

***Final Report***  
**Summer Steelhead Survey, 2011 Season**  
**Mattole River Watershed**

Cereus Fund of the Trees Foundation

&

U.S. Department of the Interior, Bureau of Land Management  
Assistance Agreement No. BCA072012

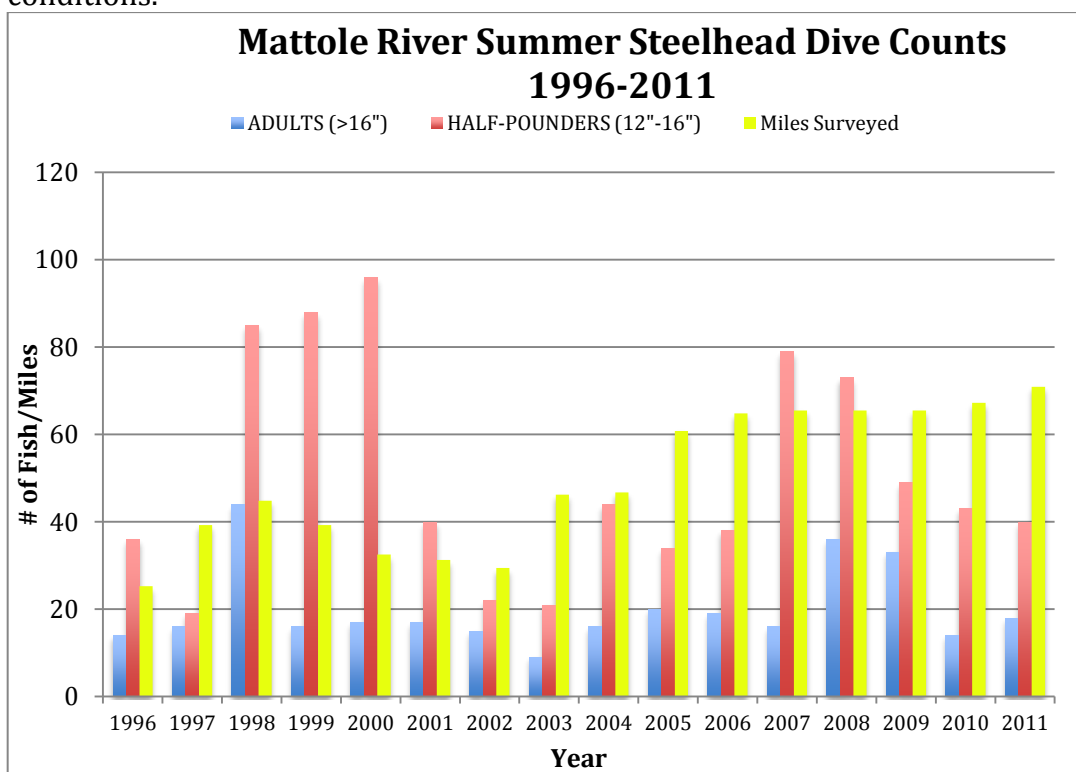
Report prepared by Amy Baier  
Mattole Salmon Group  
P.O. Box 188  
Petrolia, CA 95558-0188  
Phone 707-629-3433 □ Fax 707-629-3435  
[msg@mattolesalmon.org](mailto:msg@mattolesalmon.org)

The 16<sup>th</sup> Annual Summer Steelhead Dive on the Mattole took over the week of July 11-16, 2011. We had an amazing volunteer turnout this year, with 56 divers contributing their time and expertise to snorkel the entire length of the mainstem Mattole and sections of Thompson, Bear, Fourmile, Sholes, and Honeydew Creeks. The 2011 Summer Steelhead Dive encompassed 70.95 miles, the greatest mileage surveyed to date. We observed 18 adult summer steelhead (>16 inches in fork length) and 40 “half-pounders” (12-16” fork length) in 2011 (Figure 1).

