

Caples Creek 2009 Summary Report

September 8-10, 2009

State of California

Natural Resources Agency

Department of Fish and Game

Heritage and Wild Trout Program



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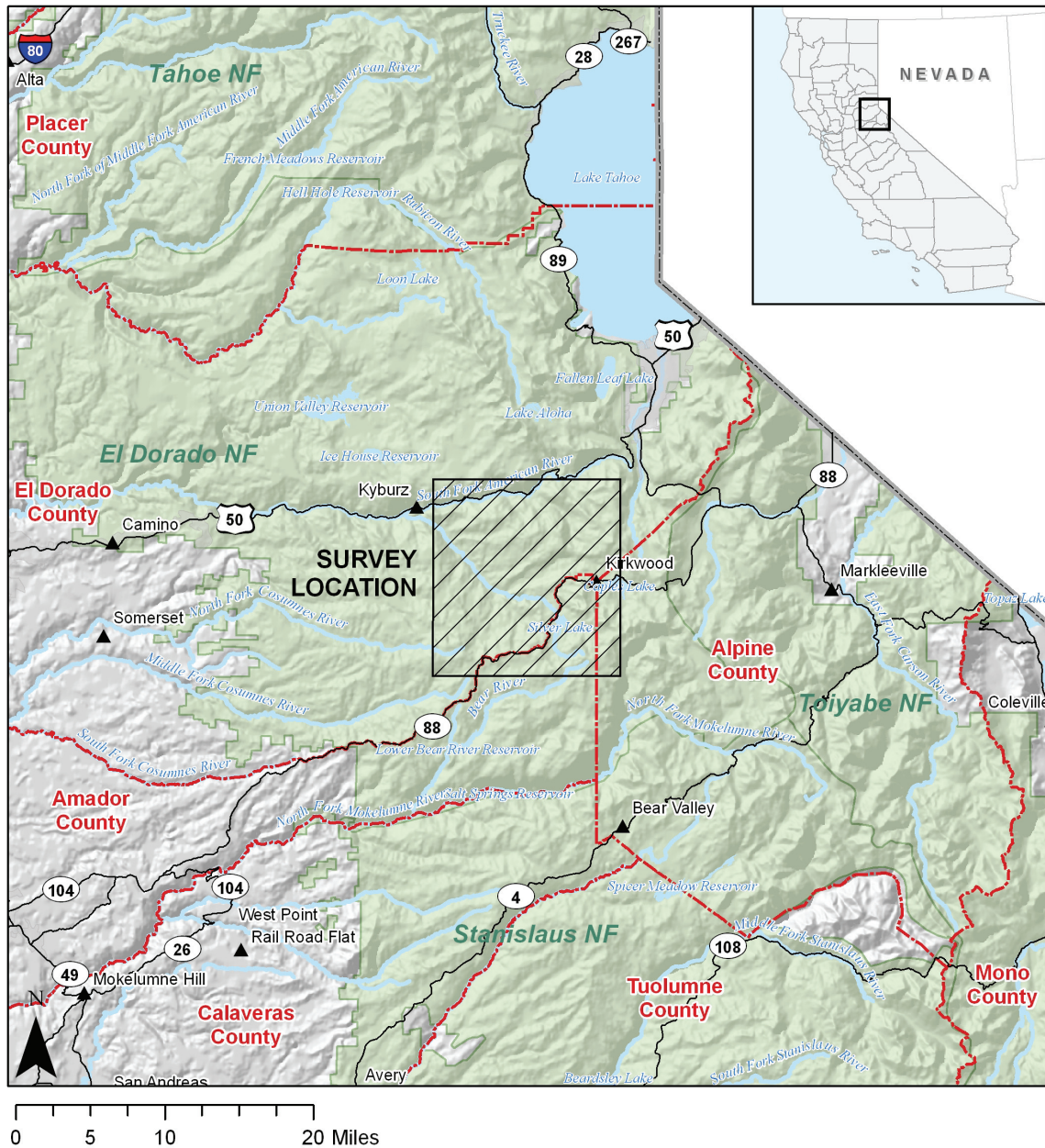
Introduction:

Caples Creek in El Dorado and Alpine counties drains the western slope of the Sierra Nevada Mountains in the vicinity of Kirkwood, California (Figure 1). Caples Creek originates from Caples Lake, flows westward for approximately nine miles and enters the Silver Fork of the American River. The Caples Creek Canyon is a proposed Wilderness Area (Eldorado National Forest) and contains wild populations of coastal rainbow trout (*Oncorhynchus mykiss irideus*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*). The California Department of Fish and Game (DFG) Heritage and Wild Trout Program (HWTP) began an evaluation of Caples Creek in 2005 for potential designation as a Wild Trout Water and conducted a Phase 1 initial resource assessment to determine whether the fishery met the minimum qualifications for designation (Martin et al. 2005). Wild Trout Waters are those that support self-sustaining (wild) populations of trout, are aesthetically pleasing and environmentally productive, provide adequate catch rates in terms of numbers or size of trout, and are open to public angling. Wild Trout Waters may not be stocked with catchable-sized hatchery trout (Bloom and Weaver 2008).

Based on the results of the 2005 survey, the HWTP recommended moving to a Phase 2 candidate water assessment and, in 2007, the HWTP conducted direct observation snorkel and hook and line surveys on Caples Creek to provide a more comprehensive assessment of the fishery, habitat, and angler use, as well as to delineate trout species distribution and size class structure in the system (Weaver and Mehalick 2007). Following the 2007 survey, the HWTP recommended continuation of Phase 2 assessments over a multi-year period to study trends and gather population-level information including estimates of abundance and productivity, and to assess fishing pressure, angler use, and angler satisfaction. Multiple-pass electrofishing and Angler Survey Box (ASB) installations were recommended. However, in 2008, the El Dorado Irrigation District (EID) identified damage to a device that controls water release on the main dam of Caples Lake. As a result, in July of 2008, EID began lowering Caples Lake levels by increasing flow releases into Caples Creek. Repairs were conducted in the fall of 2008 and EID began refilling the lake. During this process, the flow regime on Caples Creek was substantially altered to accommodate repairs and DFG and other parties were interested in determining the effects, if any, to the wild trout populations in Caples Creek and documenting potential introduction of non-game fishes from the lake into Caples Creek.

As such, in September 2009, the HWTP conducted single-pass electrofishing surveys from the Silver Fork American River upstream to Caples Lake Dam to assess species composition, distribution, and size class structure of trout species and non-game fishes. This report summarizes the results of this survey.

Figure 1. Vicinity map of 2009 Caples Creek and Silver Fork American River survey area.



Methods:

Single-pass electrofishing surveys were conducted by HWTP staff (from Headquarters and North Central Region) and volunteers throughout Caples Creek from the confluence with the Silver Fork American River (Silver Fork) upstream to Caples Lake. The Silver Fork was also surveyed within approximately six miles of the confluence with Caples Creek (Figure 2). Caples Creek was divided into three reaches, or survey sections, based on access locations. Section 109 was located from the confluence with the Silver Fork

upstream approximately 1.5 miles; Section 209 was located in the vicinity of Schneider and Government meadows and was approximately two miles in length; and Section 309 included the portion of Caples Creek from Caples Lake downstream approximately 3.6 miles (Figure 3). The Silver Fork was divided into two sections. Silver Fork Section 109 was located from the Fitch Rantz Bridge upstream approximately one mile and Section 209 extended from the US Forest Service Silver Fork Campground downstream approximately five miles (Figure 4).

Surveys were conducted using Smith Root backpack electroshockers and were initiated at the downstream boundary of each section and proceeded in an upstream direction. Areas of the river were “spot-shocked” opportunistically, where feasible, and fish were captured and identified to species. To delineate species distribution and the downstream extent of each species, GPS coordinates were collected for the first encounter of each fish species within each section (i.e. the downstream-most capture location of each species in each of the five sections). All fish were identified to species, tallied by size (total length measured to the nearest inch using a calibrated landing net), and released downstream of the electrofishing effort. Representative photographs of each species were taken. Streamflow, conductivity, and pH were measured on September 10, 2009 in Caples Creek Section 309.

