



**REGIONAL AND ECONOMIC SCIENCES**  
Applied Policy Studies for the Public and Private Sectors

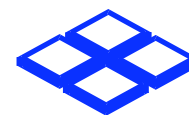
**CONTINGENT USE OF FISHING RESOURCES IN THE  
EL DORADO IRRIGATION DISTRICT**

*Prepared for the El Dorado Irrigation District*

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Regional and Economic Sciences



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# SECTION 1 INTRODUCTION

This is a summary report on a subset of questions about fishing that were included in a telephone survey about the impacts of varying water levels on recreational use around four lakes (Aloha, Caples, Echo, and Silver) in the El Dorado Irrigation District (EID) Project 184 area, which is located within the El Dorado National Forest in California.<sup>1</sup>

Regional and Economic Sciences (RES) included these questions on fishing in the EID survey at the request of the California Department of Fish and Game. The sampling frame for this telephone survey was derived from those interviewed face-to-face around the four lakes between July 4 and September 2, 2002. RES sent a color brochure to those in the face-to-face survey who volunteered their addresses and phone numbers for the follow-up telephone survey. The brochure showed each of the four lakes at low, medium, and high water levels. Phone calls to these volunteers were completed between August 30 and September 19, 2002, and produced a sample of 357 respondents.

The telephone survey contained 350 questions including three questions on fishing that could have been repeated up to 12 times (one time for low, medium, and high water levels at each of the four lakes). These three questions about fishing are the subject of this report and consist of the following:

1. ***Would you fish there (at the specified lake)?***                      **Yes    No**
2. ***Would the quality of fishing attract you as shown in the photo?***                      **Yes    No**
3. ***How would you rate the quality of the fishing experience if the water level were as shown in the photo:***    **Poor   Fair   Good   Excellent**

Our telephone interviewers asked survey respondents these questions as they went through the twelve photos showing the four lakes at three different water levels. This report examines the impact of varying water levels on the answers to the above questions.

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<sup>1</sup> For the main report on that survey, see "Contingent Use Analysis of Four Lakes in the El Dorado Irrigation District" at the following website: [http://www.project184.com/doc\\_lib/doc\\_lib.html](http://www.project184.com/doc_lib/doc_lib.html)

**Readers' Caution**

NOTE: When reading this report, please keep in mind that the number of respondents answering the questions will vary because of skip patterns. For example, if a respondent's answer indicates that he/she would go to another location because the water is too low for the types of activities that he/she enjoys at medium water levels, we did not ask him/her questions about the lake at low water levels. In some cases, when asked about water levels, respondents said they did not know even after our interviewers asked the question a second time in the same way. In those cases, we skipped to questions about another topic.

## SECTION 2 FISHING AT LAKE ALOHA

### High Water Levels

Photos 1, 2, and 3 show Lake Aloha at high, medium, and low water levels respectively. The first question asked if the respondent would fish at Lake Aloha, and 41.6% indicated they would fish there (Table 2.1). Table 2.2 shows that 65.2% of the respondents indicated they were attracted to the lake for fishing as they examined Photo 1 in the brochure, which shows Lake Aloha at high water levels.

**Table 2.1. Would you fish in Lake Aloha at high water levels?**

	Freq.	Percent
No	174	58.39
Yes	124	41.61
Total	298	100.00

**Table 2.2. Would the fishing quality attract you to Lake Aloha at high water levels?**

	Freq.	Percent
Yes	60	65.22
No	32	34.78
Total	92	100.00

Table 2.3 show that 57.4% of the respondents rated the fishing as “good to excellent.” This evaluation is based on Photo 1, which shows the lake at a high water level.

**Table 2.3. Evaluation of fishing at Lake Aloha at high water levels.**

Please rate the quality of your fishing experience at Lake Aloha.	Freq.	Percent
Poor	9	13.24
Fair	20	29.41
Good	31	45.59
Excellent	8	11.76
Total	68	100.00

## Medium Water Levels

Photo 2 shows the lake at a medium water level. The responses in Table 2.4 indicate that 45.45% would fish at the lake if it were at this level. Table 2.5 shows that 61.4% indicated that the quality of fishing would attract them at the medium water level shown in Photo 2.

