Lake Aloha
2004 Initial Trout Survey and Removal Report

El Dorado Hydroelectric Project (FERC Project No. 184)

OCTOBER 2004

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LAKE ALOHA TROUT SURVEY AND REMOVAL PROJECT
REPORT OF 2004 INITIAL SURVEY AND REMOVAL EFFORTS
EL DORADO IRRIGATION DISTRICT

I. INTRODUCTION

Monitoring Lake Aloha water levels and spill events and removal of trout below Auxiliary Dams 1-7 is required by the U.S. Forest Service (USFS) 4(e) Condition No. 33 (Condition 33) of the *Final Terms and Conditions Provided Under 18 CFR Section 4.34(b)(1) In Connection With the Application for Relicensing of the El Dorado Hydroelectric Project (FERC No. 184)*, dated October 31, 2003. The requirements set forth in Condition 33 are based on Section 3 of the El Dorado Relicensing Settlement Agreement (Settlement Agreement) for Project 184, which was finalized on April 28, 2003.

Condition 33 and Section 3 of the Settlement Agreement require that the Lake Aloha Trout Survey and Removal Plan (Plan) must be approved by the U.S. Forest Service (USFS) and California Department of Fish and Game (CDFG) prior to the Plan being implemented. Both agencies approved the Plan at the June 22, 2004 Ecological Resources Committee (ERC) meeting.

II. SURVEY AND REMOVAL ASSUMPTIONS/LIMITATIONS

Based on topography of the area below Auxiliary Dams 1-7, it was determined that only four ponds were likely to receive runoff from the Auxiliary Dams in the event of a spill. In addition to topography, some of the ponds that had initially been identified to be surveyed were dry or shallow (less than 3 feet deep), had insufficient trout habitat and no trout were observed during visual surveys. Finally, no spills occurred in 2004, thereby further reducing the likelihood of trout being present in the pools and ponds below the auxiliary dams.

III. METHODS

Based on trout survey and removal projects in high elevation mountains similar to the Lake Aloha project (Maul Lake [Knapp and Matthews 1998], Mount Rainier National Park [Larson and Hoffman 2002] and USFS Pacific Northwest Research Station [Hoffman et. al 2003]), EID proposed to survey and remove trout in the pools, ponds, and the overflow channel below Auxiliary Dams 1-7 with the use of gill nets (R. Hoffman, pers. comm., February 9, 2004; Bryant 2000). Experimental, sinking monofilament gill nets manufactured by Les Industries Fipec in Quebec were used. Nets were 150 feet long and 4 feet high with six, 6-meter panels with bar mesh sizes of 10, 12.5, 18.5, 25, 33 and 38 mm. Nets were set so that the smallest mesh size panels constituted the greatest distance across the waterbody, depending on the width of the survey site, perpendicular to shore (R. Knapp and K. Matthews, 1998). Gill nets were set overnight (8 to 12 hours). Between August 30 and September 1, a gill net was set three times in the large pond below Auxiliary Dam 7 (Attachment A, Figure 1). Between September 27 and September 30, two gill nets were set six times in four of the ponds below Auxiliary Dams 1 through 7 (Attachment A, Figure 2). In addition to gill nets, a seine was used to survey shallow areas (Attachment A, Figures 1 and 2).

CDFG recommended that should trout be present in stream channels connecting ponds below the auxiliary dams, electrofishing may be used to assist in the removal of trout (S. Lehr, personal communication, June 23, 2004); however, due to low water conditions, connecting stream channels did not exist. Electrofishing is proposed for future removal efforts (2006-2009), should spills occur and water levels allow for it.

IV. INITIAL SURVEY AND REMOVAL RESULTS

The attached data sheets (Attachment B) present the initial survey and removal results for 2004. Attachment C provides photographs of the ponds surveyed and the female trout captured.

In summary, only two brook trout were captured and removed from the large pond below Auxiliary Dam 7. No other trout were identified in the four ponds surveyed. Other aquatic organisms observed and/or captured during surveys included Pacific tree frogs (metamorphs and tadpoles), garter snakes, water boatmen, water striders, and damselflies (adults and nymphs).

Based on input provided from the USFS and CDFG regarding what to do with the fish that are removed from the ponds, fish captured were disposed of on-site at the time of the survey.

V. REFERENCES CITED

El Dorado Irrigation District. 2003. El Dorado Relicensing Settlement Agreement for Project 184. April 28, 2003.

