

South Fork Kern River 2009 Summary Report
Including Monache, Soda, and Upper Fat Cow Meadow creeks

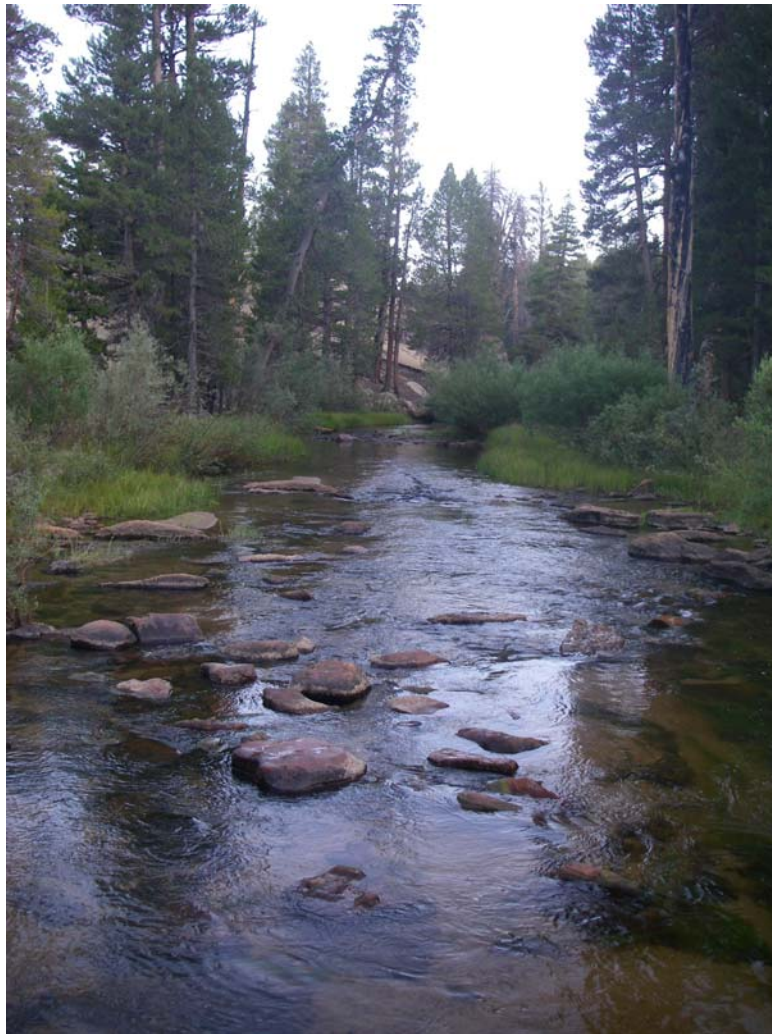
August 18-26, 2009

State of California

Natural Resources Agency

Department of Fish and Game

Heritage and Wild Trout Program



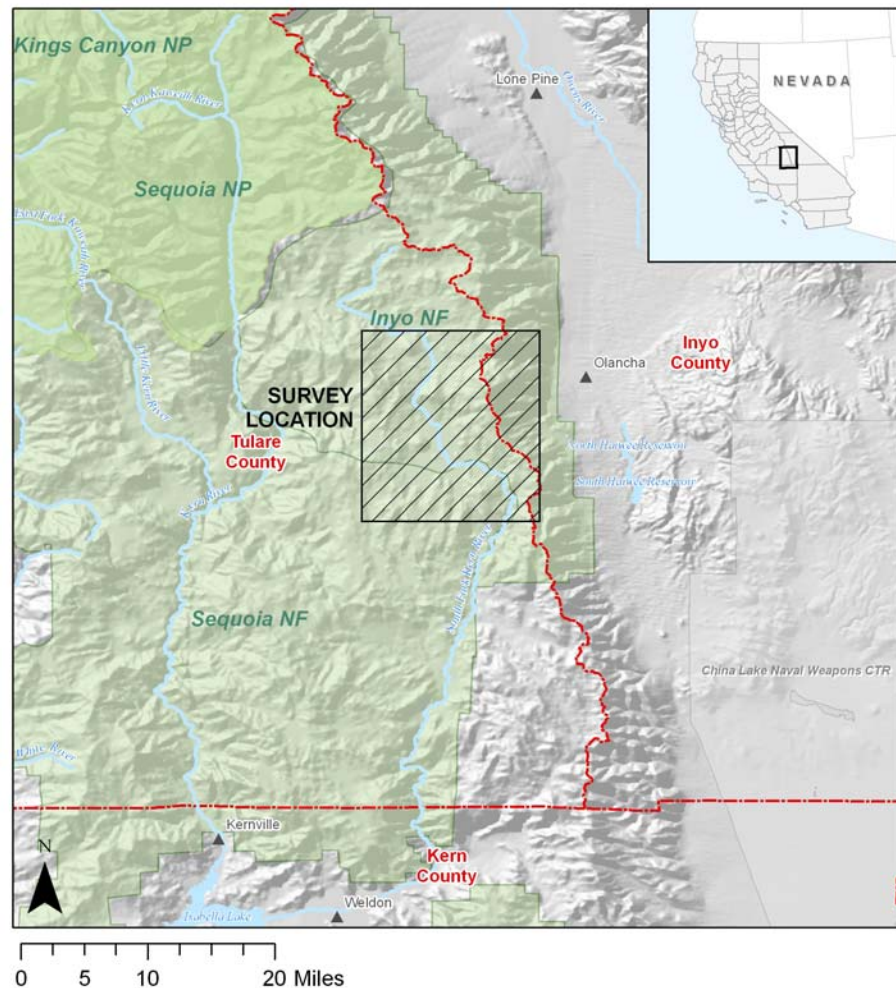
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Introduction:

The South Fork Kern River constitutes a significant portion of the native range of California golden trout (*Oncorhynchus mykiss aguabonita*), the official California State Freshwater Fish. The California golden trout is a California Department of Fish and Game (DFG) Species of Special Concern and is under review for listing in the Federal Endangered Species Act. The South Fork Kern River originates in Golden Trout Wilderness (Inyo National Forest; Tulare County, CA) and flows for approximately 160 miles in a southerly direction before emptying into Lake Isabella (Kern County) and the Kern River (Figure 1). The majority of the watershed, from its headwaters downstream to the southern boundary of the South Sierra Wilderness (north of Kennedy Meadows, Tulare County), is designated by the California Fish and Game Commission as a Wild Trout Water (Figure 2). This encompasses a watershed area of approximately 220 square miles with 50 miles of stream habitat on the main-stem, 217 miles of tributary habitat, and 332 miles of ephemeral and/or intermittent channels.

