 277518, Elev. 2191m.

Site 2: West Fork West Walker River, Bridgeport Ranger District. Just upstream of its confluence with the West Walker River, Falls Creek enters river left and contributes 5% to the overall flow of the West Fork West Walker River. This site is located at UTM: N: 4240611 & E: 277453, Elev. 2221m.

Site 3: West Fork West Walker River, Bridgeport Ranger District. Photo shows a large permanent fish barrier as the river moves through a canyon. The waterfall measures just less than 10m high. This site is located at UTM: N: 4239809 & E: 277363, Elev. 2197m.

Site 4: West Fork West Walker River, Bridgeport Ranger District. A small tributary enters river right adding 5% to the overall flow of the river. The tributary enters in an area filled with many heavy fallen trees. This site is located at UTM: N: 4238545 & E: 277288.

Site 5: West Fork West Walker River, Bridgeport Ranger District. The river here flows through a deep canyon with very steep walls, making measurements unsafe and impossible. From this vista point the waterfall appears to be a seasonal barrier with a height of 1.5m with unknown pool depth. This site is located at UTM: N: 4238888 & E: 277147.

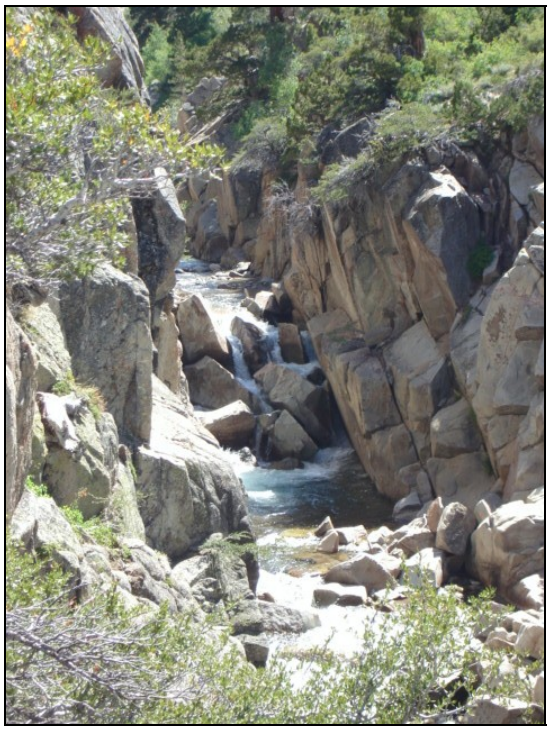
Site 6: West Fork West Walker River, Bridgeport Ranger District. As we move upstream, the canyon gets steeper and narrower to the point where the river is 3ft wide causing numerous barriers. This site is located at UTM: N: 4238917 & E: 277059.

Site 7: West Fork West Walker River, Bridgeport Ranger District, looking upstream at a permanent fish barrier 2.5m high. This site is located at UTM: N: 4238661 & E: 276891.

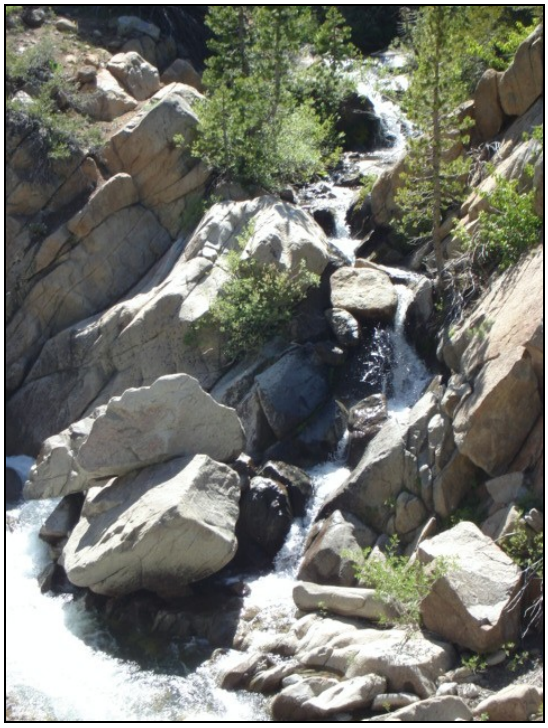
Site 8: West Fork West Walker River, Bridgeport Ranger District, looking upstream at another permanent fish barrier, this one being 4m high. This site is located at UTM: N: 4238369 & E: 276703.