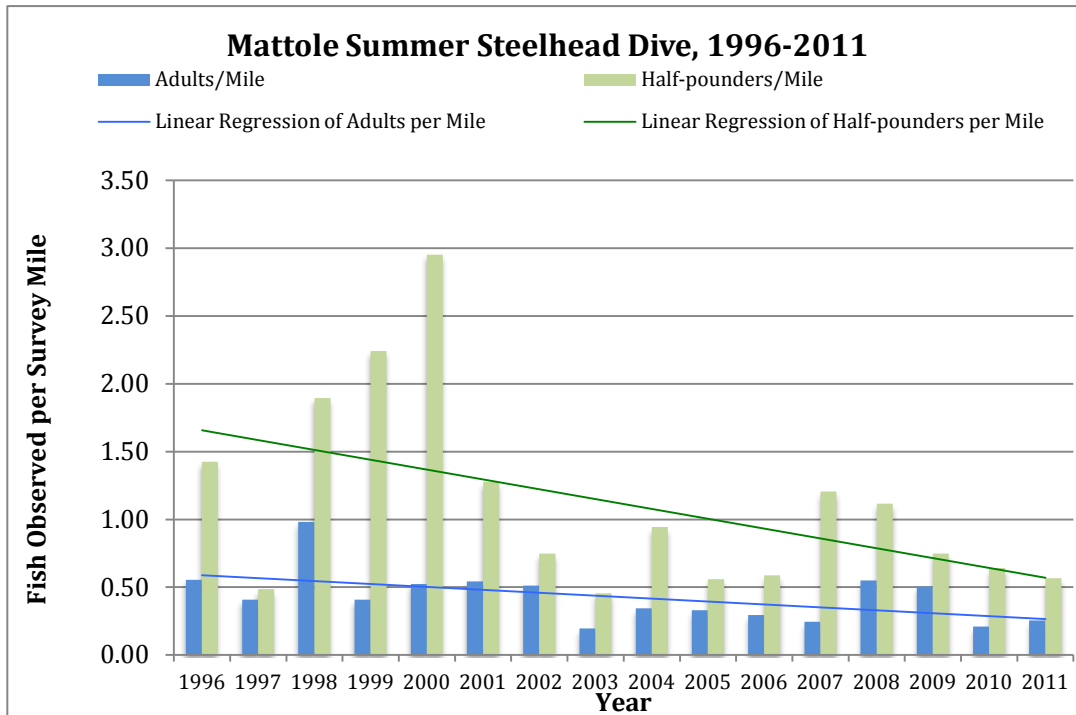
Both summer steelhead and half pounders are fish that have entered the river from the ocean in the spring and early summer, before the river mouth closes for the season. Adult summer steelhead seek out suitable habitat in the river and oversummer there, until the fall when they spawn. Half-pounders are not fully mature and nearly all are incapable of reproduction at that stage in their lives. They may exit the river when the mouth opens – just as any steelhead may opt to do – and re-enter next year or in following years to spawn when they are mature.

The number of adults observed per survey mile (0.25) was lower than the average number observed per mile over the past 16 years (0.43) (Figure 2). In 2010, we observed only 14 adults, the second lowest number observed since the dives began. Adult observations were more abundant in 2008 (36) and 2009 (33). The half-pounder count in 2011 was low relative to past years. Compared to the 16-year average of 1.11 half-pounder observations per survey mile, there were 0.56 half-pounders per mile observed in 2011.

Late spring rains and resulting higher flow in July during the dives in the past two years may have contributed to fewer observations than in previous years. A higher flow makes the dives an exciting adventure, but also makes it more challenging to observe fish. Thorough survey is more difficult in some places, where divers are moving more quickly through the habitat due to flow conditions.



**Figure 1.** Adult and Half-pounder Observations and Miles Surveyed, Mattole Summer Steelhead Dives, 1996-2011.



**Figure 2.** Adults and Half-pounders observed per survey mile during 1996-2011 Mattole Summer Steelhead Dives.

The 70.95 miles surveyed during the 2011 Summer Steelhead Dive included 64.3 accumulated survey miles of the mainstem Mattole and 6.65 miles of tributaries. Accumulated survey mileage refers to some mainstem survey areas being surveyed more than once, due to logistics. The tributaries surveyed included Thompson Creek (RM 58.4), Bear (RM 42.8), Sholes (RM 36.6), Fourmile (RM 34.6), and Honeydew (RM 26.4) Creeks. The MSG has been surveying Bear Creek and Honeydew Creek for many years due to the historical and contemporary presence of adult summer steelhead there.

The Summer Steelhead Dive is the *only* annual survey effort encompassing the *entire* mainstem in the summer and in such a short time period. In some areas, it is the *one and only* survey all year. In addition to counting adult summer steelhead and half-pounders in the Mattole, it is also the only time we enumerate juvenile salmonids and other important native and invasive aquatic species throughout the entire mainstem.