Wild Trout Waters are those that support self-sustaining trout populations, 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). The DFG Heritage and Wild Trout Program (HWTP) monitors this fishery and has been conducting fishery and habitat assessments, angler surveys, and habitat restoration efforts over many decades. In 2009, the HWTP conducted Phase 4 (monitoring) multiple-pass electrofishing surveys on the South Fork Kern River and tributaries in both Monache and Strawberry meadows (Figure 3).

Figure 1. Vicinity map of 2009 South Fork Kern River survey area.



Methods:

Multiple-pass electrofishing was used to generate population-level data including species composition, size and age class structure, and estimates of abundance. These data can be compared over time to study trends in the population. Surveys were conducted between August 18 and 26, 2009 in Monache and Strawberry meadows and included both the main-stem and three tributaries (Table 1 and Figure 3). Personnel included DFG HWTP staff (from Headquarters and Central Region), Central Region staff and scientific aides, and volunteers. All sections were newly established in 2009 and were selected by Christy McGuire, DFG Central Region Associate Biologist. At a minimum, each section was 300 feet in length (as measured along the thalweg) and section boundaries were chosen at areas where mesh block nets could effectively be installed and maintained throughout the survey effort.

Table 1. Summary of 2009 multiple-pass electrofishing survey section locations and dates by water.

Water	Section	Location	Survey date
South Fork Kern River	9	Monache Meadows	8/19/2009
	10	Monache Meadows	8/20/2009
	11	Monache Meadows	8/21/2009
	12	Strawberry Meadows	8/25/2009
Monache Creek	1	Monache Meadows	8/18/2009
Soda Creek	1	Monache Meadows	8/18/2009
Upper Fat Cow Meadow Creek	1	Fat Cow/Strawberry Meadows	8/26/2009

At each section boundary, nylon mesh block nets were installed across the wetted width, effectively closing the population within the section. Both sides of the nets were secured above bankful, heavy rocks were placed side by side along the bottom of the nets, and the nets were secured in such a way as to hold the top of the net out of the water. These nets were routinely monitored and inspected throughout the survey to ensure their integrity and to prevent fish from moving into or out of the section during the course of the survey.

Prior to electrofishing, physical measurements of the stream and environmental conditions were taken, including air and water temperature (in the shade) and conductivity (both specific and ambient). These factors were used to determine appropriate electroshocker settings. GPS coordinates were recorded for both the upstream and downstream boundaries of the survey. Current weather conditions were noted and the area was scouted for any species of concern prior to commencing the surveys.

Personnel needs were determined based on stream width, habitat complexity, and water visibility. For each of the surveys, individuals were assigned to shock, net, and tend live cars for the duration of the effort. Surveys were initiated at the lower block net and proceeded in an upstream direction, with netters capturing fish and placing them in live cars to be held until processed. Live cars are 32 gallon plastic trash bins, perforated with holes to allow water circulation. Three to four passes were conducted within each section, with fish from each pass stored separately. Over the course of the survey, fish were handled carefully to minimize injury and stress. Fish were processed separately by pass number. Each fish was identified to species and was measured from head to tail (total length in millimeters). Using a digital scale, weights were recorded (in grams). Fish were then recovered in live cars secured in the stream (with fresh flowing water) and released back into the section.

All trout captured in the South Fork Kern River Section 9 were marked with fin clips as part of long-term monitoring and restoration efforts by the DFG Central

Region to monitor the movement of fish within the system and the effectiveness of fish barriers. Brown trout (*Salmo trutta*) have been introduced into the system and hybridized golden/rainbow trout exist in portions of the drainage. Three barriers exist to limit the upstream movement of introduced and hybridized fish into California golden trout habitat. Schaeffer Barrier is located upstream of Monache Meadow (directly upstream of South Fork Kern River Section 9; Figure 4); Templeton Barrier is located in Templeton Meadow (upstream of South Fork Kern River Section 12; Figure 6); and Ramshaw Barrier is located in Ramshaw Meadow upstream of Templeton Meadow (and outside of the 2009 survey area). Currently, brown trout are present in the South Fork Kern River downstream of the Templeton Barrier. To better understand the effectiveness of the Schaeffer Barrier as a barrier to upstream fish movement, all trout captured in Section 9 were marked with an adipose (complete removal) and anal (partial removal) fin clip. Future electrofishing surveys will examine captured trout above the Schaeffer Barrier to identify the presence or absence of fin clipped trout and to evaluate fish movement in the system.

An unnamed tributary to Strawberry Creek in Fat Cow Meadow was surveyed via multiple pass electrofishing; for this purposes of this report and the HWTP database, it is referred to as Upper Fat Cow Meadow Creek. All brown trout captured in Upper Fat Cow Meadow Creek were removed from the system per DFG Central Region staff directives. There is concern that, during high water events, possible hydrological connectivity between the South Fork Kern River (above Templeton Barrier) and Strawberry Meadow may occur, facilitating the movement of brown trout into California golden trout habitat.

