

Heenan Lake, Alpine County

2017 Angler Survey Box Creel Summary



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Introduction

Heenan Lake is located in Alpine County at an elevation of 7084 feet above mean sea level. The lake covers 129 acres and contains approximately 3000 acre feet of water. Heenan Lake has a maximum depth of 35 feet with an average depth of 19 feet. The lake is fed by Heenan Creek, which is a small year-round flowing creek with a drainage area of about 4 square miles. The lake is completely within the 1652 acre Heenan Lake Wildlife Area (Figure 1). Heenan Lake contains Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) (LCT), which provide the broodstock for the California Department of Fish and Wildlife's (CDFW) LCT stocking program, and offers a quality Heritage Trout recreational fishing opportunity.

Heenan Lake is opened to angling on Fridays, Saturdays, and Sundays from the Friday before Labor Day through the last Sunday in October, with angling hours from sunrise to sunset. Only artificial lures with barbless hooks may be used with a zero bag limit. In prior years, Heenan Lake was staffed with a CDFW scientific aide; however, the past two year the lake was unstaffed while Alpine County volunteers opened and closed the gate each day. The Amador Fly Anglers provided the portable toilets and the Heenan Lake Wildlife Area sign. The fishery was monitored using a voluntary angler creel survey.

Methods

Angler survey forms were provided in an angler survey box that is located near the kiosk at the top of the boat launch (Figure 1). This form is unique for Heenan Lake and instructs the angler to use one form per angler per angling day. The CDFW asked anglers to report the date and number of hours fished for each day; the primary gear (lure or fly) used to fish; the primary method (shore or wading, float tube, or boat) used to access the lake; the total number and size classes of LCT caught; and county or state of residence. Additionally, anglers were asked their level of satisfaction on a scale of -2 (least) to +2 (most) with their overall angling experience; size of fish; and number of fish. The back side of the form can be used for comments.

Results

Heenan Lake was open to angling over nine weekends for a total of 27 angling days. However, Highway 89 to Heenan Lake was closed due to the Slinkard Fire on September 1, 2, and 3, 2017 (opening weekend) resulting in zero angler responses for that weekend and on September 22, 2017 due to inclement weather, also resulting in zero responses on that day (Table 1). The greatest number of respondents occurred during the second weekend (September 8 through September 10, 2017), when 38

anglers responded to the survey. The last weekend of the season (October 27 through October 29, 2017) resulted in the second highest number of returned survey forms, with 31 respondents while the fifth weekend resulted in 30 respondents. In terms of single day survey totals, the greatest number of responses (18) occurred on September 9 and October 28, 2017, while the least (1) occurred on October 30, 2017 (the last day).

Overall, a total 186 anglers responded to the survey, reporting 1202 hours of angling and landing 753 LCT. The average trip duration was 6.5 hours per angler. Anglers reported an average catch rate of 0.6 LCT per hour with an average of 4.0 LCT per angler (Table 1). The greatest catch rates of 1.0 LCT per hour and 6.5 LCT per angler occurred on September 8, 2017, the first day anglers could get to the lake. These 13 anglers spent 84.0 hours fishing (average 6.5 hours) and landing 84 LCT. However, the greatest number of LCT landed (111) occurred on September 9, 2017 (the second day anglers could access the lake). That day, 18 anglers fished for 120.5 hours (average 6.7 hours), producing catch rates of 0.9 LCT per hour and 6.2 LCT per angler. The least number of LCT landed (zero) occurred on September 17, 2017, the sixth day of fishing. These two anglers fished for 9.0 hours (average 4.5 hours per angler), producing catch rates of 0.0 LCT per hour and 0.0 LCT per angler; the lowest during the season.

