

EAST FORK CARSON RIVER

Alpine County, California Douglas County, Nevada

2006 Stream Habitat Survey Report



Prepared by:

Carson Ranger District: Humboldt-Toiyabe National Forest

Introduction

The East Fork Carson River watershed is located in Alpine County, California and Douglas County, Nevada. The headwaters of the East Fork Carson River originate at an elevation greater than 10,350 feet near Sonora Pass, approximately 2 miles north of Highway 108. The East Fork Carson River flows in a northerly direction for approximately 57 miles to the confluence with the West Fork Carson River near Minden, NV (Approx. Elevation 4680 feet). The majority of the watershed is located within the boundaries of the Humboldt-Toiyabe National Forest (HTNF), and the upper watershed is primarily located in the Carson-Iceberg Wilderness. In the lower reaches the East Fork Carson River passes through land managed by the Bureau of Land Management, private parcels, and a section owned by the Washoe Indian Reservation.

The total drainage area of the East Fork Carson River down to Ruhensroth Dam (Elev. 4930 feet) is approximately 356 square miles. A large portion of the water in the East Fork Carson River, flowing over Ruhensroth Dam, originates from the HTNF and is thus influenced by numerous drainages in the national forest. Upstream of Ruhensroth Dam, the East Fork Carson River is free flowing and the only permanent fish barrier between Ruhensroth Dam and Site 124 located in the headwaters is the naturally occurring Carson Falls (Site 107) located within the Carson-Iceberg Wilderness. The quality of water and habitat in the East Fork Carson River at any one location is a product of both the adjacent land and land-uses, as well as a product of watershed impacts upstream of any given point.

Purpose and Need

The 1995 Lahontan Cutthroat Trout Recovery Plan requires that ecosystem management plans be developed for the Truckee and Walker River basins in order to both determine objectives for the future desired conditions of these watersheds, and to create strategies for achieving these objectives. Similar management plans are recommended for the Carson and Humboldt River basins. In 1998 Truckee and Walker River Basin Recovery Implementation Teams were organized to develop strategies for Lahontan cutthroat trout (LCT) restoration and recovery efforts in the Truckee and Walker River basins. In August 2003 both recovery teams completed Short-Term Action Plans for Lahontan Cutthroat Trout Recovery in the Truckee and Walker River Basins. The short-term action plans outline specific tasks to be completed within five years. Many of the short-term tasks identified in the Truckee and Walker River Basin Short-Term Action Plans are similar to one another and are applicable to recovery of LCT in the Carson River basin. The Carson Ranger District adopted some of the short-term tasks identified in the Truckee and Walker River Basin Short-Term Action Plans and began implementing these actions under an informal plan for the Carson River basin. These tasks include: (1) identifying and evaluating fish passage and existing barriers within the Carson River basin, (2) developing a watershed analysis of the physical components of the Carson River basin, and (3) initiating habitat surveys to evaluate potential LCT introduction streams and validating against existing LCT inhabited streams.

The Carson River watershed historically provided an estimated 405 miles of stream habitat (Kling and Mellison 2008) 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.

At present, no self-sustaining populations of genetically pure LCT are known to occupy historic habitat within the Carson River basin and since all of the drainage has been surveyed it is doubtful that any such populations remain to be discovered. The introduction of nonnative trout before the turn of the century is believed to be largely responsible for the extirpation of LCT within the Carson River drainage.

Although naturally occurring Lahontan cutthroat trout populations have been eliminated from the Carson River drainage, small populations have been established in the formerly fishless headwaters of the East Fork Carson River above Carson Falls and in the tributaries Murray Canyon Creek, Golden Canyon Creek, and Poison Flat Creeks above impassible barriers. Pure populations of LCT also occur in Red Lake, Heenan Lake, Heenan Creek, and possibly in Raymond Meadows Creek. Hybridized populations of LCT occur in Jeff Davis Creek and in Leviathan Creek upstream of Leviathan Mine. The artificially established pure populations of LCT in the East Fork Carson River watershed occupy about 17 miles of stream habitat: approximately 4.2% 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; and 4) introductions of non-native fish species. The Carson River watershed downstream of Carson Falls is primarily inhabited by non-indigenous salmonids which include, but are not limited to: rainbow trout (*Oncorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and brown trout (*Salmo trutta*). These competitive and aggressive introduced fishes have displaced the endemic Lahontan cutthroat trout.

Long term survival and recovery of LCT within the Carson River watershed 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 Carson 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 re-introduce LCT, these surveys can provide baseline information for future management of the fishery. The East Fork Carson River was surveyed in June 2006 (6, 7, 8, 20, & 21) and in September (7-11) by members of the Carson Ranger District of the Humboldt-Toiyabe National Forest. In addition, the members of the Carson Fisheries Department have surveyed many of the tributaries of the East Fork Carson River and individual reports have also been created for those streams. The surveyors included Jason Kling, Brian Hodge, and Robert Omann. .

Materials and Methods

Forest Service personnel surveyed the East Fork Carson River by hiking, and where appropriate, floating the watercourse. Below Hangman's Bridge (Highway 4 near Markleeville) the stream was surveyed by rafting down to the pull-out point (Site 2) just upstream of Ruhlenstroth Dam. Between Hangman's Bridge and the downstream boundary of the Carson-Iceberg Wilderness, the stream was hiked in an upstream manner. The upper section was surveyed by hiking from the headwaters near Sonora Peak down to the lower wilderness boundary (SEE MAP).

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. (In the case of the East Fork, Ruhlenstroth Dam and Carson Falls were immediately recognized as permanent barriers).

Results

The Forest Service crew surveyed approximately 50 river miles of the East Fork Carson River between Ruhlenstroth Dam and the headwaters near Sonora Peak. The overall gradient for this 50 mile stretch is approximately 1.6 percent. The daily mean discharge recorded just below Markleeville Creek (USGS Station 10308200) was approximately 2600 cfs on June 6, and dropped to approximately 1600 cfs by June 21 (The average annual flow for 2005 was 290 cfs).

Seven fish passage barriers were documented, including Ruhlenstroth Dam, at the survey start point. Five of these barriers are permanent (Site 1, 107, 124, 126, & 131) and two barriers were classified as seasonal (Sites 87 & 110). Twenty-four specific dispersed campsite locations were identified and entered into GPS, though in many cases one site number was used to denote the presence of multiple dispersed campsites (Sites 8, 12, 14, 15, 16, 17, 19, 20, 21, 24, 34, 35, 39, 41, 44, 45, 46, 51, 67, 74, 75, 84, 90, & 113). For example, near Site 14 at least nine separate campsites were identified on both sides of the river. Thirty-two tributaries were noted, including the tributaries of Wolf Creek, Silver Creek, Markleeville Creek, Golden Canyon Creek, Murray Canyon Creek, Silver King Creek, Poison Creek, and Bryant Creek (Sites 10, 25, 27, 33, 36, 38, 42, 48, 52, 54, 58, 59, 60, 63, 64, 65, 68, 69, 73, 76, 83, 91, 92, 99, 103, 105, 114, 117, 119, 125, 127, & 129). Silver King Creek and Wolf Creek are the largest tributaries, contributing an estimated 35 percent and 30 percent of flow, respectively (Wolf Creek estimated at 20

percent contributing flow on June 21 and at least 40 percent on July 10). Several road stream crossings and adjacent road impacts were noted, primarily in the case of a highway bridge or adjacent highway section (Sites 7, 29, 30, 32, 43, 49, 55, & 57). In addition six trail crossings (foot and stock traffic) were documented (Sites 77, 98, 101, 109, 112, & 122). One adjacent trail impact was noted (Site 108). Nine erosion concerns were documented (Sites 5, 6, 9, 18, 47, 50, 61, 70, & 81). The crew also documented other features such as grazing impacts (Sites 26, 82, & 97), culverts (Sites 4 & 28), fence lines (Sites 11, 13, & 88), USGS gauging stations (Sites 3 & 23), and one potential archeological site (Site 95). Random photo points were used to capture stream characteristics throughout the survey (Sites 4, 22, 31, 37, 40, 53, 56, 62, 71, 78, 79, 80, 85, 86, 89, 94, 100, 102, 104, 116, 120, 121, 123, & 130).

Invasive weeds were noted in several locations: Whitetop was sighted in scattered locations between Sites 1-5. Cheat-grass was specifically concentrated between Sites 1-17 and between Sites 25-29.

Discussion

The entire 40 mile stretch of surveyed territory below Carson Falls should be considered potential LCT habitat. The absence of significant fish passage barriers creates good continuous river habitat from Ruhenstroth Dam up to the lower Carson-Iceberg Wilderness boundary. Between the lower wilderness boundary and Carson Falls, only one seasonal barrier (Site 87) with a height of 3.5 feet is present. Carson Falls, with a vertical height exceeding 80 feet, creates an irrefutably permanent fish passage barrier. Above Carson Falls, the entire 9.5 mile reach between Sites 107-131, should be considered occupied LCT stream habitat. Lahontan cutthroat trout were positively identified with fish sightings at Sites 115 and 128; two locations separated by the presence of two permanent fish barriers (Sites 124 & 126) and a longitudinal distance of more than six miles. The stream provides approximately 7.8 miles of continuous habitat between Carson Falls (Site 107) and the two permanent barriers at Sites 124 and 126. Both below and above Carson Falls, certain sections of the river provide more favorable habitat than others, though as a whole the watershed has both suitable habitat and suitable water quality for Lahontan cutthroat trout.

The widespread presence of non-native salmonids in the East Fork Carson River and the many tributaries prevents any immediate reintroduction of LCT into the main stem, unless LCT are stocked as a put-and-take recreational fishery. The ability of LCT to successfully persist in the presence of non-native salmonids within a large river system is unknown at this time.

Land use largely determines the quality of the water and habitat in the East Fork Carson River. Since the majority of the main stem East Fork Carson River is located in the Humboldt-Toiyabe National Forest, the Forest Service land management policies can be influential in maintaining and even enhancing the existing 50 miles of potential/occupied LCT habitat. In addition Forest Service personnel may be able to cooperate with private

landowners through land acquisition, cost-share agreements, or other means to achieve common goals.

Between Hangman's Bridge and Interstate 395 vehicle access is limited to jeep trails and a network of unpaved roadways. Many of these roads run adjacent to the East Fork Carson River and in some cases allow for a ford crossing during low flows. On a National Forest map several established roadways are evident: Cottonwood Canyon Trail, Scoss Canyon Trail, Barney Reilly Trail, unnamed road from Doud Springs to Bodie Flat, and a short paved road from Long Valley. During the survey, roads and or road impacts were noted at twelve locations including those where other features were documented (Sites 4, 7, 8, 9, 11, 14, 15, 16, 17, 18, 19, 20). Limiting OHV use to specific roads and closing others can act to limit the extent of both vehicle based impacts and the effects of camping.

Rafters and off-road enthusiasts are able to access the river in multiple locations between Hangman's Bridge and Interstate 395. The short rafting season on the East Fork Carson River requires that people drive to campsites after the end of June and before April. The majority of the dispersed campsites on the East Fork Carson River are located near the hot springs: within a half mile of Site 15. At least nine separate dispersed campsites were documented on both sides of the river at Site 14, four camps at Site 15, and one campsite at Site 16. The quantity of people using the hot springs and nearby campsites necessitates bathroom facilities or waste removal regulations. At Site 16 an outhouse is available for campers, and at Site 14 a crude outhouse had been constructed by the public. The outhouse is undersized and may be a contributing source of human-based contamination to the river.

In the upper watershed (lower wilderness boundary to Sonora Peak) the river is located almost exclusively within the boundaries of the Carson-Iceberg Wilderness. Therefore vehicle impacts were absent and the six documented stream crossings are used only by humans and pack animals. In one location (Site 108) the trail runs directly along the river left bank and has contributed to visible signs of slumping.

