

# Cruise Report for the

## Surface Waters Ambient Monitoring Program (SWAMP)

### Safe to Eat Workgroup (STEW)

#### Panel 4 of Long-Term Monitoring of Bass Lakes and Reservoirs in California

Sampling Dates: May 1, 2021-October 26, 2021

Prepared by the Marine Pollution Studies Laboratory (MPSL)  
at Moss Landing Marine Laboratories

## Introduction

This report describes the sampling activities in lakes and reservoirs identified for long-term monitoring of bioaccumulated contaminants as part of the Surface Water Ambient Monitoring Program (SWAMP) Safe to Eat Workgroup (STEW). Bioaccumulation monitoring is a very effective and an essential tool for evaluating current status and is the most cost-effective tool for evaluating trends for many contaminants.

Monitoring is being conducted every other year for ten (10) years in five (5) panels of lakes to allow coverage of the entire set of identified lakes and reservoirs. This report covers the Panel 4 sampling during the 2021 field season.

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## 1.0 Cruise Report

### 1.1 Objectives

The objectives were to collect 14 individual black bass over a designated size range (**Monitoring Plan**, Table 6) along with three prey species (25-100 mm, total length) at each location in the selected lakes. Other adult species were collected, if requested, at certain lakes for further analysis of other contaminants of concern or as an alternate if bass were not available.

### 1.2 MPSL sampling personnel

Wes Heim	Program Director
Autumn Bonnema	Associate Program Director
Gary Ichikawa	Project Assistant, Crew Lead
William Jakl	Project Associate, Crew Lead
Scot Lucas	Research Technician, Crew Lead
Chris Beebe	Research Technician
April Sjoboen Guimarães	Research Technician
Evan Mattiesen	Research Technician
Jon Goetzi	Project Assistant

### 1.3 Authorization to collect samples

MPSL personnel were contracted through San José State University Research Foundation (SJSURF) and the State Water Resources Control Board (SWRCB) to conduct the sample collection activities listed herein. The authorization to collect the samples as described is contained in the Monitoring Plan, including the description of the locations, number of samples and species necessary to be collected. Fish were collected under California Department of Fish and Wildlife specific use permit S-183470004-20339-001: State Water Board Non-Anadromous Monitoring.

### 1.4 Station selection

Based upon the random selection of the **2007-2008 Lakes and Reservoir Screening Study** and pre-sampling input from the regional boards, 33 lakes/reservoirs were selected (Panel 4) to resample in 2021 (Monitoring Plan, Table A). Ultimately, 28 lakes were sampled in 2021 (see **Discussion** for details).

### 1.5 Summary of types of samples authorized to be collected

Up to fourteen black bass per location within each lake were targeted. One to three prey species (10 fish/species; total length [TL] = 25 mm - 100 mm) per water body (or per location if more than one location in the lake was sampled) were also targeted. Fifteen lakes were designated for additional bottom species collection for PCB and/or OC analyses. Changes to the number of fish or addition of other additional species to be collected were requested at some

lakes by the Office of Environmental Health Hazard and Assessment (OEHHA) or the Regional Water Quality Control Boards on a lake-by-lake basis.

Upon collection, each fish was tagged with a unique ID that corresponded to the latitude/longitude where it was collected. Physical parameters collected for each individual fish included: weight, total length, fork length (if fork present), sex and presence of any abnormalities. Fish samples were stored on dry ice until returned to the laboratory facility. At MPSSL, samples were stored in a -20°C freezer until they were processed for authorized dissection and analysis.

Details on sampling and analysis, including the description of the locations, number of samples and species necessary to be collected at each lake can be found in the Monitoring Plan, specifically Tables 6 and 8.

## **1.6 Results**

Detailed fish catch summaries for each station can be found below. Maps of all stations are provided showing locations of successful fishing effort and unsuccessful fishing effort. Tables below each figure summarize the types, quantity, and sizes (total length [TL] in mm) of fish caught at each site. The **Table of Contents** indicates on which page collection details for each station can be found.

## Calero Reservoir (205CPR128)

**Latitude:** 37.17839

**Longitude:** -121.77731

**Collection Method:** Electroshock

**Dates of Collection:** 09/01/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
214	230	251	279	339	360	375	387	387	400
405	435	440	475						

Largemouth Bass Prey, TL (mm)									
56	57	58	60	63	64	68	68	71	74
78	79	81	85	89	90	91	92	96	99

Threadfin Shad Prey, TL (mm)									
60	61	62	64	64	65	65	65	68	68

Crappie Prey, TL (mm)	
69	82

**Comments:** Access to the site was from the public ramp at the Northeast end of the lake. Fish were collected using our electrofisher boat in somewhat windy conditions. The San Francisco Bay Regional Water Quality Control Board requested additional collection of young of the year (YOY) largemouth bass over a size range 50-100mm.

## Lake Chabot (Vallejo) (204PLC157)

**Latitude:** 38.13618

**Longitude:** -122.23565

**Collection Method:** Electroshock, Cast Net

**Dates of Collection:** 07/06/2021

**Samplers:** Chris Beebe, William Jakl



Largemouth Bass, TL (mm)									
202	249	265	274	309	344	359	369	371	395
399	415	445	495						

Bluegill, TL (mm)									
127	131	132	134	140	140	141	141	148	170

Largemouth Bass Prey, TL (mm)									
71	71	73	75	75	75	80	80	80	80

Golden Shiner Prey, TL (mm)									
67	70	70	70	72	73	74	78	79	80

**Comments:** Fish were collected primarily by electrofishing. The whole lake was shocked. A cast net was also used near the launch ramp to collect prey-sized largemouth bass.