Federal Energy Regulatory Commission. 2003. Final Environmental Impact Statement, El Dorado Hydroelectric Project (FERC No. 184-065). August 2003.

Hoffman, Robert (Oregon State University). 2004. Personal communication with Shelly Hatleberg, EN2 Resources, Inc. February 9, 2004.

Hoffman, Robert L. and Gary L. Larson. Removal of Non-Native Brook Trout (*Salvelinus fontinalis*) From Three Mountain Lakes, Mount Rainier National Park, Washington, USA. Mount Rainier National Park 100th Anniversary Symposium Aquatic Ecology Session.

Knapp, Roland and Kathleen R. Matthews. 1998. Eradication of Nonnative Fish by Gill Netting from a Small Mountain Lake in California. *Restoration Ecology*. Vol. 6, No. 2, pp. 207-213. June 1998.

U.S. Forest Service. 2003. Final Terms and Conditions Provided Under 18 CFR Section 4.34(b)(1) In Conjunction With the Application for Relicensing of the El Dorado Hydroelectric Project (FERC No. 184). October 31, 2003.

ATTACHMENT A

Figures

ATTACHMENT B

2004 Initial Survey and Removal Data Sheets for August 30-September 2, 2004 and September 27-October 1, 2004

ATTACHMENT C

Photographs

TROUT SURVEY DATA FORM

GILL NET #1 and 2

DATE: August 30 – September 1, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, T. Sue, S. Lind, S. Moffitt	
Time Start: 1630 (Aug. 30) and 1000 (Sept. 1)	**Time End:** 0930 (Sept. 1) and 1700 (Sept. 2)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 75 ºF (8/30) 65ºF (9/1); **Wind Speed** 0-5 (8/30), 10-15 (9/1) mph; **Wind Direction** S;

Cloud Cover 0%; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 15-20 ft. (area gill netted 2-5 ft.)

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0 ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 5%

Open Water: 95%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
Pacific tree frog (5)	Metamorphs & tadpoles	Approx. 2 in.	Shallow water near shorelines	Captured in multiple seine hauls and dipnets
Water boatmen	Adults		Shallow water	Captured in multiple seine hauls and dipnets
Damselflies	Adults & nymphs		Shallow water	Captured in multiple seine hauls and dipnets
Water striders	Adults		Shallow water	Captured in multiple seine hauls and dipnets
Garter snake	Adults	2-3 ft.	Pond and shoreline	Observed during surveys
Mallard (2)	Adult		Ponds	Observed during surveys
Clark's nutcracker	Adult		Lodgepole pines	
Golden mantle ground squirrel	Adult		Granite outcroppings	

POND DIAGRAM

TROUT SURVEY DATA FORM

SEINE HAULS

DATE: September 1, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, T. Sue, S. Lind, S. Moffitt	
Time Start: 1030	**Time End:** 1130

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 70ºF; **Wind Speed** 10-15 mph; **Wind Direction** S;

Cloud Cover 0%; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 200 ft. **Maximum Length** 100 ft. **Maximum Depth** 1-3 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☐ Shoals ☐ Undercut Banks ☐ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0 ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 5%

Open Water: 95%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
Pacific tree frog (5)	Metamorphs & tadpoles	Approx. 2 in.	Shallow water near shorelines	Captured in multiple seine hauls and dipnets
Water boatmen	Adults		Shallow water	Captured in multiple seine hauls and dipnets
Damselflies	Adults & nymphs		Shallow water	Captured in multiple seine hauls and dipnets
Water striders	Adults		Shallow water	Captured in multiple seine hauls and dipnets

POND DIAGRAM

TROUT SURVEY DATA FORM

GILL NET #3

DATE: September 1 – September 2, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, T. Sue, S. Lind, S. Moffitt	
Time Start: 1730 (Sept. 1)	**Time End:** 0830 (Sept. 2)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 75 ºF (9/1) 65ºF (9/2); **Wind Speed** 0-5 (9/1), 10-15 (9/2) mph; **Wind Direction** S;

Cloud Cover 0%; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 15-20 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0 ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 15%

Open Water: 85%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
Brook trout (deceased)	Adult (gravid female)	15 in	"Channel" portion of big pond	Captured in gill net (female was deceased when net pulled)
Brook trout	Adult (male)	14 in	"Channel" portion of big pond	Captured in gill net