Realizing this opportunity, we have expanded our goals for the basinwide survey in the past two years to include a mid-summer count of juvenile Coho and Chinook. Knowledge of both location and numbers of juvenile salmon oversummering in the Mattole mainstem gives us valuable information for both population monitoring analysis and direct enhancement efforts. The enumeration of juvenile Coho has taken on an increased significance with the status of Mattole Coho on the brink of extirpation.

We have consistently done a Thompson Creek survey as part of the Summer Steelhead Dives every year since the dives began in 1996, as this tributary has shown to be an important bearing-bearing stream. Funding constraints for our seasonal juvenile dives did not allow survey of Sholes and Fourmile Creeks during the spring due to their remote access. These two remote streams contain the most favorable habitat in the middle river area, and also have historical Coho presence. The Summer Steelhead Dive gave us the only opportunity this year to complete surveys for Coho presence in these two important drainages, as they fell within mainstem reaches that were being surveyed.

Coho observations this year were encouraging as far as the number observed (516), in comparison to 2010 (127), while still indicating a low abundance overall. The location of Coho observed indicates their fragile existence. Observations were restricted to the upper headwaters (upstream of RM 55.6). This area encompasses the majority of the thermally favorable habitat for overwintering juvenile Coho, but is also the most prone to drying and substandard water quality due to low flow.

Summer Steelhead Dive observations also show there is a small number of juvenile Chinook overwintering in the headwaters. In 2011, we observed 765 Chinook, compared to 1128 in 2010. Chinook were distributed throughout the river in 2011, although they were most numerous in the reach furthest downstream, which includes the Mattole Estuary. In 2010, a greater number of Chinook were found in the headwaters, and they were more widespread throughout the lower river. Presumably, the greater majority of the Chinook had migrated further downstream by the time of the Summer Steelhead Dive in 2011, accounting for the difference in abundance and distribution.

The Summer Steelhead Dive also gives us the opportunity to map invasive species and, over multiple survey years, track the extent of their range in the Mattole. Crayfish are one such species, which we have observed in increased numbers in recent years, spreading from the middle river downstream.

We also look for native species of interest, including freshwater mussels and western pond turtles. Freshwater mussels are an aquatic indicator species, whose presence indicates favorable salmonid habitat. In 2011, 1517+ were observed, most concentrated from the lower reaches of the upper Mattole to the upper reaches of the middle Mattole. Western pond turtles are the only native turtle to the Mattole; in 2011, we observed 52 western pond turtles.

We at the MSG want to sincerely thank all of our dedicated volunteers and staff, both new and returning, who make this dive possible. We are also grateful to the many Mattole landowners who generously grant us access and assist us in getting to and from our dive reaches. Special thanks go out to the Cereus Fund of the Trees Foundation who graciously provided the funding for this year's dive (and last year's dive). Funding helped pay for staff time for coordination with landowners, volunteers, drivers, and divers. Funds were also used to purchase dive supplies and food and supplies for breakfast for the volunteers on both dive days, a dinner on the training day, and a BBQ in the evening on the final day of diving. Your contribution is much appreciated, and truly made a difference in making the 16<sup>th</sup> Annual Mattole Summer Steelhead Dive a success.

**Table 1. 2011 Summer Steelhead Dive Reaches, Personnel, Mileage, and Adult Summer Steelhead and Half-pounder Observations**