## Lake Del Valle (204PDV169)

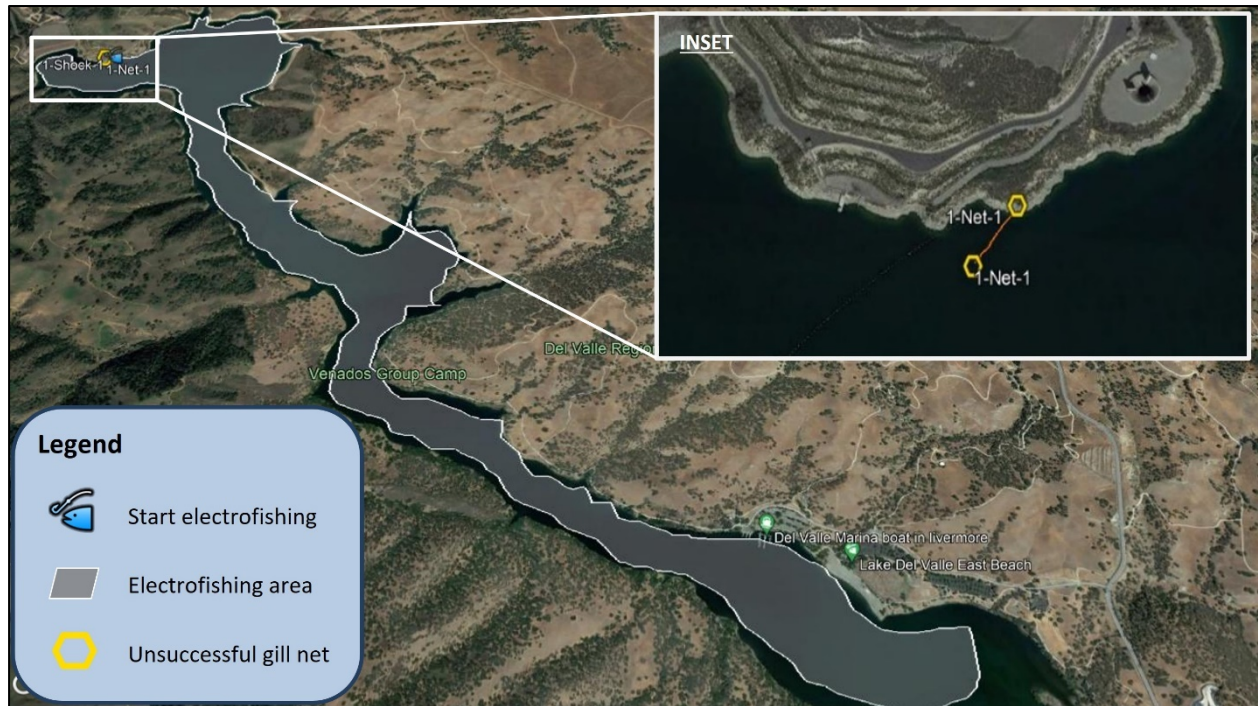
**Latitude:** 37.58954

**Longitude:** -121.71446

**Collection Method:** Electroshock, Gill Net

**Dates of Collection:** 08/10/2021

**Samplers:** Gary Ichikawa, Evan Mattiesen



Largemouth Bass, TL (mm)									
211	215	247	342	350	354	363	385	392	395
395	396	430	438						

Largemouth Bass Prey, TL (mm)									
43	44	56	59	61	64	69	71	73	98

Bluegill Prey, TL (mm)									
51	58	62	62	62	63	64	66	68	74

Mississippi Silverside Prey, TL (mm)									
62	66	68	68	69	70	70	70	72	72

**Comments:** All fish were collected by electrofishing. A gill net was also set prior to shocking and retrieved at the end but the net sampling was unsuccessful. Trout were requested but none were seen by either catch method. The entire lake was shocked.

## Lafayette Reservoir (207PLF001)

**Latitude:** 37.88237

**Longitude:** -122.14128

**Collection Method:** Electroshock

**Dates of Collection:** 09/15/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
245	249	268	285	310	310	348	371	379	397
405	419	460	488						

Largemouth Bass Prey, TL (mm)									
47	52	54	55	55	55	55	57	60	61
62	64	64	65	66	66	67	68	68	69

Crappie Prey, TL (mm)									
68	68	72	75	75	80	81	82	84	89

**Comments:** The lake was accessed by performing a challenging shore launch due to low water levels. Lake staff helped with the launch using a four-wheel drive vehicle and winch system. Fish were collected using our electrofisher boat, shocking the entire lake. The San Francisco Bay Regional Water Quality Control Board requested additional collection of YOY largemouth bass over a size range 50-100mm. Carp and catfish were also requested but none were seen.

## Lower Crystal Springs Reservoir (204TC0114)

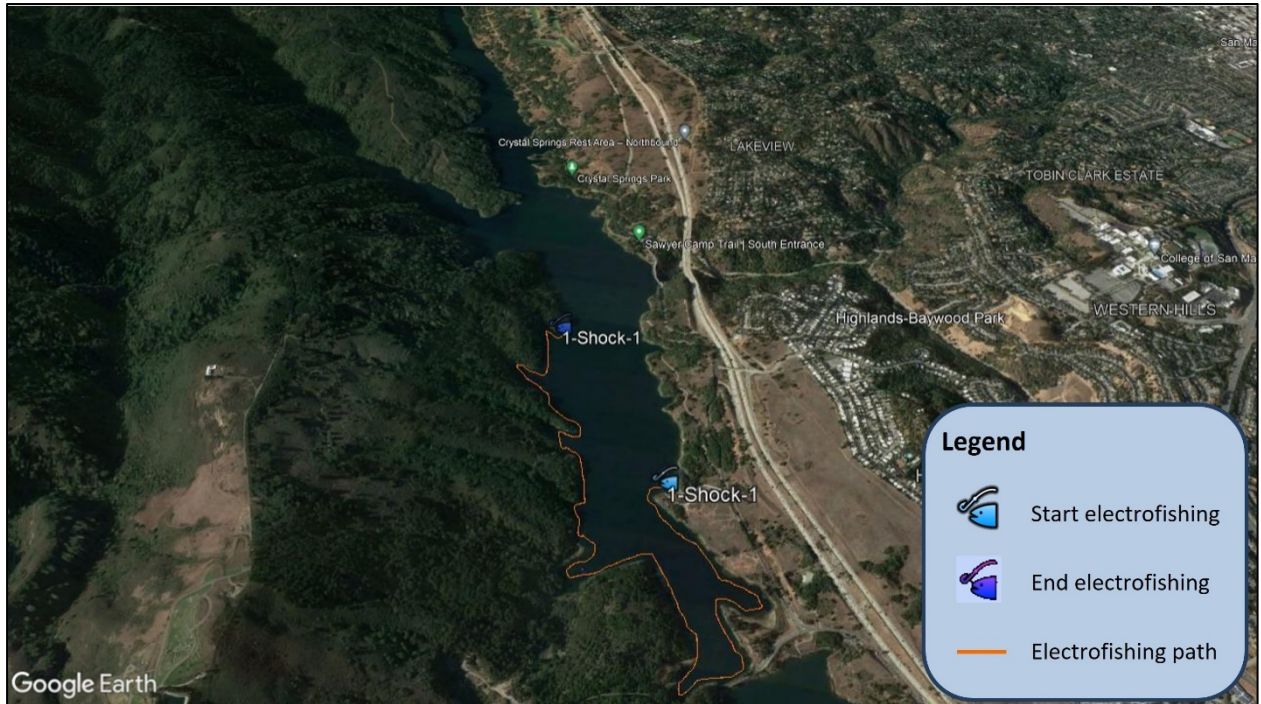
**Latitude:** 37.53133

**Longitude:** -122.3713

**Collection Method:** Electroshock

**Dates of Collection:** 09/13/2021

**Samplers:** Gary Ichikawa, Scot Lucas



Largemouth Bass, TL (mm)									
227	228	231	233	305	328	361	370	382	390
400	421	433	445						

Largemouth Bass Prey, TL (mm)									
52	54	59	60	62	68	71	77	77	78

Bluegill Prey, TL (mm)									
61	67	68	69	74	85	90	92	92	97

Sculpin Prey, TL (mm)									
35	35	39	44	46	55	62	71	78	95

**Comments:** Lower Crystal Springs is a non-public reservoir managed by San Francisco Water and access was granted by meeting with their staff on-site to let us in the access gate. Conditions were good and all requested fish were collected.