POND DIAGRAM

TROUT SURVEY DATA FORM

GILL NET #1

DATE: September 27 – September 28, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Shaeffer	
Time Start: 1730 (Sept. 27)	**Time End:** 0930 (Sept. 28)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 70 °F (9/27), 60ºF (9/28); **Wind Speed** 0-5 (9/1), 0-5 (9/28) mph; **Wind Direction** NW;

Cloud Cover 0% (9/27), 30% (9/28) ; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 6-8 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0-5% ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 0

Open Water: 100%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
None				

POND DIAGRAM

TROUT SURVEY DATA FORM

GILL NET #2

DATE: September 27 – September 28, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Shaeffer	
Time Start: 1800 (Sept. 27)	**Time End:** 1000 (Sept. 28)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 70 °F (9/27), 60ºF (9/28); **Wind Speed** 0-5 (9/1), 0-5 (9/28) mph; **Wind Direction** NW;

Cloud Cover 0% (9/27), 30% (9/28) ; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 6-8 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0-5% ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 5-10%

Open Water: 90-95%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
None				

POND DIAGRAM

TROUT SURVEY DATA FORM

GILL NET #1

DATE: September 27 – September 2, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Shaeffer	
Time Start: 1730 (Sept. 27)	**Time End:** 0930 (Sept. 28)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 70 °F (9/27), 60ºF (9/28); **Wind Speed** 0-5 (9/1), 0-5 (9/28) mph; **Wind Direction** NW;

Cloud Cover 0% (9/27), 30% (9/28) ; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 6-8 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0-5% ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 0

Open Water: 100%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes

POND DIAGRAM

**After scoping out ponds as highlighted on topographic map, natural barriers (large boulders and ridges) appear to prevent interconnectedness with Auxiliary Dams 1-7 (i.e., these ponds were considered fairly isolated).

TROUT SURVEY DATA FORM

GILL NET #2

DATE: September 27 – September 28, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Shaeffer	
Time Start: 1800 (Sept. 27)	**Time End:** 1000 (Sept. 28)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 70 °F (9/27), 60ºF (9/28); **Wind Speed** 0-5 (9/1), 0-5 (9/28) mph; **Wind Direction** NW;

Cloud Cover 0% (9/27), 30% (9/28) ; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Pond No. 1 (first pond below Auxiliary Dam 7)

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 6-8 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0-5% ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 5-10%

Open Water: 90-95%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes

POND DIAGRAM

**After scoping out ponds as highlighted on topographic map, natural barriers (large boulders and ridges) appear to prevent interconnectedness with Auxiliary Dams 1-7 (i.e., these ponds were considered fairly isolated).

TROUT SURVEY DATA FORM

GILL NET #3

DATE: September 28 – September 29, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Shaeffer	
Time Start: 1030 (Sept. 28)	**Time End:** 1030 (Sept. 29)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 60 °F (9/28), 55ºF (9/28); **Wind Speed** 0-5 (9/28), 0-5 (9/29) mph; **Wind Direction** NW;

Cloud Cover 30% (9/28), 50% (9/29); **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Small pond downstream of Auxiliary Dam 2

Maximum Width 30 ft. **Maximum Length** 45 ft. **Maximum Depth** 4 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0-5%; **Emergent Vegetation**: 0; **Floating Vegetation**: 15-20%

Open Water: 80-85%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
None				

POND DIAGRAM

* Conducted four seine hauls, resulting in no fish or tadpoles (only damselfly and dragonfly nymphs and water striders)

TROUT SURVEY DATA FORM

GILL NET #4

DATE: September 28 – September 29, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Schaeffer	
Time Start: 1100 (Sept. 28)	**Time End:** 1100 (Sept. 29)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 65 °F (9/28), 70ºF (9/29); **Wind Speed** 0-5 (9/28), 0-5 (9/29) mph; **Wind Direction** NW;

Cloud Cover 30% (9/28), 50% (9/29); **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Big pond below Auxiliary Dam 7

Maximum Width 20 ft. **Maximum Length** 200 ft. **Maximum Depth** 6 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☐ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0 ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 5-10%

Open Water: 90-95%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
None				

POND DIAGRAM

TROUT SURVEY DATA FORM

GILL NET #5

DATE: September 29 – September 30, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Schaeffer	
Time Start: 1130 (Sept. 29)	**Time End:** 1300 (Sept. 30)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 65 °F (9/29), 70ºF (9/30); **Wind Speed** 5-10 (9/28), 5-10 (9/29) mph; **Wind Direction** S;