Results:

Streamflow on Caples Creek was measured at 66 cubic feet per second, conductivity was low (28.5 microsiemens), and pH was measured at 7. Water temperatures ranged from 12 °C to 15 °C. Neither water chemistry nor streamflow measurements were taken on the Silver Fork. A total of 244 coastal rainbow trout, 58 brown trout, 109 suckers (*Catostomus* spp.), 88 Lahontan reidsides (*Richardsonius egregious*), 36 brook trout, and 24 speckled dace (*Rhinichthys osculus*) were captured during the entire survey effort in both Caples Creek and the Silver Fork (Table 1). Coastal rainbow and brown trout were captured in all sections and were distributed throughout the Silver Fork and Caples Creek (Figures 3 and 4). Suckers were captured in all sections except Silver Fork Section 209 and were presumably distributed throughout both the Silver Fork and Caples Creek. Suckers were identified as both Sacramento suckers (*C. occidentalis*) and Tahoe suckers (*C. tahoensis*); for the purposes of this report, we identify them to genus only. Both species may be present in this system or one may have been misidentified. Fin erosion was prevalent on suckers captured throughout the survey effort, especially on the caudal and dorsal fins. The downstream-most Lahontan reidside was captured at the upper extent of Caples Creek Section 209, upstream of Government Meadow. Brook trout and speckled dace were only captured in Caples Creek Section 309 and are presumed to be limited to the upper portions of Caples Creek. Surveys conducted in 2005 and 2007 corroborate the distribution of brook trout observed in 2009; there is no prior record of brook trout farther downstream in the system.

Figure 2. Detail map of Caples Creek and Silver Fork 2009 survey sections including the downstream-most location of capture for each species.