Fly anglers were the largest group of anglers fishing Heenan Lake during the 2017 season. A total of 130 anglers reported using flies as their gear choice (Table 2). Fly anglers reported 850.5 hours fishing, landing 507 LCT and averaging 6.5 fishing hours per angler. Fly anglers reported slightly lower LCT catch per hour of 0.6 and lower LCT catch per angler of 3.9. By comparison, lure anglers reported 0.7 LCT per hour and catch rate of 4.5 LCT per angler. The 53 lure anglers fished for 331.5 hours, landing 237 LCT, while fishing for an average of 6.3 hours per angler (Table 2).

A total of 111 anglers reported using float tubes as their fishing method of choice. Float tubers fished for a total of 752.5 hours and landed 484 LCT. These anglers reported catch rates of 0.6 LCT per hour and 4.4 LCT per angler. Float-tubing anglers fished for an average of 6.8 hours per angler. Another 51 anglers reported boats as their fishing method of choice. Boat anglers fished for 300.0 hours and landed 195 LCT. These anglers reported catch rates of 0.7 LCT per hour and 3.8 LCT per angler. Boat anglers fished for an average of 5.9 hours per angler.

Collectively, anglers who replied to the survey reported landing at least one LCT in each size class during the 2017 season. The greatest number of LCT landed (195) was reported in the 18.0 to 19.9 inch size class (25.9%), followed by 179 in the 20.0-21.9 inch size class (23.8%), and 126 in the 16.0 to 17.9 inch size class (16.7%; Table 4). Overall, 61% of all LCT landed were reported to be greater than or equal to 18.0 in. A length frequency histogram of the sizes of LCT landed is presented in Figure 2.

In addition to California, anglers reported traveling from the state of Nevada during the 2017 angling season. A total of 164 (88%) anglers reported California as their primary state of residence, while another 11 (six percent) of anglers reported traveling from Nevada (Table 5). A total of 11 (six percent) anglers did not respond to their state of primary residence. Of the California respondents, 40 (21.5% of the total respondents) reported their primary residence as El Dorado County. El Dorado County was followed by Sacramento County with 31 (16.7% of the total respondents), Contra Costa County with 16 (8.6% of the total respondents) and Calaveras County with 11 (5.9% of the total respondents) (Table 5 and Figure 3).

Overall, anglers reported positive satisfaction with their angling day at Heenan Lake during the 2017 season. Anglers were most satisfied with the sizes of LCT landed, with an average response of +1.22 (Table 7). Of total respondents, 131 (70.4%) responded positively (+1 or +2) regarding satisfaction with LCT size, compared to 30 (16.1%) who responded neutral or negatively (0, -1, or -2) (Tables 7). The number of anglers who did not respond (DNA) to satisfaction with size (25; 13.4%) was relatively high. Anglers responded positively, but less so with their satisfaction with the numbers of LCT landed, with an average response of 0.75 (Table 7). Of total respondents, 108 (58.1%) responded positively (1 or 2), compared to 59 (31.7%) who responded neutral or negatively (0, -1, or -2). As with size, 19 (10.2%) anglers did not respond to the question regarding number of LCT landed (Tables 7). Anglers were generally satisfied with their overall angling experience for the day, with an average response of 1.05. Of total respondents, 133 (71.5%) anglers responded positively (+1 or +2), compared to 39 (21.0%) who responded neutral or negatively (0, -1, or -2) with their overall angling experience. Of total respondents, 14 (7.5%) did not respond to their satisfaction with their overall angling experience.

Discussion

Heenan Lake continues to be a popular fishing destination even though the number of respondents to the survey was less than in previous years (Mamola 2015 and Hanson 2017). The 186 responses were significantly lower than the 1984 through 2016 average (826; range 231 – 2472), and was lower than the 297 anglers fishing during the 2016 season. The low number of responses during the 2017 angling season (when compared with 2016) was likely affected by the closure of the Highway 89 due to fire during September 1 through 3, 2017 (opening weekend) and from inclement weather on September 22, 2017.