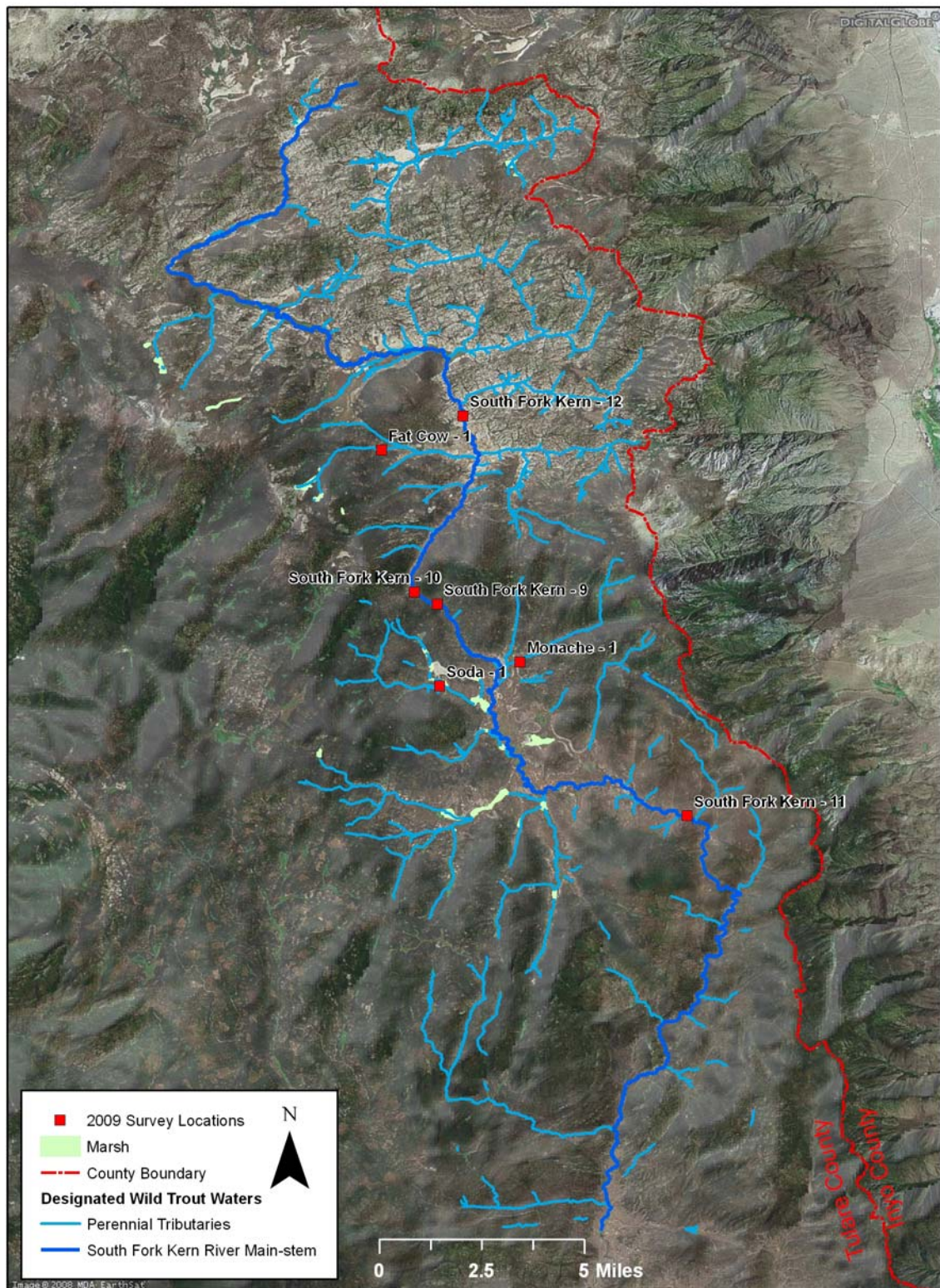
A habitat assessment was conducted in each section to document resource condition by collecting base-line data on habitat types and quality, water conditions, substrate, discharge, bank condition, etc. The HWTP habitat assessment is a pared down synthesis of Rosgen (1994) and the California Salmonid Stream Habitat Restoration Manual (CSSHRM; Flosi et al. 1988). Section length was measured along the thalweg. The length of the section was then divided into five cells of equal length. Wetted widths were measured at the center of each of the five cells. Across each width transect, five depths were taken (also at the center of five evenly divided cells), and both widths and depths were averaged for each section.

Stream characteristics, including active erosion (erosion occurring in the present), erosion at bankfull, and canopy closure were measured as percentages of either the total stream area (canopy cover) or bank area (erosion). Section percentages were defined for each habitat type (riffle, flatwater, and pool) following Level II protocols as defined by the CSSHRM. Using visual observation, substrate size classes and the percentage of each class relative to the total bottom material within the wetted width were quantified. A rating (between poor and excellent) was given to the instream cover available to fish and cover types were identified and defined as percentages of total instream cover. Change in

water surface elevation (section gradient) and streamflow were measured. Representative photographs of the section were taken.

Fish measurements were entered into DFG's Fisheries Information Sharing Host (FISH) database and were extracted into MicroFish (MicroFish Software). Based on the capture rate (number of fish captured per pass) and probability of capture, a population estimate was determined for each species in each section. MicroFish also calculated the average weight of each species by section. These data were used to determine biomass (pounds per acre) and density (fish per mile) of each species. Fish biomass estimates incorporate habitat parameters such as section length, average wetted width, and average weight of fish (by species). Density estimates are determined based on the population estimate and section length. Biomass and density estimates from the four sections surveyed on the South Fork Kern River were averaged to yield an overall estimate of abundance (Table 2).

Figure 2. Map of South Fork Kern River Wild Trout-designation and 2009 survey locations (ephemeral and intermittent channels not shown).



Data Source: National Hydrography Dataset
Image Source: NDA EarthSat 1999 (ImageConnect)

Figure 3. Map of 2009 multiple-pass electrofishing survey sections on the South Fork Kern River and Soda, Monache, and Upper Fat Cow Meadow creeks.