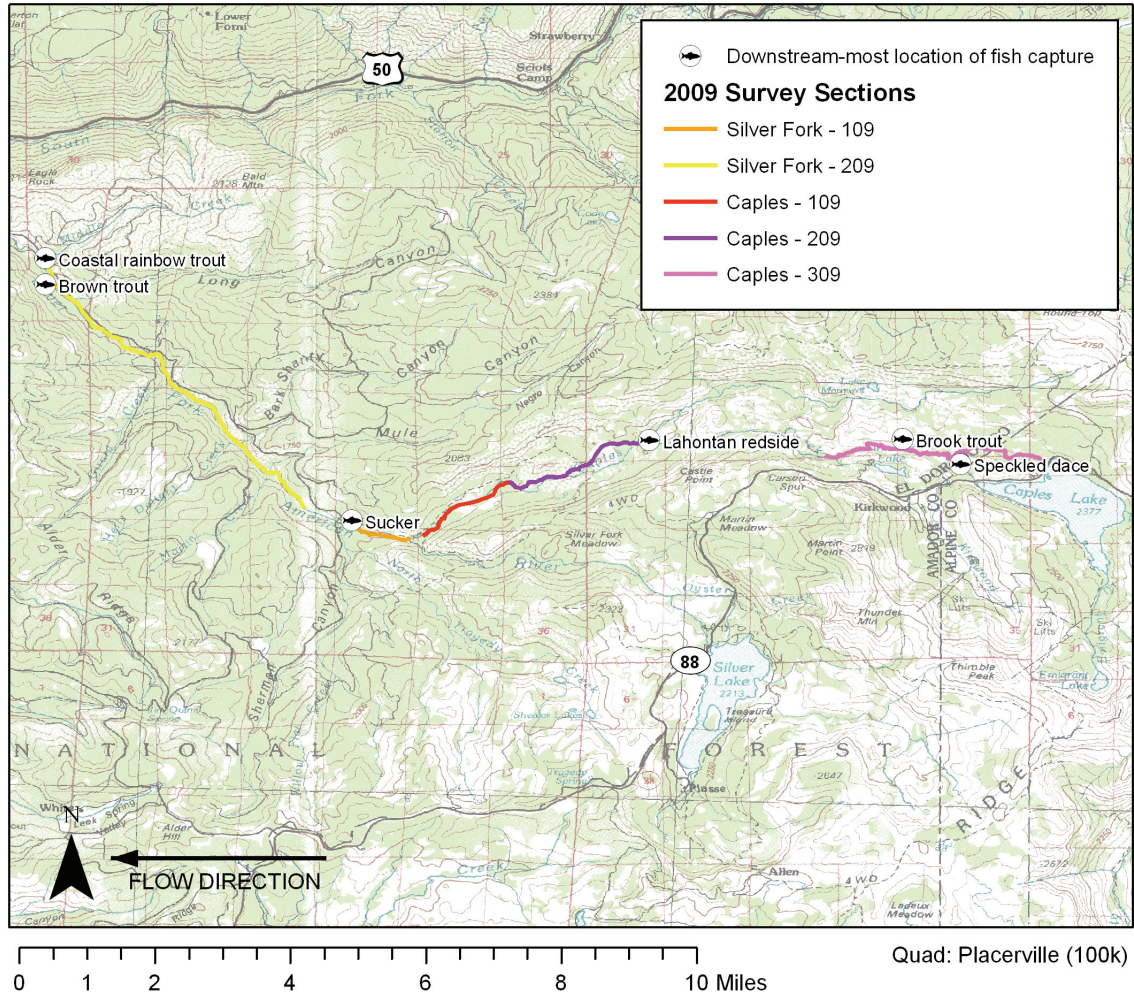
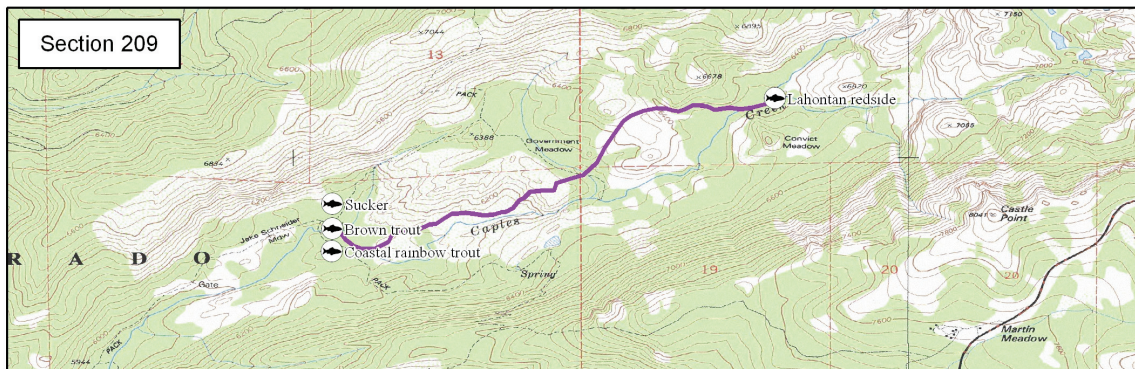
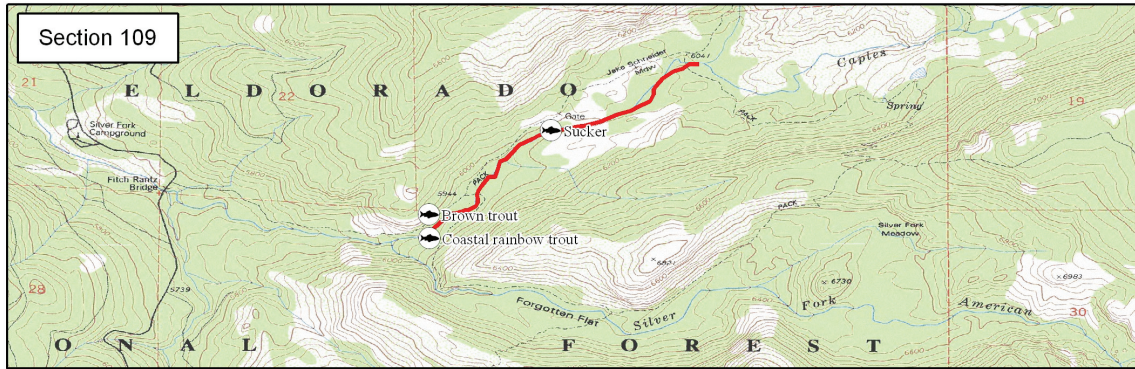
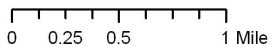


Figure 3. Detail map of Caples Creek 2009 sections including the downstream-most location of fish capture for each species and section.