**Table 2.4. Would you fish at Lake Aloha at medium water levels?**

	Freq.	Percent
No	162	54.55
Yes	135	45.45
Total	297	100.00

**Table 2.5. Would the fishing quality attract you to Lake Aloha at medium water levels?**

	Freq.	Percent
Yes	70	61.40
No	44	38.60
Total	114	100.00

There is a drop in the perceived quality of fishing. Only 24.8% of the 113 respondents found the potential fishing there “good or excellent” at the medium water level (Table 2.6).

**Table 2.6. Evaluation of fishing at Lake Aloha at medium water level.**

Please rate the quality of your fishing experience at Lake Aloha.	Freq.	Percent
Poor	17	15.04
Fair	68	60.18
Good	24	21.24
Excellent	4	3.54
Total	113	100.00

## Low Water Levels

Table 2.7 shows that only 22.3% would fish in the lake when it is at the lowest level (Photo 3). Table 2.8 indicates that 56.3% of the respondents would be attracted by the quality of fishing at the lake when it is at its lowest level. Notice that the sample has dropped considerably as 122 (77.7%) of the respondents indicated they would not be attracted to the fishing there at the lowest water level (Table 2.8).

**Table 2.7. Would you fish at Lake Aloha at low water level?**

	Freq.	Percent
No	122	77.71
Yes	35	22.29
Total	157	100.00

**Table 2.8. Would the fishing quality attract you to Lake Aloha at low water levels?**

	Freq.	Percent
Yes	18	56.25
No	14	43.75
Total	32	100.00

Table 2.9 shows that only 30.3% of those remaining respondents evaluate the quality of fishing at Lake Aloha to be “good to excellent” at a low water level

**Table 2.9. Evaluation of fishing at Lake Aloha at low water levels.**

Please rate the quality of your fishing experience at Lake Aloha.	Freq.	Percent
Poor	10	30.30
Fair	13	39.39
Good	8	24.24
Excellent	2	6.06
Total	33	100.00

## SECTION 3 FISHING AT CAPLES LAKE

### High Water Levels

Photos 4, 5, and 6 show Caples Lake at high, medium, and low water levels respectively. The first question asked if the respondent would fish in Caples Lake at its highest water level; 71.3% of the 313 respondents indicated they would (Table 3.1). Table 3.2 shows slightly more than 98% of those who would fish as Caples Lake indicated they would be attracted to fishing there at a high water level.

**Table 3.1. Would you fish in Caples Lake at high water levels?**

	Freq.	Percent
No	90	28.75
Yes	223	71.25
Total	313	100.00

**Table 3.2. Would the fishing quality attract you to Caples Lake at high water levels?**

	Freq.	Percent
Yes	215	98.62
No	3	1.38
Total	218	100.00

Table 3.3 shows the distribution of how the respondents evaluated the lake for fishing in terms of its highest water level. Notice that of the 209 respondents who said that the quality of fishing would attract them to Caples Lake, 91.4% indicated the fishing would be “good to excellent” at high water levels.

**Table 3.3. Evaluation of fishing at Caples Lake at high water levels.**

Please rate the quality of your fishing experience at Caples Lake.	Freq.	Percent
Poor	5	2.39
Fair	13	6.22
Good	113	54.07
Excellent	78	37.32
Total	209	100.00



## Medium Water Levels

The respondents were asked to look at Photo 5 showing Caples Lake at a medium water level. Almost 60% indicated they would fish at Caples Lake if it were at this level. Table 3.4 shows the distribution of the 302 respondents.

**Table 3.4.      *Would you fish at Caples Lake at medium water levels?***

	Freq.	Percent
No	122	40.40
Yes	180	59.60
Total	302	100.00

Although the total number of respondents drops to 170 in Table 3.5, 74.1% of those respondents who said they would fish at Caples Lake at medium water levels say the quality of fishing would still attract them to the lake at a medium water level. The number of respondents dropped from 302 (high water levels) to 170 (medium water levels) because 40.4% of the respondents indicated they would not fish at the lake if it were at a medium water level.