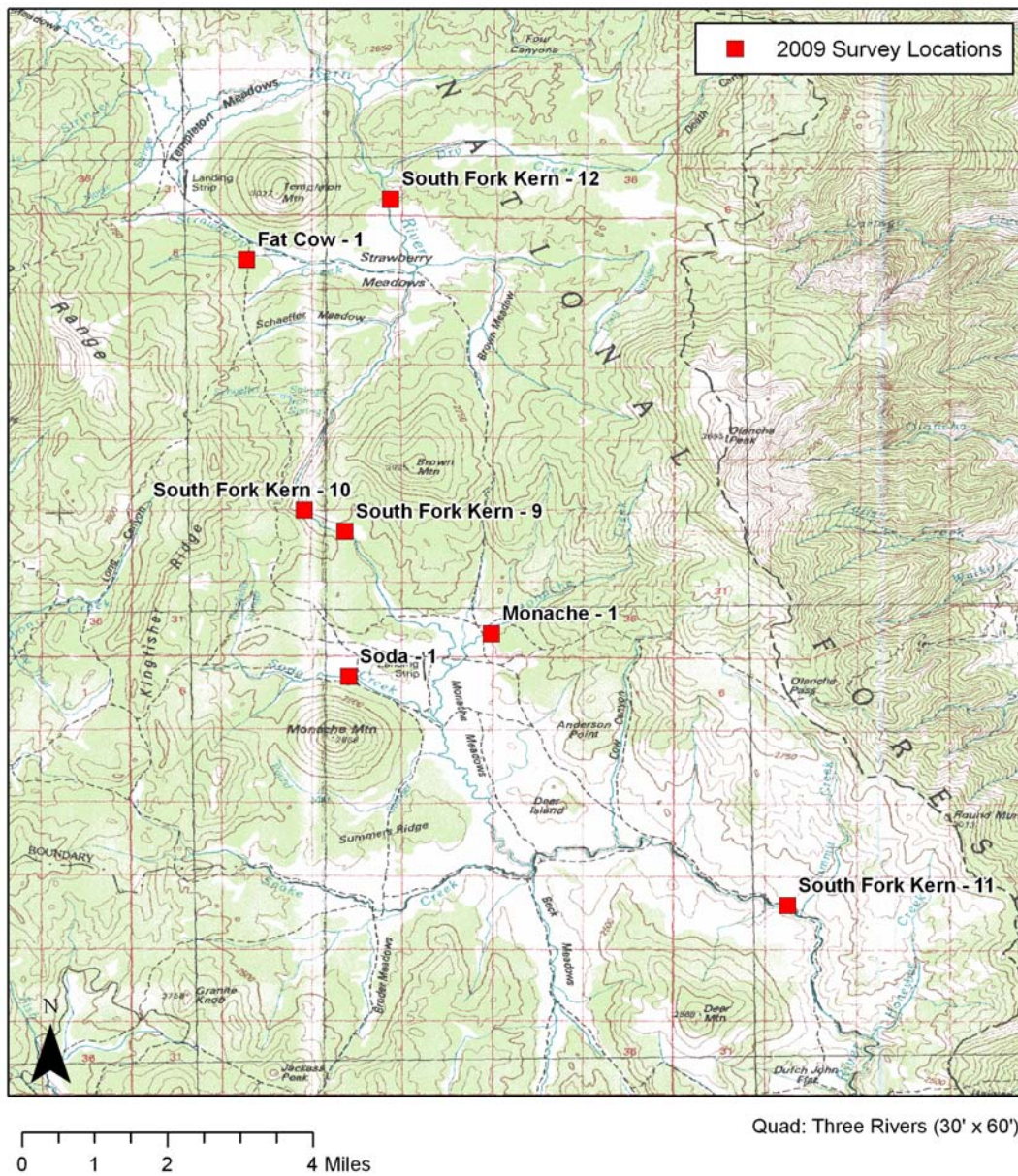


Figure 4. Map of 2009 South Fork Kern River Sections 9 and 10, Monache Creek Section 1, and Soda Creek Section 1.

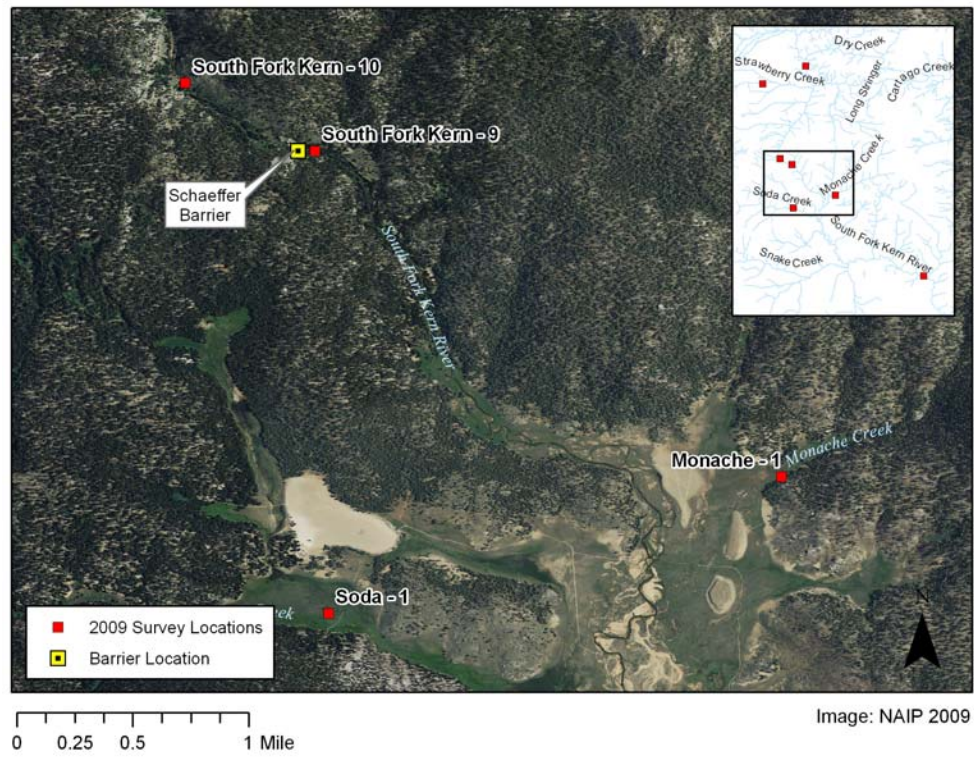


Figure 5. Map of 2009 South Fork Kern River Section 11.