Site 9: West Fork West Walker River, Bridgeport Ranger District. Photo point shows the stream characteristics just upstream of the canyon. The river is wide and flows over small rocks. The stream banks are covered with pines, aspen, and willows. This site is located at UTM: N: 4237702 & E: 276329, Elev. 2443m.

Site 10: West Fork West Walker River, Bridgeport Ranger District, looking upstream at a permanent fish barrier. This site is located at UTM: N: 4237138 & E: 275917, Elev. 2453m.



Site 11: West Fork West Walker River, Bridgeport Ranger District. The steep walls and narrow path of the canyon cause many permanent barriers including the one pictured which is 3m high. This site is located at UTM: N: 4236959 & E: 275782, Elev. 2493m.



Site 12: West Fork West Walker River, Bridgeport Ranger District. A small tributary enters the canyon and falls 25ft before joining the river and adding 5% to its overall flow. This site is located at UTM: N: 4236650 & E: 275561, Elev. 2518m.

Site 13: West Fork West Walker River, Bridgeport Ranger District. Just upstream of the tributary at Site 12 are two fish barriers. The first being a permanent barrier 2.5m high and the second being greater than 1m high. Both have deep pools. This site is located at UTM: N: 4236635 & E: 275536.

Site 14: West Fork West Walker River, Bridgeport Ranger District. This waterfall measures close to 10m high and has two separate falls. A fish was seen unsuccessfully trying to jump this waterfall. This site is located at UTM: N: 4236239 & E: 275414.

Site 15: West Fork West Walker River, Bridgeport Ranger District. A very small tributary enters river right and contributes <1% to overall river flow. This tributary does not add potential LCT habitat. This site is located at UTM: N: 4236014 & E: 275342.

Site 16: West Fork West Walker River, Bridgeport Ranger District. A 2.5m high waterfall stands as a permanent fish barrier. Upstream lies another 2m high fall. Both barriers have shallow pools. This site is located at UTM: N: 4235940 & E: 275184, Elev. 2551m.

Site 17: West Fork West Walker River, Bridgeport Ranger District. Photo shows a moderately sized tributary entering river left and adding 30% to the river's flow. This tributary does not add potential fish habitat due to a 4-5m high waterfall on the tributary just out of view of photo. This site is located at UTM: N: 4235879 & E: 275047, Elev. 2576m.

Site 18: West Fork West Walker River, Bridgeport Ranger District. As the river flows through Walker Meadows a small tributary enters river left and adds less than 1% to the river's flow. This site is located at UTM: N: 4235392 & E: 274716, Elev. 2583m.

Site 19: West Fork West Walker River, Bridgeport Ranger District. A seldom used trail crosses the river at Walker Meadows. This site is located at UTM: N: 4235332 & E: 274706.

Site 20: West Fork West Walker River, Bridgeport Ranger District. A large section of stream bank has eroded at the southern end of Walker Meadows. The erosion damage is 1-1.5m in height and approx. 50m long. This site is located at UTM: N: 4235211 & E: 274612, Elev. 2588m.

Site 21: West Fork West Walker River, Bridgeport Ranger District. A small tributary enters river left and contributes less than 5% to the river's overall flow. This site is located at UTM: N: 4235038 & E: 274608, Elev. 2590m.

Site 22: West Fork West Walker River, Bridgeport Ranger District. Although tributary in picture is small and contributes less 5% to the river's overall flow, several fish were seen in the tributary suggesting that the tributary does add some potential fish habitat. This site is located at UTM: N: 4234888 & E: 274657, Elev. 2581m.

Site 23: West Fork West Walker River, Bridgeport Ranger District. This moderately sized steep tributary cascades down and drains into river left adding 15% to river's overall flow. This site is located at UTM: N: 4234690 & E: 274695.