Cloud Cover 50% (9/29 and 9/30) ; **Precipitation** Y__ or N X

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Small pond below ridge, west of Auxiliary Dam 1

Maximum Width 85 ft. **Maximum Length** 85 ft. **Maximum Depth** 6 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☐ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 5% ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 0-5%

Open Water: 95-100%

TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
None				

POND DIAGRAM

TROUT SURVEY DATA FORM

GILL NET #6

DATE: September 29 – September 30, 2004	**PROJECT:** Lake Aloha Trout Survey and Removal
INVESTIGATOR(S): S. Hatleberg, D. Hatleberg, Kristin Schaeffer, Kayla Schaeffer	
Time Start: 1430 (Sept. 29)	**Time End:** 1330 (Sept. 30)

LOCATION

City/County El Dorado County (Desolation Wilderness; **Township** T 12 N; **Range** R 17 E

Quadrangle USGS 7.5-minute PYRAMID PEAK; **Elevation** approx. 8,300 ft.

WEATHER CONDITIONS AT START OF SURVEY

Air Temperature 60 °F (9/29), 65ºF (9/30); **Wind Speed** 5-15 (9/28), 5-15 (9/29) mph; **Wind Direction** S;

Cloud Cover 80% (9/29 and 9/30) ; **Precipitation** Y X or N__

LAKE/POND MORPHOMETRY/FEATURES

Pond/Lake Name Small pond east of ridge (west of 'channel' of Big Pond)

Maximum Width 30 ft. **Maximum Length** 90 ft. **Maximum Depth** 4 ft.

Hydroperiod: ☒ Permanent ☐ Seasonal

Water Clarity: ☒ Clear ☐ Turbid **Water Color**: ☒ Clear ☐ Stained (Color_____)

In-water Structure: ☒ Shoals ☐ Undercut Banks ☒ LOD (jams/snags) ☐ Other _____

POND VEGETATION (Dominant Species)

Canopy Cover(mid-day): 0 ; **Emergent Vegetation**: 0 ; **Floating Vegetation**: 0