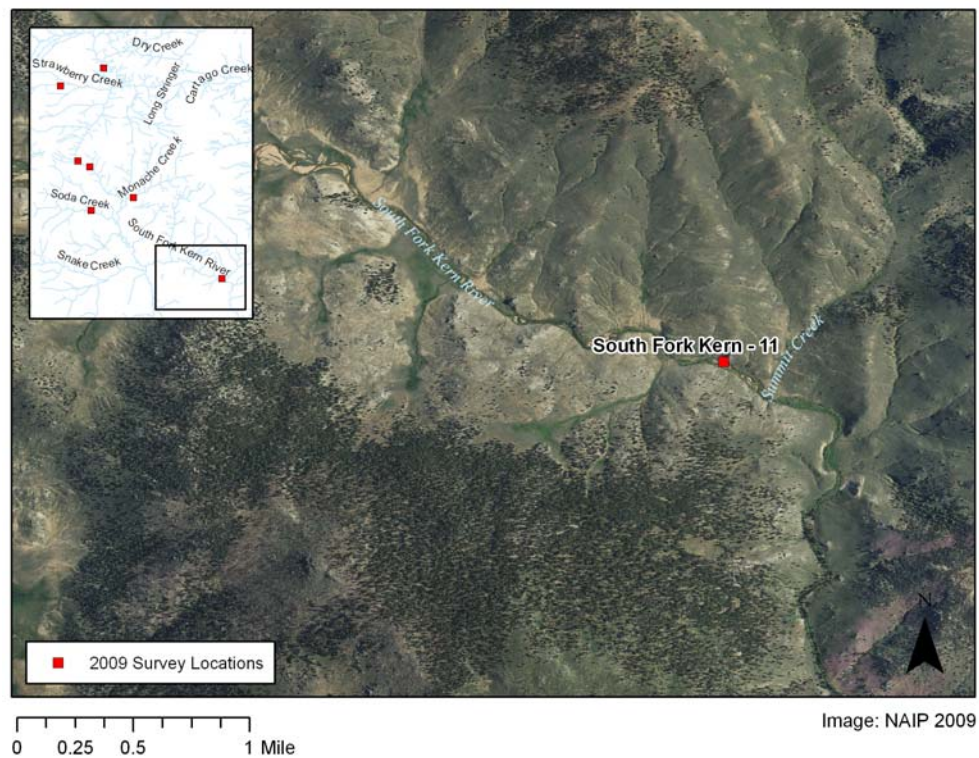
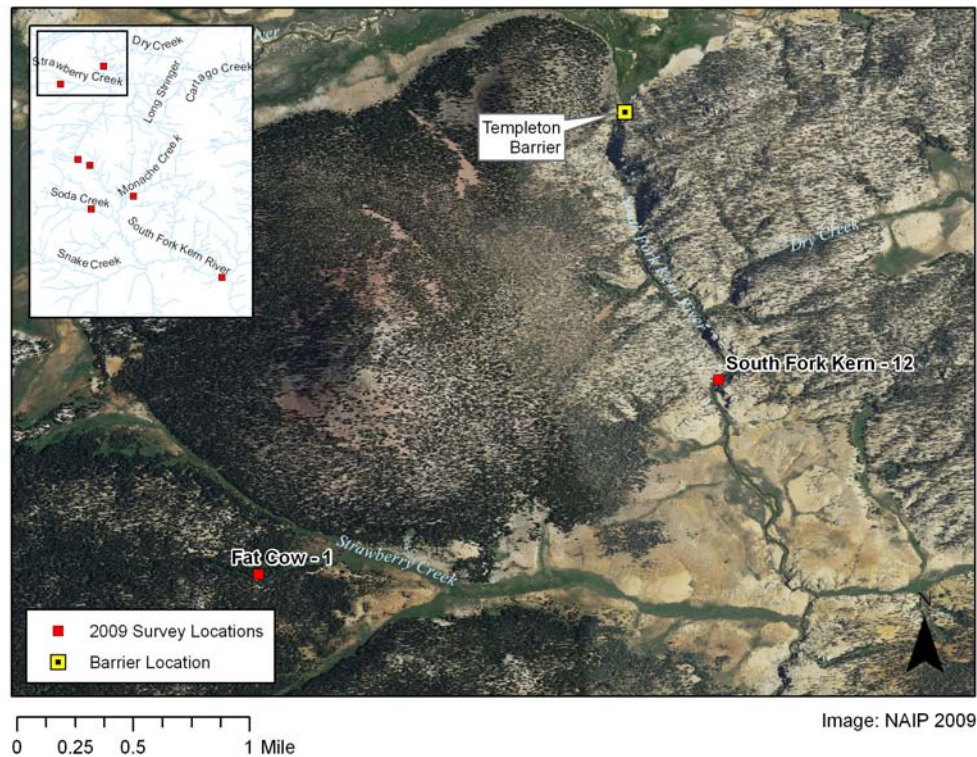


Figure 6. Map of 2009 South Fork Kern River Section 12 and Upper Fat Cow Meadow Creek Section 1.



Results:

South Fork Kern River

South Fork Kern River Section 9 was located approximately one mile to the northwest of Monache Meadows directly downstream of Schaeffer Barrier in low-gradient (1%) forested habitat (Figures 3 and 4). At 11:00 a.m., the air temperature was 21 °C and the water temperature was 12 °C. Section 9 was 315 feet in length; habitat consisted of 100% flatwater with substrate dominated by boulders and cobbles (Figure 7). The majority of fish cover was provided by boulders and, overall, was rated as fair. Approximately 10% of the stream had canopy cover and bankful erosion was estimated at 10%. Streamflow was measured at 8.21 cubic feet per second (cfs), the average wetted width was 21.0 feet, and the average water depth was 0.6 feet. Three electrofishing passes were conducted and seven California golden trout (or possible California golden/rainbow trout hybrids, given the location), 102 brown trout, and 391 Sacramento suckers (*Catostomus occidentalis*) were captured (Table 2). Fish abundance was estimated at 117 California golden trout per mile (6.81 lbs/acre), 1,844 brown trout per mile (89.91 lbs/acre), and 6,939 Sacramento suckers per mile (501.86 lbs/acre).

South Fork Kern River Section 10 was located approximately a half-mile upstream of Schaeffer Barrier and was 333.0 feet in length with a 54.0-foot braid in the channel (Figures 3 and 4). This section was slightly higher in gradient (2.6%). Habitat was classified as 70% riffle and 30% flatwater with substrate dominated by boulders (Figure 7). Instream fish cover was rated as good and the majority of fish cover was provided by boulders, water turbulence, and water depth. Temperatures were 23 °C air and 14 °C water at approximately 1:00 p.m. Due to the close proximity to Section 9 and the observation that no major hydrologic influences occurred in this vicinity, flow was not measured in this section and was presumed to be similar to 8.21 cfs, as measured in South Fork Kern River Section 9. The average wetted width was 26.7 feet and the average water depth was 0.6 feet. Bankful erosion and canopy cover were both estimated at 10%. Three passes were conducted and a total of 17 California golden trout, 54 brown trout, and 31 Sacramento suckers were captured (Table 2). Also observed were more than a hundred young of year Sacramento suckers in the stream margins; these fish were too small to capture and/or store in the live cars (the perforations in the live cars were larger than the fish). Abundance estimates were 270 California golden trout per mile (8.34 lbs/acre), 904 brown trout per mile (49.81 lbs per acre), and 492 Sacramento suckers per mile (58.53 lbs/acre).

South Fork Kern River Section 11 was located downstream of Sections 9 and 10 in the southeast corner of Monache Meadows and in the vicinity of inactive beaver dams (Figures 3 and 5). At 11:00 a.m. the air temperature was 26 °C and the water temperature was 19 °C; the latter was closely monitored throughout the electrofishing effort. HWTP guidelines state that electrofishing shall only occur in waters that contain salmonids at temperatures below 65 °C (18.3 °C). To minimize fish injury and mortality, the electrofishing effort was conducted as quickly as possible, fish processing occurred simultaneous to the electrofishing effort, water temperatures in the fish workup station were monitored closely, and fish were returned to the water as quickly as possible. The section was located in open meadow habitat with five percent canopy cover and 1.2% stream gradient (Figure 7). Streamflow was measured at 4.53 cfs. Streamflow was less than that measured in Section 9 (upstream), possibly due to evapotranspiration and/or subsurface dissipation occurring in open meadow habitat with limited cover. The section was 347 feet in length and consisted of flatwater habitat dominated by sand and gravel. Bankful erosion was higher in this section and was approximately 30%. Instream fish cover was rated as fair and was predominantly provided by aquatic vegetation with limited areas of water depth. The average wetted width was 23.8 feet and the average water depth was 0.8 feet. Three passes were conducted in Section 11 and 36 California golden trout, 17 brown trout, and 117 Sacramento suckers were captured (Table 2). There were approximately 730 California golden trout per mile (14.34 lbs/acre), 259 brown trout per mile (17.4 lbs/acre), and 1,917 Sacramento suckers per mile (109.3 lbs/acre) in Section 11.