Five dispersed campsites were documented in the Carson-Iceberg Wilderness, though that figure is likely a conservative value. Abandoned fire rings were also present throughout the Carson-Iceberg Wilderness, though only a few campsites showed evidence of frequent use. Trash and human waste was minimal in the Carson-Iceberg Wilderness.

A certain degree of erosion and sediment recruitment should be expected along the East Fork Carson River. Where the channel has been confined and cut-off by a road or highway such as between Sites 29-49 & Sites 55-60 one would expect a fluvial response. Rip-rap has been used to protect banks where a road now occupies the floodplain (See Sites 30, 55, & 57). Minimizing anthropogenic sources of erosion and increases in sediment is important to water quality in the East Fork Carson River. Monitoring and modifying public activity and livestock management can help minimize human based erosion.

Grazing pasture and livestock activity was specifically noted as a possible cause for an erosion concern in ten locations (Sites 6, 7, 8, 9, 26, 27, 76, 81, 82, & 97). In many of these locations cattle/livestock are allowed to walk through the riparian zones and in most instances have access to enter the watercourse. The removal of vegetation as well as the degradation of stream banks by hooves is apparent at several of these locations (See photos associated with Sites 6, 26, & 81). In the vicinity of Vaquero Camp and Gray's crossing, cattle were present during the survey and had visibly depleted grass and willows along the banks for a distance of several hundred meters. In addition algae were prevalent on the streambed in the same reach, signaling a major nutrient influx. Creating a buffer zone with fencing may offer a way of reducing the impact on the riparian corridor. Providing education and incentives (i.e. cost share agreements for fencing or retired acreage) to private land owners may help to minimize grazing impacts.

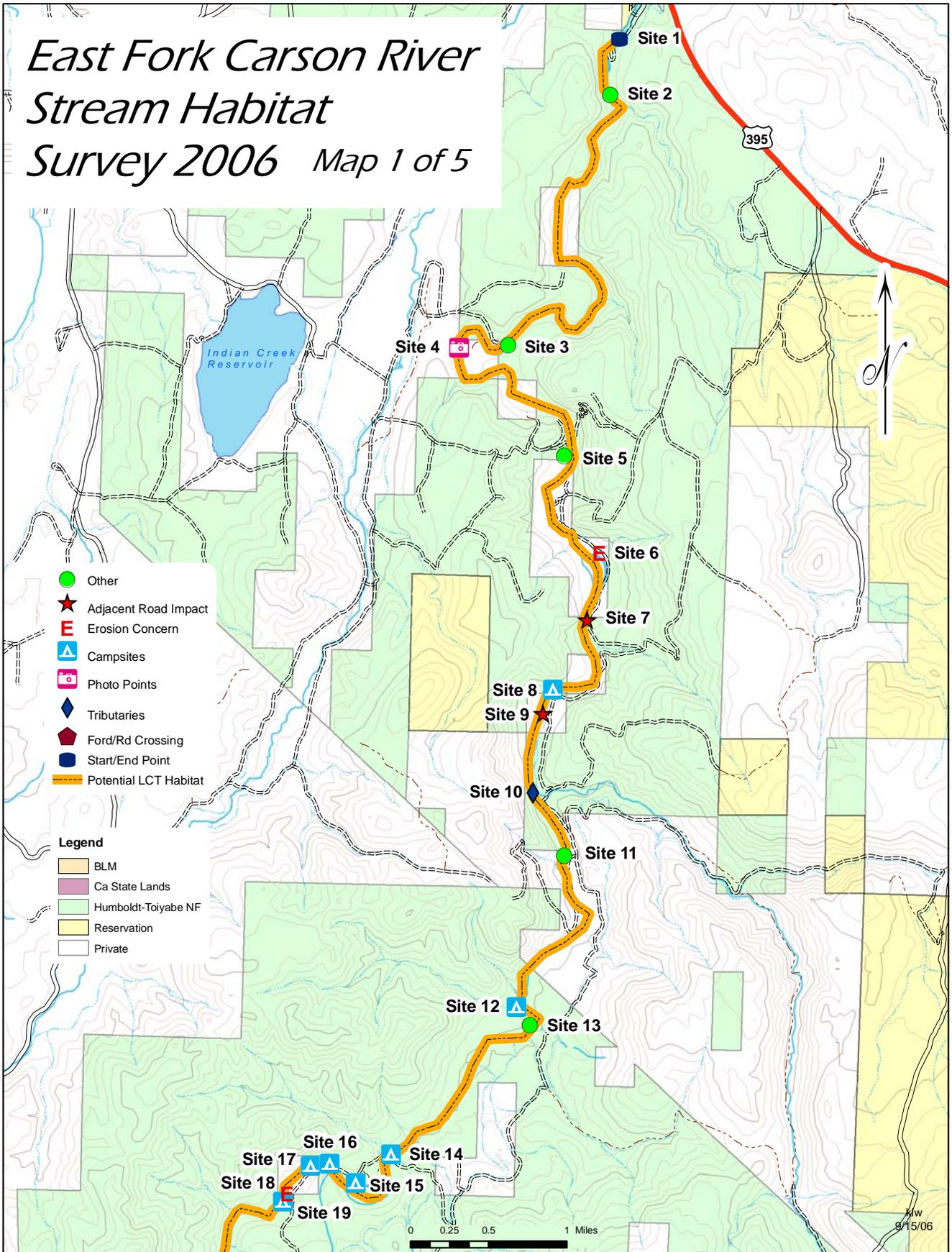
Cheat grass is widely distributed along the East Fork Carson River between Sites 1-17, and between Sites 25-29, and treatment or removal of this invasive weed would require a large scale effort. A concentration of whitetop was also noted between Sites 1-5. Location specific spraying efforts may prove effective in limiting the spread of this noxious plant in the East Fork Carson River drainage.

Recommendations

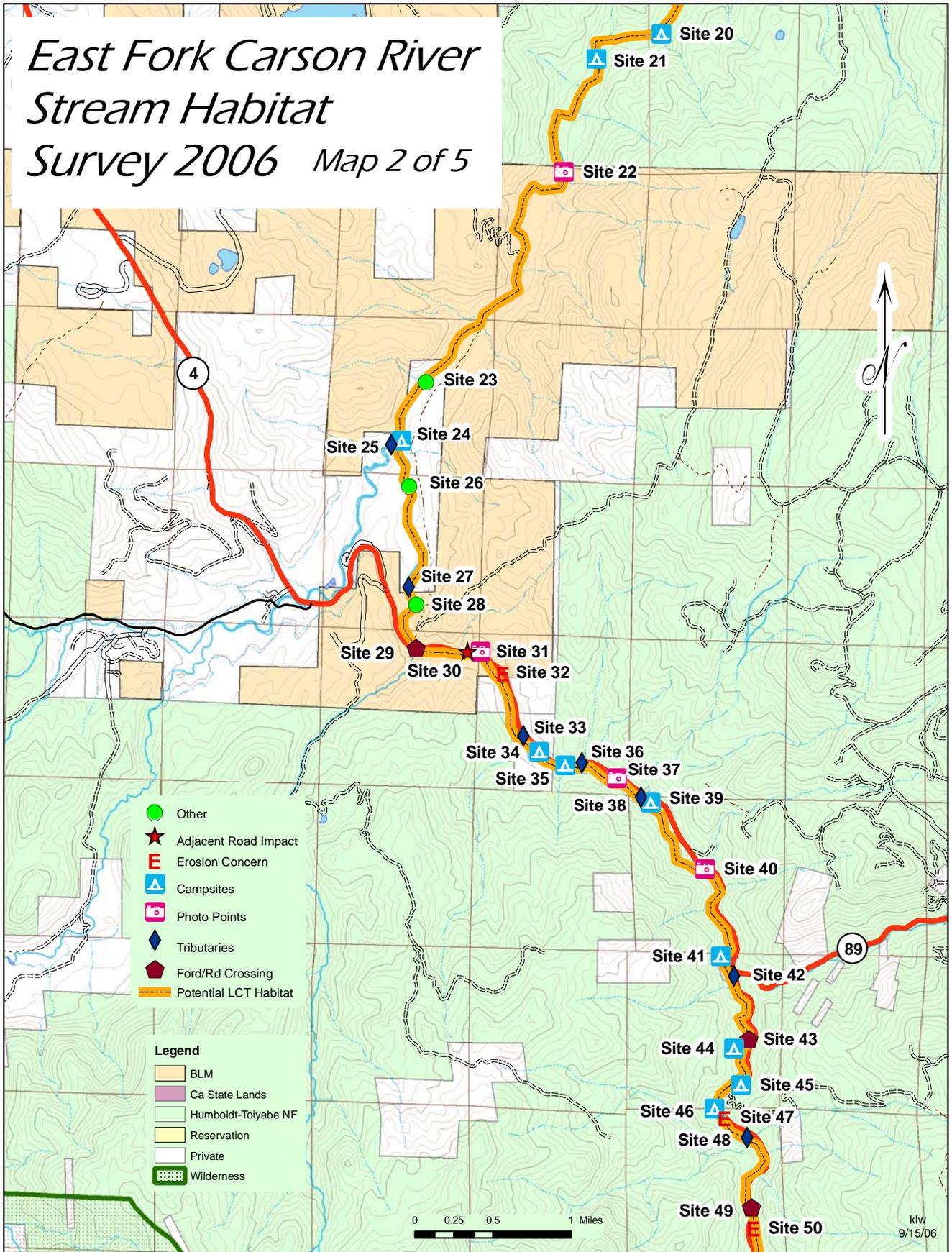
1. Recognize that the entire East Fork Carson River between Carson Falls and Ruhestroth Dam was historically inhabited by Lahontan cutthroat trout and that this section of river may be essential/necessary for the future recovery of the species. Do not allow any future management activities that would preclude this section of river from helping with the future recovery of Lahontan cutthroat trout within the Carson River watershed. For example, do not allow any fish passage barriers or water diversions to be constructed on the East Fork Carson River between Carson Falls and Ruhestroth Dam. Consider the entire East Fork Carson River between Ruhestroth Dam and Carson Falls as providing potential Lahontan cutthroat trout habitat.
2. Require recreational users to carry out all human waste.
3. Work with the local ranchers/private land owners to reduce/eliminate livestock grazing impacts within the East Fork Carson River riparian areas. Monitor and enforce terms of grazing permits. Investigate the effects of livestock with respect to nutrient loading (TMDL).
4. Increase public awareness of Leave-No-Trace principles along the East Fork Carson River, (i.e.) more signs at raft put-ins, trailheads, social trails, and access points).
5. Encourage the use of designated OHV trails (Cottonwood Canyon, Barney Riley, and Scossa Canyon) for access to the East Fork Carson River. Utilize maps, signs, and trail markers to make designated trails known. Close and decommission all non designated roads, unwanted spurs/roadways, and social jeep trails, especially where adjacent roads are impacting the river (removal from maps, earth berms, fallen trees, etc.).

6. Close and decommission all campsites within 100 feet of the East Fork Carson River. Only allow camping to occur more than 100 feet away from the river edge.
7. Investigate the impacts of contaminated tributaries at the confluence with the East Fork Carson River (i.e. Bryant Creek and Monitor Creek) and develop recommendations that will reduce/eliminate impacts from the contaminated tributaries.
8. Remove large trash/debris such as culverts, broken kayaks, etc. from the East Fork Carson River watercourse. Remove all barb wire fences not being used.
9. Eliminate noxious weeds (cheat grass and whitetop) where herbicides can be safely applied.
10. Designate the East Fork Carson River watershed upstream of Carson Falls as a Critical Aquatic Refuge (See Attached Map).
11. Develop and install Lahontan cutthroat trout interpretive panels that will educate the public about LCT in the East Fork Carson River.
12. Re-locate the Carson River trail near Site 108 to a location further away from the waters edge in order to minimize bank erosion.
13. Install additional fishing closure signs in the upper watershed where the river is closed to all fishing due to the presence of LCT.
14. Work with California Department of Fish and Game to conduct an LCT density and distribution survey above Carson Falls.

