

ROBINSON CREEK

MONO COUNTY, CALIFORNIA

2006 Stream Habitat Survey Report



Prepared By:

Humboldt-Toiyabe National Forest, Bridgeport Ranger District

Introduction

Robinson Creek is located in Mono County, California. The mainstem of Robinson Creek flows for approximately 20.7 miles in a northeasterly direction from a series of lakes in the Hoover Wilderness near Yosemite National Park, to Bridgeport Reservoir. Approximately 2/3 of the Robinson Creek watershed occurs on National Forest lands; the other 1/3 occurs on private lands. Approximately 6.4 miles of Robinson Creek were surveyed between the National Forest-private property boundary located just upstream of Twin Lakes (Site 1, 2192m) and a point just upstream of Crown Lake (Site 24, 2944m).

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 2006 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. Robinson Creek was surveyed on August 1- August 4, 2006 by Joel Ingram and Harrison Davis of the Bridgeport Ranger District: Humboldt-Toiyabe National Forest.

Materials and Methods

Forest Service personnel surveyed Robinson Creek by hiking the stream in an upstream manner. Interesting and relevant features were documented, photographed, and recorded into a Trimble GPS unit. These features included but were not limited to: road crossings, trail crossings, fish sightings, permanent fish barriers, seasonal fish barriers, tributaries, springs, beaver dams, areas of erosion concern, grazing impacts, dispersed campsites, 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. Barriers categorized as permanent barriers may actually be seasonal barriers, and some seasonal barriers may actually act as a permanent barrier.

Results

Approximately 6.4 miles of Robinson Creek were surveyed between the National Forest-private property boundary located just upstream of Twin Lakes (Site 1) and a point just upstream of Crown Lake (Site 24). Five tributaries were documented at Sites 2, 6, 7, 10, and 15. No seasonal fish barriers were documented; however, nine permanent fish barriers were documented at Sites 3, 8, 9, 11, 14, 16, 17, 20 and 23. One point of beaver activity was documented at Site 4. Photos were taken at five locations to document stream characteristics (Sites 5, 12, 13, 19, and 22). Two

campsites were documented at Sites 18 and 21. A road-stream crossing was also documented at Site 1. The average stream gradient between Site 1 and Site 24 is 7.3%.

