

California Red-legged Frog Surveys  
Middle Fork American River  
Horseshoe Bar  
2003

by George Elliott

Amphibian surveys of Several Small Lakes  
along the Horseshoe Bar Area of the  
Old Middle Fork American River Channel

The survey area is approximately 3 miles east-southeast of Foresthill, California, and adjacent to the Middle Fork American River, 1.8 miles downstream from the Oxbow Reservoir dam. An oxbow bend of the river at Horseshoe Bar was cut off by the construction of a tunnel, diverting the entire flow of the river. There are presently 7 small lakes along the abandoned river channel that are probably remnant river pools. For the purpose of this survey, lakes were numbered 1 through 7 starting at the upstream end of the old channel and proceeding downstream (Figure 1). There was no flow between the lakes during April and May 2003, even though April was exceptionally wet this year. There is evidence that the flood of January 1997 spilled over into the abandoned channel. There is a large logjam between lakes 2 and 3 and additional logjams along the south edge of lake 5 and the upper end of lake 6. During high river flows, water spills into the east end of lake 1 and spills back into the river from the north end of the lake at the entrance of the tunnel.

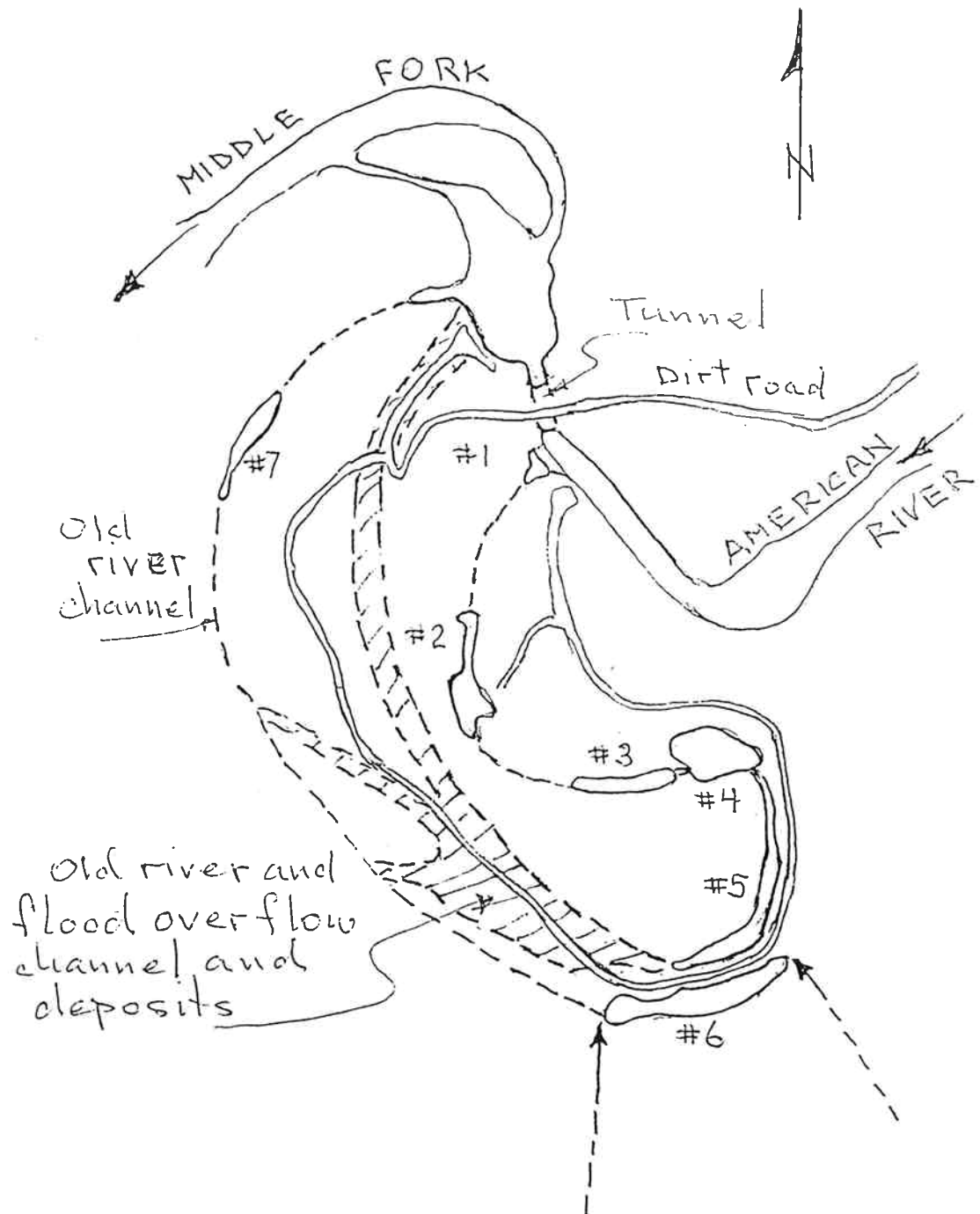
During April and May, 2003, the lake levels appeared higher than normal, based on the location of the edge of riparian vegetation. There was extensive inundation of willows and larger trees adjacent to portions of lakes 3 through 7. On April 15 and 18 and again on May 5, a section of the road between lakes 5 and 6 was flooded with about 0.3 meters of water in response to rain storms several days prior. This represented a short term change in water level of approximately 0.5 meters. Water flow from two small tributaries entered each end of lake 6 during the entire survey period. No surface flow was observed in the channel between lakes 6 and 7 on April 8. The water clarity was best in lakes 1, 6, and 7 during the May surveys, probably due to clear water inflow from the river, the tributaries, and subsurface flow, respectively.

During the spring breeding season for California red-legged frogs (*Rana aurora draytonii*) and bullfrogs (*Rana catesbeiana*), all of the lakes except number 1 provided excellent breeding habitat for these two species. All provided adequate depth (3.1 to 8.7 meters) as well as up to 1.5 meter depth in the areas of inundated willows, which extended up to approximately 100 meters back from the open waters edge. Bullfrog reproduction was documented at high levels in all the lakes. Although no California red-legged frogs were observed or heard during the surveys, the expanse of excellent habitat that was inaccessible to survey does not allow for meaningful negative results. A rarer and more secretive species such as the California red-legged frog could easily remain undetected in the impenetrable cover provided by the inundated willows. Two other amphibian species were observed breeding in the lakes, Pacific tree frogs (*Hyla regilla*) and Western toads (*Bufo boreas*).