## Shadow Cliffs Reservoir (204PSC113)

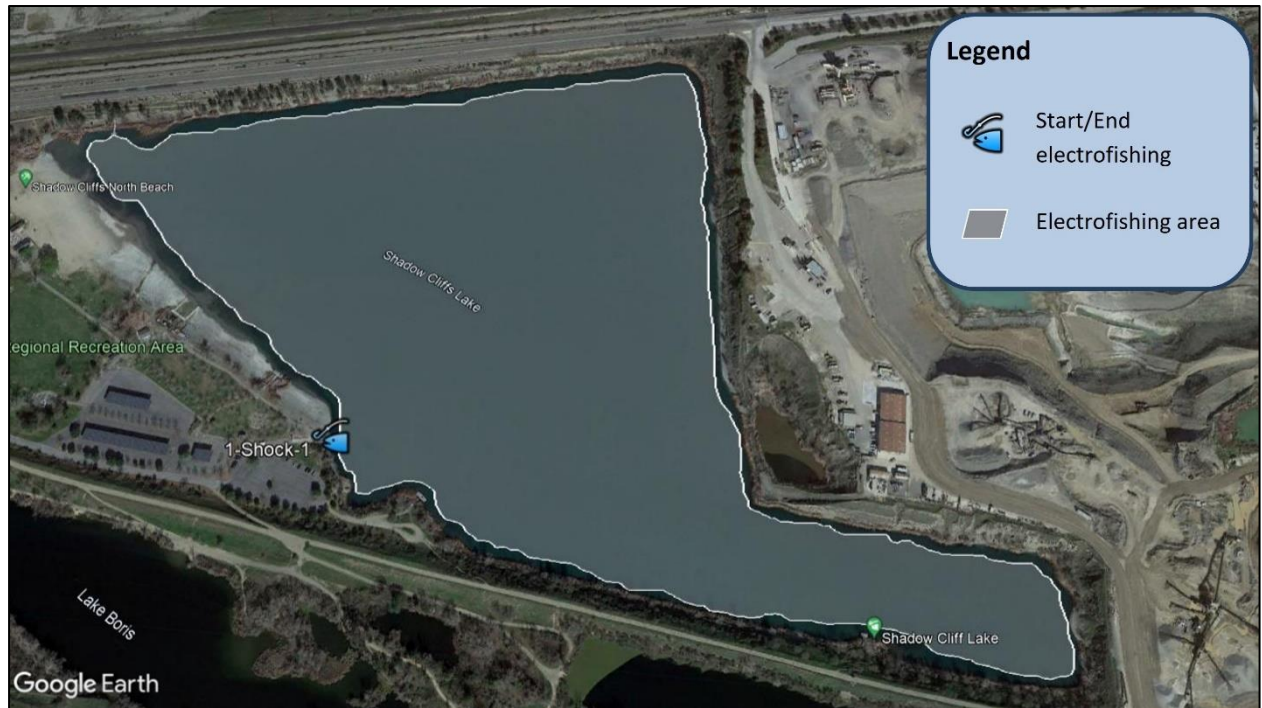
**Latitude:** 37.66963

**Longitude:** -121.83581

**Collection Method:** Electroshock

**Dates of Collection:** 05/11/2021, 5/12/2021

**Samplers:** Gary Ichikawa, Scot Lucas



Largemouth Bass, TL (mm)									
136	136	160	178	333	339	345	352	376	381
397	406	406	410	414	462				

Rainbow Trout, TL (mm)									
315	319	330	340	341	348	351	400	437	461

Channel Catfish, TL (mm)				
442	572	583	620	631

Sacramento Sucker Prey, TL (mm)									
36	36	36	37	37	39	39	41	42	43

Sculpin Prey, TL (mm)									
46	50	70	72	74	75	76	82	84	88

Green Sunfish Prey, TL (mm)									
52	57	58	60	62	62	63	74	97	98



Bluegill Prey, TL (mm)									
48	58	59	59	60	63	64	65	66	67

**Comments:** Shadow Cliffs, a single location reservoir, was sampled on multiple days to collect a larger suite of requested fish than most of the other small lakes from panel four. The San Francisco Bay Regional Water Quality Control Board requested additional collection of YOY largemouth bass over a size range 50-100mm. On both days the entire lake was shocked multiple times. We were unable to find the prey-size/juvenile largemouth bass (25-100 mm) nor any largemouth in the 200-300 mm size range. We did see “clouds” of very small (approximately 20 mm) largemouth bass which slipped through our net and were too small for this study. Adult bass, catfish and trout were successfully collected along with juvenile sunfish, bluegill, sculpin and suckers.

## Soulajule Lake (201PSL093)

**Latitude:** 38.14734

**Longitude:** -122.77787

**Collection Method:** Electroshock

**Dates of Collection:** 05/10/2021

**Samplers:** Gary Ichikawa, Scot Lucas



Largemouth Bass, TL (mm)									
239	247	279	303	311	316	316	320	323	328
331	409	437	472						

Brown Bullhead, TL (mm)									
204	235	243	275	280	341	362	364	364	368

Black Crappie, TL (mm)									
196	203	213	217	221	222	225	229	264	269

Bluegill Prey, TL (mm)									
54	60	63	65	66	66	66	67	70	75
106	110	111	112	149					

Sculpin Prey, TL (mm)									
62	64	65	66	68	69	70	72	80	85

Largemouth Bass Prey, TL (mm)				
103	106	112	115	132

**Comments:** Soulajule is a public access lake but closed to boating. Arrangements were made with Marin Water granting us access to launch our electrofisher boat from shore near the dam at the West end. The San Francisco Bay Regional Water Quality Control Board requested the collection of YOY largemouth bass over a size range 50-100mm (n=20) and another species of prey fish over a size range 50-100mm (n=30). No YOY largemouth bass (TL < 100 mm) were present here, therefore bluegill and sculpin prey fish were collected along with adult largemouth, bullhead and crappie. Prey-sized juveniles were not abundant and despite full effort, we were unable to collect all the requested number of extra fish.

## Loch Lomond Reservoir (304PLL184)

**Latitude:** 37.11024

**Longitude:** -122.06464

**Collection Method:** Electroshock

**Dates of Collection:** 09/08/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
240	244	283	298	325	331	338	345	375	403
403	417	432	455						

Largemouth Bass Prey, TL (mm)									
69	75	78	78	80	82	86	87	89	90

**Comments:** Loch Lomond is a drinking water reservoir for the city of Santa Cruz and only non-motorized or electric motor boats are allowed on the lake. Lake staff granted access and assisted us by pressure washing our boat prior to launching. Nearly the whole lake was shocked except for the area nearest the dam, which was roped off for ongoing construction projects. In addition to bass, 10 of catfish, carp or trout were requested but none were seen. Adult and prey-sized bass were collected.



## Belvedere Park Lake (412BLDPRK)

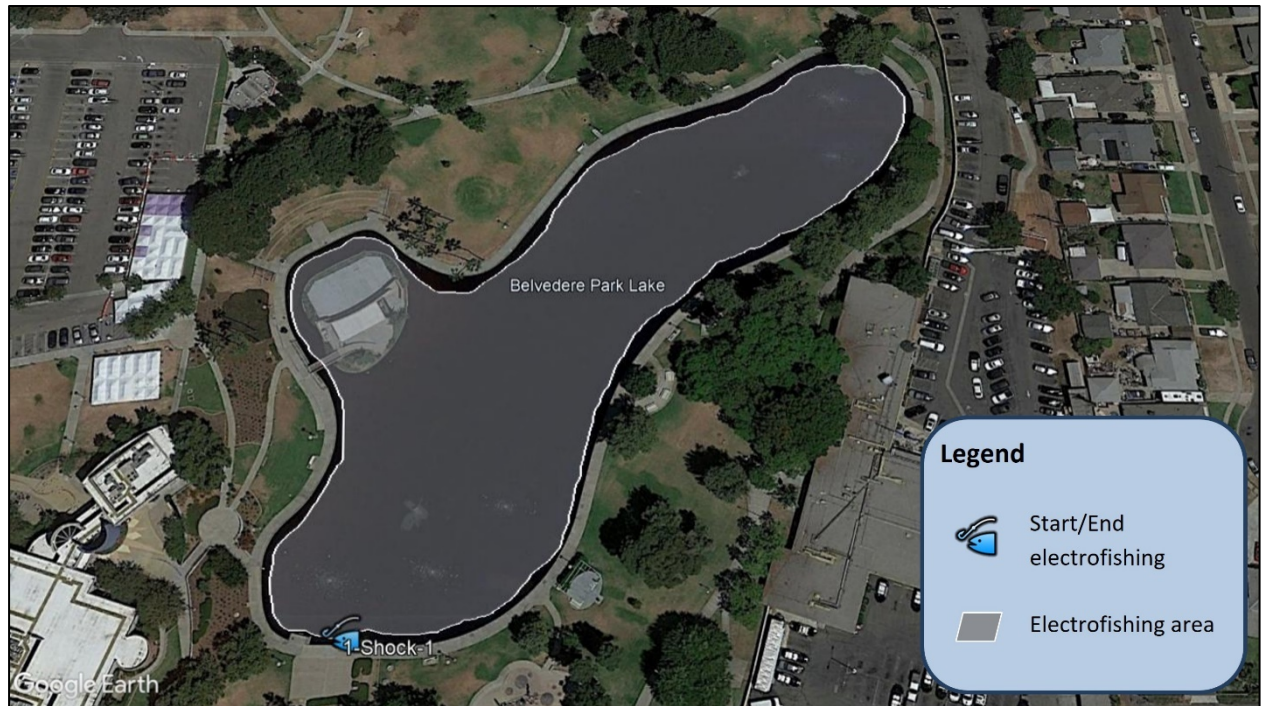
**Latitude:** 34.03445

**Longitude:** -118.15882

**Collection Method:** Electroshock

**Dates of Collection:** 08/24/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
230	235	259	260	310	314	330	330	340	361
395	408	530	555						