Site 24: West Fork West Walker River, Bridgeport Ranger District. This trail crossing the river is not heavily used and is indistinguishable on the opposite side of the river. This site is located at UTM: N: 4234197 & E: 274571

Site 25: West Fork West Walker River, Bridgeport Ranger District. A bridge has been built over this rocky section of the river where the Pacific Crest Trail crosses. This site is located at UTM: N: 4233871 & E: 274544, Elev. 2618m.

Site 26: West Fork West Walker River, Bridgeport Ranger District. This waterfall measures 3m high and creates a permanent fish barrier. This site is located at UTM: N: 4233724 & E: 274379, Elev. 2634m.

Site 27: West Fork West Walker River, Bridgeport Ranger District. This smaller waterfall measured 1.6m tall and has a pool approx. 2m deep. This site is located at UTM: N: 4233471 & E: 274222, Elev. 2650m.

Site 28: West Fork West Walker River, Bridgeport Ranger District. Photo shows a large waterfall dropping approx. 5m into a shallow pool creating a permanent fish barrier. This site is located at UTM: N: 4233316 & E: 274034, Elev. 2674m.

Site 29: West Fork West Walker River, Bridgeport Ranger District. A large tributary enters the river doubling its water flow. This tributary definitely adds potential fish habitat. This site is located at UTM: N: 4232943 & E: 273509.

Site 30: West Fork West Walker River, Bridgeport Ranger District. A campsite located 10m from river right contains a fire ring built next to a large boulder. This site is located at UTM: N: 4232778 & E: 273455, Elev. 2695m.

Site 31: West Fork West Walker River, Bridgeport Ranger District. A medium size tributary enters river left and it adds 20% of the river's overall flow. This tributary has a 2m high waterfall just upstream of the confluence. This site is located at UTM: N: 4232503 & E: 273535.

Site 32: West Fork West Walker River, Bridgeport Ranger District. The waterfall pictured here is approx. 4m high and has two steps. It creates a permanent barrier for fish passage. This site is located at UTM: N: 4232437 & E: 273566, Elev. 2740m.

Site 33: West Fork West Walker River, Bridgeport Ranger District. Several fish are seen in this lower gradient section of stream. Fish were seen up to 8 inches in length. This site is located at UTM: N: 4232314 & E: 273535.

Site 34: West Fork West Walker River, Bridgeport Ranger District. This waterfall is 7m high and has two steps. This waterfall acts as a permanent fish barrier. This site is located at UTM: N: 4232198 & E: 273428, Elev. 2758m.

Site 35: West Fork West Walker River, Bridgeport Ranger District. Tributary entering river left is very small adding 5% to the overall flow. This site is located at UTM: N: 4231957 & E: 273024.

Site 36: West Fork West Walker River, Bridgeport Ranger District. A trail leading to Cinko Lake crosses the river here. This site is located at UTM: N: 4231911 & E: 272999.

Site 37: West Fork West Walker River, Bridgeport Ranger District. This small tributary entering river right adds 5% to the overall river's flow. This tributary comes from Cinko Lake. This site is located at UTM: N: 4231875 & E: 273005, Elev. 2770m.

Site 38: West Fork West Walker River, Bridgeport Ranger District. This large tributary contributes roughly 40% of the overall river's flow. This site is located at UTM: N: 4231522 & E: 272713, Elev. 2788m.

Site 39: West Fork West Walker River, Bridgeport Ranger District. A series of waterfalls ending with a 3m high drop marks this site as a permanent fish barrier. This site is located at UTM: N: 4231667 & E: 272441, Elev. 2814m.

Site 40: West Fork West Walker River, Bridgeport Ranger District. A series of five falls are linked together and range in size from 0.5 to 2m in height, thus creating a permanent fish barrier. This site is located at UTM: N: 4231619 & E: 272219, Elev. 2839m.

Site 41: West Fork West Walker River, Bridgeport Ranger District. Four fish between the sizes of 8 and 10 inches were seen in this section of the river. The fish were believed to be rainbow trout. This site is located at UTM: N: 4231544 & E: 272146.

Site 42: West Fork West Walker River, Bridgeport Ranger District. Survey ends due to time restraints. Fish barriers are still visible upstream of this site. This site is located at UTM: N: 4231588 & E: 271963.