The field surveys generally followed the US Fish and Wildlife Service protocol of April 4, 1997, except surveys were initiated before May 1 with the intention of identifying breeding California red-legged frogs by the presence of egg masses and by hearing their vocalizations. All lakes were surveyed twice during the daytime and twice during the night. Full perimeter visual surveys were conducted from the shoreline on lakes 1 and 2 and from a boat on lakes 3 through 7.

California red-legged frogs have been observed within 5 miles of the survey area on two occasions. In 1916, an adult was collected near Michigan Bluff, 2.8 miles northeast of the survey area. In 2001, an adult female was observed in an intermittent pond on Ralston Ridge, 3 miles east of the survey area.

Figure 1. Diagrammatic drawing of survey area at Horseshoe Bar.



Horseshoe Bar - Middle Fork American River  
Photo Log

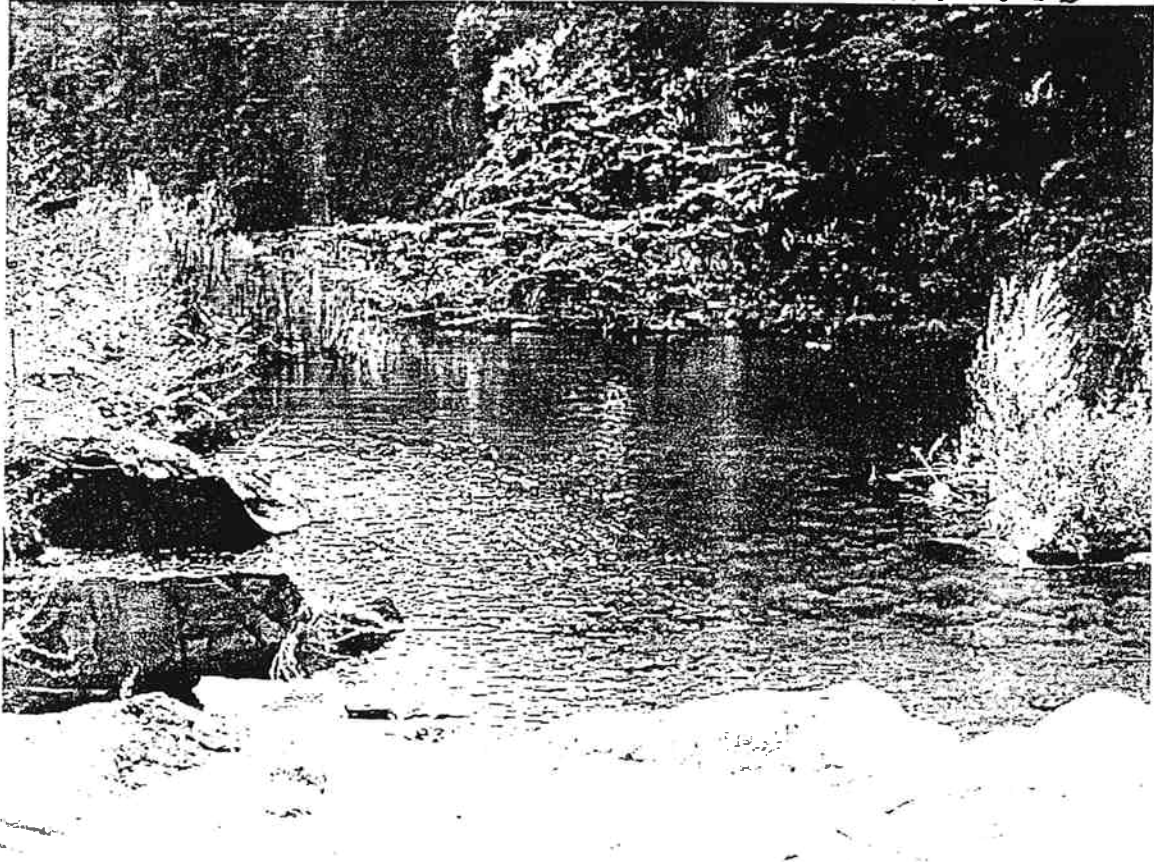
| <u>Photo</u> | <u>Lake #</u> | <u>Photo Description</u>                            |
|--------------|---------------|-----------------------------------------------------|
| P4180001     | 6             | Looking west from east end.                         |
| P4180002     | 6             | Looking east from west end.                         |
| P4180003     | 1             | Looking southwest from northeast side.              |
| P4180004     |               | Looking downstream through tunnel.                  |
| P4180005     | 1             | Looking northeast from southwest side.              |
| P4180006     | 2             | Looking south from northeast side.                  |
| P4180007     | 2             | Looking north from logjam.                          |
| P4180008     | 3             | Looking east from logjam.                           |
| P5200009     | 7             | Looking northeast from southwest end of upper pool. |
| P5200010     | 7             | Looking southwest from northeast end of lower pool. |
| P5200011     | 5             | Looking east from west end.                         |
| P5200012     | 5             | Looking southwest from near north end.              |
| P5200013     | 4             | Looking northwest from southeast end.               |
| P5200014     | 4             | Looking east from west end.                         |
| P5200015     | 3             | Looking west from east end.                         |
| P5200016     | 3             | Looking east from west end. (see photo P4180008)    |