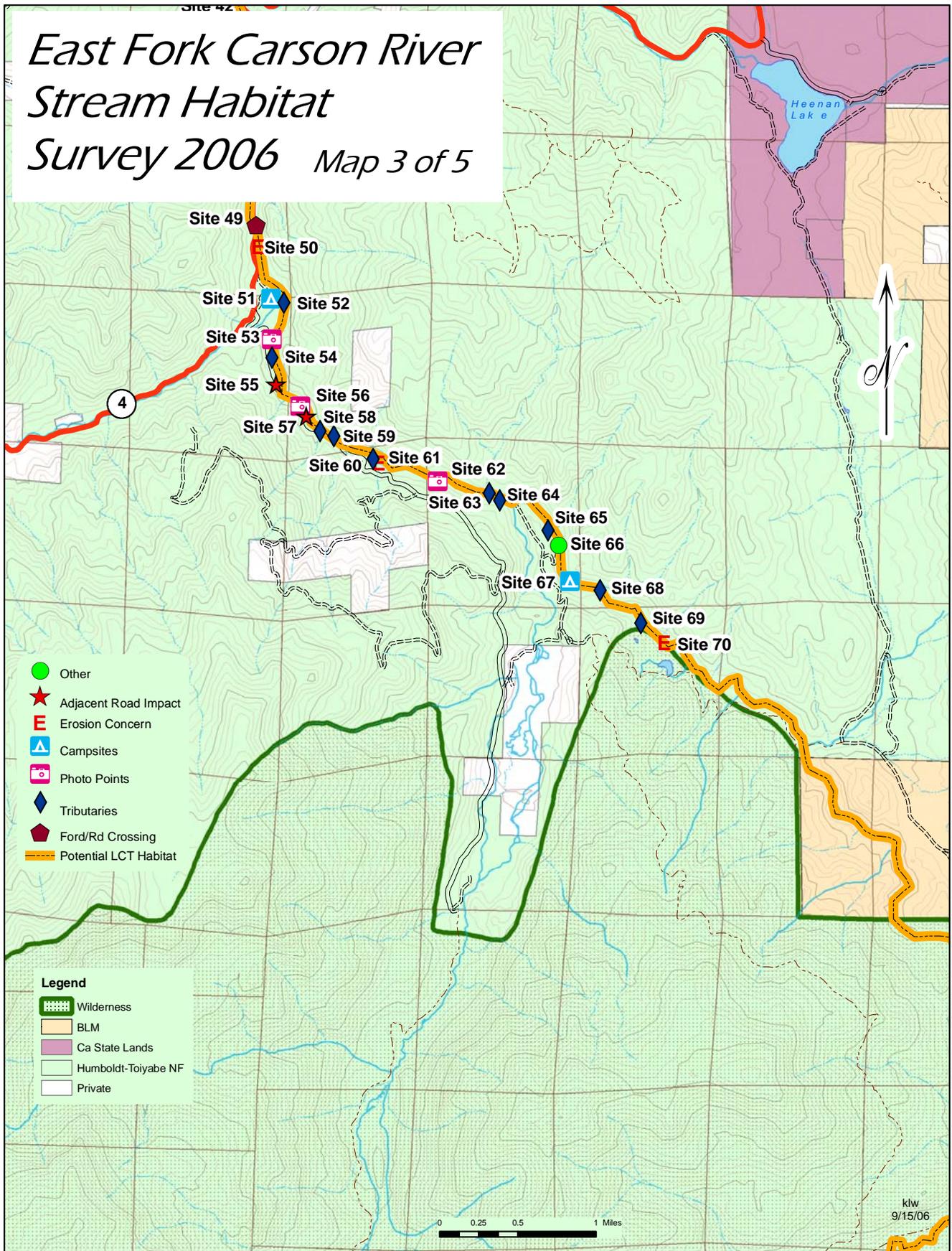
East Fork Carson River Stream Habitat Survey 2006 Map 1 of 5



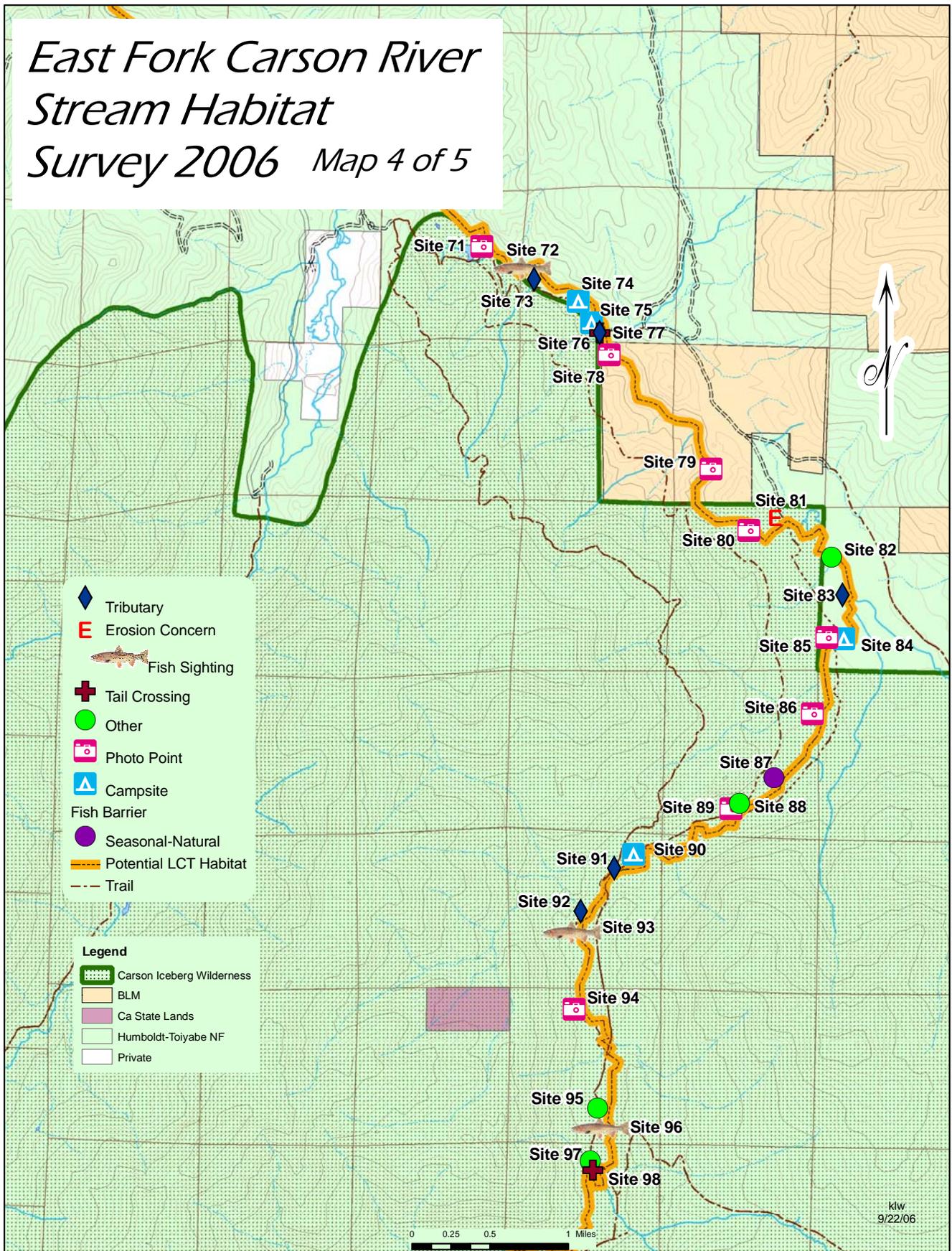
East Fork Carson River Stream Habitat Survey 2006 Map 2 of 5



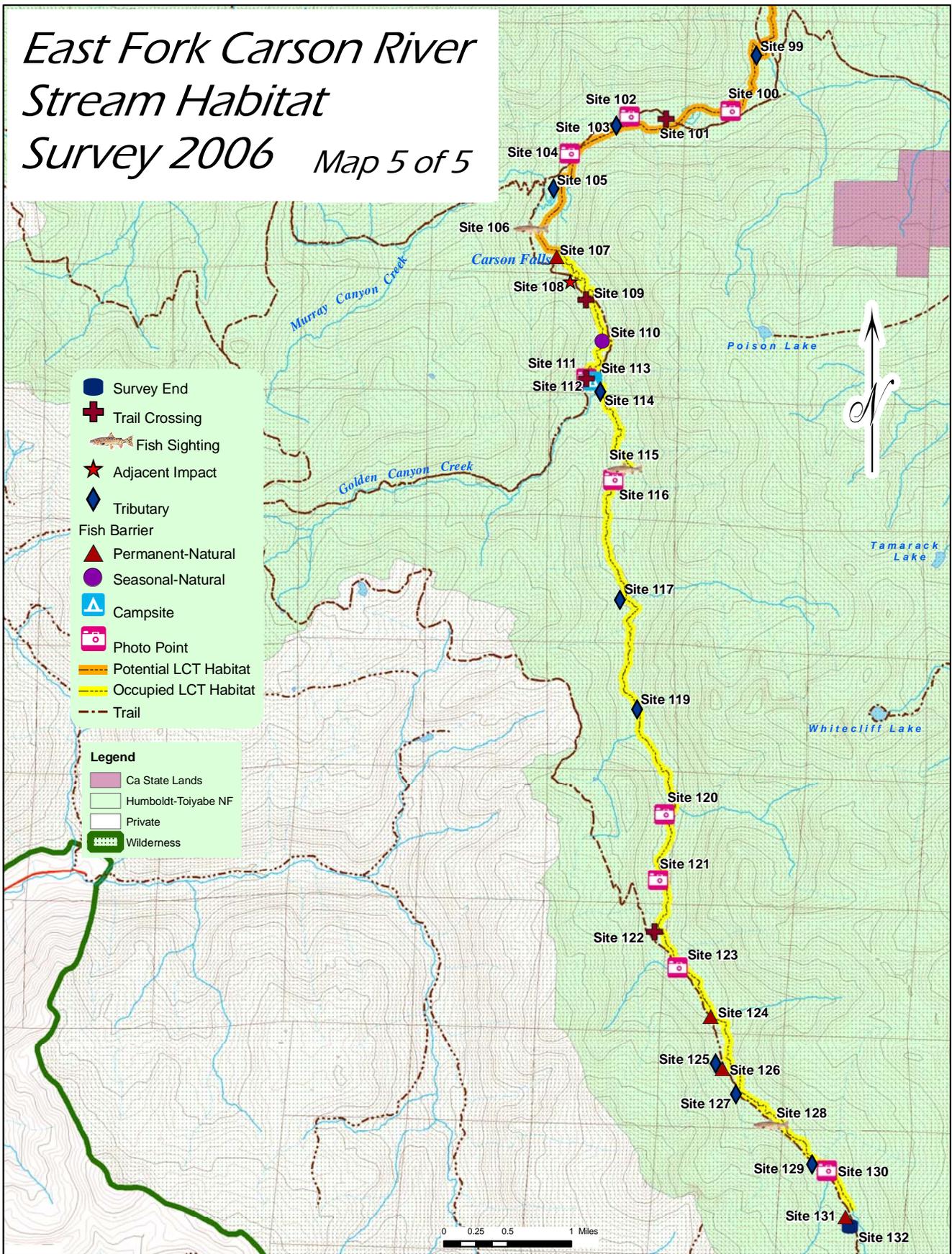
East Fork Carson River Stream Habitat Survey 2006 Map 3 of 5