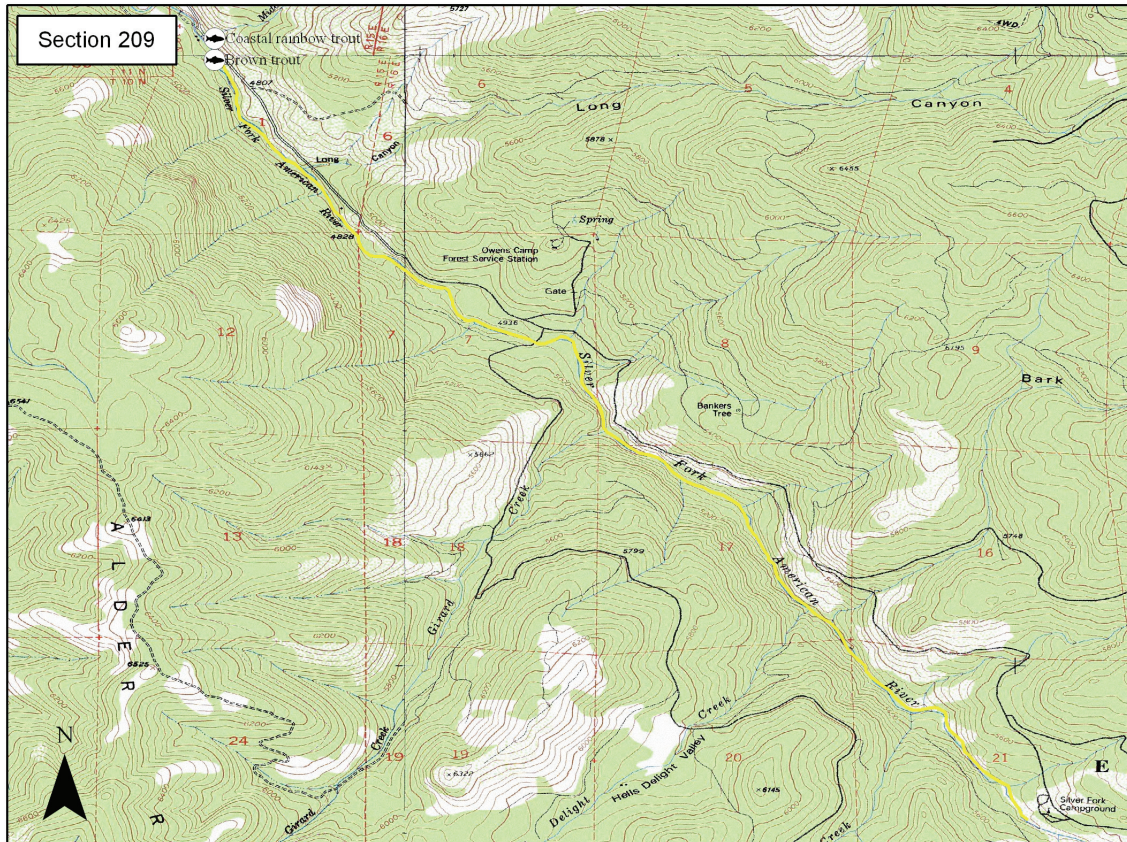
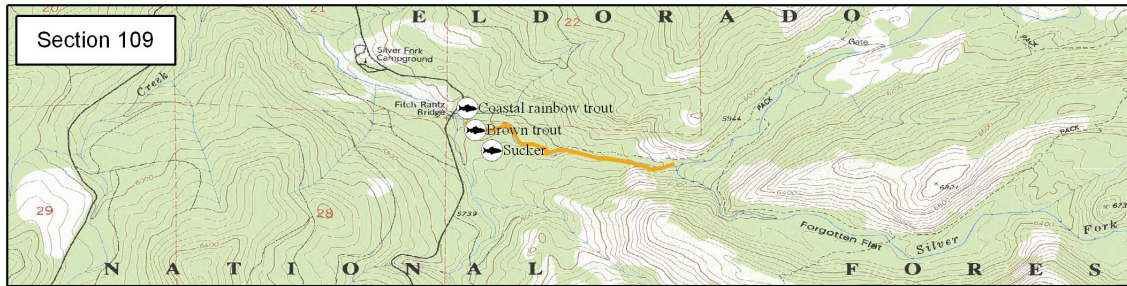


← Flow Direction



➔ Downstream-most location of fish capture by section

Figure 4. Detail map of Silver Fork 2009 sections including the downstream-most location of fish capture for each species and section.



← Flow Direction

0 0.25 0.5 1 1.5 Mile

● Downstream-most location of fish capture by section

Coastal rainbow trout captured during the 2009 surveys ranged in size from one to nine inches in total length with an average length of four inches (Figure 5). Brown trout ranged in length from two to 14 inches, with an average of seven inches. Brook trout ranged in length from two to eight inches with an average of four inches. Suckers ranged in length from two to 13 inches with an average of seven inches (Figure 6). Lahontan reddsides were between two and five inches in total length with an average of three inches and speckled dace ranged from one to three inches with an average length of three inches.

Table 1. Summary of 2009 electrofishing data on Caples Creek and the Silver Fork including the number of fish captured by species and section.