**Table 3.5.      *Would the fishing quality attract you to Caples Lake at medium water levels?***

	Freq.	Percent
Yes	126	74.12
No	44	25.88
Total	170	100.00

Table 3.6 shows that 50.9% of the 169 respondents evaluate the quality of fishing at Caples Lake as “good to excellent” at medium water levels.

**Table 3.6. Evaluation of fishing at Caples Lake at medium water levels.**

<b>Please rate the quality of your fishing experience at Caples Lake.</b>	<b>Freq.</b>	<b>Percent</b>
Poor	11	6.51
Fair	72	42.60
Good	69	40.83
Excellent	17	10.06
Total	169	100.00

## Low Water Levels

When the respondents were shown Photo 6 and asked if they would fish at Caples Lake when the water is at its lowest level, we find that, of the 209 respondents, 35.9% (75) indicated they would still fish there (Table 3.7).

**Table 3.7. Would you fish at Caples Lake at low water levels?**

	<b>Freq.</b>	<b>Percent</b>
No	134	64.11
Yes	75	35.89
Total	209	100.00

Table 3.8 shows that the attractiveness of the lake dropped when Photo 6 of Caples Lake is presented to the respondent. Of those 71 respondents who indicated they would still fish at Caples Lake, 50 (70.4%) indicated they would still be attracted by the quality of fishing.

**Table 3.8. Would the fishing quality attract you to Caples Lake at low water levels?**

	<b>Freq.</b>	<b>Percent</b>
Yes	50	70.42
No	21	29.58
Total	71	100.00

When asked about the quality of the fishing at the lowest water level, almost 39.1% (27) of the respondents evaluated the quality of fishing to be “good to excellent.” Table 3.9 shows that pattern. This estimate is based on a small sample of 69 remaining anglers.

**Table 3.9. Evaluation of fishing at Caples Lake at low water levels.**

<b>Please rate the quality of your fishing experience at Caples Lake.</b>	<b>Freq.</b>	<b>Percent</b>
Poor	16	23.19
Fair	26	37.68
Good	19	27.54
Excellent	8	11.59
Total	69	100.00

## SECTION 4 FISHING AT ECHO LAKE

### High Water Levels

Photos 7, 8, and 9 show Echo Lake at high, medium, and low water levels respectively. Table 4.1 shows 66.6% of respondents would be willing to fish at the Echo Lake when it is at its highest water level.

**Table 4.1.** *Would you fish in Echo Lake at high water levels?*

	Freq.	Percent
No	95	33.45
Yes	189	66.55
Total	284	100.00

Slightly more than 97% of the 188 respondents who said they would fish at Echo Lake stated they would be attracted to the quality of fishing at Echo Lake at its highest water level (Table 4.2).

**Table 4.2.** *Would the fishing quality attract you to Echo Lake at high water levels?*

	Freq.	Percent
Yes	183	97.34
No	5	2.66
Total	188	100.00

Most of the respondents who said they would fish at Echo Lake (89.3%) said the quality of fishing there would be “good to excellent” when the lake’s water level is at its highest (Table 4.3).

**Table 4.3. Evaluation of fishing at Echo Lake at high water levels.**

Please rate the quality of your fishing experience at Echo Lake.	Freq.	Percent
Poor	2	1.12
Fair	17	9.55
Good	84	47.19
Excellent	75	42.13
Total	178	100.00

## Medium Water Levels

When the respondents were shown Photo 8 and asked about fishing at Echo Lake at medium water levels, the responses indicated that a majority (63.2% of the 269) would do so (Table 4.4). Table 4.5 shows that 94.6%(158) of these respondents say the quality of fishing would attract them to the lake at medium water levels.

**Table 4.4. Would you fish at Echo Lake at medium water levels?**

	Freq.	Percent
No	99	36.80
Yes	170	63.20
Total	269	100.00

**Table 4.5. Would the fishing quality attract you to Echo Lake at medium water levels?**

	Freq.	Percent
Yes	158	94.61
No	9	5.39
Total	167	100.00

Table 4.6 shows the perceptions of respondents regarding the quality of their fishing experience at Echo Lake at medium water levels. A little over 66% of those who responded to the question indicated that the quality of fishing would be “good to excellent.”