MIDDLE FORK AMERICAN RIVER TUNNEL

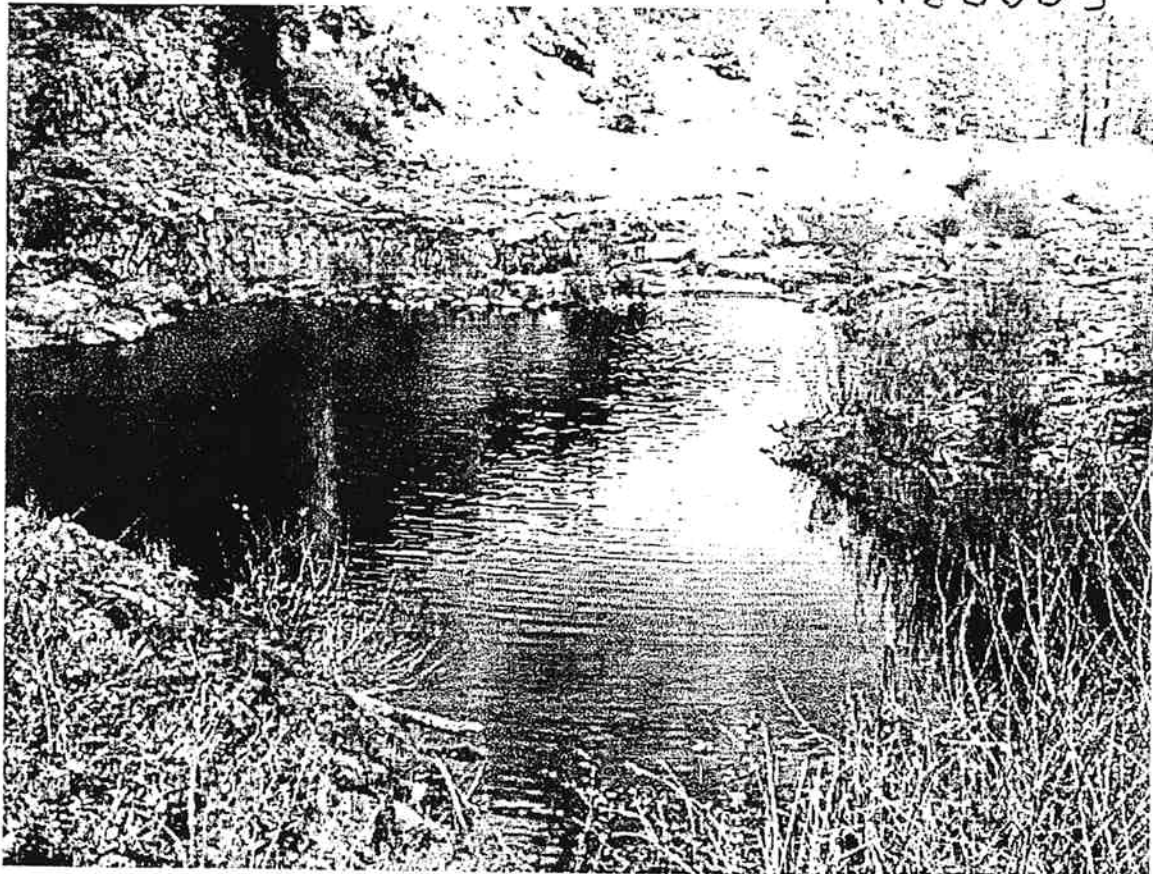


LAKE 1

P4180003



P4180005



# Aquatic Survey Data Sheet

Site: 1. daisy

|                                               |                                  |                                     |                                       |
|-----------------------------------------------|----------------------------------|-------------------------------------|---------------------------------------|
| Date: 04-18-03<br>(mm-dd-yy)                  | Begin Time: 1525                 | Total Time: 15 min                  | Observer(s): G. Elliott L. Elliott    |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                     | Owner: ?<br>NPS FS BLM<br>SL (P) Oth. |
| County: El Dorado<br>Placer                   | Elevation: 1060 m                | North UTM: 4319659                  | East UTM: 693793 (10)<br>345678 11    |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678                    | 10<br>11                              |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                       |

|                             |                           |              |                              |                                 |                                      |
|-----------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|
| Weather: Clear<br>PL Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: 68 C<br>(at 1 m) (E) | Water Temp.: 51 C<br>(0.5 m out) (F) |
|-----------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|

|                                  |                |                                                                                   |                                        |
|----------------------------------|----------------|-----------------------------------------------------------------------------------|----------------------------------------|
| Habitat: Natural 1 (2) 3 4 5     | Altered        | Description: Lake River Woodland Meadow/Wet<br>Ditch Pond Stream Grassland Spring | Drainage: Permanent Seasonal           |
| Site Length: m                   | Aver. Width: m | Aver. Depth: m                                                                    | Max Depth: 7.4 m                       |
| Water Turbidity: Clear 1 2 3 4 5 | Turbid         | Mid-day Shade: 10 %                                                               | Emergent Vegetation: %                 |
| Water-shed: X Natural Urban      | Grazed         | X Logged (last 15 yr.)                                                            | Substrate: X Silt X < 2 mm 75 - 300 mm |
|                                  | Agricul.       | X Other Mining                                                                    | X Bedrock 2 - 75 mm > 300 mm           |
| Predominant Vegetation: Willow   |                |                                                                                   |                                        |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                          | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------|-------------------------------|
| RACT    |        |           | ~50    |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | ~150   |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |



Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cutoff outflow channel from tunnel diversion  
lake is remnant river channel pool.  
Midday shade from riparian vegetation.  
Water flow across north end of lake from river  
high water spill into lake.

Two river otters seen in lake at 1800.



# Aquatic Survey Data Sheet

Site: L. night

|                                               |                                  |                                     |                                               |
|-----------------------------------------------|----------------------------------|-------------------------------------|-----------------------------------------------|
| Date: 04-18-03<br>(mm-dd-yy)                  | Begin Time: 2000                 | Total Time: 10 min                  | Observer(s):<br>1 2 3 4 G. Elliott L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL (P.L.) Oth.      |
| County: Placer                                | Elevation: 1060 m                | North UTM: 4319659                  | East UTM: 345678 693793 10 11                 |
| Topographic Map: 7.5' 15' Foresthill          | North UTM:                       | East UTM:                           | 10 11                                         |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                               |

|                              |                           |              |                      |              |                                 |                                 |
|------------------------------|---------------------------|--------------|----------------------|--------------|---------------------------------|---------------------------------|
| Weather: Clear<br>Pl. Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0<br>(mph) < 5 | 5-20<br>> 20 | Air Temp.: 68 C<br>(at 1 m) (F) | Water Temp.: C<br>(0.5 m out) F |
|------------------------------|---------------------------|--------------|----------------------|--------------|---------------------------------|---------------------------------|

|                                |                     |                                                                                   |                                                          |
|--------------------------------|---------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|
| Habitat: Natural 1 (2) 3 4 5   | Altered             | Description: Lake River Woodland Meadow/Wet<br>Ditch Pond Stream Grassland Spring | Drainage: Permanent Seasonal                             |
| Site Length: m                 | Aver. Width: m      | Aver. Depth: m                                                                    | Max Depth: 7.4 m                                         |
| Water Clear Turbid             | Mid-day Shade: 10 % | Emergent Vegetation: %                                                            | Water Flow: 0 7-11 sec.<br>sec/10 ft. < 7 sec. > 11 sec. |
| Turbidity: 1 2 3 4 5           | Shade: 10 %         | Vegetation: %                                                                     | Floating Vegetation: %                                   |
| Water-shed: X Natural Urban    | Grazed Agri. X      | Logged (last 15 yr.) X                                                            | Other Mining                                             |
| Predominant Vegetation: Willow |                     | Substrate: X Silt X < 2 mm 75-300 mm<br>X Bedrock 2-75 mm > 300 mm                |                                                          |

|                        |                          |                             |
|------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes No | Fish Present: Yes No (?) | Species and Approx. Number: |
|------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae  | Eggs | DNA # | Survey Method(s)                          | Other                         |
|---------|--------|-----------|---------|------|-------|-------------------------------------------|-------------------------------|
| RACT    |        |           | present |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | present |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cutoff oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool.  
 Midday shade from riparian vegetation.  
 Water flow across north end of lake from river  
 high water spill into lake