Generally, the opening weekends have been popular during past angling seasons. However, anglers could not fish the opening weekend due the Highway 89 closure. The greatest number of responses occurred during the second weekend (September 8-10, 2017) followed by the ninth weekend and then the fifth weekend. Catch rates for all three of these weekends were greater than or equal to the weekly catch rate averages.

When compared to other ASB surveys at other waters, the Heenan Lake voluntary survey receives a high number of responses during the angling seasons (Hickey 2013 and Ewing 2016). This high response rate relative to other waters may be because prior to the 2016 season Heenan Lake was staffed during the angling season. Anglers were required to check in and out during the first several seasons; therefore, the response was 100%. During the first 18 years (1984-2001) of angling at Heenan Lake, an average of 1125 anglers responded to the survey compared to an average of 450 anglers over the last 16 (2002-2017) years (Mamola 2015). The 2016 and 2017 average response rate has declined even further to 242 responses. The 2017 response rate may have in part been the lowest on record due to the lack of staffing the fishery, and to the road closure and weather conditions. The 2017 angling season was the second year the Department did not staff the fishery. However, a decline in the number of anglers fishing in California could be a contributing factor in a decline in anglers fishing Heenan Lake.

CDFW staffing of Heenan Lake not only encourages a higher ASB response rate but also compliance with angling and Heenan Lake Wildlife Area regulations. Although the 2017 season was not staffed, many anglers still responded to the survey. These high responses enable CDFW to track long-term trends of the Heenan Lake fishery. Maintaining the high number of responses is important to help guide future management decisions for the Heenan Lake fishery and broodstock population. Therefore, it is recommended that:

1. Continue the creel survey through the use of the ASB to monitor the fishery.
2. In the absence of every day staffing, include randomly staffed creel surveys during the season, in an effort to maintain high response rates to guide management of the quality fishery.
3. Continue to inform anglers of the ASB survey's importance for effective management of the Heenan Lake fishery

References

Ewing, B. 2016. Red Lake, Alpine County 2011-2015 Angler Survey Box Analysis. California Department of Fish and Wildlife. Unpublished.

Hanson, J. 2017. 2017 Heenan Lake Angler Survey Box Creel. California Department of Fish and Wildlife. Unpublished.

Hickey, K. 2013. Milton Lake, Nevada County 2003-2012 Angler survey Box Analysis with a 2012 Creel Survey. California Department of Fish and Wildlife. Unpublished.

Mamola, M. 2015. Heenan Lake 2014 Creel. California Department of Fish and Wildlife. Unpublished

Table 1. The number of angler responses, total daily fishing hours, and total daily catch of Lahontan cutthroat trout land each day and totals for 2017 fishing season in Heenan Lake, Alpine County, CA. Catch statistics include the daily and season total for the catch per angler, catch per angler, and hours fished per angler.

Date	Number of Responses	Hours Fished	LCT Landed	Catch per Hour	Catch per Angler	Hours per Angler
09/01/17						
09/02/17						
09/03/17						
09/08/17	13	84.0	84	1.0	6.5	6.5
09/09/17	18	120.5	111	0.9	6.2	6.7
09/10/17	7	47.0	21	0.4	3.0	6.7
09/15/17	14	89.0	37	0.4	2.6	6.4
09/16/17	7	51.0	21	0.4	3.0	7.3
09/17/17	2	9.0		0.0	0.0	4.5
09/22/17						
09/23/17	9	63.5	16	0.3	1.8	7.1
09/24/17	5	27.0	19	0.7	3.8	5.4
09/29/17	15	97.0	69	0.7	4.6	6.5
09/30/17	9	54.0	29	0.5	3.2	6.0
10/01/17	6	42.0	19	0.5	3.2	7.0
10/06/17	14	82.0	50	0.6	3.6	5.9
10/07/17	6	33.0	12	0.4	2.0	5.5
10/08/17	2	7.5	4	0.5	2.0	3.8
10/13/17	9	71.0	44	0.6	4.9	7.9
10/14/17	3	11.0	7	0.6	2.3	3.7
10/15/17	4	34.5	21	0.6	5.3	8.6
10/20/17	2	17.0	4	0.2	2.0	8.5
10/21/17	4	23.5	6	0.3	1.5	5.9
10/22/17	6	37.5	29	0.8	4.8	6.3
10/27/17	12	89.5	73	0.8	6.1	7.5
10/28/17	18	106.5	76	0.7	4.2	5.9
10/29/17	1	5.0	1	0.2	1.0	5.0
2017 Total	186	1202	753	0.6	4.0	6.5