Reach #	River Mile (RM) Location	Location and Reach Name	Survey Date	Personnel	Mileage	Adult Summer Steelhead (>16")	"Half-Pounders" (12"-16")
1	RM 60.4 - RM 58.8	Upper Mattole:	7/16	Daniel Hoshizaki*, Steve Gough*	1.6	0	0
		Phillips Creek to Lost River Creek					
2A	RM 58.8 - RM 57.1	Upper Mattole:	7/15	Kate Cenci*, Nathan Queener*	1.7	0	0
		Lost River Creek to Stanley Creek					
2B	RM 58.4 +0.15	Thompson Creek (RM 58, mouth to			(+0.15)	0	0
19	RM 57.1 - RM 55.6	Upper Mattole:	7/15	Sarah Burstein*, Lindsey Baris, Ryan	~1.5	0	0
		Stanley Creek to Anderson Creek					
24	RM 55.6 - RM 54.0	Upper Mattole:	7/15	Keytra Meyer*, Tony Heacock*	~2.8	0	0
		Anderson Creek to McKee Creek					
3	RM 52.8 - RM 51.3	Upper Mattole:	7/15	Colum Coyne*, Ray Lingel	~1.5	1	0
		McKee Creek to Crook's					
4	RM ~51.3 - RM ~49.4	Upper Mattole:	7/15	Jill Grbavac*, Flora Brain*, Erika Stowe-	~1.9	0	4
		Crook's to Tom's Hole					
5	RM ~49.4 - RM 47.4	Upper Mattole:	7/15	Amy Haas*, Jerry Baier, Tammy Lightle	~2.0	0	1
		Tom's Hole to Big Finley Creek					
6	RM 47.4 - RM ~46.0	Upper Mattole:	7/15	Will Kelly*, Todd Carlin, Matt Cavin	~1.4	2	2
		Big Finley Creek to Schepp's					
20	RM ~46.0 - RM 42.9	Middle Mattole:	7/15	Matt Hanington*, Issac Baker, Katrina	~3.1	4	3
		Schepp's to upstream of Bear					
7	RM 42.9 - RM ~41.1	Middle Mattole:		Aaron Johnson*, Margaret Tauzer, Ryley Tauzer, Trevor Griffiths	2.8	0	2
		Upstream of Bear Creek to Klossen's Hole (downstream of Mattole Canyon Creek)					
21A	RM 41.1 - RM 39.0	Middle Mattole:	7/16	Kate Cenci*, Chad Paul, Pete Tans*, Allison Tans	2.1	2	4
		ds Mattole Canyon Creek to Grindstone Creek					
21B	RM 39.0 - RM 35	Middle Mattole:	7/16	Amy Haas*, Jerry Baier, Katrina Nystrom, Chris Tiffany	4	1	2
		Grindstone Creek to us Fourmile Creek (Annette's)					
--	RM 36.6 + ~0.2	Sholes Creek			(+0.2)	0	0
22/8 A	RM 35 - RM 31.3	Middle Mattole:	7/16	Jill Grbavac*, Steve Gough*, Trevor Griffiths	3.7	0	3
		us Fourmile Creek (Annette's) to Middle Creek					
--	RM 34.6 + 0.2	Fourmile Creek			(+0.2)	0	0
8B/2 3	RM 31.3 - RM 27.4	Middle Mattole:	7/16	Flora Brain*, Sarah Burstein	3.9	4	4
		Middle Creek to Honeydew Slide					
9	RM 27.4 - RM 24.4	Lower Mattole:	7/16	Amanda Piscitelli*, Jordan Green, Margaret Tauzer, Ryley Tauzer	3	3	0
		Honeydew Slide to Bundle Prairie Creek					
10	RM 24.4 - RM 21.3	Lower Mattole:	7/16	Will Kelly*, Monica Scholey, Skaidra Scholey, James Bruce	3.1	0	1
		Bundle Prairie Creek to Triple Junction High School					
11	RM 19.7 - RM 14.9	Lower Mattole:	7/16	Tony Heacock*, Phil Heacock, Tobin	4.8	0	1
		Saunders Creek to Squaw Creek					
12	RM 14.9 - RM 12.6	Lower Mattole:	7/16	Keytra Meyer*, AJ Donnell, Issac Baker	2.3	0	1
		Squaw Creek to Lindley Bridge					
13	RM 12.6 - RM 7.8	Lower Mattole:	7/16	Matt Hanington*, Lindsey Baris, Nick	4.8	0	0
		Lindley Bridge to Conklin Creek					
14	RM 7.8 - RM 5.2	Lower Mattole:	7/15	Amanda Piscitelli*, Cindy Wilcox, Katelyn	2.6	0	0
		Conklin Creek to Hideaway Bridge					
15A	RM 5.2 - RM 2.9	Lower Mattole:	7/12	Cam Thompson*, Nick's Interns (Taylor	2.3	0	1
		Hideaway Bridge to MSG Office					
15B	RM 2.9 - RM 1.3	Lower Mattole:	7/12	Matt Hanington*, Nick's Interns (Trent, Julia,	1.6	0	3
		MSG Office to Stansberry Creek					
15	RM 5.2 - RM 1.3	Lower Mattole:	7/15	Sam Adelson*	3.9	0	2

		Hideaway Bridge to Stansberry Creek		Tobin Weatherson, Leandra Darden, Jay			
15B	RM 2.9 - RM 1.3	Lower Mattole: MSG Office to Stansberry Creek	7/16	Michael Evenson*, Nathan Scheinman	1.6	0	2
16	RM 1.3 - RM 0.0	Lower Mattole: Stansberry Creek to Ocean	7/13	Daniel Hoshizaki*, Yana Haralanova, Joe	1.3	0	0
17	RM 42.8 + 3.6	Bear Creek (Geppert/Spence's to mouth)	7/16	Aaron Johnson*, Nathan Queener	(+~3.6)	1	4
18	RM 26.5 + 2.5	Honeydew Creek (Maureen Catalina's to 2.5 miles upstream of Bear Wallow Slide)	7/16	Daniel	(+~2.5)	0	0
		Totals		56 volunteers	70.95	18	40

\*Some Reaches were combined in 2011, due to logistics, and have been re-numbered to reflect parts of historically surveyed reaches.