Common Carp, TL (mm)				
545	555	562	585	610

Largemouth Bass Prey, TL (mm)									
50	55	56	57	58	59	59	59	59	60

Threadfin Shad Prey, TL (mm)									
44	44	44	45	47	48	49	52	79	85

**Comments:** Belvedere Park is an urban lake which was accessed from a small concrete ramp at the Southeast end. The whole lake was shocked multiple times. In addition to bass and carp, 10 of catfish or trout were requested but none were seen.

## Hansen Dam Lake (412HANSCLK)

**Latitude:** 34.26604

**Longitude:** -118.38824

**Collection Method:** Electroshock

**Dates of Collection:** 09/21/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
152	168	181	202	211	241	460			

Bluegill, TL (mm)	
82	148

Green Sunfish, TL (mm)	
135	

**Comments:** Hansen Dam Lake is a cement-lined, small, man-made lake. Water levels were low, which may have affected the fish population. The entire lake was shocked multiple times with very few fish seen.

## Peck Road Water Conservation Park (412PECPRK)

**Latitude:** 34.10231

**Longitude:** -118.01268

**Collection Method:** Electroshock

**Dates of Collection:** 06/29/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
235	249	288	288	330	336	344	345	365	390
407	411	468	505						

Common Carp, TL (mm)									
420	422	440	450	458	460	460	475	485	493

Bluegill, TL (mm)									
95	101	105	115	115	119	122	125	145	160

Largemouth Bass Prey, TL (mm)									
44	48	48	48	50	51	53	53	57	60

Threadfin Shad Prey, TL (mm)									
48	48	50	50	50	51	52	52	54	54

Bluegill Prey, TL (mm)									
65	67	68	68	69	70	72	78	78	89

**Comments:** Peck Park Lake is essentially two small artificial lakes separated by a small channel. The upper part of the lake has the only shoreline reasonable for a shore launch. The entire upper lake was shocked multiple times but the channel between the two parts of the lake was too shallow to get across, preventing samplers from collecting fish from the lower part of the lake. Despite low water levels, all requested fish were collected.



# Lake Amador (532PLA129)

**Latitude:** 38.29588

**Longitude:** -120.87521

**Collection Method:** Electroshock

**Dates of Collection:** 08/11/2021

**Samplers:** Gary Ichikawa, Evan Mattiesen



Largemouth Bass, TL (mm)									
200	209	285	295	315	318	322	331	361	389
390	408	425	473						

Common Carp, TL (mm)						
370	374	395	399	401	443	454

Channel Catfish, TL (mm)				
385	455	489	495	620

Largemouth Bass Prey, TL (mm)									
44	49	50	53	55	58	58	61	62	80

Bluegill Prey, TL (mm)									
60	70	72	75	84	85	88	90	97	97

Green Sunfish Prey, TL (mm)									
62	75	76	85	85	86	88	89	91	94

Threadfin Shad Prey, TL (mm)									
83	84	86	90	90	91	94	94	96	96

**Comments:** Amador is a lake with many fingers creating extensive areas of shoreline. Most of the North side of the lake was sampled. Three adult species and four prey species were collected. Water level was at 37% capacity.

## Lake Combie (516TC0293)

**Latitude:** 38.29588

**Longitude:** -120.87521

**Collection Method:** Electroshock

**Dates of Collection:** 07/06/2021

**Samplers:** Scot Lucas, Evan Mattiesen



Largemouth Bass, TL (mm)									
204	250	255	292	309	325	333	361	364	377
378	430	435	453						

Redear Sunfish, TL (mm)									
174	177	187	187	190	197	205	211	211	

Largemouth Bass Prey, TL (mm)									
44	44	52	55	55	77	79	90	93	93

Bluegill Prey, TL (mm)									
45	46	47	49	52	57	63	65	75	77

**Comments:** Lake Combie is a private community association lake and access was granted through the acting lake manager. Much of the entire lake was sampled.



## Finnon Reservoir (514FINONR)

**Latitude:** 38.7986

**Longitude:** -120.7492

**Collection Method:** Electroshock

**Dates of Collection:** 08/16/2021

**Samplers:** Scot Lucas, April Sjoboen Guimarães



Largemouth Bass, TL (mm)									
214	243	252	253	359	378	379	385	387	399
405	405	412	412						

Largemouth Bass Prey, TL (mm)									
48	49	55	59	59	60	62	62	63	69

Bluegill Prey, TL (mm)									
83	85	88	88	93	95	95	96	100	100

**Comments:** Finnnon Reservoir is a private lake and access was arranged by meeting with the lake manager the morning of sampling. The entire lake was shocked multiple times to round out requested species and length categories.

## Millerton Lake (540PML138)

**Latitude:** 37.00971

**Longitude:** -119.66691

**Collection Method:** Electroshock

**Dates of Collection:** 07/19/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
200	210	211	218	230	264	271	278	310	318
325	330	349	350	362	372	379	382	392	400
402	403	403	410	415	421	425	438		

Bluegill, TL (mm)									
110	110	115	115	125	128	128	135	135	135
143	149	150	151	152	155	163	178	180	188

Largemouth Bass Prey, TL (mm)									
57	58	59	60	60	66	66	67	67	67
70	70	71	72	74	75	78	86	88	91

Bluegill Prey, TL (mm)									
64	65	66	67	71	72	73	74	78	79
80	81	85	86	88	90	94	95	95	95

Green Sunfish Prey, TL (mm)		
81	93	99

**Comments:** Millerton Lake is normally large enough to be a three-location lake but at 44% capacity, only two locations were sampled. Adult and juvenile largemouth bass and bluegill were collected at both locations.