# Aquatic Survey Data Sheet

Site: 1. clay

|                                                |                                  |                                     |                                              |
|------------------------------------------------|----------------------------------|-------------------------------------|----------------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)                   | Begin Time: 1700                 | Total Time: 10 min                  | Observer(s):<br>1/234 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - M. R. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL (P) Oth.        |
| County: El Dorado/<br>Placer                   | Elevation: 1060 m                | North UTM: 4319659<br>GPS Map       | East UTM: 693793 10<br>345678 11             |
| Topographic Map: 7.5' 15' Foresthill           |                                  | North UTM: GPS Map                  | East UTM: 10<br>345678 11                    |
| Distance to Mapped trail: km                   | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                              |

|                             |                           |              |                              |                                 |                                      |
|-----------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|
| Weather: Clear<br>PL Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: 79 C<br>(at 1 m) (F) | Water Temp.: 57 C<br>(0.5 m out) (F) |
|-----------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|

|                                       |                |                                                                                    |                                      |
|---------------------------------------|----------------|------------------------------------------------------------------------------------|--------------------------------------|
| Habitat: Natural<br>1 (2) 3 4 5       | Altered        | Description: Lake River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: Permanent Seasonal         |
| Site Length: m                        | Aver. Width: m | Aver. Depth: m                                                                     | Max. Depth: 7.4 m                    |
| Water Turbidity: Clear<br>(1) 2 3 4 5 | Turbid         | Mid-day Shade: 10 %                                                                | Emergent Vegetation: %               |
| Water: X Natural                      | Grazed         | X Logged (last 15 yr.)                                                             | Substrate: X Silt < 2 mm 75 - 300 mm |
| shied: Urban                          | Agri cul.      | X Other Mining                                                                     | X Bedrock 2 - 75 mm > 300 mm         |
| Predominant Vegetation: Willow        |                |                                                                                    |                                      |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: (Yes) No | Fish Present: Yes No (7) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                              | Other                         |
|---------|--------|-----------|--------|------|-------|-----------------------------------------------|-------------------------------|
| RACT    |        |           | ~150   |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | ~225   |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

# Aquatic Survey Data Sheet

Site: L. night

|                                                |                                  |                                     |                                            |
|------------------------------------------------|----------------------------------|-------------------------------------|--------------------------------------------|
| Date: 05-24-03<br>(mm-dd-yy)                   | Begin Time: 2040                 | Total Time: 10 min                  | Observer(s):<br>1034 G. Elliott, J. Hanson |
| Locality: Horseshoe Bar - M. F. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL (PM) Oth.     |
| County: El Dorado/<br>Placer                   | Elevation: 1060 m                | North UTM: 4319659                  | East UTM: 693793 (10)<br>11                |
| Topographic Map:<br>7.5' 15' Foresthill        | North UTM:                       | East UTM:                           | 10<br>11                                   |
| Distance to Mapped trail: km                   | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                            |

|                                                                 |                                |                                 |                                      |
|-----------------------------------------------------------------|--------------------------------|---------------------------------|--------------------------------------|
| Weather: (Clear) Overcast Rain<br>Pl. Cloudy Mostly Cloudy Snow | Wind: (0) 5-20<br>(mph) <5 >20 | Air Temp.: 68 C<br>(at 1 m) (F) | Water Temp.: 56 C<br>(0.5 m out) (F) |
|-----------------------------------------------------------------|--------------------------------|---------------------------------|--------------------------------------|

|                                                                              |                                                |                                                                                      |                                |
|------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------|
| Habitat: Natural (2) 3 4 5                                                   | Altered                                        | Description: (Lake) River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal |
| Site Length: m                                                               | Aver. Width: m                                 | Aver. Depth: m                                                                       | Max Depth: 7.4 m               |
| Water Turbidity: (1) 2 3 4 5                                                 | Mid-day Shade: 10 %                            | Emergent Vegetation: %                                                               | Floating Vegetation: %         |
| Water-shed: (X) Natural ( ) Grazed (X) Logged (last 15 yr.) (X) Other Mining | Substrate: (X) Silt (X) < 2 mm ( ) 75 - 300 mm | (X) Bedrock ( ) 2 - 75 mm ( ) > 300 mm                                               |                                |
| Predominant Vegetation: Willow                                               |                                                |                                                                                      |                                |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: (Yes) No | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae  | Eggs | DNA # | Survey Method(s)                                | Other                         |
|---------|--------|-----------|---------|------|-------|-------------------------------------------------|-------------------------------|
| RACT    |        |           | present |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | present |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:



LAKE 2

P4180006



P4180007





8th: 2 day

|                |               |      |           |        |                 |                    |
|----------------|---------------|------|-----------|--------|-----------------|--------------------|
| Weather: Clear | Overcast      | Rain | Wind: 0   | 5 - 20 | Air Temp.: C    | Water Temp.: C     |
| PL. Cloudy     | Mostly Cloudy | Snow | (mph) < 5 | > 20   | (at 1 m) 64 (F) | (0.5 m out) 61 (F) |