Table 2. The number of responses, hours fished, and number of Lahontan cutthroat landed by gear type used during the 2017 Heenan Lake, Alpine County, CA, fishing season. Catch statistics include the catch per hour, catch per angler, and hour fished per angler.

Gear Type	Number of Responses	Hours Fished	LCT Landed	Catch per Hour	Catch per Angler	Hours per Angler
DNA	1	4	1	0.3	1.0	4.0
Fly	130	850.5	507	0.6	3.9	6.5
Lure	53	331.5	237	0.7	4.5	6.3
Lure/Fly	2	16	8	0.5	4.0	8.0
Total	186	1202	753	0.6	4.0	6.5

Table 3. The number of responses, hours fished, and number of Lahontan cutthroat landed by method type used during the 2017 Heenan Lake, Alpine County, CA, fishing season. Catch statistics include the catch per hour, catch per angler, and hour fished per angler.

Method	Number of Responses	Hours Fished	LCT Landed	Catch per Hour	Catch per Angler	Hours per Angler
Boat	51	300	195	0.7	3.8	5.9
Float Tube	111	752.5	484	0.6	4.4	6.8
Shore or Wading	19	111.5	53	0.5	2.8	5.9
Multiple	3	25	11	0.4	3.7	8.3
DNA	2	13	10	0.8	5.0	6.5
Total	186	1202	753	0.6	4.0	6.5

Table 4. The number and percentage of Lahontan cutthroat trout landed in each size class during the 2017 Heenan Lake, Alpine County, CA, fishing season.

	< 6"	6.0"-7.9"	8.0"-9.9"	10.0"-11.9"	12.0"-13.9"	14.0"-15.9"	16.0"-17.9"	18.0"-19.9"	20.0"-21.9"	22.0"-23.9"	24.0"-25.9"	≥ 26.0"
Number	2	3	6	21	28	74	126	195	179	94	18	7
Percent	0.3	0.4	0.8	2.8	3.7	9.8	16.7	25.9	23.8	12.5	2.4	0.9

Table 5. The primary state of residence, number, and percent of anglers responding to the survey for the 2017 fishing season in Heenan Lake, Alpine County, CA .

State	Number of Responses	Percent of Responses
California	164	88
DNA	11	6
Nevada	11	6
Total	186	100

Table 6. A list of California counties which the anglers listed as their primary residence during the 2017 fishing season in Heenan Lake, Alpine County, CA.

California County	Number of Responses	Percent of Anglers
Alameda	5	2.7
Alpine	4	2.2
Amador	1	0.5
Calaveras	11	5.9
Contra Costa	16	8.6
El Dorado	40	21.5
Fresno	2	1.1
Inyo	2	1.1
Los Angeles	2	1.1
Mendocino	2	1.1
Nevada	4	2.2
Orange	1	0.5
Placer	5	2.7
Riverside	1	0.5
Sacramento	31	16.7
San Bernardino	7	3.8
San Diego	1	0.5
San Joaquin	4	2.2
San Mateo	2	1.1
Santa Clara	2	1.1
Santa Cruz	2	1.1
Sonoma	6	3.2
Stanislaus	7	3.8
Tehama	1	0.5
Tuolumne	2	1.1
Yolo	3	1.6

Table 7. The number of responses from each angler to their satisfaction with the overall angling day, size of fish landed, and the number of Lahontan cutthroat trout landed during 2017 angling season in Heenan Lake, Alpine County, CA. Heenan Lake was opened to angling on Fridays, Saturdays, and Sundays from September 1, through October 29, 2017.