Water	Section	Count by species					
		coastal rainbow trout	brown trout	suckers	Lahontan reddsides	brook trout	speckled dace
Silver Fork	109	111	5	4	0	0	0
	209	52	10	0	0	0	0
Caples Creek	109	35	7	4	0	0	0
	209	37	21	15	2	0	0
	309	9	15	86	86	36	24
Total		244	58	109	88	36	24

Figure 5. Length frequency histogram of trout captured in Caples Creek and the Silver Fork in 2009.

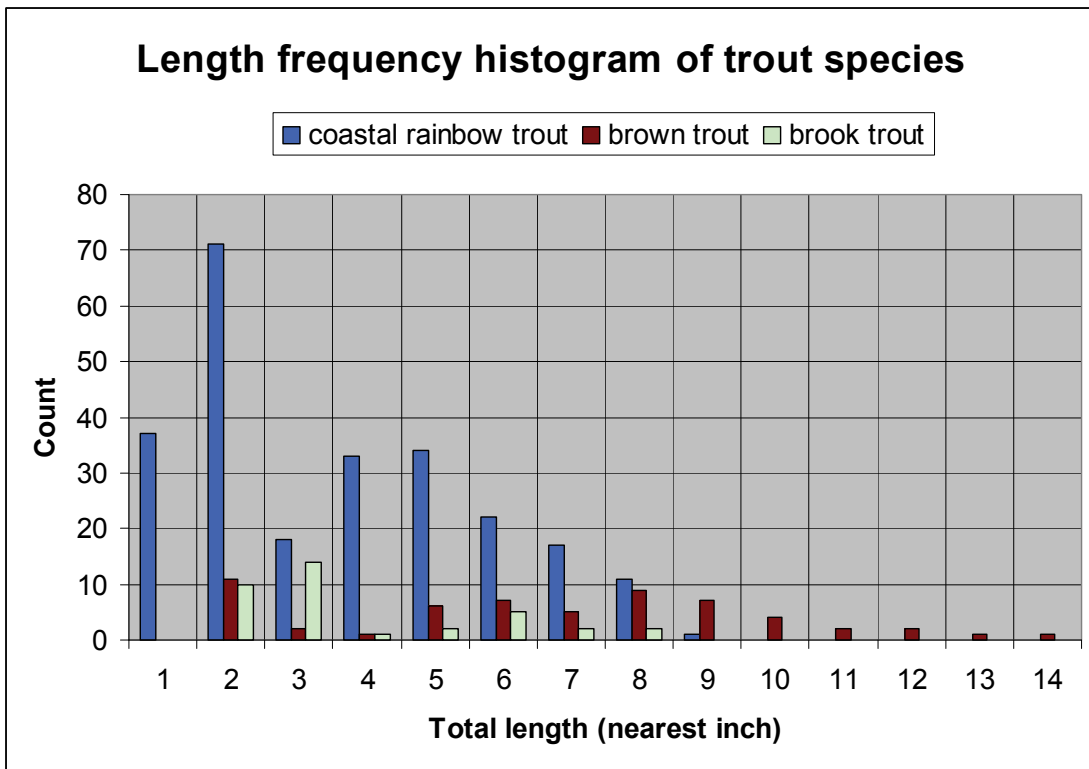
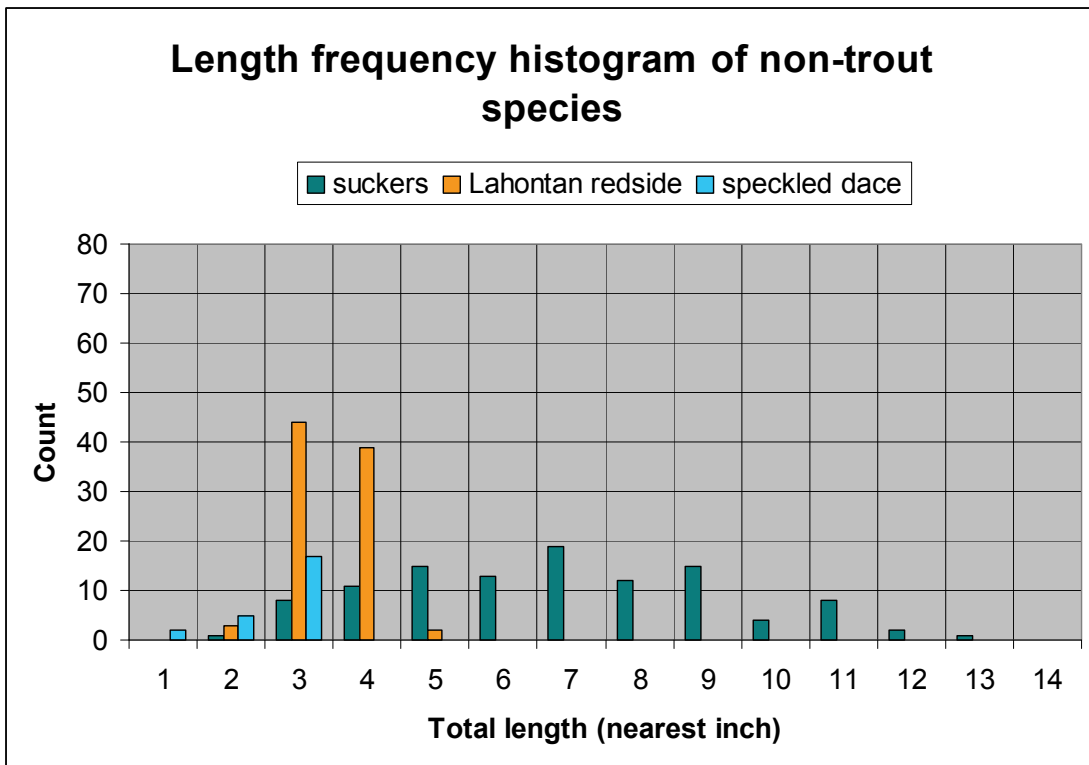