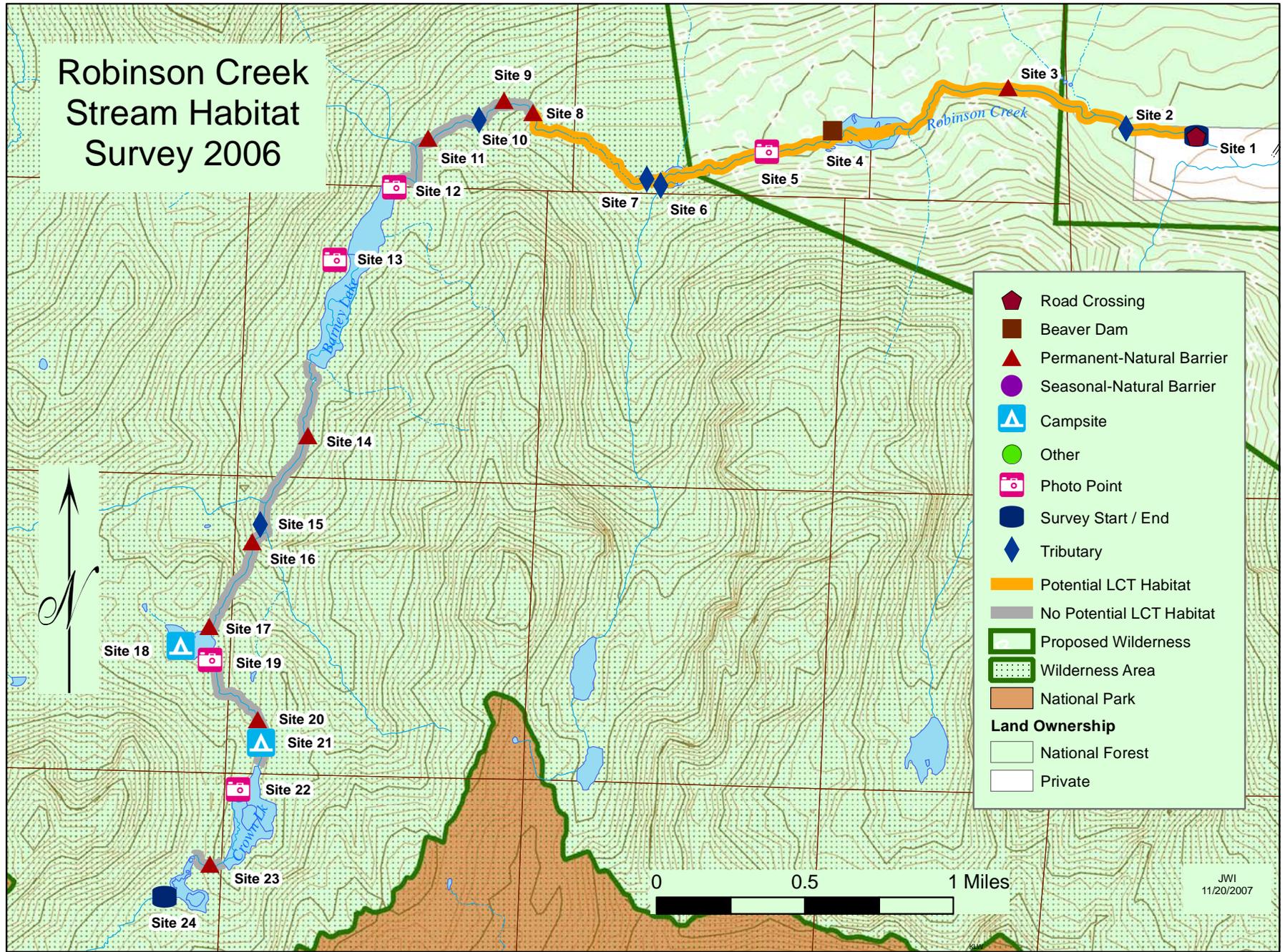
Discussion

Robinson Creek provides approximately 2.6 miles of potential LCT habitat between Site 1 and Site 8. The average stream gradient between Site 1 and Site 8 is 5.3%. Through this lowest reach the shallow and wide stream meanders through large meadows. A 15m (49ft) high waterfall at Site 8 prevents fish passage upstream year round. The section of stream between Sites 8 and 24 is characterized as high gradient with the presence of multiple permanent fish passage barriers. Non-native fish were sighted throughout the watershed; however, many of these fish were probably airily stocked in several of the lakes within the watershed and subsequently those fish have been able to migrate downstream but not back upstream.

Recommendations

1. Consider the 2.6 mile section of Robinson Creek between Site 1 and Site 8 as potential LCT habitat and consider Robinson Creek a low candidate for restoration.
2. Work with the California Department of Fish and Game to obtain stocking records and information related to previous density and distribution surveys of fish in Robinson Creek.

Robinson Creek Stream Habitat Survey 2006



	Road Crossing
	Beaver Dam
	Permanent-Natural Barrier
	Seasonal-Natural Barrier
	Campsite
	Other
	Photo Point
	Survey Start / End
	Tributary
	Potential LCT Habitat
	No Potential LCT Habitat
	Proposed Wilderness
	Wilderness Area
	National Park
Land Ownership	
	National Forest
	Private



JWI
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Site 1: Robinson Creek, Bridgeport Ranger District. Downstream view of a large concrete bridge that crosses Robinson Creek at Mono Village and marks the survey start point. This site is located at UTM: N: 4224514 & E: 290892, Elevation 2192m.



Site 1 continued: Robinson Creek, Bridgeport Ranger District, looking upstream from the survey start point. This site is located at UTM: N: 4224514 & E: 290892, Elevation 2192m.



Site 1 continued: Robinson Creek, Bridgeport Ranger District, looking downstream from the survey start point. This site is located at UTM: N: 4224514 & E: 290892, Elevation 2192m.



Site 2: Robinson Creek, Bridgeport Ranger District. Photo shows the confluence of a small tributary that contributes 5-10% of the total flow. No GPS coordinates were recorded for this site. This site is located at UTM: N: 4224558 & E: 290506.



Site 3: Robinson Creek, Bridgeport Ranger District, a cross-section photo of a 2m (6.6ft) high permanent fish passage barrier. Fish occupy the pool below. This site is located at UTM: N: 4224779 & E: 289867, Elevation 2269m.