|             |             |         |              |      |          |          |             |           |             |          |                      |  |
|-------------|-------------|---------|--------------|------|----------|----------|-------------|-----------|-------------|----------|----------------------|--|
| Habitat:    | Natural     | Altered | Description: | Lake | River    | Woodland | Meadow/Wet. | Drainage: | Permanent   |          |                      |  |
|             | 1           | 2       | 3            | 4    | 5        | Ditch    | Pond        | Stream    | Grassland   |          |                      |  |
|             |             |         |              |      |          |          |             | Spring    | Seasonal    |          |                      |  |
| Site        | Aver.       |         |              |      | Aver.    |          |             |           | Max.        |          |                      |  |
| Length:     | m           |         |              |      | m        |          |             |           | Depth:      |          |                      |  |
|             | Width:      |         |              |      | m        |          |             |           | Depth:      |          |                      |  |
|             | m           |         |              |      | m        |          |             |           | 7.3 m       |          |                      |  |
| Water       | Clear       | Turbid  |              |      |          | Mid-day  |             |           |             | Emergent |                      |  |
| Turbidity:  | 1           | 2       | 3            | 4    | 5        | Shade:   |             |           |             | %        |                      |  |
|             |             |         |              |      | 10       |          |             |           | %           |          |                      |  |
| Water-      | X           | Natural | Grazed       |      |          |          | X           |           |             |          | Logged (last 15 yr.) |  |
| shed:       | Urban       |         |              |      | Agricul. |          |             |           | X           |          |                      |  |
|             |             |         |              |      | Other    |          |             |           | Mining      |          |                      |  |
| Substrate:  | X           |         |              |      | Silt     |          |             |           | X           |          |                      |  |
|             |             |         |              |      | < 2 mm   |          |             |           | 75 - 300 mm |          |                      |  |
|             |             |         |              |      | Bedrock  |          |             |           | 2 - 75 mm   |          |                      |  |
|             |             |         |              |      |          |          |             |           | > 300 mm    |          |                      |  |
| Predominant | Vegetation: |         |              |      |          |          |             |           |             |          |                      |  |
|             | Willow      |         |              |      |          |          |             |           |             |          |                      |  |

|                                                            |                                                          |                                |
|------------------------------------------------------------|----------------------------------------------------------|--------------------------------|
| Fishing Tackle:<br>Yes <input checked="" type="radio"/> No | Fish Present:<br>Yes No <input checked="" type="radio"/> | Species and<br>Approx. Number: |
|------------------------------------------------------------|----------------------------------------------------------|--------------------------------|

[illegible]

Site:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Date:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Comments:

Cutoff oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool.  
 Midday shade from riparian vegetation.

# Aquatic Survey Data Sheet

Site: 2. Wright

|                                               |                                  |                                     |                                            |
|-----------------------------------------------|----------------------------------|-------------------------------------|--------------------------------------------|
| Date: 04-18-03<br>(mm-dd-yy)                  | Begin Time: 2015                 | Total Time: 30 min                  | Observer(s): 1 2 3 4 G. Elliott L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL (PW) Oth.     |
| County: Placer                                | Elevation: 1060 m                | North UTM: 4319439                  | East UTM: 693733 10                        |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678                    | 11                                         |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                            |

|                |               |      |              |                 |                |
|----------------|---------------|------|--------------|-----------------|----------------|
| Weather: Clear | Overcast      | Rain | Wind: 0 5-20 | Air Temp.: 68 C | Water Temp.: C |
| Pl. Cloudy     | Mostly Cloudy | Snow | (mph) <5 >20 | (at 1 m) 68 E   | (0.5 m out) F  |

|                                |             |                        |                   |               |             |                     |
|--------------------------------|-------------|------------------------|-------------------|---------------|-------------|---------------------|
| Habitat: Natural               | Altered     | Description: Lake      | River             | Woodland      | Meadow/Wet. | Drainage: Permanent |
| 1 2 3 4 5                      |             | Ditch                  | Pond              | Stream        | Grassland   | Spring              |
| Site                           | Aver.       | Aver.                  | Max               | Water Flow: 0 | 7-11 sec.   |                     |
| Length: m                      | Width: m    | Depth: m               | Depth: 7.3 m      | sec/10 ft     | <7 sec.     | >11 sec.            |
| Water: Clear                   | Turbid      | Mid-day                | Emergent          | Floating      |             |                     |
| Turbidity: 1 2 3 4 5           | Shade: 10 % | Vegetation: %          | Vegetation: %     | Vegetation: % |             |                     |
| Water-shed: X Natural          | Grazed      | X Logged (last 15 yr.) | Substrate: X Silt | X <2 mm       | 75-300 mm   |                     |
| Urban                          | Agricul.    | X Other Mining         | Bedrock           | 2-75 mm       | >300 mm     |                     |
| Predominant Vegetation: Willow |             |                        |                   |               |             |                     |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae  | Eggs | DNA # | Survey Method(s)                                | Other                         |
|---------|--------|-----------|---------|------|-------|-------------------------------------------------|-------------------------------|
| RACT    | 2      |           | present |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    | ~25    |           | present |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| RUBO    | 1      |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cutoff oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool  
 Midday shade from riparian vegetation

# Aquatic Survey Data Sheet

Site: 2 day

|                                                |                                  |                                     |                                         |
|------------------------------------------------|----------------------------------|-------------------------------------|-----------------------------------------|
| Date: 05-21-03<br>(mm-dd-yy)                   | Begin Time: 1625                 | Total Time: 35 min                  | Observer(s): 1234 G. Elliott, J. Hansen |
| Locality: Horseshoe Bar - H. F. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL (P) Oth.   |
| County: El Dorado/<br>Placer                   | Elevation: 1060 m                | North UTM: 4319439<br>GPS Map       | East UTM: 693733 (10)<br>345678 11      |
| Topographic Map: 7.5' 15' Foresthill           | North UTM: GPS Map               | East UTM: 345678 10<br>11           |                                         |
| Distance to Mapped trail: km                   | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                         |

|                |               |      |              |                 |                   |
|----------------|---------------|------|--------------|-----------------|-------------------|
| Weather: Clear | Overcast      | Rain | Wind: 0 5-20 | Air Temp.: 93 C | Water Temp.: 80 C |
| PL Cloudy      | Mostly Cloudy | Snow | (mch) <5 >20 | (at 1 m) F      | (0.5 m out) F     |

|                                |          |                        |                   |               |              |                     |
|--------------------------------|----------|------------------------|-------------------|---------------|--------------|---------------------|
| Habitat: Natural               | Altered  | Description: Lake      | River             | Woodland      | Meadow/Wetl. | Drainage: Permanent |
| 1 (2) 3 4 5                    |          | Ditch                  | Pond              | Stream        | Grassland    | Seasonal            |
| Site                           | Aver.    | Aver.                  | Max               | Water Flow    | 0            | 7-11 sec.           |
| Length: m                      | Width: m | Depth: m               | Depth: 7.3 m      | sec/10 ft     | <7 sec.      | >11 sec.            |
| Water Clear                    | Turbid   | Mid-day                | Emergent          | Floating      |              |                     |
| Turbidity: 1 (2) 3 4 5         |          | Shade: 10 %            | Vegetation: %     | Vegetation: % |              |                     |
| Water-shed: X Natural          | Grazed   | X Logged (last 15 yr.) | Substrate: X Silt | X <2 mm       | 75-300 mm    |                     |
| Urban                          | Agricul. | X Other Mining         | Bedrock           | 2-75 mm       | >300 mm      |                     |
| Predominant Vegetation: Willow |          |                        |                   |               |              |                     |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                          | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------|-------------------------------|
| RACT    | 5      | 3         | ~800   |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | ~600   |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| THCO    | 1      |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| BUBO    |        |           | ~2000  |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS                  | Voucher<br>Pathology          |