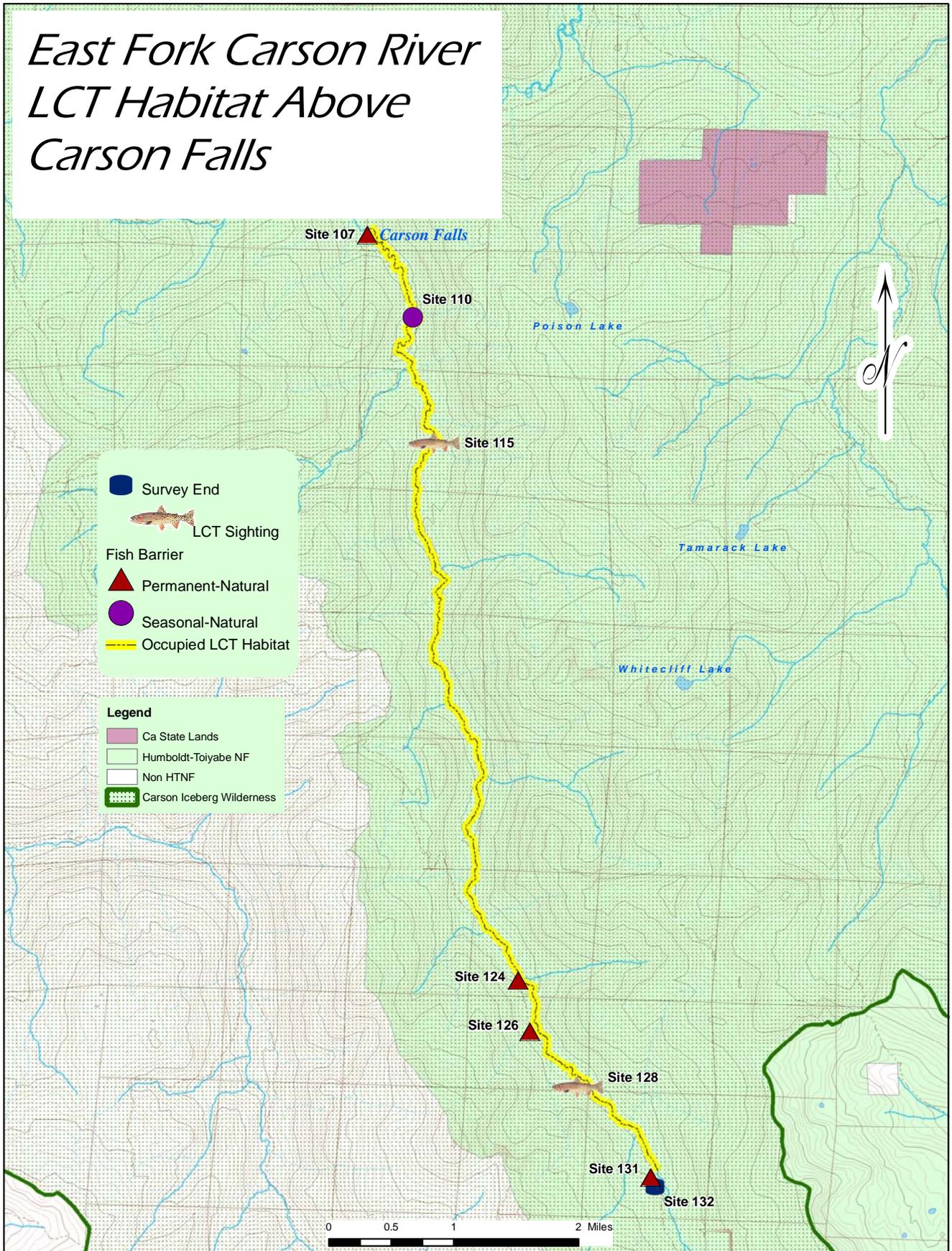
East Fork Carson River Stream Habitat Survey 2006 Map 4 of 5



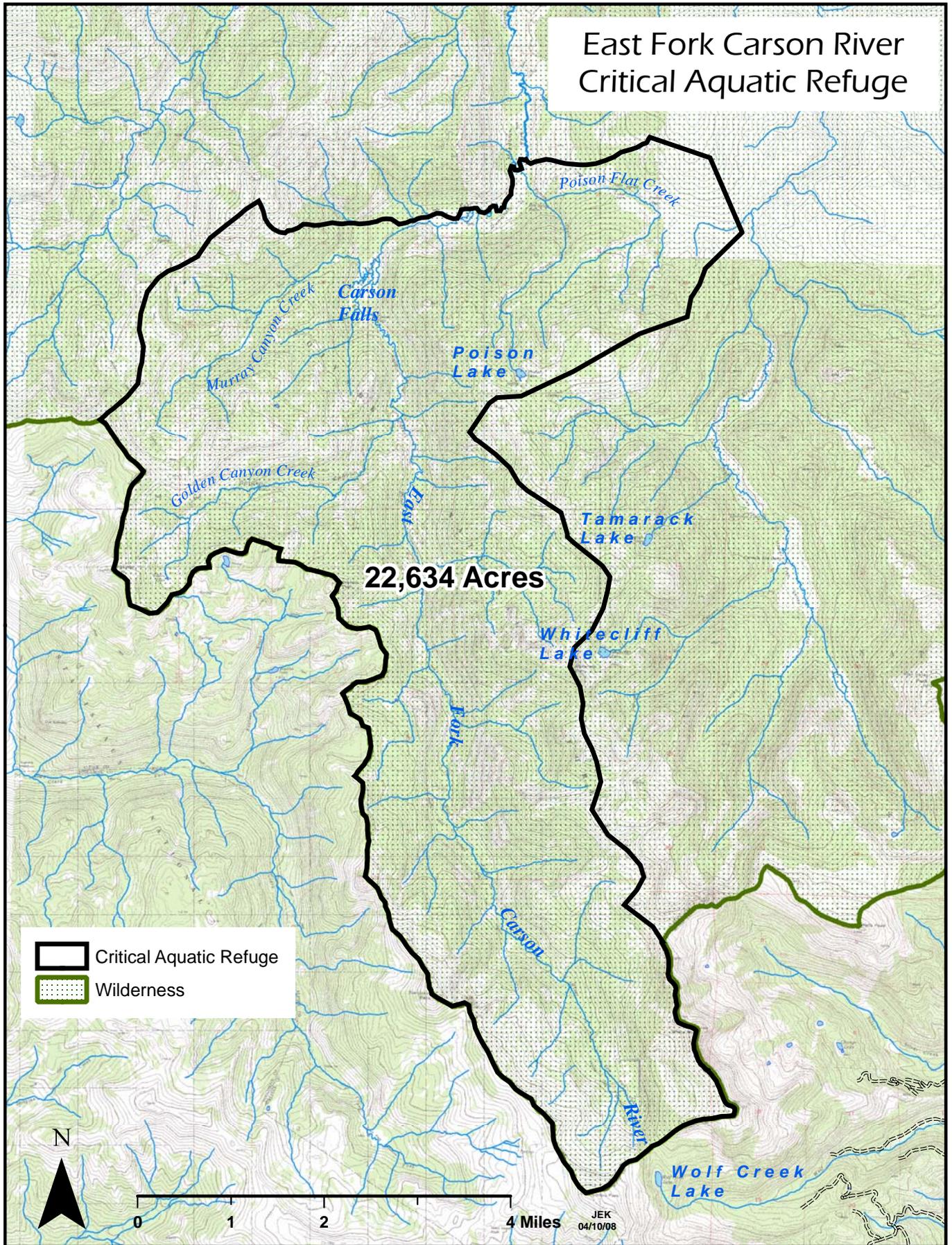
East Fork Carson River Stream Habitat Survey 2006 *Map 5 of 5*



East Fork Carson River LCT Habitat Above Carson Falls



East Fork Carson River Critical Aquatic Refuge





Site 1: East Fork Carson River, Carson Ranger District. Upstream photo of Ruhenstroth Dam, a permanent fish barrier with a vertical height of 10-20 feet. This site is located at UTM: N: 4305990 & E: 266589, Elev. 4930 Feet (1503m).



Site 2: East Fork Carson River, Carson Ranger District. Photo shows the popular rafting pull-out location. Note the presence of gravel supported by a tarp or mat. The high flows in early 2006 eroded the old bank. This site is located at UTM: N: 4305416 & E: 266489, Elev. 4946 feet (1508m).



Site 2: East Fork Carson River, Carson Ranger District. Downstream view of the pull-out location. This site is located at UTM: N: 4305416& E: 266489, Elev.4946 feet (1508m).



Site 3: East Fork Carson River, Carson Ranger District. Downstream view of a USGS gauging station. Gauge height is measured on the left bank. This site is located at UTM: N: 4302845 & E: 265439, Elev. 4979 feet (1518m).



Site 4: East Fork Carson River, Carson Ranger District. Photo shows a vertical culvert buried in the river left bank. This site is located at UTM: N: 4302820 & E: 264935, Elev. 5002 feet (1525m).



Site 5: East Fork Carson River, Carson Ranger District. Downstream view of a long section of an eroding river left bank. Yellow sweet clover was noted on the stream banks near this area. This site is located at UTM: N: 4301704 & E: 266018, Elev. 5032 feet (1534m).



Site 6: East Fork Carson River, Carson Ranger District. Photo shows a loose vertical bank where sediment is eroding directly into the watercourse. This site is located at UTM: N: 4300704 & E: 266373, Elev. 5071 feet (1546m).



Site 7: East Fork Carson River, Carson Ranger District. Viewpoint of a road that runs perpendicular to the river. Photo shows one part of a visible road network. This site is located at UTM: N: 4300017 & E: 266259, Elev. 5071 feet (1546m).



Site 7: East Fork Carson River, Carson Ranger District. Photo shows an adjacent road impact. This site is located at UTM: N: 4300017 & E: 266259, Elev. 5071 feet (1546m).



Site 8: East Fork Carson River, Carson Ranger District. Photo shows part of a well established campsite, which includes an incoming road and a tree swing. This camp is located at UTM: N: 4299299 & E: 265890, Elev. 5110 feet (1558m).



Site 8: East Fork Carson River, Carson Ranger District. Photo shows the heavily traveled road leading to the campsite. The road approaches from a downstream or northeasterly direction. This campsite is located at UTM: N: 4299299 & E: 265890, Elev.5110 feet (1558m).



Site 9: East Fork Carson River, Carson Ranger District. Photo shows where vehicles have been driving on recently exposed bars, killing vegetation and exposing the land to increased erosion. This Site is located at UTM: N: 4299054 & E 265792, Elev. 5107 feet (1557m).



Site 10: East Fork Carson River, Carson Ranger District. Looking across Bryant Creek and up the East Fork Carson River. This site is located at UTM: N: 4298168 & E: 265741, Elev. 5107 ft. (1557m).



Site 11: East Fork Carson River, Carson Ranger District. Downstream viewpoint of the Nevada/California border. The state line is actually delineated by a fence, which is barely visible in the middle right of the photo. The state line intersects the river at UTM: N: 4297597 & E: 266018, Elev. 5159 feet (1573m).



Site12: East Fork Carson River, Carson Ranger District. A campsite is set-up adjacent to the river, and walking distance to a hot spring. This site is located at UTM: N: 4296028 & E: 265521, Elev. 5163 feet (1574m).