South Fork Kern River Section 12 was located farther upstream in the system in the northern corner of Strawberry Meadow and was higher in elevation than

Monache Meadows (Figures 3 and 6). As a result, temperatures were cooler. In the morning, air temperature was measured at 5 °C and the water temperature was 8 °C. Section 12 was 340 feet in length with a 35.7-foot braid and consisted of flatwater habitat with poor fish cover; aquatic vegetation provided the majority of cover but was limited in area (Figure 7). Substrate was mostly sand (89%) and both bankful erosion and canopy cover were five percent or less. The average wetted width was 25.0 feet and the average water depth was 1.0 foot. Streamflow was measured at 6.26 cfs and stream gradient was less than one percent. Four passes were conducted in Section 12 and three California golden trout, 125 brown trout, and 54 Sacramento suckers were captured (Table 2). Fish abundance was estimated at 47 California golden trout per mile (0.74 lbs/acre), 1,988 brown trout per mile (83.3 lbs/acre), and 839 Sacramento suckers per mile (99.75 lbs/acre).

Figure 7. Site photographs of 2009 South Fork Kern River Sections (starting from top left and rotating clockwise: Section 9, 10, 11, and 12).



Table 2. Summary of 2009 South Fork Kern River multiple-pass electrofishing data.

Water	Section	Species	Total number captured	Estimated section population	Average weight (g)	Density (fish/mile)	Biomass (lbs/acre)
South Fork Kern River	9	California golden trout	7	7 ± 1	67.0	117	6.81
		brown trout	102	110 ± 10	56.3	1844	89.91
		Sacramento sucker	391	414 ± 15	83.5	6939	501.86
	10	California golden trout	17	17 ± 1	45.4	270	8.34
		brown trout	54	57 ± 6	80.9	904	49.81
		Sacramento sucker	31	31 ± 2	174.8	492	58.53
	11	California golden trout	36	48 ± 23	25.7	730	14.34
		brown trout	17	17 ± 2	88.0	259	17.4
		Sacramento sucker	117	126 ± 10	74.6	1917	109.3
	12	California golden trout	3	3 ± 3	21.8	47	0.74
		brown trout	125	128 ± 5	57.6	1988	83.3
		Sacramento sucker	54	54 ± 2	163.5	839	99.75
Average		California golden trout	-	-	-	291	7.56
		brown trout	-	-	-	1249	60.11
		Sacramento sucker	-	-	-	2547	192.36

Abundance estimates (density and biomass) and fish lengths were averaged across the four sections surveyed on the South Fork Kern River in 2009 by species (Table 2; Figures 8 and 9). Captured California golden trout ranged in size from 43 mm to 257 mm total length with an average length of 126 mm; there were approximately 291 California golden trout per mile with a biomass of 7.56 pounds per acre in 2009 within the entire survey area. Captured brown trout ranged in size from 68 mm to 505 mm total length with an average length of 175.1 mm; there were approximately 1,249 brown trout per mile with an estimated biomass of 60.11 pounds per acre in 2009 within the entire survey area. Captured Sacramento suckers ranged in size from 29 mm to 325 mm with an average length of 194 mm; there were approximately 2,547 Sacramento suckers per mile with an estimated biomass of 192.36 pounds per acre in 2009 within the entire survey area.

Abundance estimates in 2009 indicate the South Fork Kern River (in the vicinity of the survey sections) was dominated by Sacramento suckers, in both numbers and biomass, followed by brown trout. Areas with high brown trout abundance appeared to have low California golden trout abundance (Sections 9 and 12). Section 11 was the only section surveyed on the South Fork Kern River in 2009 in which the density of California golden trout was greater than that of brown trout; however, brown trout biomass was higher. Section 11 appeared to have degraded habitat with higher water temperatures, substrate dominated by sand with boulders mostly absent, instream fish cover was fair, there was higher bankful erosion, and cattle grazing was evident. The density of Sacramento suckers was also relatively high in this section.

Figure 8. Chart of 2009 density estimates on South Fork Kern River and tributaries by species and section.