# New Bullards Bar Reservoir (517PNB117)

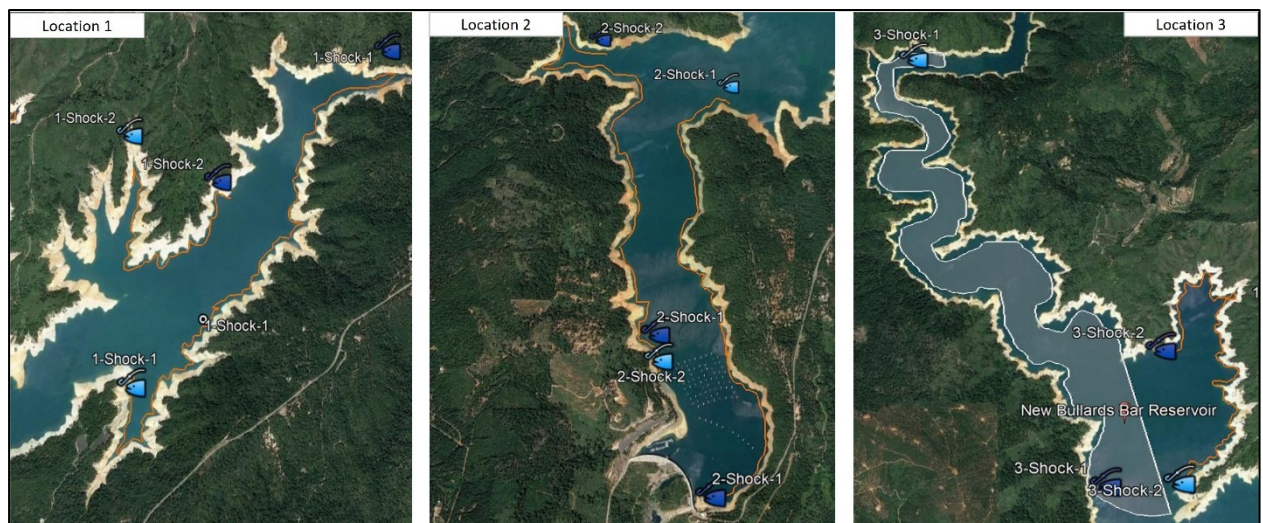
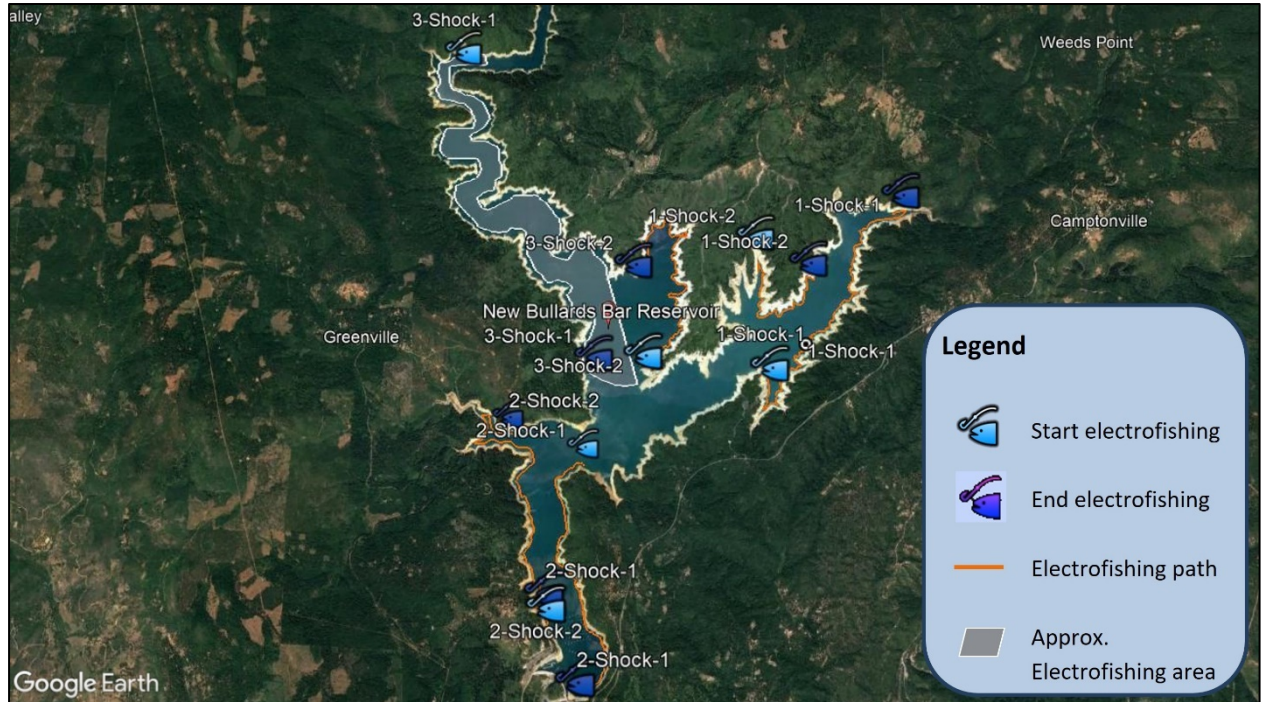
Latitude: 39.42821

Longitude: -121.12186

Collection Method: Electroshock

Dates of Collection: 07/07/2021, 07/08/2021

Samplers: Chris Beebe, William Jakl, Scot Lucas, Evan Mattiesen



Spotted Bass, TL (mm)									
220	228	235	236	239	243	245	247	256	262
264	268	270	271	273	275	276	278	285	285
287	289	292	292	292	295	295	300	309	310
311	314	317	333	335	340	342	345	347	350
356	367								

Green Sunfish, TL (mm)									
128	128	145	145	145	146	148	150	155	156
163	165	166	177	180					

Common Carp, TL (mm)									
426	452	455	463	468	472	473	500	511	528
560	590								

Spotted Bass Prey, TL (mm)									
35	36	36	38	38	39	40	41	44	47
47	47	50	50	51	52	53	54	77	79
82	83	87	91	91	92	95	95	96	99

Green Sunfish Prey, TL (mm)									
48	49	50	50	51	52	53	55	56	59
59	60	62	62	62	63	63	68	72	72
74	75	76	79	80	90				

Bluegill Prey, TL (mm)									
46	50	50	52	55	55	61	61	61	62
62	63	64	64	66	68	69	69	69	70
71	73	73	76	77	81	87	90	91	92

**Comments:** Due to its large size, New Bullards Bar was accessed from multiple locations over a two-day period. Two separate teams electrofished both days covering the majority of accessible shoreline along the lake. Collecting fish from three separately defined locations, a total of 154 adult and juvenile fish were caught and processed from this effort.



## Pine Flat Lake (552PPF042)

**Latitude:** 36.89033

**Longitude:** -119.25953

**Collection Method:** Electroshock

**Dates of Collection:** 09/27/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
170	175	176	204	206	230	240	294	324	325
358	364	369	374	378	392	395	398	398	400
402	422	430	437	440	445	462	468		

Bluegill, TL (mm)									
110	138	140	140	147	155	161	167	168	

Largemouth Bass Prey, TL (mm)									
53	55	65	67	68	72	72	73	74	78
79	80	80	80	82	85	88	90	96	97

Bluegill Prey, TL (mm)									
66	72	74	75	75	76	77	77	78	80
81	82	82	82	83	88	89	89	90	99

Green Sunfish Prey, TL (mm)									
65	69	69	71	72	72	78	79	79	80
80	80	82	82	83	83	86	87	89	92

Threadfin Shad Prey, TL (mm)									
55	55	55	55	55	55	56	57	57	60
60	60	61	61	61	62	63	65	67	69

**Comments:** Water level at time of sampling was reported at 19% of full capacity. Fish habitat was scarce due to the low water which may have affected any trout population as no trout were seen. Normally a three-location lake, only two locations were sampled due to low water.

## Union Valley Reservoir (514PUV156)

**Latitude:** 38.86148

**Longitude:** -120.40512

**Collection Method:** Electroshock, Gill Net

**Dates of Collection:** 08/17/2021

**Samplers:** Scot Lucas, April Sjoboen Guimarães



Spotted Bass, TL (mm)				
181	192	218	297	310

Rainbow Trout, TL (mm)									
326	332	340	341	341	342	343	345	347	352
367	376	410							

Lake Trout, TL (mm)
452

Brown Trout, TL (mm)
514

Spotted Bass Prey, TL (mm)									
59	63	64	67	70	72	73	75	76	88

Green Sunfish Prey, TL (mm)									
40	41	49	64	71	77	81	86	91	99

**Comments:** Union Valley Reservoir, a two-location lake was sampled on 8/17/2021. Gill nets were set in addition to electrofishing. As we began work on the second location of the day around 1:00 pm, we were evacuated off the lake by local authorities as a rapidly expanding wildfire (Caldor Fire) approached the lake. Conditions became less than ideal with poor air quality. A second attempt was made to revisit the lake two weeks later, but we were denied and so for the most part, fish were only collected from one location.