Site:

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

# Aquatic Survey Data Sheet

Site: 2 night

|                                               |                                  |                                     |                                                |
|-----------------------------------------------|----------------------------------|-------------------------------------|------------------------------------------------|
| Date: 05-21-03<br>(mm-dd-yy)                  | Begin Time: 2050                 | Total Time: 35 min                  | Observer(s): G. Elliott J. Harrison<br>1/2/3/4 |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL PML Oth.          |
| County: El Dorado<br>Placer                   | Elevation: 1060 m                | North UTM: 4319439<br>GPS Map       | East UTM: 693733 10<br>345878 11               |
| Topographic Map: 7.5° 15° Foresthill          | North UTM: GPS Map               | East UTM: 345878 10<br>11           |                                                |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                                |

|                              |                           |              |                              |                                 |                                      |
|------------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|
| Weather: Clear<br>Pl. Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: 68 C<br>(at 1 m) (F) | Water Temp.: 75 C<br>(0.5 m out) (F) |
|------------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|

|                                                                                                                 |                                            |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Habitat: Natural 1 2 3 4 5<br>Description: Lake River Woodland Meadow/Wet<br>Ditch Pond Stream Grassland Spring | Drainage: Permanent Seasonal               |
| Site Length: m                                                                                                  | Aver. Width: m                             |
| Water Turbidity: 1 2 3 4 5                                                                                      | Mid-day Shade: 10 %                        |
| Water-shed: X Natural Urban                                                                                     | Grazed Agricultural                        |
| Substrate: X Silt Bedrock                                                                                       | X < 2 mm 75 - 300 mm<br>2 - 75 mm > 300 mm |
| Predominant Vegetation: Willow                                                                                  |                                            |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae  | Eggs | DNA # | Survey Method(s)                              | Other                         |
|---------|--------|-----------|---------|------|-------|-----------------------------------------------|-------------------------------|
| TRACT   | 4      | 6         | present |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    | 5      |           | present |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| BUBO    | 1      |           | present |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |         |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |



Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

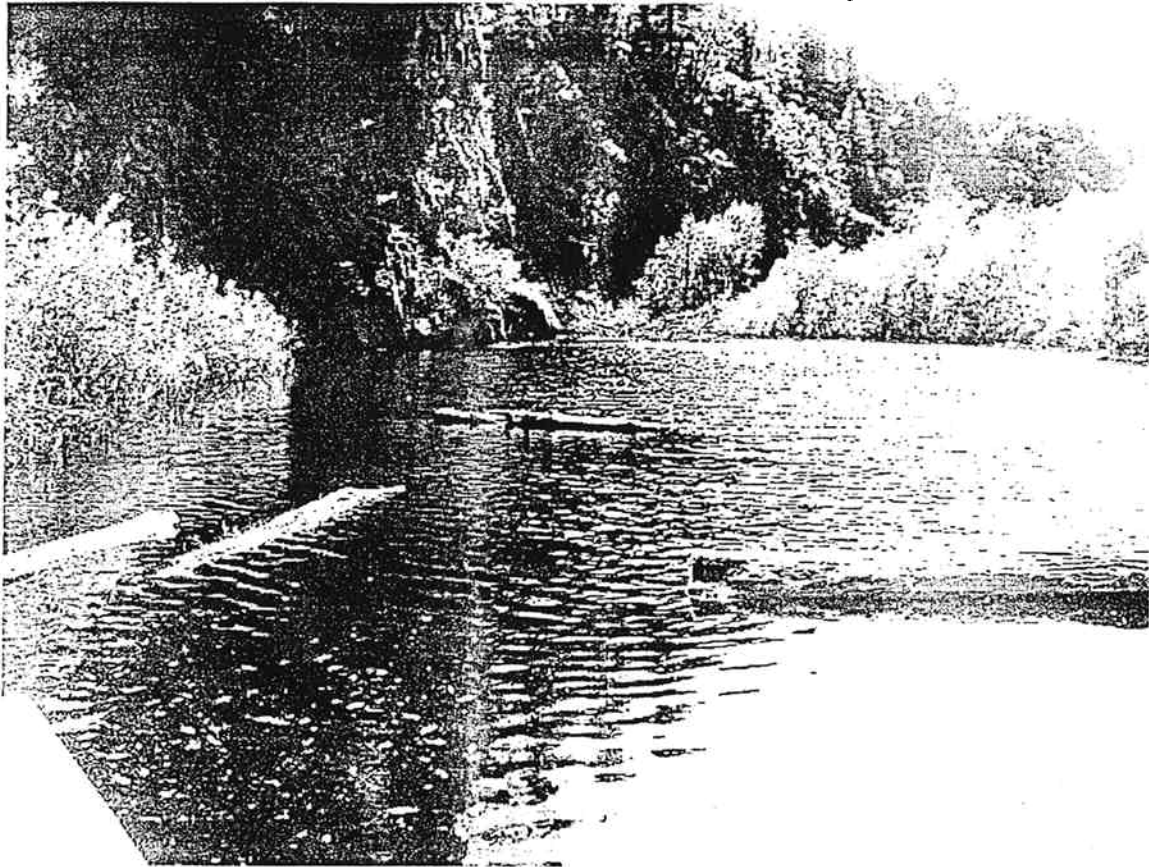
|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Another BUBO Adult seen crossing road near pond @ 2135.