Key: RM=River Mile, (+) denotes tributary mileage, us=upstream, ds=downstream

**Table 2. 2011 Mattole Summer Steelhead Dive Juvenile Salmonid Observations by Reach.**

Reach #	River Mile (RM) Location	Location and Reach Name	Juvenile COHO	Juvenile CHINOOK	Juvenile STEELHEAD (<12")
1	RM 60.4 - RM 58.8	Upper Mattole: Phillips Creek to Lost River Creek	322	0	Yes, entire reach
2	RM 58.8 - RM 57.1	Upper Mattole: Lost River Creek to Stanley Creek, including partial survey (0.15 miles) of Thompson Creek (RM 58, mouth to confluence with Yew Creek)	171	1	Yes, entire reach
19	RM 57.1 - RM 55.6	Upper Mattole: Stanley Creek to Anderson Creek	23	0	Yes
24	RM 55.6 - RM 54.0	Upper Mattole: Anderson Creek to McKee Creek	0	0	Yes, entire reach
3	RM 52.8 - RM 51.3	Upper Mattole: McKee Creek to Crook's	0	0	Yes, entire reach
4	RM ~51.3 - RM ~49.4	Upper Mattole: Crook's to Tom's Hole (Patty's)	0	0	Yes, entire reach
5	RM ~49.4 - RM 47.4	Upper Mattole: Tom's Hole to Big Finley Creek	0	0	Yes, entire reach
6	RM 47.4 - RM ~46.0	Upper Mattole: Big Finley Creek to Schepp's	0	0	Yes, entire reach
20	RM ~46.0 - RM 42.7	Middle Mattole: Schepp's to upstream of Bear Creek	0	Yes	Yes
7	RM 42.7 - RM ~39.9	Middle Mattole: Upstream of Bear Creek to Klossen's Hole (downstream of Mattole Canyon Creek)	0	2	Yes, entire reach
21A	RM 41.1 - RM 39.0	Middle Mattole: Mattole Canyon Creek to Grindstone Creek	0	1	Yes, entire reach
21B	RM 39.0 - RM 35	Middle Mattole: Grindstone Creek to us Fourmile Creek + Sholes Creek (RM 36.6)	0	0	Yes, entire reach
22/8A	RM 35 - RM 31.3	Middle Mattole: us Fourmile Creek to Middle Creek + Fourmile Creek (RM 34.6)	0	1	Yes, entire reach
8B/23	RM 31.3 - RM 27.4	Middle Mattole: Middle Creek to Honeydew Slide	0	0	Yes, entire reach
9	RM 27.4 - RM 24.4	Lower Mattole:	0	0	Yes, entire reach

		Honeydew Slide to Bundle Prairie Creek			
10	RM 24.4 - RM 21.3	Lower Mattole: Bundle Prairie Creek to Triple Junction High School	0	0	Yes
11	RM 19.7 - RM 14.9	Lower Mattole: Saunders Creek to Squaw Creek	0	0	Yes
12	RM 14.9 - RM 12.6	Lower Mattole: Squaw Creek to Lindley Bridge	0	0	Yes
13	RM 12.6 – RM 7.8	Lower Mattole: Lindley Bridge to Conklin Creek	0	0	Yes, entire reach
14	RM 7.8 – RM 5.2	Lower Mattole: Conklin Creek to Hideaway Bridge	0	1	Yes
15	RM 5.2 – RM 3.9	Lower Mattole: Hideaway Bridge to Stansberry Creek	0	5	1392
15A	RM 5.2 – RM 3.9	Lower Mattole: Hideaway Bridge to MSG Office	0	4	Yes
15B	RM 3.9 - RM 1.3	Lower Mattole: MSG Office to Stansberry Creek	0	50	Yes
15B	RM 3.0 – RM 1.3	Lower Mattole: MSG Office to Stansberry Creek	0	0	Yes, entire reach
16	RM 1.3 – RM 0.0	Lower Mattole: Stansberry Creek to Ocean	0	700	1500
17	RM 42.8 + 3.6	Bear Creek (Geppert/Spence's to mouth)	0	0	Yes, many
18	RM 26.5 + 2.5	Honeydew Creek (Maureen Catalina's to 2.5 miles upstream of Bear Wallow Slide)	0	0	810
		Totals	516	765	N/A