In addition to the Statewide Program effort, bass and trout were collected near the Dam (West side of the lake) earlier in the year for a different project and are reported on that project's cruise report. Mercury and selenium data collected are shared between projects.



## Lake Arrowhead (628PLA091)

**Latitude:** 34.25648

**Longitude:** -117.18538

**Collection Method:** Electroshock

**Dates of Collection:** 05/26/2021

**Samplers:** Gary Ichikawa, Scot Lucas



Spotted Bass, TL (mm)									
214	222	256	281	380	381	381	383	384	386
390	391	398	399						

Rainbow Trout, TL (mm)									
281	291	327	340	347	355	357	369	388	436

Brown Bullhead, TL (mm)									
320	325	326	333	335	351	351	355	371	377

Bluegill, TL (mm)									
157	170	172	179	190	190	196	201	201	210

Spotted Bass Prey, TL (mm)			
81	92	109	138

Sculpin Prey, TL (mm)									
45	46	50	51	52	55	56	57	58	69

**Comments:** A wide variety and quantity of adult fish were seen and collected but there weren't many juvenile fish (TL < 100mm) seen comparatively. Most of the smaller sized fish were the previous year's YOY (TL > 100 mm). In addition to the 14 bass, we were able to get adult trout, bullhead and bluegill. A unique fish called a lightning trout was seen and released alive.

## Gene Wash Reservoir (714TG0155)

**Latitude:** 34.29739

**Longitude:** -114.17245

**Collection Method:** Electroshock

**Dates of Collection:** 10/26/2021

**Samplers:** Scot Lucas, April Sjoboen Guimarães



Largemouth Bass, TL (mm)									
250	287	296	308	322	466	470	482	496	520
521									

Flathead Catfish, TL (mm)									
505	520	530	541	620	642	668	676	825	

Redear Sunfish, TL (mm)									
152	155	157	160	160	165	166	182	184	186

Largemouth Bass Prey, TL (mm)									
65	68	70	72	73	81	85	93	95	95

Bluegill Prey, TL (mm)									
44	46	51	52	54	55	55	56	57	65

**Comments:** Gene Wash has a no public access policy and is a drinking water lake administered by the Metropolitan Water District of Southern California. Taking steps to meet the

requirements for access, we were allowed to launch from a gated, makeshift shore ramp near the facility pump station. The generator on the boat developed a problem where it would not stay running, which cost us an hour of fishing time for repairs. Water levels were low and there was very little habitat, so we were unable to collect all the requested fish.



## Big Bear Lake (801PBB131)

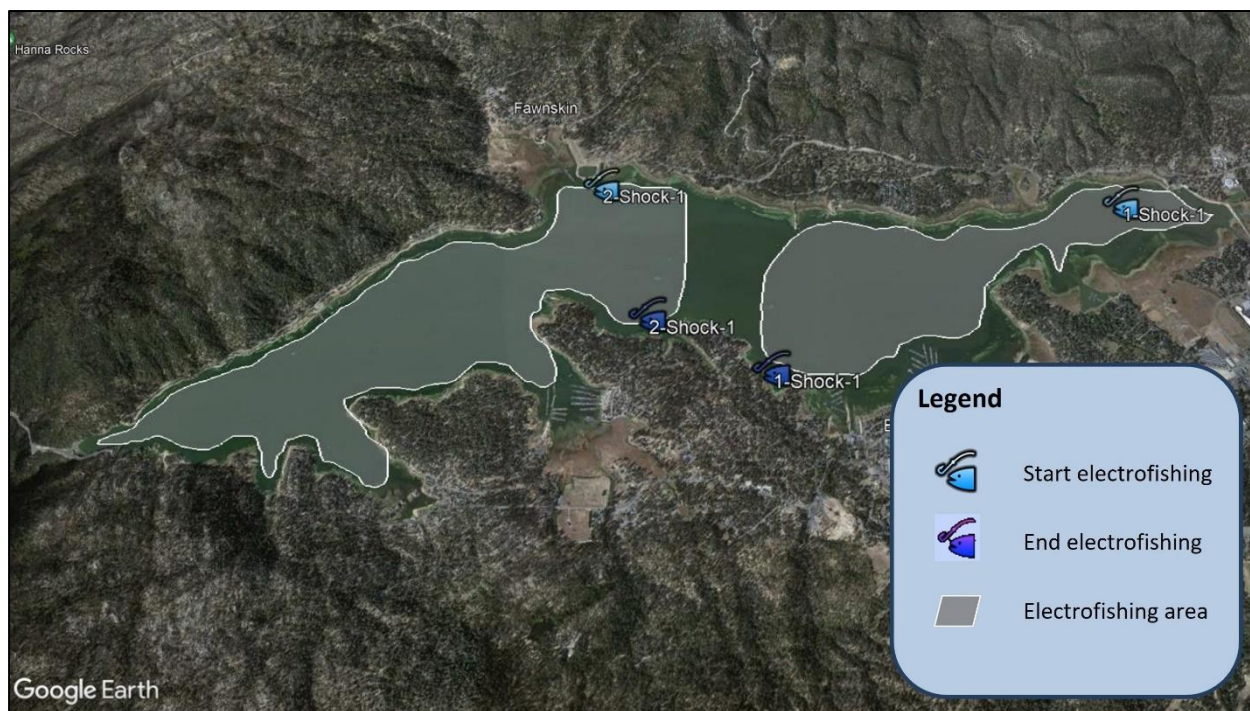
**Latitude:** 34.24955

**Longitude:** -116.93076

**Collection Method:** Electroshock

**Dates of Collection:** 05/26/2021

**Samplers:** Gary Ichikawa, Scot Lucas



Spotted Bass, TL (mm)									
204	218	247	263	269	278	280	286	305	305
314	315	315	319	325	329	387	392	397	399
404	405	416	420	423	439	442	455		

Rainbow Trout, TL (mm)									
165	183	188	203	212	216	220	223	226	233
239	247	250	267	390	392	396	403	425	436

Sculpin Prey, TL (mm)									
42	43	47	48	50	51	51	53	55	56
57	59	60	67	69	71	73	73	85	91

**Comments:** Low water level resulted in sparse fish habitat and, like Arrowhead Lake, there were few YOY prey fish; mostly just sculpins. Trout were plentiful and available by running the boat back and forth parallel to shore forcing them into shallow water. Most of the lake was shocked. Normally a three-location lake, only sampled two locations were sampled due to low water.

## Perris Reservoir (802PPR203)

**Latitude:** 34.29739

**Longitude:** -114.17245

**Collection Method:** Electroshock

**Dates of Collection:** 06/15/2021

**Samplers:** William Jakl, April Sjoboen Guimarães



Largemouth Bass, TL (mm)									
200	224	226	247	268	272	289	290	306	315
328	330	336	344	344	362	377	385	388	388
389	398	421	447	490	514	516	557		

Channel Catfish, TL (mm)									
520	526	535	559	563	565	576	584	600	650

Flathead Catfish, TL (mm)				
584	611	665	710	720

Bluegill Prey, TL (mm)									
65	70	70	72	79	79	84	85	85	86
87	88	88	89	90	90	90	93	98	98

**Comments:** All requested adult fish were collected. Only bluegill prey fish were seen for juveniles. Two locations were sampled.