LAKE 3

P5200015



P5200016



# Aquatic Survey Data Sheet

Site: 3 day

|                                               |                                  |                                       |                                       |
|-----------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------|
| Date: 04-15-03<br>(mm-dd-yy)                  | Begin Time: 1415                 | Total Time: 15 min                    | Observer(s): G. Elliott, L. Elliott   |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL, P, Oth. |
| County: El Dorado / Placer                    | Elevation: 1060 m                | North UTM: 4319368<br>GPS Map: 693932 | East UTM: 693932<br>345678 4319368    |
| Topographic Map: 7.5 15° Foresthill           |                                  | North UTM:                            | East UTM: 10<br>345678 11             |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 4 km   |                                       |

|                              |                           |              |                      |              |                            |                                 |
|------------------------------|---------------------------|--------------|----------------------|--------------|----------------------------|---------------------------------|
| Weather: Clear<br>Pl. Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0<br>(mph) < 5 | 5-20<br>> 20 | Air Temp.: C<br>(at 1 m) F | Water Temp.: C<br>(0.5 m out) F |
|------------------------------|---------------------------|--------------|----------------------|--------------|----------------------------|---------------------------------|

|                                 |                                 |                                                                     |                                                                |
|---------------------------------|---------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------|
| Habitat: Natural<br>1 (2) 3 4 5 | Altered                         | Description: Lake<br>Ditch Pond Stream Grassland Meadow/Wet. Spring | Drainage: Permanent<br>Seasonal                                |
| Site Length: m                  | Aver. Width: m                  | Aver. Depth: m                                                      | Max Depth: 6.7 m                                               |
| Water Flow: 0<br>sec/10 ft      | 7-11 sec.<br>< 7 sec. > 11 sec. |                                                                     |                                                                |
| Water Turbidity: 1 (2) 3 4 5    | Clear<br>Turbid                 | Mid-day Shade: 80 %                                                 | Emergent Vegetation: %                                         |
| Water-shed: X Natural<br>Urban  | Grazed<br>Agricul.              | X Logged (last 15 yr.)<br>X Other Mining                            | Substrate: X Silt < 2 mm 75-300 mm<br>Bedrock 2-75 mm > 300 mm |
| Predominant Vegetation: Willow  |                                 |                                                                     |                                                                |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                              | Other                         |
|---------|--------|-----------|--------|------|-------|-----------------------------------------------|-------------------------------|
| RACT    |        |           | 3      |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | 2      |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

| Species | Time | Sex | Weight (g) | Length (cm) |
|---------|------|-----|------------|-------------|
| 1       |      |     |            |             |
| 2       |      |     |            |             |
| 3       |      |     |            |             |
| 4       |      |     |            |             |
| 5       |      |     |            |             |
| 6       |      |     |            |             |
| 7       |      |     |            |             |
| 8       |      |     |            |             |
| 9       |      |     |            |             |
| 10      |      |     |            |             |
| 11      |      |     |            |             |
| 12      |      |     |            |             |

Date:

| Species | Time | Sex | Weight (g) | Length (cm) |
|---------|------|-----|------------|-------------|
| 1       |      |     |            |             |
| 2       |      |     |            |             |
| 3       |      |     |            |             |
| 4       |      |     |            |             |
| 5       |      |     |            |             |
| 6       |      |     |            |             |
| 7       |      |     |            |             |
| 8       |      |     |            |             |
| 9       |      |     |            |             |
| 10      |      |     |            |             |
| 11      |      |     |            |             |
| 12      |      |     |            |             |

Comments:

Cut off oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool  
 Midday shade from vertical cliff on south  
 side of lake.

# Aquatic Survey Data Sheet

Site: 3 night

|                                                            |                                                     |                                                                |                                                                |
|------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Date: <u>04-15-03</u><br>(mm-dd-yy)                        | Begin Time: <u>2000</u>                             | Total Time: <u>15</u> min                                      | Observer(s): <u>G. Elliott, L. Elliott</u>                     |
| Locality: <u>Horseshoe Bar - M.F. American River</u>       |                                                     |                                                                | Owner: <u>7</u><br>NPS FS BLM<br>SL (Pvt) Oth.                 |
| County: <u>El Dorado</u><br><u>Placer</u>                  | Elevation: <u>1060</u> m                            | North UTM: <u>4319368</u><br>GPS Map: <u>493932</u>            | East UTM: <u>693932</u> <u>(10)</u><br><u>345678</u> <u>11</u> |
| Topographic Map: <u>Foresthill</u><br><u>7.5</u> <u>15</u> | North UTM: <u>4319368</u><br>GPS Map: <u>493932</u> | East UTM: <u>693932</u> <u>(10)</u><br><u>345678</u> <u>11</u> |                                                                |
| Distance to Mapped trail: <u>        </u> km               | Distance to Public dirt road: <u>        </u> km    | Distance to Public paved road: <u>4</u> km                     |                                                                |

|                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weather: <u>Clear</u> <u>Overcast</u> <u>Rain</u> <u>Wind: 0</u> <u>5-20</u> <u>Air Temp.: C</u> <u>Water Temp.: C</u><br><u>Pl. Cloudy</u> <u>Mostly Cloudy</u> <u>Snow</u> <u>(mph) &lt;5</u> <u>&gt;20</u> <u>(at 1 m) F</u> <u>(0.5 m out) F</u> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Habitat: <u>Natural</u> <u>Altered</u> <u>Description: Lake</u> <u>River</u> <u>Woodland</u> <u>Meadow/Wetl.</u> <u>Drainage: Permanent</u><br><u>1</u> <u>(2)</u> <u>3</u> <u>4</u> <u>5</u> <u>Ditch</u> <u>Pond</u> <u>Stream</u> <u>Grassland</u> <u>Spring</u> <u>Seasonal</u> |
| Site: <u>        </u> <u>Aver. 6.7</u> <u>Water Flow: 0</u> <u>7-11 sec.</u><br><u>Length: m</u> <u>Width: m</u> <u>Depth: m</u> <u>Depth: m</u> <u>sec./10 ft. &lt;7 sec.</u> <u>&gt;11 sec.</u>                                                                                   |
| Water: <u>Clear</u> <u>Turbid</u> <u>Mid-day</u> <u>Emergent</u> <u>Floating</u><br><u>Turbidity: 1</u> <u>(2)</u> <u>3</u> <u>4</u> <u>5</u> <u>Shade: 80</u> <u>%</u> <u>Vegetation: %</u> <u>Vegetation: %</u>                                                                   |
| Water-shed: <u>X</u> <u>Natural</u> <u>Grazed</u> <u>X</u> <u>Logged (last 15 yr.)</u> <u>Substrate: X</u> <u>SR</u> <u>&lt;2 mm</u> <u>75-300 mm</u><br><u>Urban</u> <u>Agricul.</u> <u>X</u> <u>Other Mining</u> <u>Bedrock</u> <u>2-75 mm</u> <u>&gt;300 mm</u>                  |
| Predominant Vegetation: <u>Willow</u>                                                                                                                                                                                                                                               |

|                                      |                                               |                                             |
|--------------------------------------|-----------------------------------------------|---------------------------------------------|
| Fishing Tackle: <u>Yes</u> <u>No</u> | Fish Present: <u>Yes</u> <u>No</u> <u>(?)</u> | Species and Approx. Number: <u>        </u> |
|--------------------------------------|-----------------------------------------------|---------------------------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)      | Other |
|---------|--------|-----------|--------|------|-------|-----------------------|-------|
| HYRE    | ~10    |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cut off oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool  
 Midday shade from vertical cliff on south  
 side of lake.