**Table 3. 2011 Mattole Summer Steelhead Dive Observations of Other Species of Interest**

Reach #	River Mile (RM) Location	Freshwater Mussels	Bull Frog Tadpoles	Crayfish	Western Pond Turtles	Other	Notes
1	RM 60.4 - RM 58.8	0	0	0	0	1 dead newt	N/A
2	RM 58.8 - RM 57.1	27	0	0	0	newts (3), stickleback (pregnant)	Pool in Thompson Cr. just ds of Yew Cr. Has no surface flow to next pool downstream. All water is percolating through gravel and large LWD spanner buried in gravel.
19	RM 57.1 - RM 55.6	0	0	0	0	N/A	N/A
24	RM 55.6 - RM 54.0	246	0	0	0	4 lamprey carcasses, 4 lamprey redds, 6 newts	
3	RM 52.8 - RM 51.3	N/A	N/A	N/A	N/A	N/A	N/A
4	RM ~51.3 - RM ~49.4	throughout reach	0	throughout reach	2	2 lamprey redds, 6 lamprey carcasses, 1 live 16" lamprey, 1 large abalone, rough-skinned newts throughout reach	3 starfishes and 1 adult salmonid skeleton appear to have been placed in river (@ same location)
5	RM ~49.4 - RM 47.4	16	0	22	4	1 lamprey carcass	Lots of algae, an unusual amount, throughout reach, compromised visibility
6	RM 47.4 - RM ~46.0	60	0	0	1	rough-skinned newt, pacific giant salamander	N/A
20	RM ~46.0 - RM 42.7	685	Adult Bullfrog	Yes, lots throughout reach	7	N/A	See map
7	RM 42.7 - RM ~ 39.9	475+	0	45	1	Snake	N/A
21A	RM 41.1 - RM 39.0	1	0	14+	1	newts, yellow-legged frogs, stickleback, watersnake	12-15 lamprey redds in riffle area ds half-pounder #4 sighting (near Grindstone Cr)
21B	RM 39.0 - RM 35	5	0	1	5	N/A	saw fresh dead adult steelhead (~22") in large pool not far from reach end
22/8A	RM 35 - RM 31.3	0	0	0	3	Newts	N/A



8B/23	RM 31.3 - RM 27.4	0	1	crayfish shells, no live crayfish	6	rough-skinned newts, kingfisher, merganser families (a few), great blue heron, 3 lamprey spinal cords, 8 lamprey redds (some recent)	cows in the river, a lot of fine sediment flushed out of upper 1/3 of reach, one of turtles was dead, appeared to be old/natural death
9	RM 27.4 - RM 24.4	0	0	0	1	western toad, yellow-legged frog, garter snake, rough-skinned newt	N/A
10	RM 24.4 - RM 21.3	0	no	no	4	2 pigs on river bar	
11	RM 19.7 - RM 14.9	0	0	0	3	3 rough-skinned newts	Family on 4- Wheeler
12	RM 14.9 - RM 12.6	0	0	0	0	N/A	N/A
13	RM 12.6 - RM 7.8	0	0	0	0	N/A	N/A
14	RM 7.8 - RM 5.2	0	0	0	0	Stickleback	N/A
15	RM 5.2 - RM 3.9	0	1	no	1	Yellow-legged frog tadpoles	N/A
15	RM 5.2 - RM 2.9	0	0	0	1	Great Blue Heron	N/A
15	RM 2.9 - RM 1.3	0	0	0	0	Mostly steelhead (4"-8") spotted in lower river	Not much habitat
15B	RM 2.9 - RM 1.3	0	0	0	0	N/A	N/A
16	RM 1.3 - RM 0.0	0	1	no	0	N/A	N/A
17	RM 42.8 + 3.6	2	0	1	9	rough-skinned newts (7-8), yellow legged frogs	N/A
18	RM 26.5 + 2.5	0	no	no	3	salamanders, newts, snakes	6 large resident trout
	Totals	1517	3 plus 1 adult bullfrog	83 plus many more, concentrated in middle river	52	N/A	N/A