	Response					Did not Respond	Total	Average
	-2	-1	0	1	2			
Number	17	13	29	44	64	19	186	0.75
Overall	9	14	16	54	79	14	186	1.05
Size	7	7	16	44	87	25	186	1.22

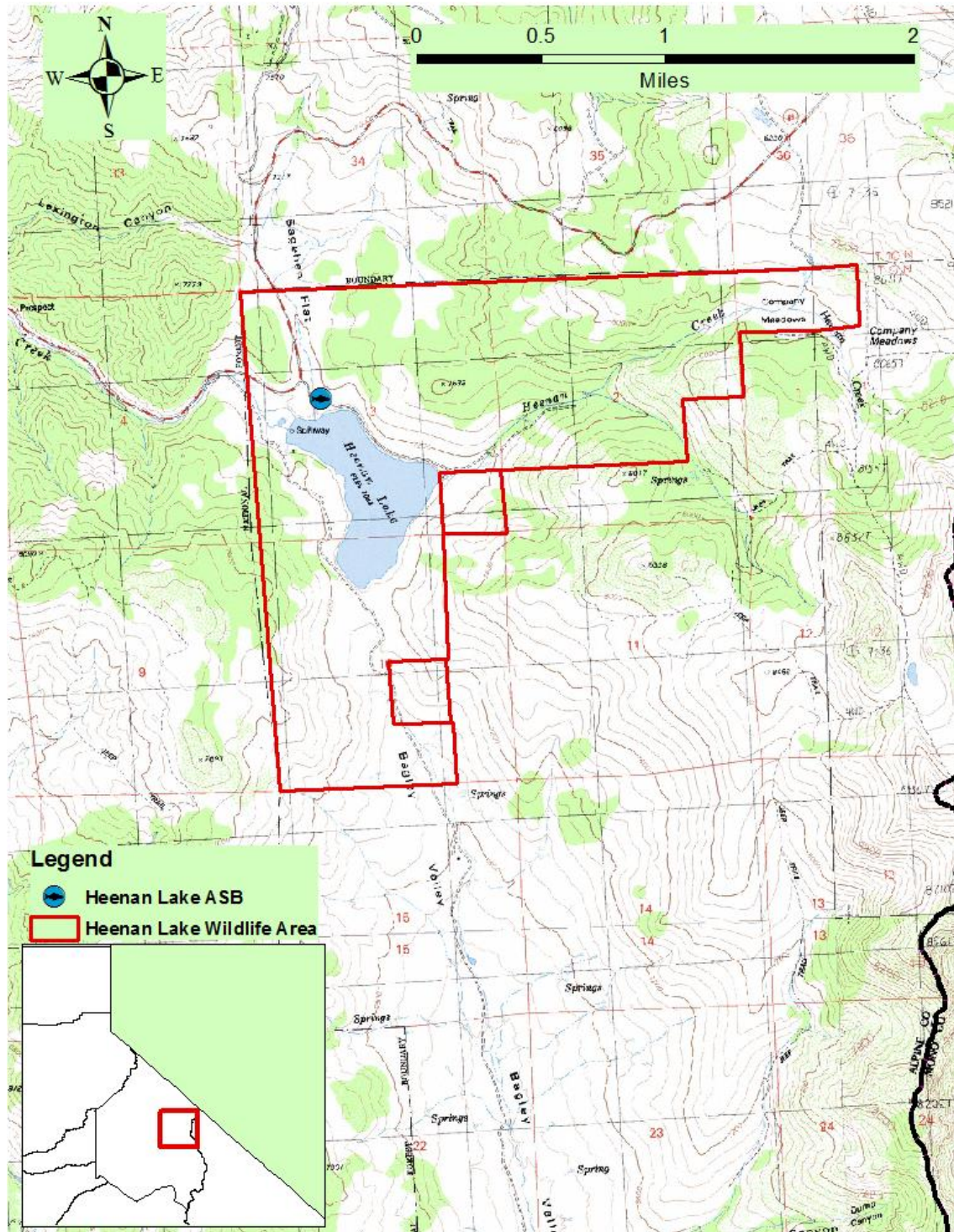


Figure 1. Map depicting the Heenan Lake, the Wildlife Area, and the Angler Survey Box (ASB) location, Alpine County, CA.