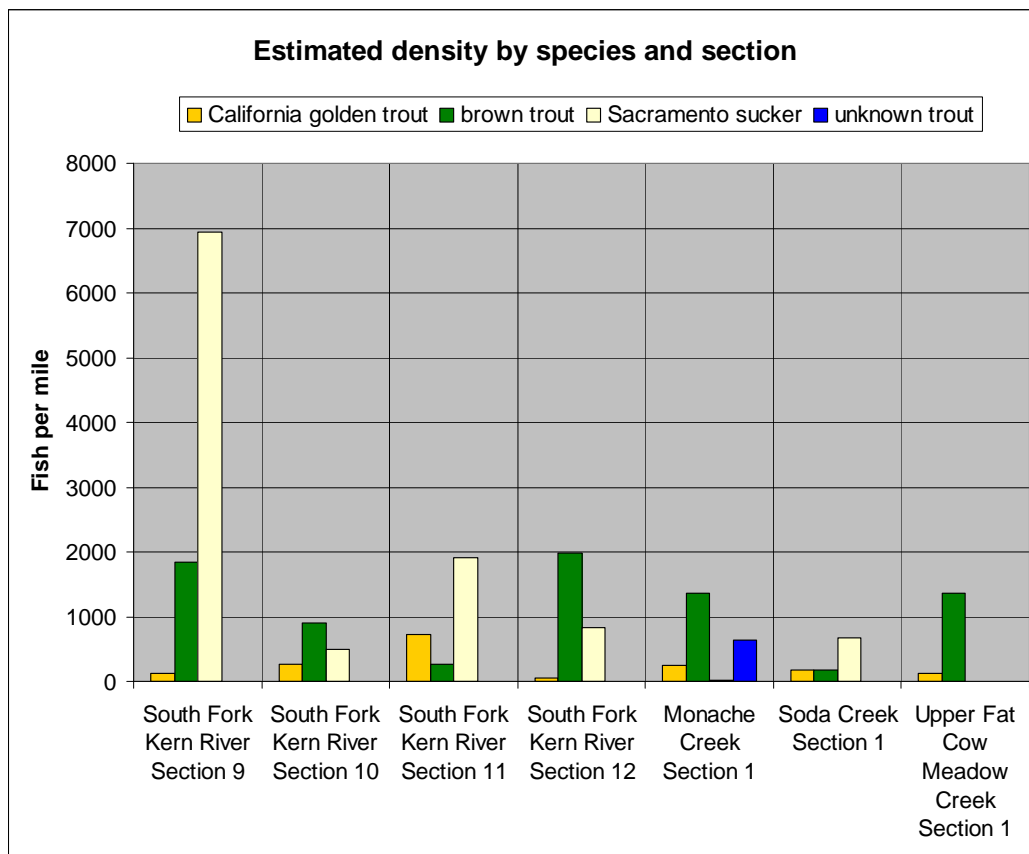
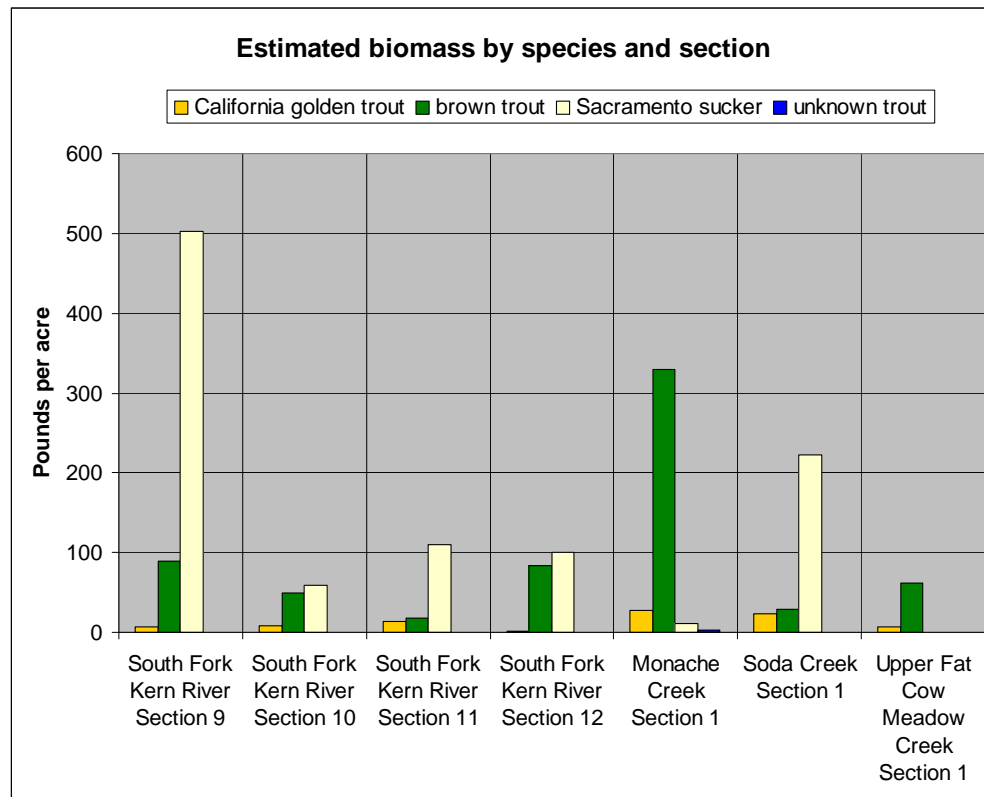


Figure 9. Chart of 2009 biomass estimates on South Fork Kern River and tributaries by species and section.



Monache Creek

Monache Creek is tributary to the South Fork Kern River in the northeastern corner of Monache Meadows. Monache Creek Section 1 was approximately one mile upstream from the confluence with the South Fork Kern River and adjacent to the DFG Administrative Site; a barbed-wire fence associated with the DFG site and adjacent US Forest Service cabins crossed the section approximately 23 feet downstream of the upper block net (Figures 3 and 4). The section was 300.0 feet in length and consisted of flatwater habitat with good fish cover (Figure 10). The dominant cover forms included overhanging vegetation, aquatic vegetation, and undercut banks with canopy closure at 30%. The air temperature, measured at 11:30 a.m., was 25 °C and the water temperature was 11 °C. Substrate was dominated by cobble and silt/fines. Bankful erosion was estimated at 15%. The average wetted width was 2.1 feet, average water depth was 0.3 feet, and streamflow was approximated at less than one cubic foot per second. Stream gradient was 1.6%. Three passes were conducted and 13 California golden trout, 74 brown trout, 14 unidentified juvenile trout, and one Sacramento sucker were captured (Table 3). Captured California golden trout ranged in size from 72 mm to 177 mm total length with an average length of 100 mm; estimates of

abundance indicate there were 246 California golden trout per mile with an estimated biomass of 27.53 pounds per acre. Captured brown trout ranged in size from 42 mm to 285 mm with an average length of 124 mm; there were approximately 1,355 brown trout per mile with an estimated biomass of 329.82 pounds per acre. The one Sacramento sucker captured measured 189 mm in total length; there were approximately 18 Sacramento suckers per mile in Monache Creek with an estimated biomass of 11.36 pounds per acre. The unknown trout species captured were all young of year and ranged in size from 29 mm to 42 mm total length with an average length of 36 mm; due to their small size and lack of diagnostic morphological features, identification to species was not attempted.

Figure 10. 2009 site photographs of Monache Creek Section 1.



Soda Creek

Soda Creek is located in the northwest corner of Monache Meadows and drains the eastern slope of Kingfisher Ridge approximately one mile upstream from the South Fork Kern River (Figures 3 and 4). This stream is classified as an intermittent channel (DFG Inland Fisheries Database) and may not have been connected to the main-stem at the time of the survey. At 11:00 a.m., air and water temperatures were 22 °C and 12 °C, respectively. The section was 309 feet in length and consisted of flatwater habitat with fair fish cover (Figure 11). Substrate was mostly silt and fines (85%). Canopy closure and erosion were both

low. This creek was also small in size; the average wetted width was 3.7 feet, the average water depth was 0.7 feet, and streamflow was measured at less than one cubic foot per second. Stream gradient was less than one percent. Three passes were conducted and a total of 10 California golden trout, 8 brown trout, and 39 Sacramento suckers were captured (Table 3). Captured California golden trout ranged in size from 92 mm to 205 mm total length with an average length of 136 mm; estimates of abundance indicate there were 171 California golden trout per mile with an estimated biomass of 23.69 pounds per acre. Captured brown trout ranged in size from 65 mm to 205 mm with an average length of 143 mm; there were approximately 171 brown trout per mile with an estimated biomass of 29.23 pounds per acre. Captured Sacramento suckers ranged in size from 64 mm to 265 mm total length with an average length of 178 mm; there were approximately 666 Sacramento suckers with an estimated biomass of 221.78 pounds per acre (Table 3).