## Prado Lake (801PPP187)

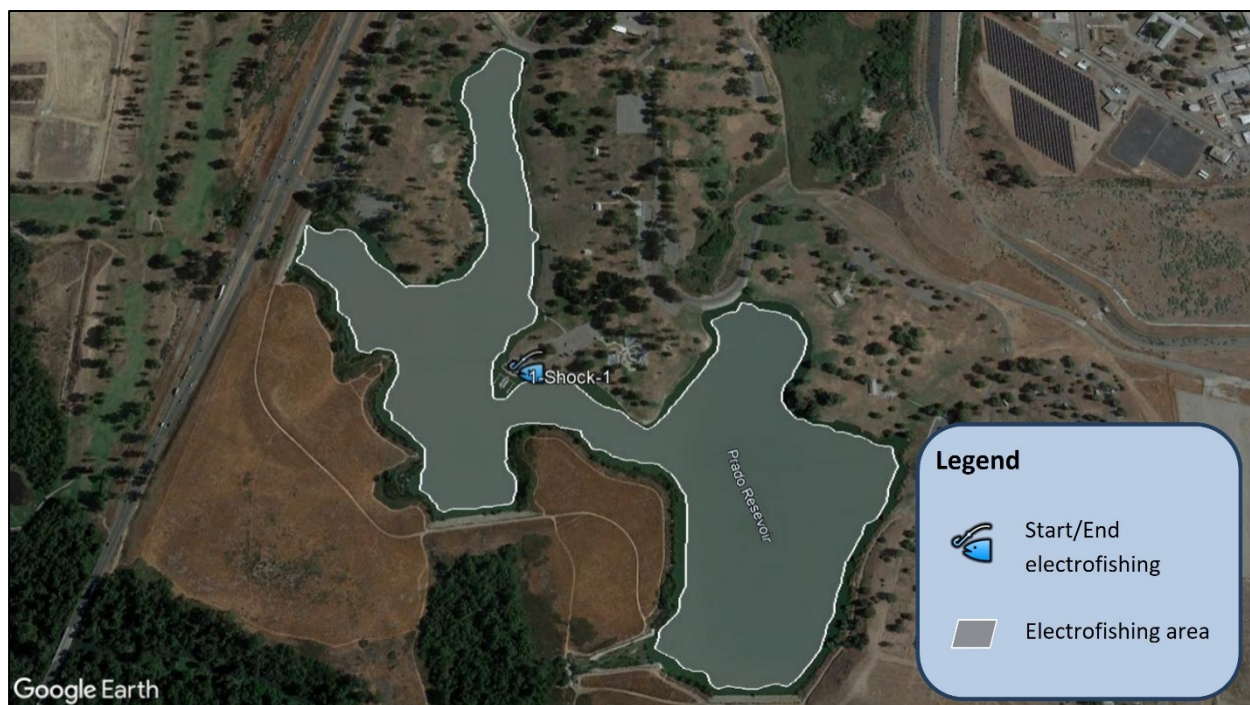
**Latitude:** 33.94313

**Longitude:** -117.65068

**Collection Method:** Electroshock

**Dates of Collection:** 08/23/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Common Carp, TL (mm)									
430	430	438	450	460	462	462	465	468	472

Common Carp Prey, TL (mm)									
33	33	34	37	37	38	40	40	40	45

Bluegill Prey, TL (mm)									
49	49	51	52	52	73	86	94	97	99

Green Sunfish Prey, TL (mm)									
44	45	45	45	48	50	68	71	72	100

Mississippi Silverside Prey, TL (mm)									
61	63	65	68	69	69	71	74	78	88

**Comments:** Prado Lake was drained in early 2017 for structural repairs and refilled later that year. The lake was stocked with bass, catfish, and trout after refilling, but only adult carp were

seen and collected along with juvenile silverside, bluegill, carp and sunfish. The entire lake was shocked multiple times.



## Diamond Valley Reservoir (902DMDVLK)

**Latitude:** 33.68326

**Longitude:** -117.0029

**Collection Method:** Electroshock, Gill Net

**Dates of Collection:** 09/29/2021, 09/30/2021

**Samplers:** Scot Lucas, Evan Mattiesen



Largemouth Bass, TL (mm)									
204	204	210	213	213	220	220	224	230	231
233	244	246	250	257	258	260	270	272	300
326	370	408	436	465	469	483	515		

Flathead Catfish, TL (mm)									
346	350	356	377	401	418	420	429	445	448
458	469	471	475	512	555	576	578	630	670

Striped Bass, TL (mm)
670

Largemouth Bass Prey, TL (mm)									
52	62	70	71	72	74	77	78	80	81
82	83	83	86	87	87	88	88	94	96

Bluegill Prey, TL (mm)									
38	38	40	43	44	45	45	46	48	51
52	52	52	53	54	55	63	73	81	95

Green Sunfish Prey, TL (mm)									
70	72	72	76	77	85	85	89	97	99

Mississippi silverside Prey, TL (mm)									
65	66	70	71	75	75	76	76	79	89

**Comments:** Diamond Valley Reservoir is normally a three-location lake, however water levels were low and only two locations were sampled over two days using both electroshock and gill nets. Low water levels left a lot of potential fish habitat dry on the shore above the waterline. The San Diego Regional Water Quality Control Board requested flathead catfish and striped bass at this lake.



## El Capitan (907PEC062)

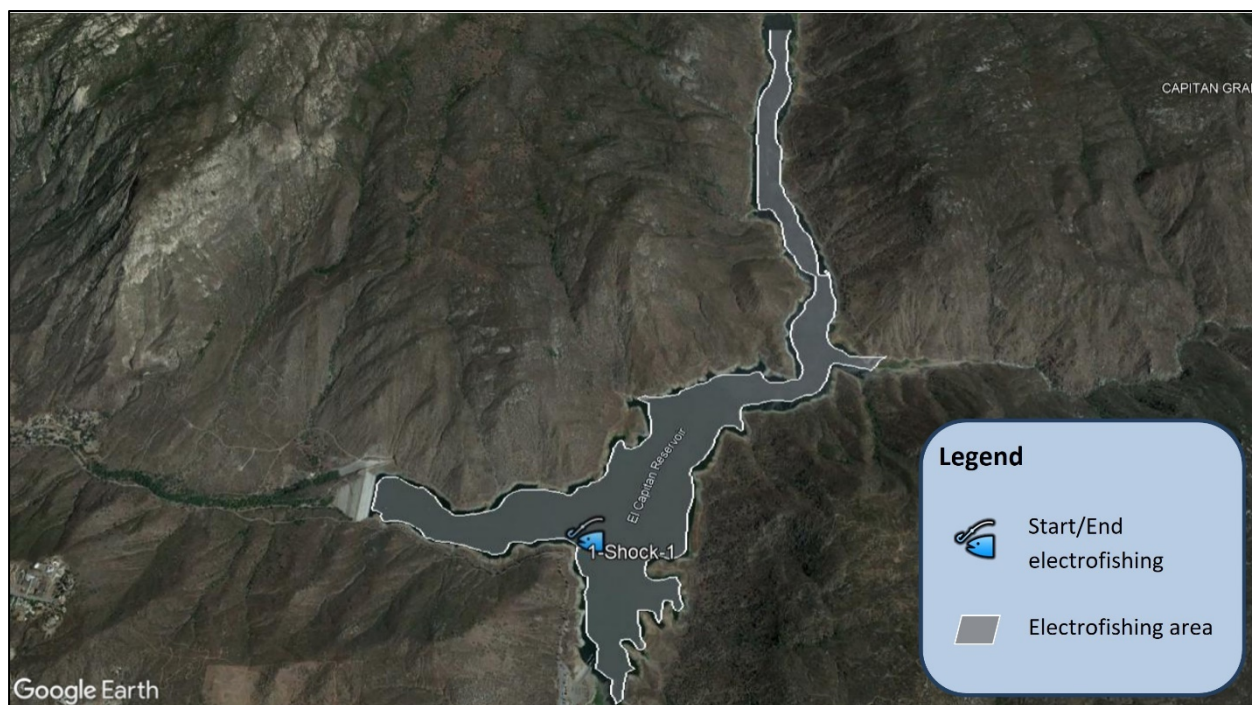
**Latitude:** 32.89082

**Longitude:** -116.78195

**Collection Method:** Electroshock

**Dates of Collection:** 06/08/2021, 06/09/2021

**Samplers:** Chris Beebe, Scot Lucas



Largemouth Bass, TL (mm)									
243	247	252	290	340	345	351	364	372	381
398	429	450	524						