Site 4: Robinson Creek, Bridgeport Ranger District. Photo shows a small beaver lodge in the middle of the stream. No dam was evident. This site is located at UTM: N: 4224545 & E: 288918, Elevation 2282m.



Site 5: Robinson Creek, Bridgeport Ranger District. A photo point showing the stream characteristics typical of this section of stream. This site is located at UTM: N: 4224432 & E: 288562, Elevation 2305.



Site 6: Robinson Creek, Bridgeport Ranger District. A small tributary enters the stream on the river right side from Little Slide Canyon. This site is located at UTM: N: 4224251 & E: 287979, Elevation 2325m.



Site 6 continued: Robinson Creek, Bridgeport Ranger District. Downstream photo of Robinson Creek taken from the confluence with the tributary. This site is located at UTM: N: 4224251 & E: 287979, Elevation 2325m.



Site 7: Robinson Creek, Bridgeport Ranger District. A small tributary enters into a meandering Robinson Creek on the river right side. This tributary may originate in Little Slide Canyon. This site is located at UTM: N: 4224282 & E: 287908, Elevation 2326m.



Site 8: Robinson Creek, Bridgeport Ranger District. This 15m (49ft) high waterfall forms a permanent fish passage barrier. This site is located at UTM: N: 4224644 & E: 287291, Elevation 2412m.



Site 9: Robinson Creek, Bridgeport Ranger District. This 2.5-3.0m (8-10ft) high waterfall is followed by several cascades, forming a permanent fish passage barrier. This site is located at UTM: N: 4224710 & E: 287133, Elevation 2457m.



Site 10: Robinson Creek, Bridgeport Ranger District. This tributary enters Robinson Creek on the river right side and contributes approximately 30% of the overall flow. This site is located at UTM: N: 4224600 & E: 287000, Elevation 2466m.



Site 11: Robinson Creek, Bridgeport Ranger District, looking upstream at a permanent fish barrier with an overall height of 2.0m (6.6ft). This site is located at UTM: N: 4224504 & E: 486721, Elevation 2510m.



Site 12: Robinson Creek, Bridgeport Ranger District, looking upstream at Robinson Creek from just below Barney Lake. This slow moving section of stream as well as the lake are full of fish. This site is located at UTM: N: 4224239 & E: 286538, Elevation 2528m.



Site 12 continued: Robinson Creek, Bridgeport Ranger District, looking downstream from just below Barney Lake. This site is located at UTM: N: 4224239 & E: 286538, Elevation 2528m.



Site 12 continued: Robinson Creek, Bridgeport Ranger District. Photo of Barney Lake. This site is located at UTM: N: 4224239 & E: 286538, Elevation 2528m.



Site 13: Robinson Creek, Bridgeport Ranger District, a cross-section photo of where Robinson Creek enters Barney Lake through a marsh. This site is located at UTM: N: 4223847 & E: 286217, Elevation 2546 m.



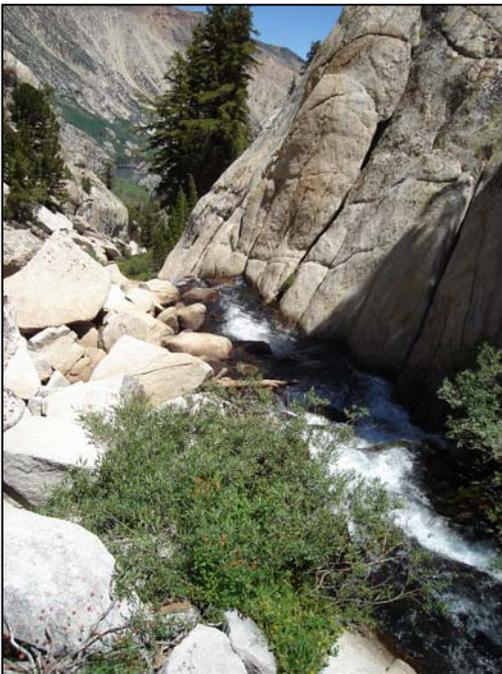
Site 14: Robinson Creek, Bridgeport Ranger District. This 2m (6.6ft) high waterfall forms a permanent fish passage barrier. This site is located at UTM: N: 4222893 & E: 286071, Elevation 2542m.