Site12: East Fork Carson River, Carson Ranger District. Photo shows a hot spring, which is less than 100 m from the Carson River and campsite. This site is located at UTM: N: 4296028 & E: 265521, Elev. 5163 feet (1574m).



Site 13: East Fork Carson River, Carson Ranger District. Barely visible in the photo, a barbed wire fence runs up to the river's edge. During low flow, the fence is stretched across the East Fork. This site is located at UTM: 4295846 & E: 265661, Elev. 5136 feet (1566m).



Site 14: East Fork Carson River, Carson Ranger District. The photo shows a man-made basin that catches water from the hot springs on river left. Across the stream is a frequently used campsite. At least 9 campsites were counted on both sides of the river. This site is located at UTM: N: 4294521 & E: 264232, Elev. 5179 feet (1579m).



Site 14: East Fork Carson River, Carson Ranger District. Photo shows a primitive outhouse constructed by recreational visitors.



Site 14: East Fork Carson River, Carson Ranger District. A 4x4 road descends to the stream, running adjacent to the source of the hot springs. Jeep trails are visible on both sides of the river.



Site 14: East Fork Carson River, Carson Ranger District. One of nine campsites identified near this location. Blackened fire rings and barren ground indicate repeated use by the public.



Site 15: East Fork Carson River, Carson Ranger District. A campsite marks the downstream end of a 1/8 mile string of dispersed campsites on river left. This site is located at UTM: N: 4294228 & E: 263869, Elev. 5215 feet (1590m).



Site 16: East Fork Carson River, Carson Ranger District. Photo shows the uppermost hot spring, which marks the beginning of a 1/8 mile section of dispersed campsites. This hot spring is located at UTM: N: 4294427 & E: 263600, Elev.5212 feet (1589m).



Site 16: East Fork Carson River, Carson Ranger District. Campsites, campers, and jeep trails indicate heavy use directly across from the hot spring on river left.



Site 17: East Fork Carson River, Carson Ranger District. A series of campsites are located on river right, just upstream of Site 16. This campsite is located at UTM: N: 4294406 & E: 263414, Elev. 5255 feet (1602m).



Site 17: East Fork Carson River, Carson Ranger District. A stairway leads from the river edge up to a series of campsites on river right, just upstream of Site 16. This campsite is located at UTM: N: 4294406 & E: 263414, Elev. 5255 feet (1602m).



Site 18: East Fork Carson River, Carson Ranger District. Photo shows a loose vertical right bank. A low-use road runs adjacent to the river approximately 30 feet from the waters edge. This site is located at UTM: N: 4294112 & E: 263162, Elev. 5232 feet (1595m).



Site 19: East Fork Carson River, Carson Ranger District. A small campsite (45 ft x 75 ft) is located on the river right bank, approximately 1 m from the waters edge. This site is located at UTM: N: 4294033 & E: 263117, Elev. 5228 feet (1594m).



Site 19: East Fork Carson River, Carson Ranger District. A road leading to the campsite runs adjacent to the river for approximately 200 feet. This site is located at UTM: N: 4294033 & E: 263117, Elev. 5228 feet (1594m).



Site 20: East Fork Carson River, Carson Ranger District. A large campsite, including a wooden picnic table (100 ft x 130 ft), is located on river left. This site is located at UTM: N: 4292117 & E: 262096, Elev. 5307 feet (1618m).



Site 20: East Fork Carson River, Carson Ranger District. The campsite/parking area lacks vegetative cover. This site is located at UTM: N: 4292117 & E: 262096, Elev. 5307 feet (1618m).



Site 20: East Fork Carson River, Carson Ranger District. Photo shows a jeep trail which connects this campsite to the Indian Creek Reservoir/Diamond Valley area. This site is located at UTM: N: 4292117 & E: 262096, Elev. 5307 feet (1618m).



Site 21: East Fork Carson River, Carson Ranger District. Photo shows part of a campsite which shows signs of frequent use by rafters. The camp was located 10 meters from the waters edge and the barren ring around the fire is approximately 20 meters in diameter. This camp is located at UTM: N: 4291827 & E: 261433, Elev. 5317 feet (1621m).



Site 21: East Fork Carson River, Carson Ranger District. Photo shows the raft landing associated with the campsite. This site is located at UTM: N: 4291827 & E: 261433, Elev. 5317 feet (1621m).



Site 22: East Fork Carson River, Carson Ranger District. Downstream photo shows a characteristic view of this reach. This site is located at UTM: N: 4290673 & E: 261105, Elev. 6217 feet 1636m).



Site 23: East Fork Carson River, Carson Ranger District. Photo shows a USGS gauging station on river right (USGS 10308200). This station is located at UTM: N: 4288511 & E: 259683, Elev. 5399 feet (1646m).



Site 24: East Fork Carson River, Carson Ranger District. Photo shows a dispersed campsite on river right. This site is located at UTM: N: 4287926 & E: 259418, Elev.5442 feet (1659m).



Site 24: East Fork Carson River, Carson Ranger District. Downstream view of the raft landing area adjacent to campsite. This site is located at UTM: N: 4287926 & E: 259418, Elev.5442 feet (1659m).



Site 25: East Fork Carson River, Carson Ranger District. Upstream view of Markleeville Creek, which contributes approximately 20 % of flow. This site is located at UTM: N: 4287867 & E259321, Elev. 5435 feet (1657m)



Site 25: East Fork Carson River, Carson Ranger District. Looking up the East Fork at the confluence, where Markleeville Creek enters river left. This site is located at UTM: N: 4287867 & E259321, Elev. 5435 feet (1657m).



Site 26: East Fork Carson River, Carson Ranger District. Photo shows left bank of the river where grazing pasture is visible. Grazing was evident on both banks. This site is located at UTM: 4287448 & E: 259510, Elev. 5415 feet (1651m).



Site 27: East Fork Carson River, Carson Ranger District. Barely visible in the center of this photo is a small tributary (1% flow), which enters from green pasture. This site is located at UTM: N: 4286414 & E: 259499, Elev. 5422 feet (1653m).



Site 28: East Fork Carson River, Carson Ranger District. Upstream view of a trash culvert deposited during high flows. This site is located at UTM: N: 4286230 & E: 259579, Elev. 5415 feet (1651m).



Site 28: East Fork Carson River, Carson Ranger District. Downstream view of grazing land on river left. This site is located at UTM: N: 4286230 & E: 259579, Elev. 5415 feet (1651m).



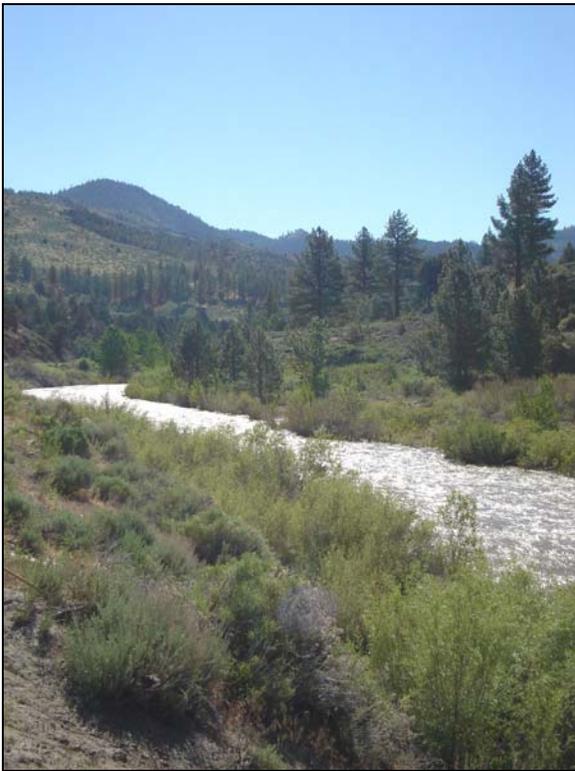
Site 29: East Fork Carson River, Carson Ranger District. Photo shows Hangman's bridge where Highway 4 crosses the East Fork. The bridge marks the put-in for rafting trips. This bridge is located at UTM: N: 4285774 & E: 259577, Elev. 5481 feet (1671m).



Site 29: East Fork Carson River, Carson Ranger District. Looking up bank on river right, a trail/road leads down from the parking area to the raft put-in location. This site is located at UTM: N: 4285774 & E: 259577, Elev. 5481 feet (1671m).



Site 29: East Fork Carson River, Carson Ranger District. Downstream view from Hangman's Bridge. This site is located at UTM: N: 4285774 & E: 259577, Elev. 5481 feet (1671m).



Site 29: East Fork Carson River, Carson Ranger District. Upstream view from Hangman's Bridge. This site is located at UTM: N: 4285774 & E: 259577, Elev. 5481 feet (1671m).



Site 30: East Fork Carson River, Carson Ranger District. Upstream view shows how the highway is confining the channel by cutting off the floodplain. This site is located at UTM: N: 4285738 & E: 260106, Elev. 5478 feet (1670m).



Site 31: East Fork Carson River, Carson Ranger District. Rip-rap is used to protect the highway from erosion on the outside of a river bend. This site is located at UTM: N: 4285737 & E: 260239, Elev. 5402 feet (1674m).



Site 32: East Fork Carson River, Carson Ranger District. Recreational boaters, anglers, etc. drive vehicles on stream banks and into channel. This site is located at UTM: 4285513 & E: 260471, Elev. 5537 feet (1688m).



Site 32: East Fork Carson River, Carson Ranger District. This site is located at UTM: 4285513 & E: 260471, Elev. 5537 feet (1688m).



Site 33: East Fork Carson River, Carson Ranger District. Downstream view where a small trib. enters river left. The tributary enters near the alder tree in the left side of the photo. This site is located at UTM: N: 4284878 & E: 260681, Elev. 5540 feet (1689m).



Site 34: East Fork Carson River, Carson Ranger District. A private campground is located on river right. A 200 m x 75 m plot has approximately 10 campsites. This site is located at UTM: N: 4284715 & E: 260843, Elev. 5520 feet (1683m).



Site 34: East Fork Carson River, Carson Ranger District. A private campground is located on river right. Centered in the photo is a large RV. This site is located at UTM: N: 4284715 & E: 260843, Elev. 5520 feet (1683m).



Site 34: East Fork Carson River, Carson Ranger District. A private campground is located on river right. Photo shows picnic tables located near the waters edge. This site is located at UTM: N: 4284715 & E: 260843, Elev. 5520 feet (1683m).



Site 35: East Fork Carson River, Carson Ranger District. Photo shows a small (15m x 30m) campsite located on river right. This camp is located at UTM: N: 4284570 & E: 261113, Elev. 5556 feet (1694m).



Site 36: East Fork Carson River, Carson Ranger District. A small trib. (<1% contribution) enters on river right. This site is located at UTM: N: 4284594 & E: 261282, Elev. 5569 feet 1698m).



Site 37: East Fork Carson River, Carson Ranger District. Upstream view of East Fork taken from Highway 4. This site is located at UTM: N: 4284435 & E: 261646, Elev. 5609 feet (1710m).



Site 38: East Fork Carson River, Carson Ranger District. A small clear tributary pours down into the East Fork. The confluence is located at UTM: N: 4284244 & E: 261893, Elev. 5576 feet (1700m).



Site 39: East Fork Carson River, Carson Ranger District. Photo shows a camp site situated between the road and river. Any impact was minimal. This site is located at UTM: N: 4284187 & E: 261990, Elev. 5592 feet (1705m).



Site 40: East Fork Carson River, Carson Ranger District. Upstream view of East Fork taken from Highway 4. This site is located at UTM: N: 4283498 & E: 262553, Elev. 5684 feet (1733m).