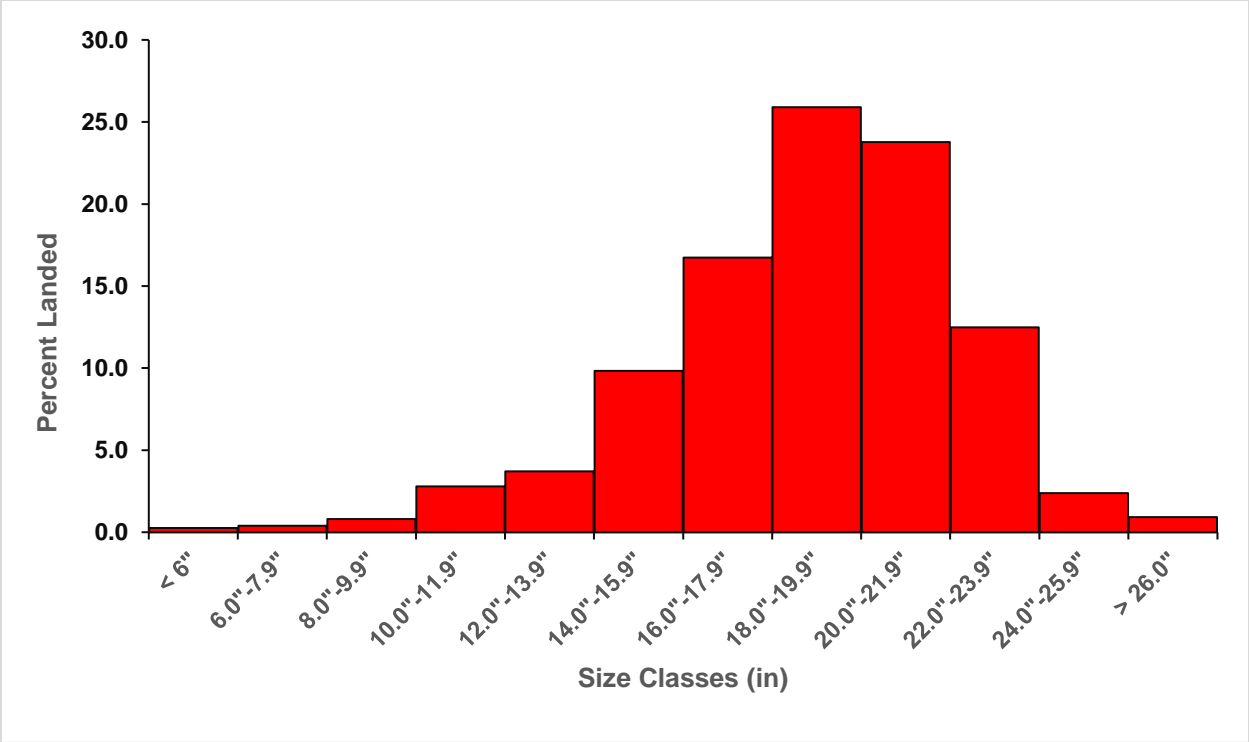


Figure 2. Length frequency histogram for the percentage of Lahontan cutthroat trout landed in each size class during the 2017 Heenan Lake, Alpine County CA, fishing season.