Figure 11. 2009 site photograph of Soda Creek Section 1.



Upper Fat Cow Meadow Creek

Upper Fat Cow Meadow Creek is tributary to Strawberry Creek in the northwest corner of Upper Fat Cow Meadow (Figures 3 and 6). This creek is unnamed on USGS topographical maps and, for the purposes of this report and HWTP's data recording, we refer to it as Upper Fat Cow Meadow Creek. This medium-gradient (3.9%) section was located approximately one-half mile upstream of the confluence with Strawberry Creek and was 450 feet in length. The air temperature was 15 °C and water temperature was 7 °C at 10:00 a.m. The majority of habitat was flatwater (90%) with a few pools (9%) and a short riffle (1%). This section was forested (65% canopy cover) and had good fish cover

with all instream cover types present (aquatic and overhanging vegetation, undercut banks, boulders, large woody debris, etc.; see Figure 12). Bankful erosion was estimated at 20% and substrate was dominated by gravel, cobble, and sand. The average wetted width was 5.5 feet, the average water depth was 0.3 feet, and streamflow was measured at less than one cubic foot per second. Three passes were conducted and 10 California golden trout and 103 brown trout were captured (Table 3). All brown trout were euthanized and disposed of per Central Region directives. Captured California golden trout ranged in size from 75 mm to 193 mm total length with an average length of 99 mm; estimates of abundance indicate there were 117 California golden trout per mile with a biomass of 6.32 pounds per acre. Captured brown trout ranged in size from 20 mm to 220 mm with an average length of 81 mm; there were approximately 1,361 brown trout per mile with an estimated biomass of 61.66 pounds per acre.

Figure 12. 2009 site photographs of Upper Fat Cow Meadow Creek Section 1.



Table 3. Summary of 2009 multiple-pass electrofishing data on South Fork Kern River tributaries.

Water	Section	Species	Total number captured	Estimated section population	Average weight (g)	Density (fish/mile)	Biomass (lbs/acre)
Monache Creek	1	California golden trout	13	14 \pm 5	12.9	246	27.53
		brown trout	74	77 \pm 5	28.1	1355	329.82
		unknown trout	14	36 \pm 118	0.4	634	2.2
		Sacramento sucker	1	1 \pm 1	74.5	18	11.36
Soda Creek	1	California golden trout	10	10 \pm 2	28.2	171	23.69
		brown trout	8	10 \pm 11	34.8	171	29.23
		Sacramento sucker	39	39 \pm 2	67.7	666	221.78
Upper Fat Cow Meadow Creek	1	California golden trout	10	10 \pm 0	16.3	117	6.32
		brown trout	103	116 \pm 15	13.7	1361	61.66

Discussion:

The HWTP has conducted fisheries assessments throughout the drainage since 1985; however, the majority of previous electrofishing data were collected from different locations in the watershed. In 2006, the HWTP conducted multiple-pass electrofishing surveys in the South Fork Kern River at four locations in Monache Meadows. These data were included in this report as a point of reference, but it should be noted that all survey sections in 2009 were newly established, sections were located both within and outside of Monache Meadows, and included tributaries (2006 surveys occurred on the main-stem only). The four sections surveyed on the South Fork Kern River in 2006 yielded an average abundance of approximately 1216 California golden trout per mile, 1620 brown trout per mile, and 6108 Sacramento suckers per mile (Table 4).

Monache Creek had the highest biomass of both California golden and brown trout than any other section surveyed in 2009 (and the lowest biomass of Sacramento suckers). Monache Creek may provide important trout habitat within this system, although sampling was limited to one survey section and information pertaining to the extent of fish distribution and habitat types farther upstream in this tributary was unavailable at the time of this report. Soda Creek is an intermittent channel near the confluence with the South Fork Kern River and had relatively equal abundance of California golden trout and brown trout. Upper Fat Cow Meadow Creek had complex habitat, was higher in gradient than other sections surveyed in 2009, and was dominated by brown trout. The DFG FISH

database does not have historic survey information from Monache, Soda, or Upper Fat Cow Meadow creeks for comparison.

Table 4. Summary of 2006 multiple-pass electrofishing data on the South Fork Kern River.

Section number	Location	Survey date	Species	Estimated density (fish/mi)	Estimated biomass (lbs/acre)
3	Monache Meadow (near Wildlife Area)	10/17/2006	California golden trout	634	14.29
			brown trout	2235	120.34
			Sacramento sucker	11510	1097.01
4	Monache Meadow (near Soda Creek)	10/18/2006	California golden trout	1940	10.59
			brown trout	1799	42.54
			Sacramento sucker	3469	165.63
5 (SK-3)	Monache Meadow (southern end)	10/19/2006	California golden trout	1496	25.06
			brown trout	123	6.01
			Sacramento sucker	4893	30.44
6	Monache Meadow (near Wildlife Area)	8/16/2006	California golden trout	792	5.91
			brown trout	2323	32.25
			Sacramento sucker	4558	237.67
Average			California golden trout	1216	13.96
			brown trout	1620	50.29
			Sacramento sucker	6108	382.69

Conclusion:

The South Fork Kern River is a designated Wild Trout Water for its population of California golden trout and brown trout. California golden trout are native to this drainage and this fishery provides anglers with an opportunity to catch California's State Freshwater Fish within its historic drainage. Due to introductions of non-native brown trout, these two species occur together from Lake Isabella upstream to the Templeton Barrier in Templeton Meadow. California golden trout are the only trout species above Templeton Barrier and native species composition in this portion of the watershed remains intact. Anthropogenic alterations to the ecosystem, including cattle grazing and the introduction of non-native fishes, have altered species composition and reduced suitable habitat. These ongoing threats to California golden trout populations in the South Fork Kern River system are the focus of long-term recovery efforts. A goal of the DFG (and other resource management agencies), as outlined in the

Conservation Assessment and Strategy for the California Golden Trout (Stephens et al. 2004) is to re-establish genetically pure populations of California golden trout in their native range through the removal of introduced or introgressed trout and the improvement of habitat conditions to benefit California golden trout. This restoration process has been ongoing for many decades and considerable time and resources will be required in the future to meet this restoration goal.

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