Site 41: East Fork Carson River, Carson Ranger District. Photo shows one of multiple campsites located on river right. The camp area encompasses 40 m x 100 m. This site is located at UTM: N: 4282600 & E: 262714, Elev. 5655 feet (1724m).



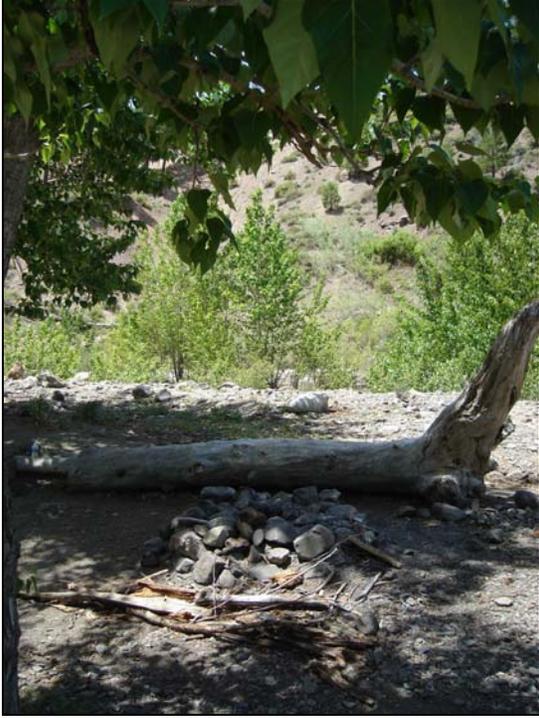
Site 42: East Fork Carson River, Carson Ranger District. Photo shows confluence of Monitor Creek and East Fork Carson River. Monitor Creek contributes 2-5 % of flow. This site is located at UTM: N: 4282406 & E: 262852, Elev. 5710 feet (1741m).



Site 43: East Fork Carson River, Carson Ranger District. A small lagoon isolates a rock bar to create a jetty. This site is located at UTM: N: 4281743 & E: 263005, Elev. 5704 feet (1739m).



Site 43: East Fork Carson River, Carson Ranger District. A gravel road connects the jetty to the highway. This site is located at UTM: N: 4281743 & E: 263005, Elev. 5704 feet (1739m).



Site 44: East Fork Carson River, Carson Ranger District. One of ten campsites on or near the rock jetty. This site is located at UTM: N: 4281668 & E: 262948, Elev. 5707 feet (1740m).



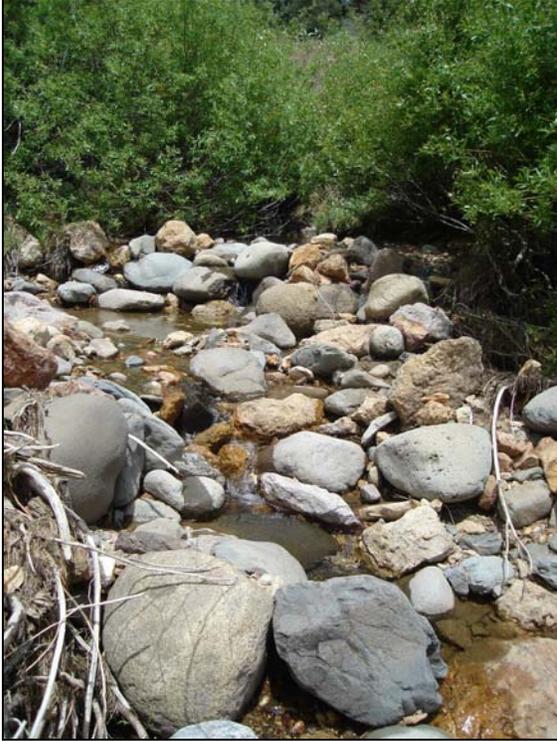
Site 45: East Fork Carson River, Carson Ranger District. Campsite located in the floodplain on river left. This site is located at UTM: N: 4281283 & E: 262922, Elev. 5727 feet (1746m).



Site 46: East Fork Carson River, Carson Ranger District. Photo shows a small campsite located 15 m from the river. This site is located at UTM: N: 4281040 & E: 262652, Elev. 5740 feet (1750m).



Site 47: East Fork Carson River, Carson Ranger District. Erosion concern. Loose bank measures 1-3 m in height and approximately 80 m in length. This site is located at UTM: N: 4280932 & E: 262756, Elev. 5743 feet (1751m).



Site 48: East Fork Carson River, Carson Ranger District. A small tributary enters river right (<1% contributing flow). This confluence is located at UTM: N: 4280745 & E: 262985, Elev. 5753 feet (1754m).



Site 49: East Fork Carson River, Carson Ranger District. Photo shows upstream view from Highway 4 bridge near Centerville Flat. This site is located at UTM: N: 4276463 & E: 265566.



Site 50: East Fork Carson River, Carson Ranger District. Photo shows a 60 m x 8 m eroding bank on river right. This site is located at UTM: N: 4279801 & E: 263057, Elev. 5809 feet (1771m).



Site 51: East Fork Carson River, Carson Ranger District. Photo shows a campsite established on the river left bank, approximately 10m from the water. This campsite is located at UTM: N: 4279243 & E: 263313, Elev. 5848 feet (1783m).



Site 52: East Fork Carson River, Carson Ranger District. Upstream view of the tributary Silver Creek, which contributes approximately 20% of the flow to the East Fork Carson. This confluence is located at UTM: N: 4279213 & E: 263311, Elev. 5835 feet (1779m).



Site 53: East Fork Carson River, Carson Ranger District. Upstream photo is characteristic of this reach. This site is located at UTM: N: 4278898 & E: 263193, Elev. 5871 feet (1790m).



Site 54: East Fork Carson River, Carson Ranger District. Downstream photo of small (1% contribution to flow) tributary entering the main stem on river left. This confluence is located at UTM: N: 4278654 & E: 263192, Elev. 5858 feet (1786m).



Site 55: East Fork Carson River, Carson Ranger District. Upstream photo shows where Wolf Creek Road has confined the channel, requiring rip-rap to minimize erosion. This site is located at UTM: N: 4278370 & E: 263239, Elev. 5881 feet (1793m).



Site 56: East Fork Carson River, Carson Ranger District. Upstream photo point. This site is located at UTM: N: 4278158 & E: 263487 5920 feet (1805m).



Site 57: East Fork Carson River, Carson Ranger District. Upstream photo shows adjacent road and required rip-rap to prevent the river from undercutting the roadway. This site is located at UTM: N: 4278042 & E: 263548, Elev. 5914 feet (1803m).



Site 58: East Fork Carson River, Carson Ranger District. A small tributary passes through a culvert and enters the East Fork on river left. This site is located at UTM: N: 4277891 & E: 263687, Elev. 5927 feet (1807m).



Site 59: East Fork Carson River, Carson Ranger District. A small tributary passes through a culvert and enters East Fork on river left. This site is located at UTM: N: 4277840 & E: 263829, Elev. 5927 feet (1807m).



Site 60: East Fork Carson River, Carson Ranger District. A small tributary descends the mountain and enters East Fork on river left. This site is located at UTM: N: 4277607 & E: 264230, Elev. 5960 feet (1817m).



Site 61: East Fork Carson River, Carson Ranger District. Photo shows a large slump on left bank. This site is located at UTM: N: 4277571 & E: 264296, Elev. 5963 feet (1818m).



Site 62: East Fork Carson River, Carson Ranger District. Cross-sectional photo shows a wide and shallow channel. This site is located at UTM: N: 4277381 & E: 264901, Elev. 6006 feet (1831m).



Site 63: East Fork Carson River, Carson Ranger District. Barely visible, photo shows a steep tributary entering river right. The tributary contributes an estimated 4-5 % of flow to the East Fork. This site is located at UTM: N: 4277253 & E: 265428, Elev. 6025 feet (1837m).



Site 64: East Fork Carson River, Carson Ranger District. Upstream view of confluence of East Fork and Wolf Creek, which enters on river left and contributes approximately 20% of flow to the main stem. This site is located at UTM: N: 4277183 & E: 265534, Elev. 6029 feet (1838m).



Site 65: East Fork Carson River, Carson Ranger District. Photo shows river right bank, where a small (<1% contributing flow) tributary runs out of the Dixon Mine drainage. This site is located at UTM: N: 4276870 & E: 266033, Elev. 6157 feet (1877m).



Site 66: East Fork Carson River, Carson Ranger District. A rustic cabin and mining claim are located on river left. This site is located at UTM: N: 4276728 & E: 266150, Elev. 6042 feet (1842m).



Site 67: East Fork Carson River, Carson Ranger District. Photo shows a scarcely used campsite on river left, located approximately 15m from the water. This campsite is located at UTM: N: 4276348 & E: 266264, Elev. 6094 feet (1858m).



Site 68: East Fork Carson River, Carson Ranger District. A tributary enters on river right, contributing 2% of flow to the East Fork. A thin waterfall is visible in the center of the photo. This site is located at UTM: N: 4276248 & E: 266570, Elev. 6140 feet (1872m).



Site 69: East Fork Carson River, Carson Ranger District. A small tributary runs through this marshy area to enter the East Fork on river left. This site is located at UTM: N: 4275919 & E: 266987, Elev. 6166 feet (1880).



Site 70: East Fork Carson River, Carson Ranger District. A large open slide has downed trees and left a big exposed face of erosion. This site is located at UTM: N: 4275714 & E: 267235.



Site 71: East Fork Carson River, Carson Ranger District. Downstream view into a steep canyon. This site is located at UTM: N: 4275515 & E: 267484, Elev. 6242 feet (1903 m on canyon wall.)



Site 72: East Fork Carson River, Carson Ranger District. Photo shows a run where a single fish was sighted. This site is located at UTM: N: 4275309 & E: 267897, Elev. 6212 feet (1894m).



Site 73: East Fork Carson River, Carson Ranger District. Photo shows the mouth of Railroad Canyon where a tributary enters on river left. This site is located at UTM: N: 4275196 & E: 268025, Elev. 6239 feet (1902m).



Site 74: East Fork Carson River, Carson Ranger District. A campsite is located approximately 10 meters from the left bank. This campsite is located at UTM: N: 4274968 & E: 268479, Elev. 6242 feet (1903m).



Site 75: East Fork Carson River, Carson Ranger District. Photo shows a campsite with dimensions 10 m x 20 m. This site is located at UTM: N: 4274740 & E: 268617, Elev. 6255 feet (1907m).



Site 76: East Fork Carson River, Carson Ranger District. Looking up Bagley Creek, which enters the East Fork on river right. This confluence is located at UTM: N: 4274645 & E: 268694, Elev. 6255 feet (1907m).



Site 77: East Fork Carson River, Carson Ranger District. Cross-sectional view of Gray's crossing, where foot traffic and pack stock ford the river. This site is located at UTM: N: 4274639 & E: 268697, Elev. 6265 feet (1910m).