Blue Catfish, TL (mm)								
795	797	842	899	923	969	1030	1070	

Bluegill, TL (mm)									
165	169	172	175	178	191	192	196	201	214

Bluegill Prey, TL (mm)									
55	57	59	64	66	66	71	74	76	84

Mississippi Silverside Prey, TL (mm)									
64	64	64	65	65	66	67	70	71	75

Sculpin Prey, TL (mm)									
46	67	72	77	77	79	81	82	83	84

Threadfin Shad Prey, TL (mm)									
56	57	60	63	80	80	82	89	93	95

**Comments:** The lake was at 25% of full water capacity and thus the whole lake was sampled as one location over a two-day period. The blue catfish collected were immense; a couple approaching 35 lbs. Crappie was requested at this lake by the San Diego Regional Water Quality Control Board, but none were observed during the collection.

## Morena Reservoir (911PMR110)

**Latitude:** 32.68600

**Longitude:** -116.53728

**Collection Method:** Electroshock

**Dates of Collection:** 06/07/2021

**Samplers:** Chris Beebe, Scot Lucas



Largemouth Bass, TL (mm)									
205	248	272	291	315	316	324	342	356	356
360	407	423	438						

Black Crappie, TL (mm)									
204	205	210	210	212	214	215	216	227	232

Largemouth Bass Prey, TL (mm)									
81	84	89	90	92	94	95	96	97	97

Bluegill Prey, TL (mm)									
52	54	55	55	58	65	66	66	74	90

**Comments:** Despite the low water levels, there was ample fish habitat and we were able to get all adult fish requested and correct size classes. For juvenile fish, we only saw bluegill and bass and were able to get 10 of each. Crappie was requested at this lake by the San Diego Regional Water Quality Control Board, but none were observed during the collection.

## O'Neill Lake (902ONEILL)

**Latitude:** 33.32920

**Longitude:** -117.32170

**Collection Method:** Electroshock

**Dates of Collection:** 09/22/2021

**Samplers:** Jon Goetzl, Gary Ichikawa



Largemouth Bass, TL (mm)									
192	260	262	269	322	341	350	357	358	360
392	428	455	495						

Channel Catfish, TL (mm)									
432	435	437	446	465	472	474	475	520	

Bluegill, TL (mm)									
115	136	138	142	174	177	180	182	190	

Largemouth Bass Prey, TL (mm)									
73	79	80	81	82	83	88	90	91	94

Bluegill Prey, TL (mm)									
60	62	63	64	66	70	71	72	72	74

**Comments:** Access to O'Neill Lake was from a small boat ramp at the lower East end. Generator problems and shallow water hindered fish collection but adult bass, catfish and bluegill were collected along with bluegill and bass prey fish. The entire lake was shocked.



## Lake Wohlford (904PLW126)

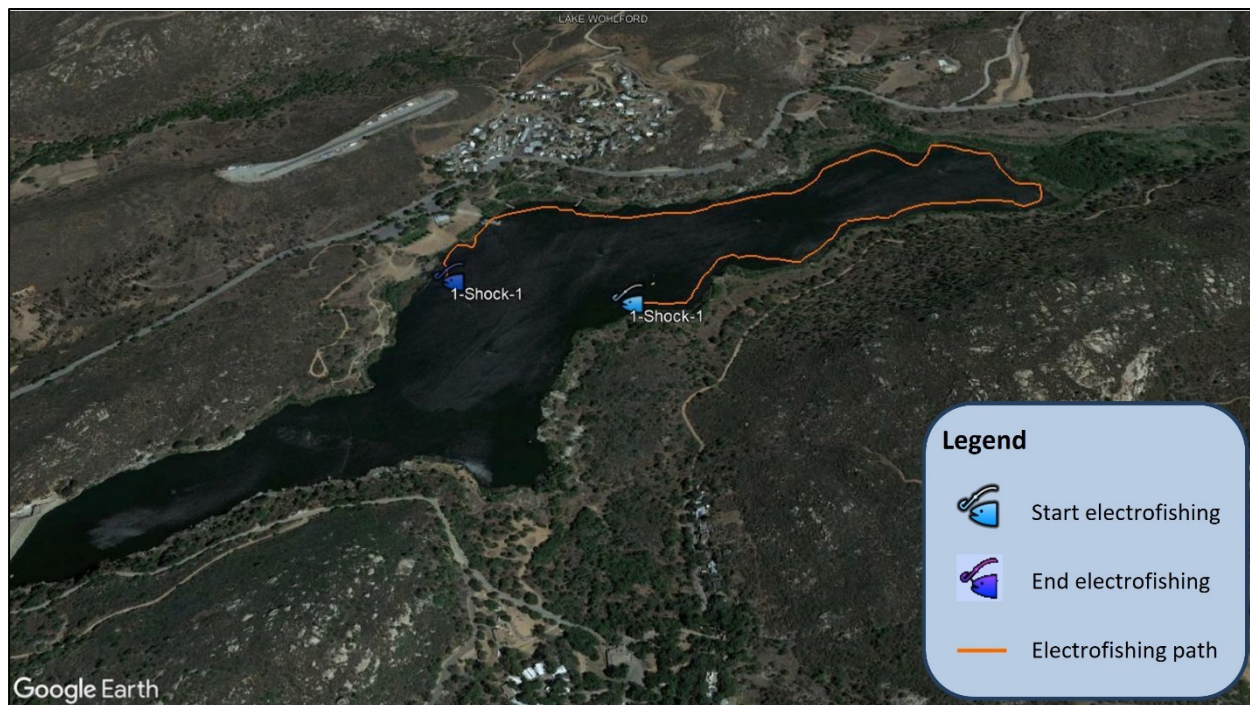
**Latitude:** 33.17540

**Longitude:** -116.98907

**Collection Method:** Electroshock

**Dates of Collection:** 06/14/2021

**Samplers:** William Jakl, April Sjoboen Guimarães



Largemouth Bass, TL (mm)									
204	220	245	256	350	359	370	374	374	376
379	413	425	457						

Channel Catfish, TL (mm)									
398	428	430	459	468	482	483	484	497	508

Largemouth Bass Prey, TL (mm)									
45	45	45	47	48	48	49	51	52	52

**Comments:** The water level at Wohlford was high due to pumping in of water from another nearby lake to combat high vegetation conditions at Wohlford. Largemouth bass prey were the only juvenile species found in the correct size range for collection. Adult catfish and bass were also collected. The San Diego Regional Water Quality Control Board requested the collection of catfish as an additional species at this lake.

## **1.7 Discussion**

Twenty-eight of the thirty-three lakes/reservoirs were sampled. The five that were not sampled include: Shastina Lake, Trinity Lake, Antelope Lake, Indian Valley Reservoir and Stony Gorge Reservoir. Fire related conditions were the major obstacle preventing sampling of those lake with low water also a minor factor. Union Valley Reservoir was limited to one location sampled instead of two locations for those same reasons.