

Mad River Summer Steelhead Dive Summary 2017



Mad River Adult Summer Steelhead (photo by Jacob Pounds)
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Summary

From July 20 - 22, 2017, personnel from Blue Lake Rancheria, Mad River Alliance, Bureau of Land Management, California Department of Fish and Wildlife, Green Diamond Resource Company, Wiyot Tribe, United States Forest Service, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Timberland Resources Company, and several community volunteers performed a dive survey to count summer-run steelhead in Mad River. Teams of snorkelers covered approximately 46.5 river miles within the 74.4-mile stretch of river between R.W. Matthews Dam and the Highway 101 bridge. Divers counted a total of 151 adult (≥ 16 inches fork length) and 40 half-pounder (< 16 inches fork length) summer-run steelhead. Presence of other species, including Pacific lamprey and lamprey redds, freshwater mussels, western pond turtles, garter snakes, and Sacramento suckers were also noted.

No adult summer-run steelhead were counted above the upper partial Humbug Creek barrier, leading us to believe that summer-run steelhead likely did not migrate upstream of the barrier prior to the 2017 survey. Although rainfall was in the “above normal” range for the water year, lack of appreciable rainfall after April 2017 led to early low-flow conditions, and is believed to have limited upstream passage. We believe that the survey covered the majority of habitat in mainstem Mad River where summer-run steelhead were present.

The total distance surveyed this year was limited in large part to 2 factors: deteriorated river access points and the proliferation of marijuana farms, and associated perceived threats to property and safety while surveying. Due to these factors, approximately 15.2 river miles were not surveyed. However, it is important to note that these river miles are above the uppermost barrier to anadromous migration at most flows (Humbug Creek Barrier).

Table 1 describes the total count of adult and half-pounder summer steelhead, and distance surveyed for each year. Data is provisional from 1980 – 2008, as it has not been checked since entered into the database.

2017 Dive Survey

Goals of the 2017 Mad River survey were:

1. Obtain a count of summer-run steelhead from R.W. Matthews Dam to the Kadle Hole (.5 mile upstream of the Highway 101 bridge), 74.4 miles total.
2. Gain access through private property to reaches of the river near Pilot Creek that have not been surveyed in several years.
3. Provide dive training on the lower Mad River to community volunteers so they may learn surveying techniques and effective data collection. This training could lead to future volunteer recruitment for more difficult and remote survey reaches
4. Provide swiftwater safety training for dive volunteers to increase safety in the field and awareness of potential hazards while conducting the survey.

Table 1. Mad River summer-run steelhead dive survey results 1980 - 2016

Year	Miles Surveyed	Adults			Half-Pounders			Grand Total
		Live	Dead	Total	Live	Dead	Total	
1980 ^P	17.9	0	0	0	0	0	0	0
1981 ^P	17.5	2	0	2	0	0	0	2
1982 ^P	32.4	167	0	167	0	0	0	167
1983 ^P	22.8	31	0	31	0	0	0	31
1984 ^P	14.1	111	0	111	0	0	0	111
1985 ^P	14.8	52	0	52	0	0	0	52
1986 ^P	7.8	10	0	10	0	0	0	10
1987 ^P	20.2	18	0	18	0	0	0	18
1988 ^P	10.6	60	0	60	0	0	0	60
1989 ^P	10.6	20	0	20	0	0	0	20
1990 ^P	10.6	33	0	33	0	0	0	33
1991 ^P	14.7	59	0	59	0	0	0	59
1992 ^P	10.6	34	0	34	0	0	0	34
1993 ^P	10.6	48	0	48	0	0	0	48
1994 ^P	51.6	305	0	305	166	0	166	471
1995 ^P	66.6	541	1	542	10	0	10	552
1996 ^P	60.7	427	1	428	19	0	19	447
1997 ^P	66.6	292	5	297	12	0	12	309
1998 ^P	57.0	191	0	191	20	0	20	211
1999 ^P	46.4	82	0	82	15	0	15	97
2000 ^P	53.5	170	0	170	62	0	62	232
2001 ^P	12.5	194	0	194	583	0	583	777
2002 ^P	19.7	185	0	185	80	0	80	265
2003 ^P	18.7	483	0	483	5	0	5	488
2004 ^P	5.8	209	0	209	9	0	9	218
2005 ^P	5.6	211	0	211	10	0	10	221
2006	0	-	-	-	-	-	-	-
2007	0	-	-	-	-	-	-	-
2008 ^P	5.1	110	0	110	20	0	20	130
2009	0	-	-	-	-	-	-	-
2010	0	-	-	-	-	-	-	-
2011	0	-	-	-	-	-	-	-
2012	0	-	-	-	-	-	-	-
2013	50.0	280	0	280	28	0	28	308
2014	53.1	322	0	322	92	0	92	414
2015	47.2	336	0	336	222	0	222	558

2016	46.5	187	0	187	29	0	29	216
2017	46.5	151	0	151	40	0	40	191
Total	928.5	5321	7	5328	1422	0	1422	6750

' P ' = Provisional data.

' - ' = No data available; no survey conducted.

Recommendations and Environmental Considerations

Goals for future summer steelhead dive surveys:

1. Ensure every participant returns after every survey day
2. Survey the entire river from R.W. Matthews Dam to the Kadle Hole
3. Survey all reaches within a few days (as short a period of time as possible)
4. Rely on trained and experienced divers for the most strenuous and difficult reaches (H and I)
5. Produce annual summary reports detailing survey effort, including distance surveyed, total count, participating entities, other observations, and considerations for future years
6. Maintain a database and/or spreadsheet of the results. This will help assist in understanding and assessing population viability

Prior to the 2015 dives, the group discussed using data from the CDFW-operated ARIS sonar camera to target survey dates, with the idea that survey dates will be conducted after the entire run has entered the river. Although this practice has not been implemented, comparing survey data to ARIS sonar counts can be one way to determine if trends in dive counts parallel the ARIS-observed run size. Dive counts would then be used as an index of adult summer-run steelhead population abundance and to assess in-stream distribution. If resources become available, comparing these data could be an effective way of truthing run size and dive observation.

This effort would not be possible without the generous assistance and participation from all volunteers and surveyors who dedicated time towards planning and implementing this survey and creating and editing this report to ensure safety and success for all involved. We would also like to acknowledge the private landowners and associated land managers who helped facilitate crucial access points in remote stretches of the river. Thank you all very much for being a critical part of this effort!