Figure 6. Length frequency histogram of non-salmonids captured in Caples Creek and the Silver Fork in 2009.



Capture efficiency was limited by low conductivity and the number personnel qualified to operate backpack electroshockers. Depending on availability of personnel, either one or two electroshockers were used in each section; the stream was too wide in many locations for comprehensive fish capture with this limited number of shockers. In long flatwater sections, fish were visually observed upstream of the electroshockers but were able to swim away from the electric field and avoid capture. In faster-water riffle habitats and deep pools, water depth and/or velocity precluded the use of backpack shockers. Edgewater habitat and areas of the stream where natural restriction points occurred (i.e. small pools in pocketwater) were targeted. No trout larger than 14 inches was captured. Larger-size trout may not be present in the system or may not have been captured due to bias related to sampling methods. However, few trout larger than twelve inches were observed during either the 2005 electrofishing survey or the 2007 direct observation snorkel survey, so it is likely that larger-sized fish are not abundant in this system.

Discussion:

This marks the first survey effort in which speckled dace, suckers, and Lahontan redbside were observed by the HWTP in Caples Creek. Speckled dace and suckers have a wide distribution throughout North America including the Sacramento River drainage; Lahontan rebsides are native to the Lahontan basin in northern Nevada and northeastern California, but have been introduced into the Sacramento River drainage (Moyle 2002). None of these species were observed by the HWTP during Caples Creek surveys in 2005 or 2007. Based on the limited distribution of speckled dace and Lahontan rebsides observed in the upper portion of Caples Creek in 2009, presumably, these fishes were introduced into Caples Lake as baitfish and entered Caples Creek during the de-watering of the lake by EID in 2008. Thousands of Lahontan rebsides and speckled dace were observed by HWTP staff in Caples Creek immediately below Caples Dam during the dewatering process. Some of these fishes were stranded during flow ramp-downs, but many appear to have survived in Caples Creek (Figure 7). Their reproductive potential and possible long-term effect on trout densities, distribution, and dynamics in Caples Creek is unknown. The distribution of suckers throughout both Caples Creek and the Silver Fork observed in 2009 leads to uncertainty of their origins, whether natural to the system and not observed in prior surveys, or recently introduced from Caples Lake.

The HWTP recommends continuing Phase 2 candidate water assessments of Caples Creek to monitor potential impacts of introduced non-game species, to gather population-level data on the trout fishery, and to better understand angling pressure. Due to water turbidity observed during the 2007 direct observation snorkel surveys, multiple-pass electrofishing surveys are recommended for future efforts; however, streamflow must be low enough to effectively install block nets, necessitating close coordination with EID to monitor flow release schedules. To assess angling pressure, success, and satisfaction, angler survey boxes should be installed at multiple access points throughout the Caples Creek canyon.

Figure 7. Photographs of Caples Lake during 2008 dewatering (top left), non-game fishes in Caples Creek below Caples Dam (top right), and stranded non-game fishes below Caples Dam (bottom center).



References:

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