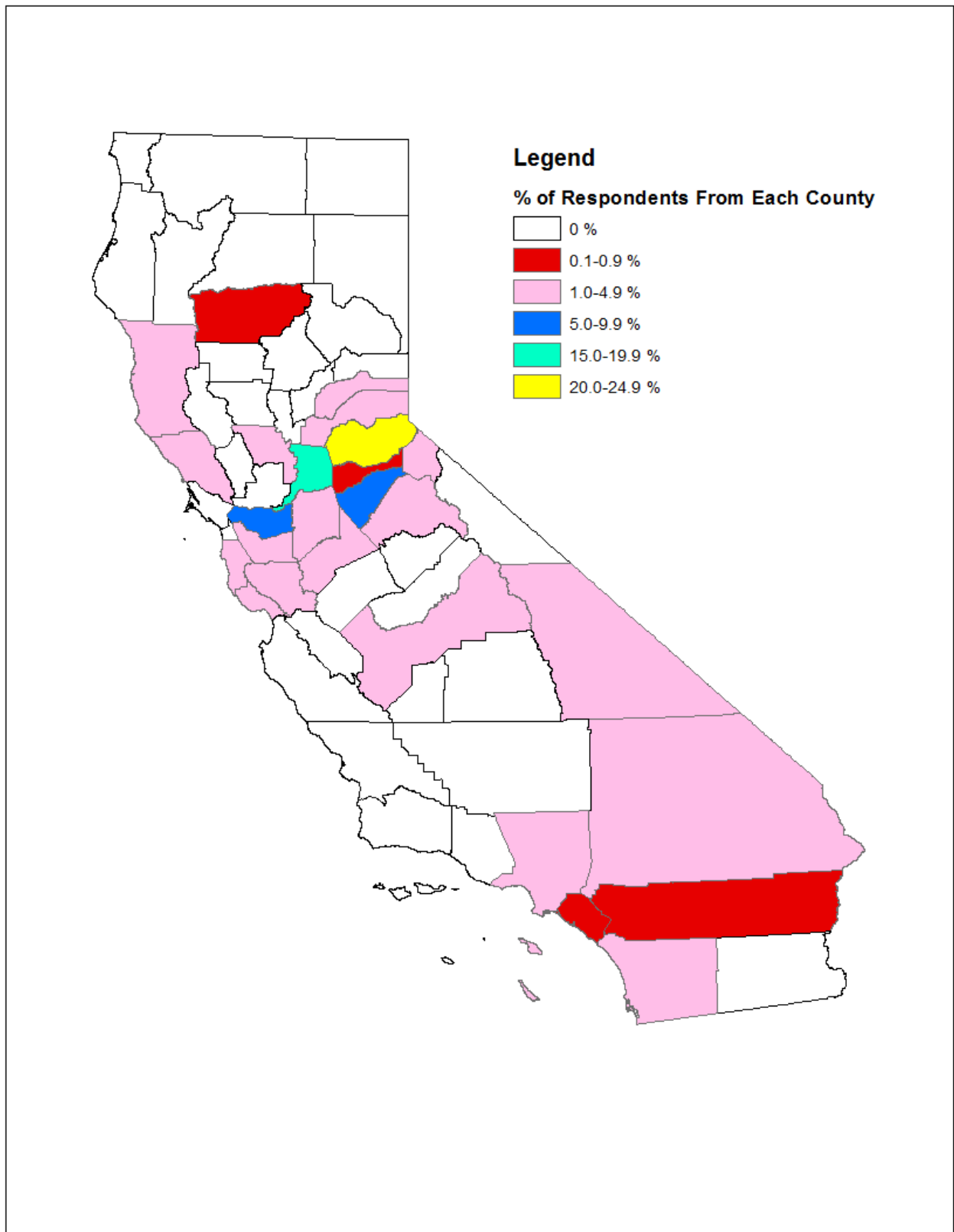


Figure 3. Map of California showing the percentage and county of primary residence of anglers fishing Heenan Lake, Alpine County, CA during the 2017 fishing season.