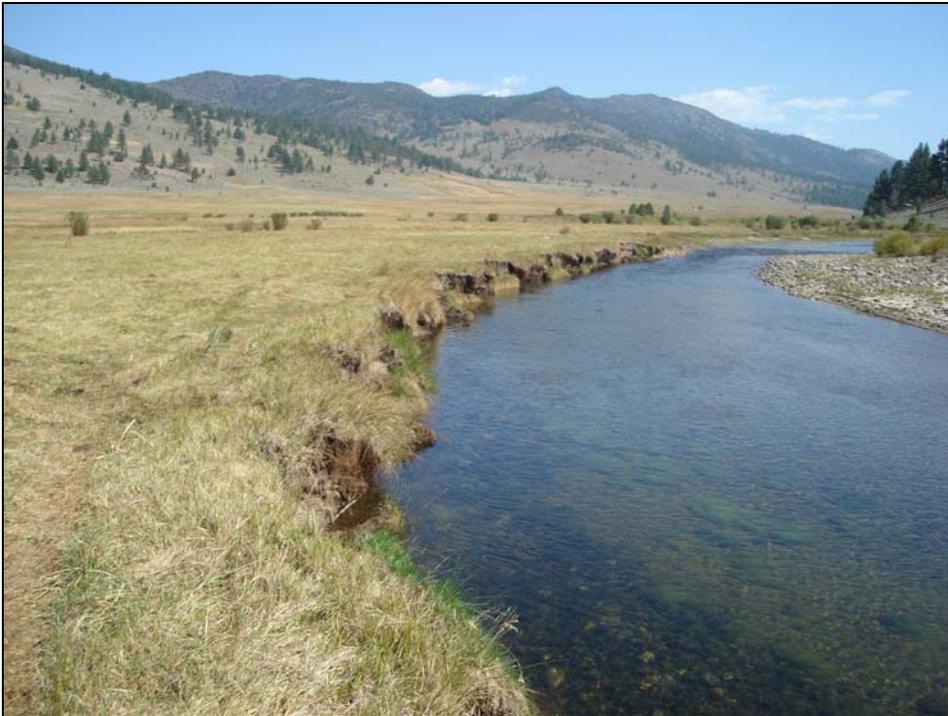
Site 78: East Fork Carson River, Carson Ranger District. Upstream view of a long and wide riffle. This site is located at UTM: N: 4274410 & E: 268791, Elev. 6229 feet (1899m).



Site 79: East Fork Carson River, Carson Ranger District. Looking upstream from the wall of a short canyon adjacent to Bagley Valley. This site is located at UTM: N: 4273251 & E: 269845, Elev. 6465 feet (1971m).



Site 80: East Fork Carson River, Carson Ranger District. Downstream view of point where the river enters a small canyon. This site is located at UTM: N: 4272604 & E: 270232, Elev. 6366 feet (1941).



Site 81: East Fork Carson River, Carson Ranger District. Upstream view from left bank. Photo taken near Vaquero Camp. Note the short-cropped grass. This site is located at UTM: N: 4272743 & E: 279499, Elev. 6370 feet (1942m).



Site 81: East Fork Carson River, Carson Ranger District. Photo shows abundant algae in the stream near Vaquero Camp. This site is located at UTM: N: 4272743 & E: 279499, Elev. 6370 feet (1942m).



Site 81: East Fork Carson River, Carson Ranger District. Zoomed view of livestock effects on stream banks. This site is located at UTM: N: 4272743 & E: 279499, Elev. 6370 feet (1942m).



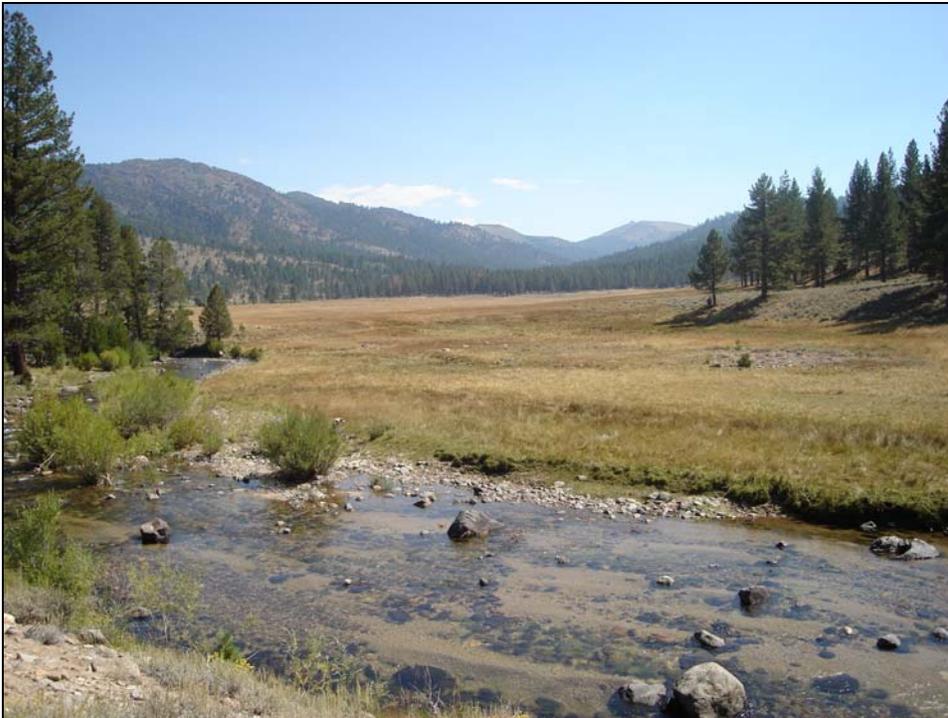
Site 82: East Fork Carson River, Carson Ranger District. Downstream view of East Fork and Bagley Valley. This site is located at UTM: N: 4272334 & E: 271083, Elev. 6386 feet (1947m).



Site 83: East Fork Carson River, Carson Ranger District. Upstream view of confluence of Silver King Creek and the east Fork Carson River. Silver King contributes approximately 35% of total flow. This site is located at UTM: N: 4271943 & E: 271193, Elev. 6409 feet (1954m).



Site 84: East Fork Carson River, Carson Ranger District. Photo shows a campsite located on river left approximately 10 meters from the water. This site is located at UTM: N: 4271490 & E: 271206, Elev. 6439 feet (1963).



Site 85: East Fork Carson River, Carson Ranger District. Cross-sectional view of river looking up the Silver King Valley. This site is located at UTM: N: 4271502 & E: 271041, Elev. 6458 feet (1969m).



Site 86: East Fork Carson River, Carson Ranger District. Downstream photo of river where it enters a small medium gradient canyon. This site is located at UTM: N: 4270707 & E: 270885, Elev. 6448 feet (1984m).



Site 87: East Fork Carson River, Carson Ranger District. Photo shows a seasonal fish barrier with height 3.5 feet and max. pool depth 5.0 feet. This site is located at UTM: N: 4270054 & E: 270488, Elev. 6544 feet (1995m).



Site 88: East Fork Carson River, Carson Ranger District. A barbed wire fence crosses the Carson River trail and runs down to the water edge. This site is located at UTM: N: 4269791 & E: 270126, Elev. 6606 feet (2014m).



Site 89: East Fork Carson River, Carson Ranger District. Upstream photo shows meanders through meadows and interspersed trees. This site is located at UTM: N: 4269739 & E: 270051, Elev. 6550 feet (1997m).



Site 90: East Fork Carson River, Carson Ranger District. A campsite (15 m x 15 m) is located 3 meters from the river. This camp is located at UTM: N: 4269248 & E: 269051, Elev. 6629 feet (2021m).



Site 91: East Fork Carson River, Carson Ranger District. Bryant Creek (upper) enters on river left, contributing approximately 3 percent of flow to the East Fork. This site is located at UTM: N: 4269131 & E: 268847, Elev. 6530 feet (1991m).



Site 92: East Fork Carson River. Upstream view of Jones Canyon Creek just above the confluence with the East Fork. This tributary adds an additional 5 percent to the total flow in the East Fork. This site is located at UTM: N: 4268685 & E: 268505, Elev. 6645 feet (2026m).



Site 93: East Fork Carson River, Carson Ranger District. A large salmonid (15 + inches) is centered in this photo. This site is located at UTM: N: 4268466 & E: 268395, Elev. 2042m).



Site 93: East Fork Carson River, Carson Ranger District. Upstream photo shows the stream characteristics where the fish was sighted. This site is located at UTM: N: 4268466 & E: 268395, Elev. 2042m).



Site 94: East Fork Carson River, Carson Ranger District. Downstream photo taken at the point where the river leaves wide open meadow and enters a reach with a slightly increased gradient. This site is located at UTM: 4267662 & E: 268439, Elev. 2074m).



Site 95: East Fork Carson River, Carson Ranger District. Remnants of an old stove and evidence of a foundation mark a potential arch site. This site is located at UTM: N: 4266663 & E: 268681, Elev. 2067m).



Site 96: East Fork Carson River, Carson Ranger District. Downstream photo of a pool where a fish was sighted. This site is located at UTM: N: 4266454 & E: 268695, Elev. 2045m).



Site 97: East Fork Carson River, Carson Ranger District. Downstream view of horses picketed along the river. This site is located at UTM: N: 4266101 & E: 268596, Elev. 2035m).



Site 98: East Fork Carson River, Carson Ranger District. Cross-sectional view of a trail-stream crossing in Dumont's Meadows. This site is located at UTM: N: 4266013 & E: 268628, Elev. 2035m).



Site 98: East Fork Carson River, Carson Ranger District. Upstream view of Dumont's Meadows.



Site 99: East Fork Carson River, Carson Ranger District. Looking up Poison Creek, a tributary that contributes approximately 7 percent of flow to the East Fork. This site is located at UTM: N: 4265848 & E: 268620, Elev. 2040m).



Site 100: East Fork Carson River, Carson Ranger District. Downstream photo of a side channel in Dumont's Meadows. Marshes, ponds, side channels, and oxbows are characteristic of this reach. This site is located at UTM: N: 4265148 & E: 268288, Elev. 2055m).



Site 101: East Fork Carson River, Carson Ranger District. Cross-sectional view of a trail-stream crossing. This site is located at UTM: N: 4265037 & E: 267469, Elev. 2062m).



Site 102: East Fork Carson River, Carson Ranger District. Downstream photo of a high gradient reach between Falls and Dumont meadows. This site is located at UTM: N: 4265077 & E: 267012, Elev. 2065 m).



Site 103: East Fork Carson River, Carson Ranger District. Upstream view of a small tributary that enters river left. This site is located at UTM: N: 4264947 & E: 266762.



Site 103: East Fork Carson River, Carson Ranger District. Photo shows an abandoned campsite located adjacent to the small tributary.



Site 104: East Fork Carson River, Carson Ranger District. Downstream photo at point where the river exits Falls Meadow and enters a short canyon. This site is located at UTM: 4264591 & E: 266253, Elev. 2122m).



Site 105: East Fork Carson River, Carson Ranger District. Upstream view of Murray Canyon Creek just above the confluence with the East Fork. This tributary adds about 10 percent of flow to the main stem. This site is located at UTM: N: 4264610 & E: 266052, Elev. 2099m).



Site 106: East Fork Carson River, Carson Ranger District. Two small salmonids were sighted in this pool in Falls Meadow. This site is located at UTM: N: 4263663 & E: 265763, Elev. 2103 m).



Site 107: East Fork Carson River, Carson Ranger District. Upstream view of Carson Falls, a permanent fish passage barrier with a height of approximately 80 feet. This site is located at UTM: N: 4263308 & E: 266088, Elev. 2129m).