**Table 4.6. Evaluation of fishing at Echo Lake at medium water levels.**

<b>Please rate the quality of your fishing experience at Echo Lake.</b>	<b>Freq.</b>	<b>Percent</b>
Poor	4	2.50
Fair	50	31.25
Good	87	54.38
Excellent	19	11.88
Total	160	100.00

## **Low Water Levels**

When the respondents were shown Photo 9 and asked about fishing at Echo Lake at its lowest water level, slightly more than 50% (123) of those who remained in the sample indicated they would fish at the lake (Table 4.7).

**Table 4.7. Would you fish at Echo Lake at low water levels?**

	<b>Freq.</b>	<b>Percent</b>
No	121	49.59
Yes	123	50.41
Total	244	100.00

Table 4.8 shows that 85.7% (102) of the respondents indicated the quality of fishing would still attract them to Echo Lake at its lowest water level.

**Table 4.8. Would the fishing quality attract you to Echo Lake at low water levels?**

	<b>Freq.</b>	<b>Percent</b>
Yes	102	85.71
No	17	14.29
Total	119	100.00

Table 4.9 indicates that 46.1% (53) of respondents say fishing is “good to excellent” when Echo Lake is at its lowest water level. This estimate is based on a sample of 115 respondents.

**Table 4.9. Evaluation of fishing at Echo Lake at low water levels.**

<b>Please rate the quality of your fishing experience at Echo Lake.</b>	<b>Freq.</b>	<b>Percent</b>
Poor	17	14.78
Fair	45	39.13
Good	45	39.13
Excellent	8	6.96
Total	115	100.00

## SECTION 5 FISHING AT SILVER LAKE

### High Water Levels

Photos 10, 11, and 12 show Silver Lake at high, medium, and low water levels respectively. Table 5.1 shows that 71.7% of the 307 respondents indicated they would fish Silver Lake at a high water level.

**Table 5.1. Would you fish in Silver Lake at high water levels?**

	Freq.	Percent
No	87	28.34
Yes	220	71.66
Total	307	100.00

When asked about the attractiveness of Silver Lake to fishing, the 213 (98.6%) respondents who said they would fish at a high water level said they would be attracted to the lake if it were at a high water level (Table 5.2).

**Table 5.2. Would the fishing quality attract you to Silver Lake at high water levels?**

	Freq.	Percent
Yes	213	98.61
No	3	1.39
Total	216	100.00

When the respondents were asked to evaluate the quality of fishing at the lake, 91.1% of the 212 respondents indicated that they felt it would be “good to excellent” at the high water level (Table 5.3).



**Table 5.3. Evaluation of fishing at Silver Lake at high water levels.**

Please rate the quality of your fishing experience at Silver Lake.	Freq.	Percent
Poor	2	0.94
Fair	19	8.96
Good	108	50.94
Excellent	83	39.15
Total	212	100.00

## Medium Water Levels

In Table 5.4, 60.3% of the 302 respondents indicated they would fish at Silver Lake if the lake were at a medium water level. Table 5.5 shows the pattern when the respondents were asked about the attractiveness of fishing when the lake is at a medium water level. Almost 89% would be attracted to the lake for fishing during medium water level conditions.

**Table 5.4. Would you fish at Silver Lake at medium water levels?**

	Freq.	Percent
No	120	39.74
Yes	182	60.26
Total	302	100.00

**Table 5.5. Would the fishing quality attract you to Silver Lake at medium water levels?**

	Freq.	Percent
Yes	151	88.82
No	19	11.18
Total	170	100.00

Notice that 120 respondents stated they would not fish at the lake if it were at the medium water level as shown in Photo 11, and 55 respondents indicated they did not know whether they would fish at the lake at this level. This reduces the following sample set to 170, and as Table 5.5 shows, 88.8% of those remaining indicated they would continue to be attracted to fishing there at medium water levels.

Table 5.6 shows that 61.0% (105) of respondents rate the quality of fishing as “good to excellent” when Silver Lake is at a medium water level. This estimate is based on a sample of 172 respondents.

**Table 5.6. Evaluation of fishing at Echo Lake at medium water levels.**

Please rate the quality of your fishing experience at Silver Lake.	Freq.	Percent
Poor	8	4.65
Fair	59	34.30
Good	88	51.16
Excellent	17	9.88
Total	172	100.00

## Low Water Levels

Table 5.7 shows that 64.7% (108) would be interested in fishing at Silver Lake when it is at a low water level.