Site 15: Robinson Creek, Bridgeport Ranger District. This small tributary, which does not provide fish habitat, enters on the river right side. This site is located at UTM: N: 4222409 & E: 285810, Elevation 2604m.



Site 16 and 17: Robinson Creek, Bridgeport Ranger District, looking upstream at the start of a long fish barrier section. Sites 16 and 17 have been put together to describe one area of the creek that is long and incredibly steep. Site 16 is located at the bottom of the falls section and Site 17 is located at the top of the falls section near Robinson Lakes. These sites are located at UTM: (Site 16) N: 4222319 & E: 285768, Elevation 2629m and (Site 17) N: 4221855 & E: 285537, Elevation 2809m.



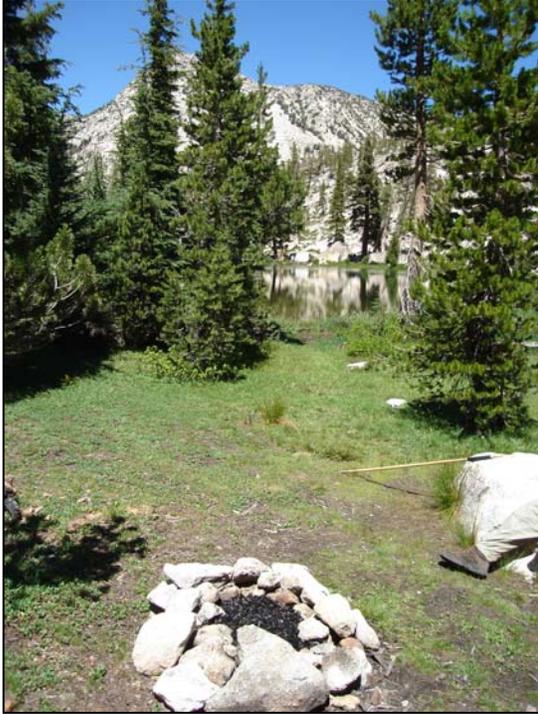
Site 16 continued: Robinson Creek, Bridgeport Ranger District, fish barrier section continued. Looking downstream from the middle of the falls. This site is located at UTM: N: 4222319 & E: 285768, Elevation 2629m.



Site 17: Robinson Creek, Bridgeport Ranger District, the last fish barrier near Robinson Lakes. This site is located at UTM: N: 4221855 & E: 285537, Elevation 2809m.



Site 17 continued: Robinson Creek, Bridgeport Ranger District, view of where Robinson Creek flows out of Robinson Lakes. This site is located at UTM: N: 4221855 & E: 285537, Elevation 2809m.



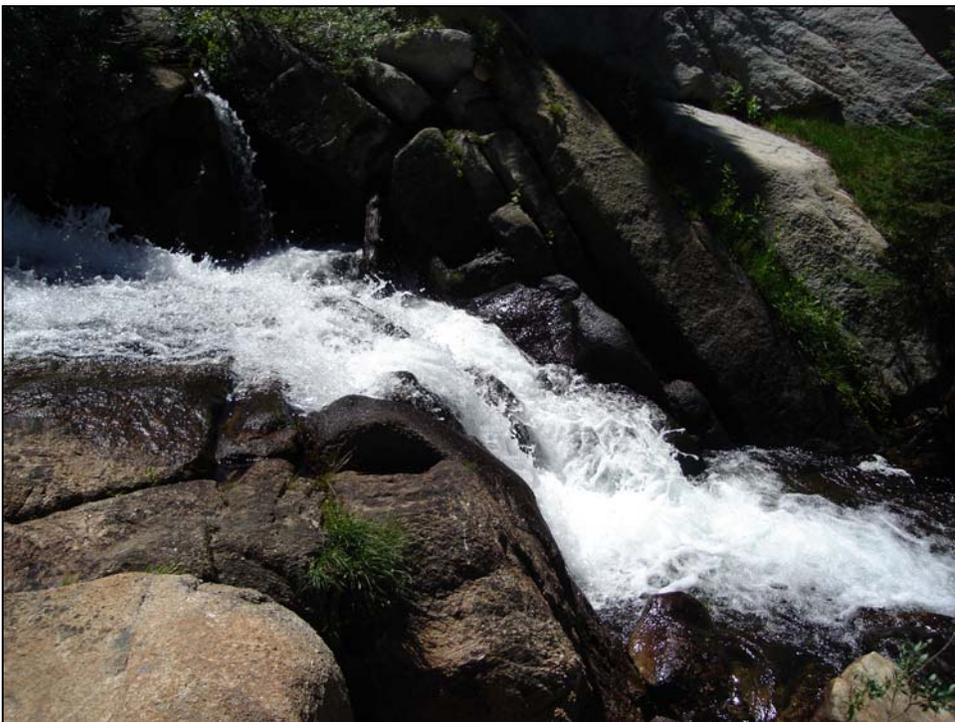
Site 18: Robinson Creek, Bridgeport Ranger District, cross section view of a campsite. This campsite is located at Robinson Lakes close to the water and close to the trail. This site is located at UTM: N: 4221750 & E: 285381.