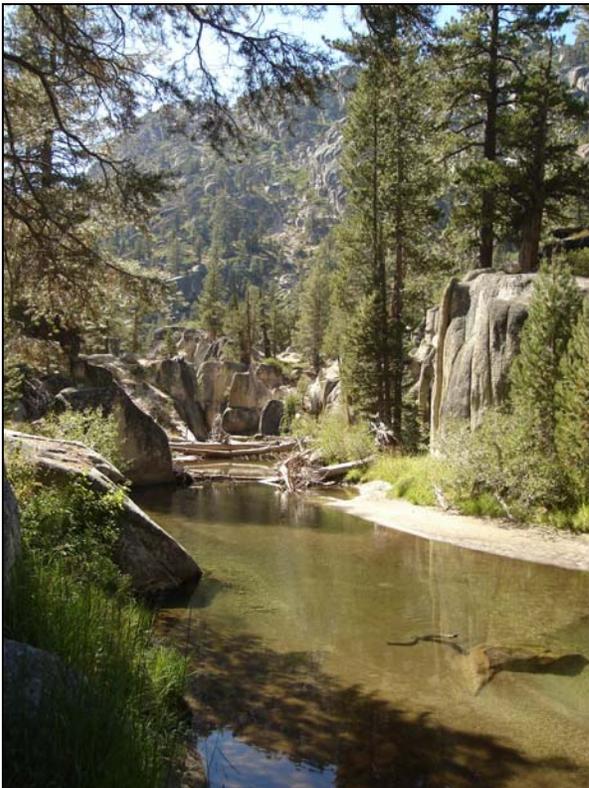
Site 108: East Fork Carson River, Carson Ranger District. Downstream view from left bank. The trail runs along the left bank and has exacerbated bank erosion, causing slumping. This site is located at UTM: N: 4263004 & E: 266278, Elev. 2152m).



Site 109: East Fork Carson River, Carson Ranger District. Cross-sectional view of a trail-stream intersection which requires a ford crossing. This site is located at UTM: N: 4262760 & E: 266461, Elev. 2167m).



Site 110: East Fork Carson River, Carson Ranger District. Upstream view of a seasonal barrier comprised of multiple 2-3 foot cascades. Maximum pool depth varies from 1-4 feet. This site is located at UTM: N: 4262247 & E: 266675, Elev. 2174m).



Site 111: East Fork Carson River, Carson Ranger District. Upstream photo of slow moving water in a granitic ravine. This site is located at UTM: N: 4261750 & E: 266380.



Site 112: East Fork Carson River, Carson Ranger District. Cross-sectional view of intersection where the Golden canyon trail crosses the river. This site is located at UTM: 4261761 & E: 266468, Elev. 2168m).



Site 113: East Fork Carson River, Carson Ranger District. Photo shows an elaborate fire ring and campsite located approximately 20 meters from the river's right bank. This site is located at UTM: N: 4261725 & E: 266547, Elev. 2156m).



Site 114: East Fork Carson River, Carson Ranger District. Upstream view of confluence of East Fork and Golden canyon Creek. This tributary contributes 15 percent to overall flow. This site is located at UTM: N: 4261598 & E: 266565, Elev. 2267m).



Site 115: East Fork Carson River, Carson Ranger District. Photo shows a pool in a low gradient reach where two fish were sighted. This site is located at UTM: N: 4260622 & E: 266947, Elev. 2242m).



Site 116: East Fork Carson River, Carson Ranger District. Downstream view of favorable habitat. This site is located at UTM: N: 4260457 & E: 266788, Elev. 2278m).



Site 117: East Fork Carson River, Carson Ranger District. Upstream view of an unnamed tributary that adds 15 percent to overall flow in the East Fork. This confluence is located at UTM: N: 4258972 & E: 266899, Elev. 2325m).



Site 118: East Fork Carson River, Carson Ranger District. Downstream view of river within White Canyon. This site is located at UTM: N: 4258003 & E: 266841.



Site 118: East Fork Carson River, Carson Ranger District. Upstream view within White Canyon.



Site 119: East Fork Carson River, Carson Ranger District. Photo shows two small tributaries entering through the brush on river right. This site is located at UTM: N: 4257567 & E: 267025.



Site 120: East Fork Carson River, Carson Ranger District. Downstream view from upper White Canyon. This site is located at UTM: N: 4256255 & E: 267453, Elev. 2407m).



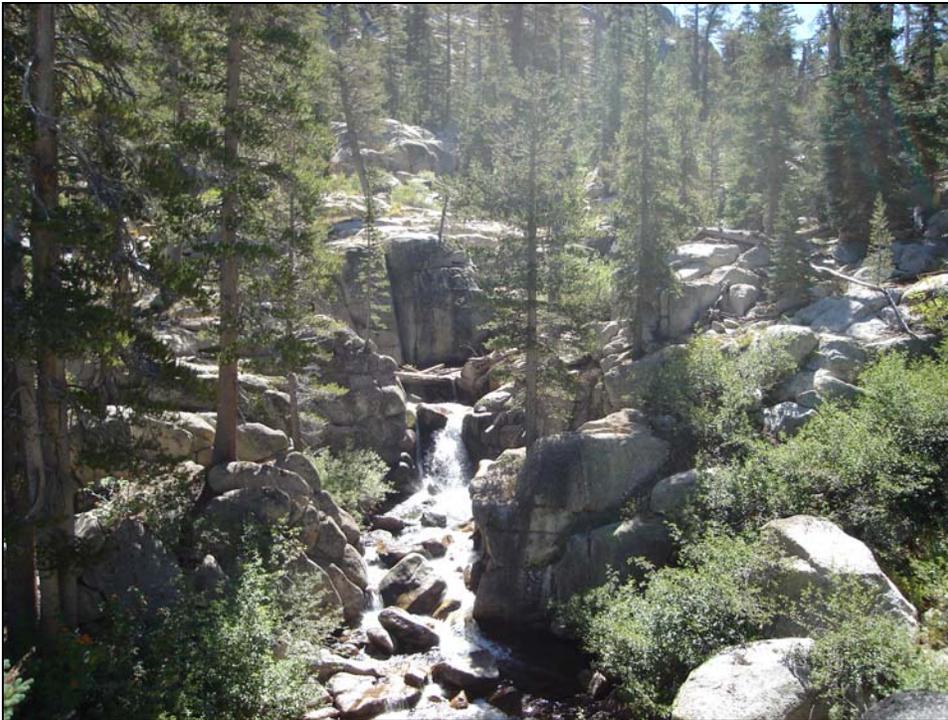
Site 121: East Fork Carson River, Carson Ranger District. Upstream view of high gradient cascades entrenched in granite. This site is located at UTM: N: 4255426 & E: 267375, Elev. 2433m).



Site 122: East Fork Carson River, Carson Ranger District. Cross-sectional view of a decommissioned trail-stream crossing. This site is located at UTM: N: 4254772 & E: 267321, Elev. 2436m).



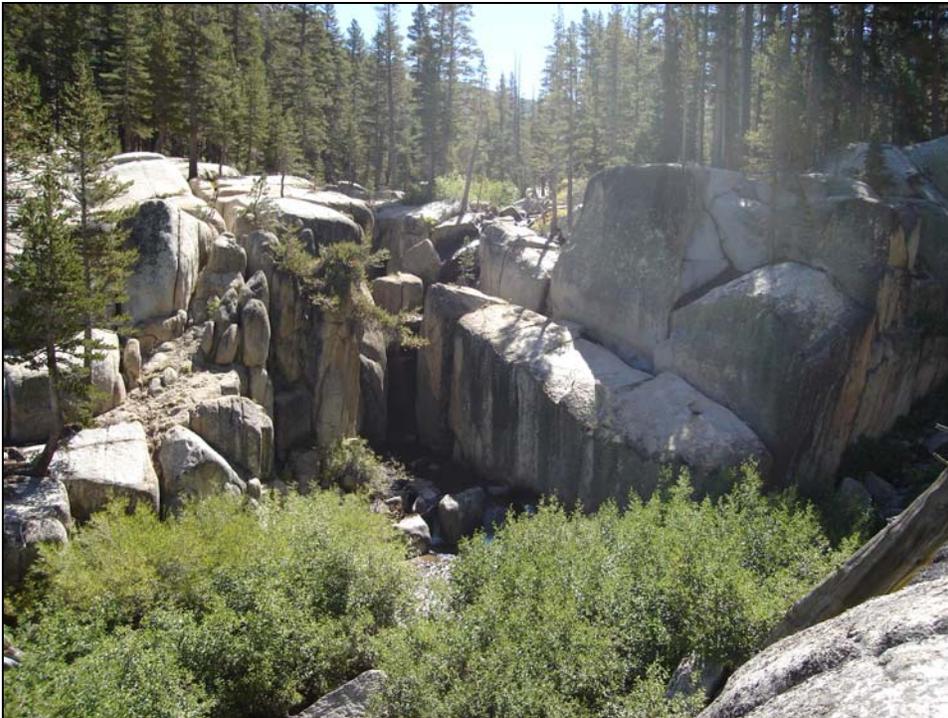
Site 123: East Fork Carson River, Carson Ranger District. Downstream view of a low to medium gradient reach where alders are prevalent. This site is located at UTM: 4254318 & E: 267621, Elev. 2474m).



Site 124: East Fork Carson River, Carson Ranger District. Upstream view of a steep and impassible section of stream. This site is located at UTM: N: 4253547 & E: 268108, Elev. 2552m).



Site 125: East Fork Carson River, Carson Ranger District. Upstream view of a waterfall on a tributary that enters on river left and adds 10 percent to the overall flow in the East Fork at that point. This site is located at UTM: N: 4253110 & E: 268104, Elev. 2617m).



Site 126: East Fork Carson River, Carson Ranger District. Upstream view of a rock band that creates a 45-foot permanent fish passage barrier. This site is located at UTM: N: 4253054 & E: 268186, Elev. 2603m).



Site 127: East Fork Carson River, Carson Ranger District. Upstream view of confluence of East Fork and an unnamed tributary which adds approximately 35 percent to the total discharge of the East Fork. This site is located at UTM: N: 4252712 & E: 268270.



Site 128: East Fork Carson River, Carson Ranger District. Two LCT were sighted, including this large fish in the photo. This site is located at UTM: N: 4252341 & E: 268792, Elev. 2647m).



Site 129: East Fork Carson River, Carson Ranger District. Upstream view of confluence of headwater branches. Each branch contributes approximately half the flow in the East Fork. This site is located at UTM: N: 4251842 & E: 269316, Elev. 2715m).



Site 130: East Fork Carson River, Carson Ranger District. Photo shows upstream view of a series of seasonal barriers. Continuous LCT habitat is located downstream of this point. This site is located at UTM: N: 4251769 & E: 269495, Elev. 2700m).



Site 131: East Fork Carson River, Carson Ranger District. A 9.0 foot waterfall creates a permanent fish passage barrier (max. pool depth 3.0 feet). This site is located at UTM: N: 4251172 & E: 269738, Elev. 2752m).



Site 132: East Fork Carson River, Carson Ranger District. Photo shows the survey end point: an 8-9 foot permanent fish passage barrier. This site is located at UTM: N: 4251066 & E: 269810, Elev. 2775m).

APPENDIX A

- East Fork Carson River
 - Bryant Creek
 - Mountaineer Creek
 - Poison Creek
 - Leviathan Creek
 - Hot Springs Creek
 - Pleasant Valley Creek
 - Raymond Canyon Creek
 - Hodge Creek
 - Jeff Davis Creek
 - Spratt Creek
 - Charity Valley Creek
 - Indian Creek
 - Monitor Creek
 - Silver Creek
 - Noble Creek
 - Eagle Creek
 - Raymond Meadows Creek
 - Wolf Creek
 - Dixon Creek
 - Bull Canyon Creek
 - Elder Creek
 - Silver King Creek
 - Poison Flat Creek
 - Murray Canyon Creek
 - Golden Canyon Creek

- West Fork Carson River
 - Horsethief Creek
 - Willow Creek
 - Hawkins Creek
 - Red Lake Creek
 - Crater Lake Creek
 - Forestdale Creek

A summary of all the streams surveyed in the East and West Carson River drainages. Indented streams denote that stream is a tributary to the upper referenced stream. Streams are listed in order starting from the furthest downstream on the East and West Carson Rivers and working upstream. Individual reports have been prepared for each stream surveyed.