**Table 5.7. Would you fish at Echo Lake at low water levels?**

	Freq.	Percent
No	59	35.33
Yes	108	64.67
Total	167	100.00

Table 5.8 shows how attractive the lake would be to people who say they would still fish the lake at a low water level. The table indicates that 74.8% of the 103 respondents would fish at Silver Lake.

**Table 5.8. Would the fishing quality attract you to Silver Lake at low water levels?**

	Freq.	Percent
Yes	77	74.76
No	26	25.24
Total	103	100.00

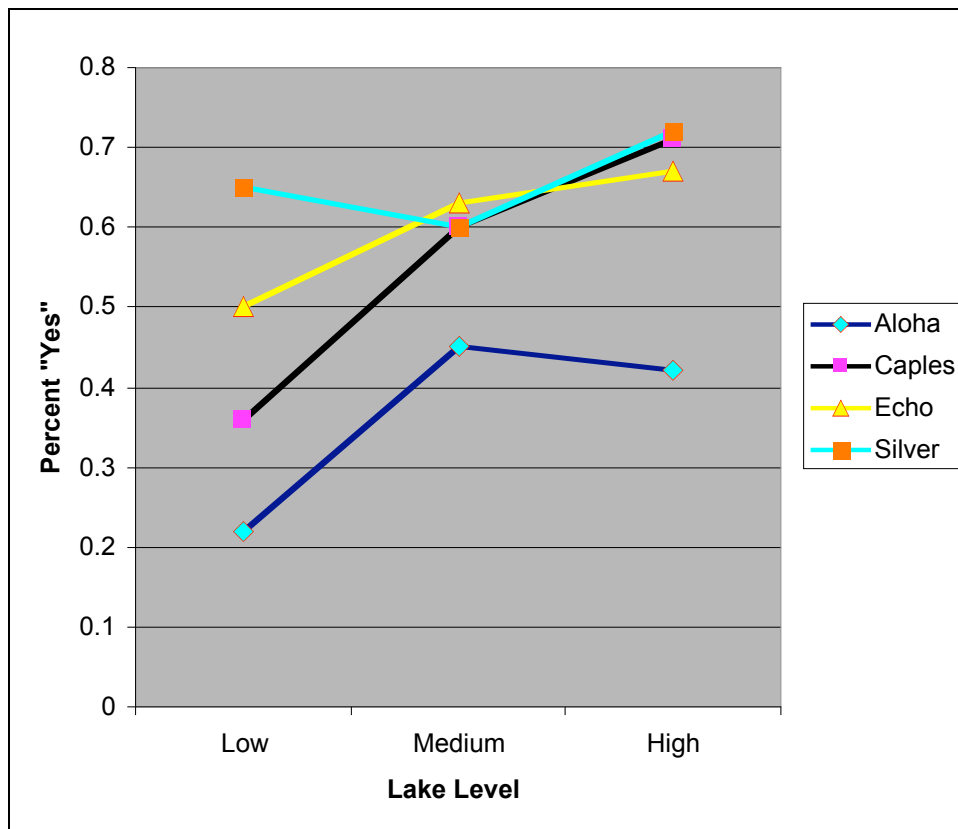
When asked about evaluating the quality of fishing at Silver Lake, 42.6% (43) of the 101 respondents rated it as “good to excellent” at a low water level (Table 5.9).

**Table 5.9. Evaluation of fishing at Silver Lake at low water levels.**

<b>Please rate the quality of your fishing experience at Silver Lake.</b>	<b>Freq.</b>	<b>Percent</b>
Poor	21	20.79
Fair	37	36.63
Good	36	35.64
Excellent	7	6.93
Total	101	100.00