Open Water: 100%

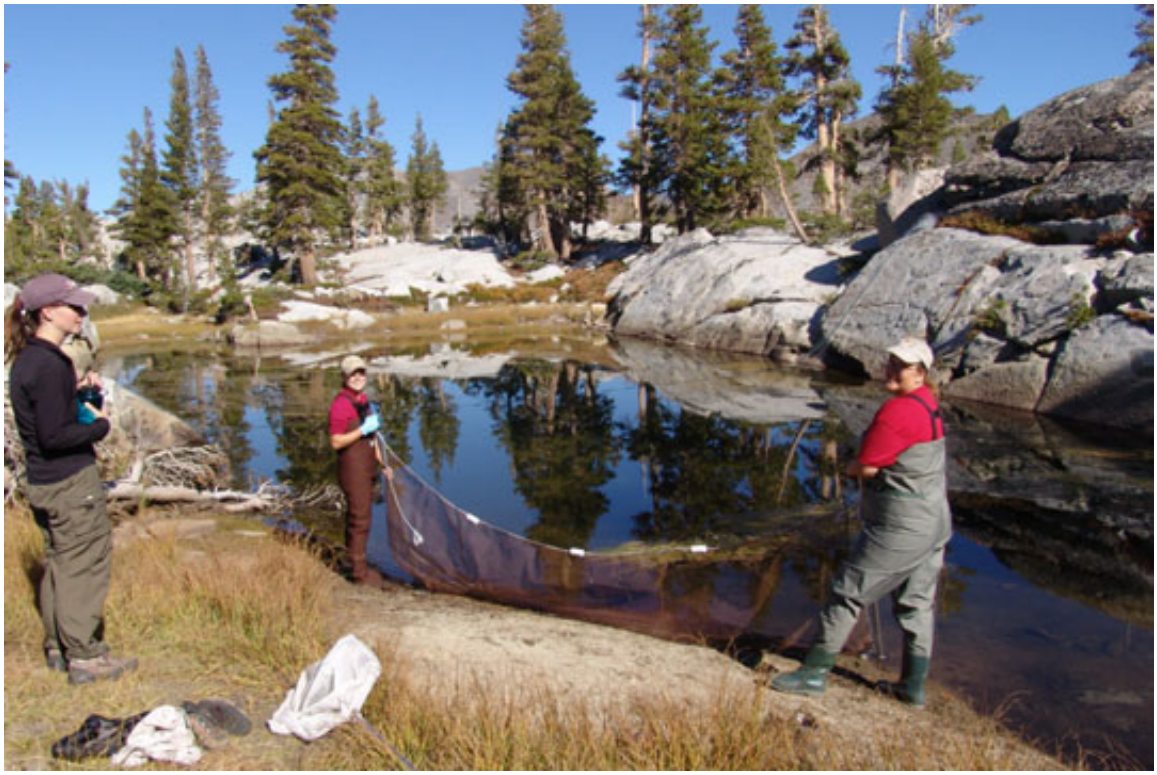
TROUT SURVEY DATA FORM

SPECIES SURVEYED/OBSERVED

Species	Life stage	Length (in)	Habitat where observed	Other observations/notes
None				

POND DIAGRAM

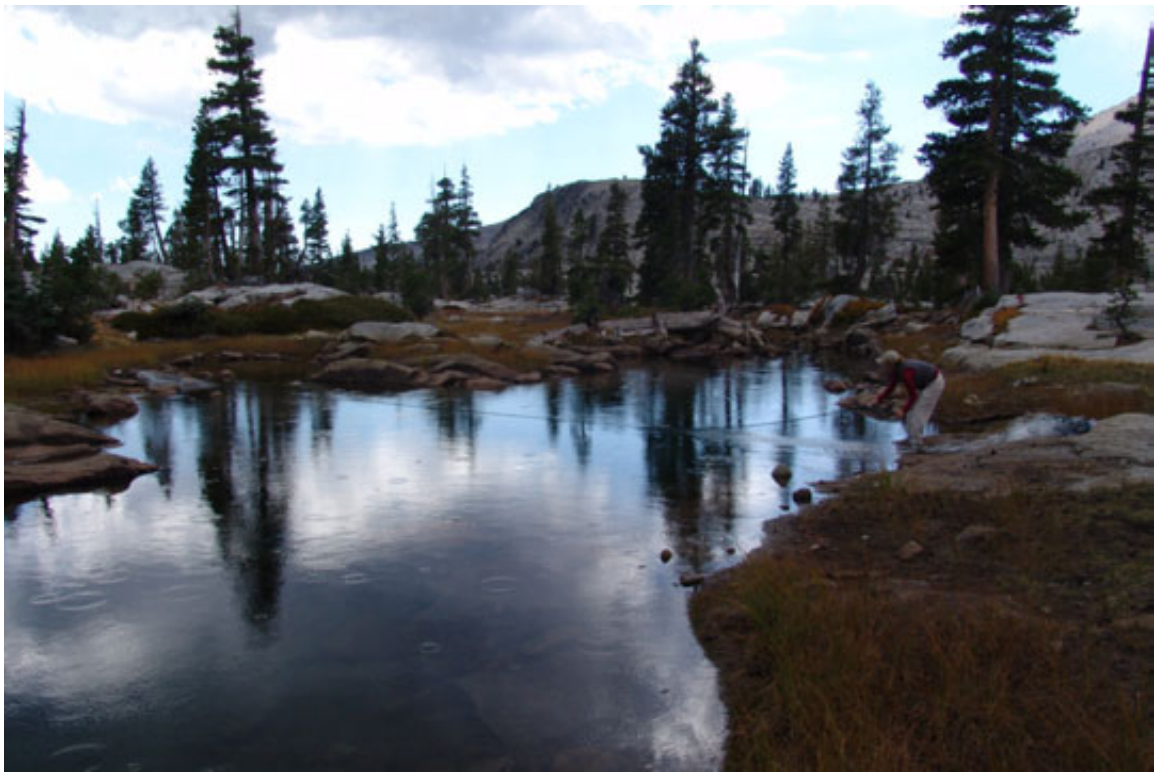
Pond No. 1 (seined on September 1 and 30, 2004)



Small pond downstream of Auxiliary Dam 2 (gill net #3 and seine on Sept. 28 and 29, 2004)

"Channel" connected to Pond No. 1 (gill net #1 & 2 on Aug. 30 and Sept. 1 and gill net #1, 2 and 4 (in far distance, on Sept. 27 through 29, 2004)

Small pond below ridge, west of Auxiliary Dam 1 (gill net #5 on Sept. 29 and 30, 2004)



Small pond east of ridge, west of 'channel' of Pond No. 1 (gill net #6 on Sept. 29 and 30, 2004)

Gravid female captured in gill net (Pond No. 1) on Sept. 2, 2004