Site 19: Robinson Creek, Bridgeport Ranger District. This is the location where Robinson Creek enters Robinson Lakes. This site is located at UTM: N: 4221675 & E: 285539, Elevation 2811m.



Site 19 continued: Robinson Creek, Bridgeport Ranger District, view looking upstream. This site is located at UTM: N: 4221675 & E: 285539, Elevation 2811m.



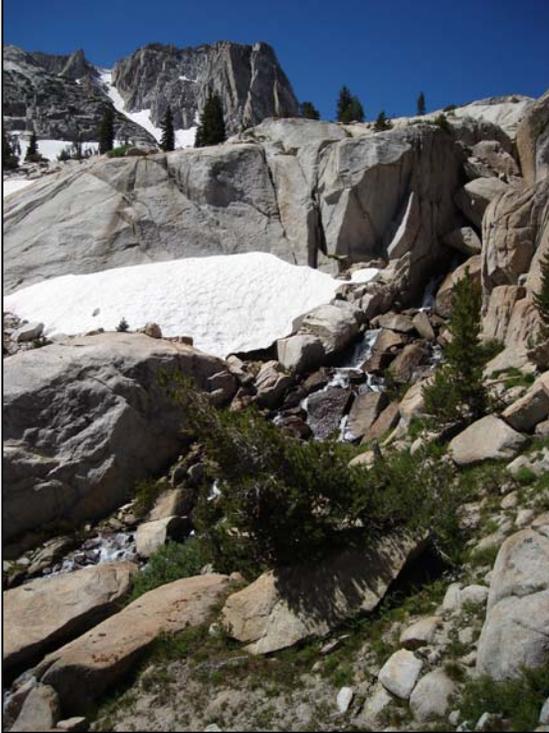
Site 20: Robinson Creek, Bridgeport Ranger District, cross-section view of a permanent fish barrier. This waterfall drops in a series of steps, with the largest of those steps being just over 2m (6.6ft) in height. This site is located at UTM: N: 4221347 & E: 285798, Elevation 2869m.



Site 21: Robinson Creek, Bridgeport Ranger District, looking at a small campsite approximately 5 meters (16ft) from the creek. A fire ring and extra wood marks this spot. This site is located at UTM: N: 4221222 & E: 285817, Elevation 2882m.



Site 22: Robinson Creek, Bridgeport Ranger District, photo point. At this point the stream is meandering slowly from Crown Lake. This site is located at UTM: N: 4220970 & E: 285689, Elevation 2879m.



Site 23: Robinson Creek, Bridgeport Ranger District, looking upstream at a permanent fish barrier. The overall height of the waterfall is approximately 20m (66ft). This site is located at UTM: N: 4220567 & E: 285541, Elevation 2915m.



Site 23 continued: Robinson Creek, Bridgeport Ranger District, view of where Robinson Creek flows into Crown Lake. This site is located at UTM: N: 4220567 & E: 285541, Elevation 2915m.



Site 24: Robinson Creek, Bridgeport Ranger District, looking upstream at the survey end point. The survey ended at this point due to elevation and snow. The stream here meanders through an open area. This site is located at UTM: N: 4220387 & E: 285293, Elevation 2944m.



Site 24 continued: Robinson Creek, Bridgeport Ranger District, looking downstream from the survey end point. This site is located at UTM: N: 4220387 & E: 285293, Elevation 2944m.