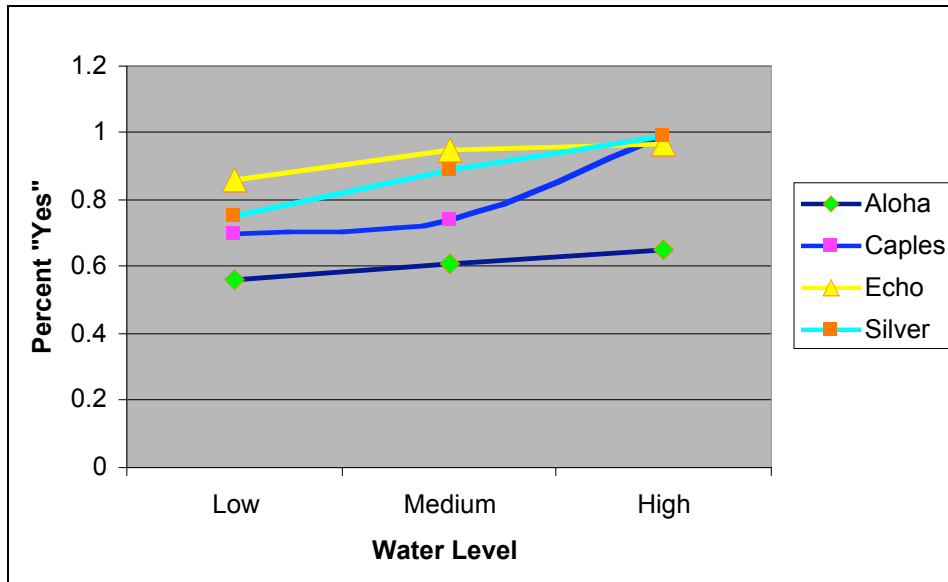
## SECTION 6 CONCLUSIONS

The percentage of respondents saying they would fish increases as the water levels rises from low to medium to high at all of the lakes with two exceptions. One exception occurs when Silver Lake rises from low to medium: the percentage saying they would fish decreases from 50% or less to about 70%. The other exception occurs when Lake Aloha rises from medium to high: the percentage saying they would fish decreases from 45% to 42% (Figure 1).



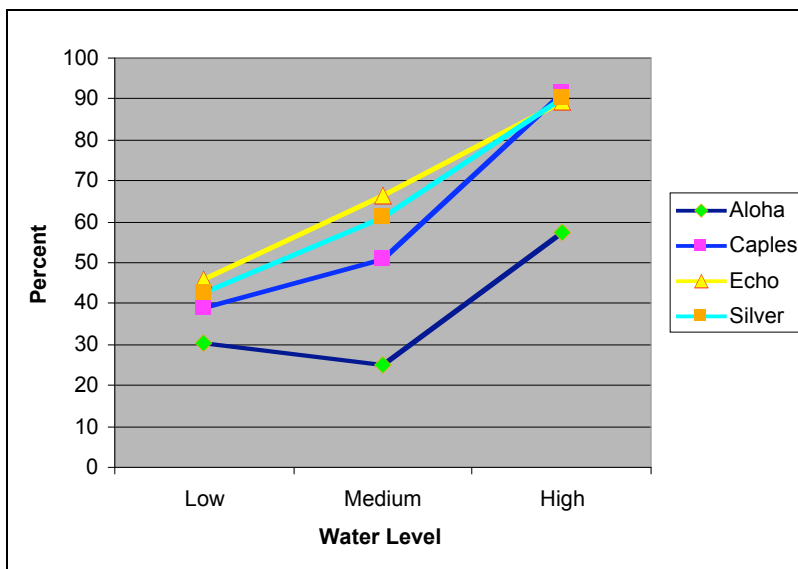
**Figure 1. Would you fish?**

As the water level rises, the percentage of respondents saying the quality of the fishing would attract them increases. Generally, at all water levels, Lake Aloha appears to be the least attractive while Echo is the most attractive for fishing. At the lowest levels, fewer than 60% of respondents find Lake Aloha attractive for fishing and more than 80% find Echo attractive. Almost 100% find Caples, Echo, and Silver attractive for fishing when the water level is high (Figure 2).



**Figure 2. Yes, quality of fishing would attract me.**

The percentage of respondents judging the fishing to be good or excellent increases as the water level rises at Caples, Echo, and Silver Lakes. However for Lake Aloha, the percentage judging the fishing to be good or excellent decreases from low to medium and then increases from medium to high (Figure 3).



**Figure 3. Fishing is good to excellent.**