# Aquatic Survey Data Sheet

Site: 3. day

|                                               |                                  |                                     |                                       |
|-----------------------------------------------|----------------------------------|-------------------------------------|---------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)                  | Begin Time: 1610                 | Total Time: 15 min                  | Observer(s): G. Elliott, L. Elliott   |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                     | Owner: 7<br>NPS FS BLM<br>SL (P) Oth. |
| County: El Dorado/<br>Placer                  | Elevation: 1060 m                | North UTM: 4319368<br>GPS/Map       | East UTM: 693932 (10)<br>345678 11    |
| Topographic Map: Foresthill<br>(7.5' 15')     | North UTM: 345678                | East UTM: 10<br>345678 11           |                                       |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 4 km |                                       |

|                                                                 |                                |                            |                                       |
|-----------------------------------------------------------------|--------------------------------|----------------------------|---------------------------------------|
| Weather: (Clear) Overcast Rain<br>Pl. Cloudy Mostly Cloudy Snow | Wind: 0 5-20<br>(mph) (<5) >20 | Air Temp.: C<br>F (at 1 m) | Water Temp.: 6.9 C<br>(0.5 m out) (F) |
|-----------------------------------------------------------------|--------------------------------|----------------------------|---------------------------------------|

|                                                        |                                             |                                                                                      |                                |
|--------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------|
| Habitat: Natural 1 (2) 3 4 5                           | Altered                                     | Description: (Lake) River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal |
| Site Length: m                                         | Aver. Width: m                              | Aver. Depth: m                                                                       | Max. Depth: 6.7 m              |
| Water Turbidity: 1 (2) 3 4 5                           | Mid-day Shade: 80 %                         | Emergent Vegetation: %                                                               | Floating Vegetation: %         |
| Water- (X) Natural ( ) Grazed (X) Logged (last 15 yr.) | Substrate: (X) Silt (X) <2 mm ( ) 75-300 mm | ( ) Bedrock 2-75 mm >300 mm                                                          |                                |
| shrub: ( ) Urban ( ) Agricul. (X) Other Mining         | Predominant Vegetation: Willow              |                                                                                      |                                |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                              | Other                         |
|---------|--------|-----------|--------|------|-------|-----------------------------------------------|-------------------------------|
| RACT    |        |           | ~130   |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | ~50    |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |



Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Sta: 3 night

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s) | Other     |
|---------|--------|-----------|--------|------|-------|------------------|-----------|
| RACT ?  |        | 1         |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | N Dip Net Seine  | Photo     |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | N Dip Net Seine  | Photo     |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | N Dip Net Seine  | Photo     |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | N Dip Net Seine  | Photo     |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | N Dip Net Seine  | Photo     |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | N Dip Net Seine  | Photo     |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

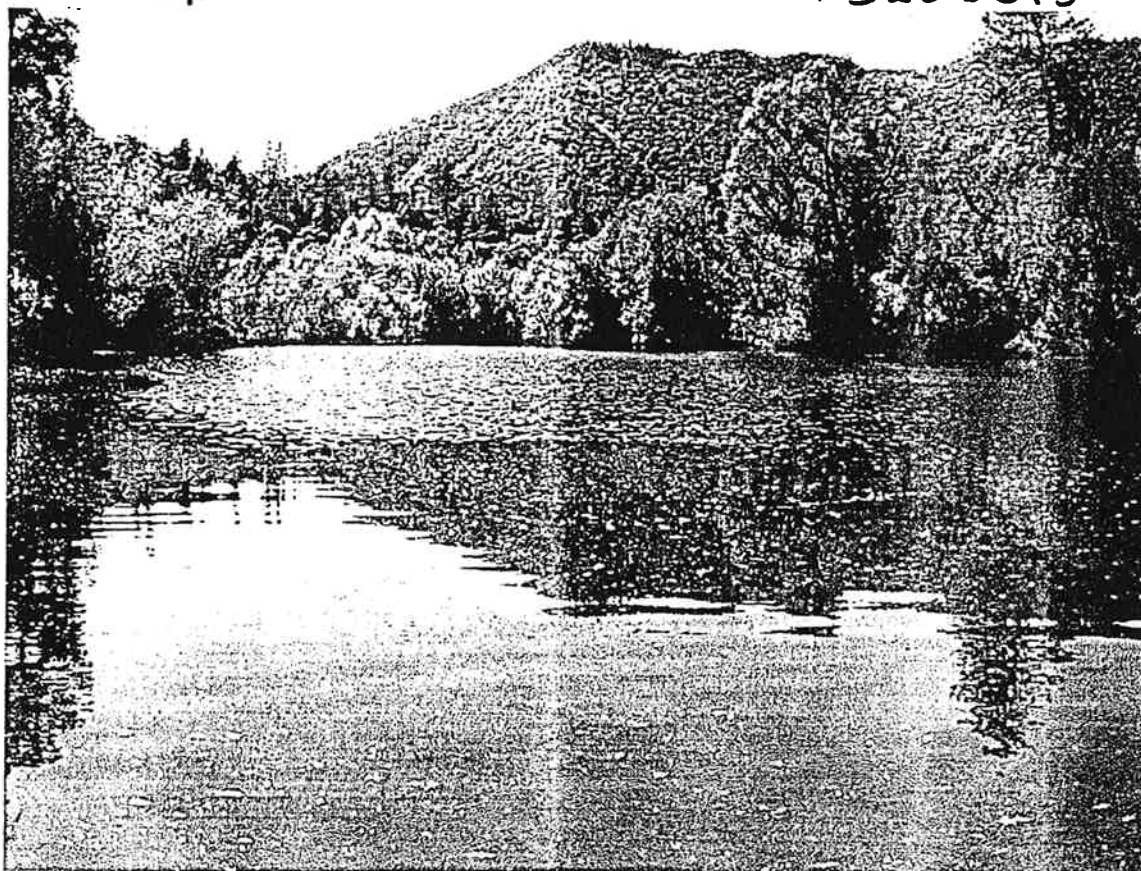
|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

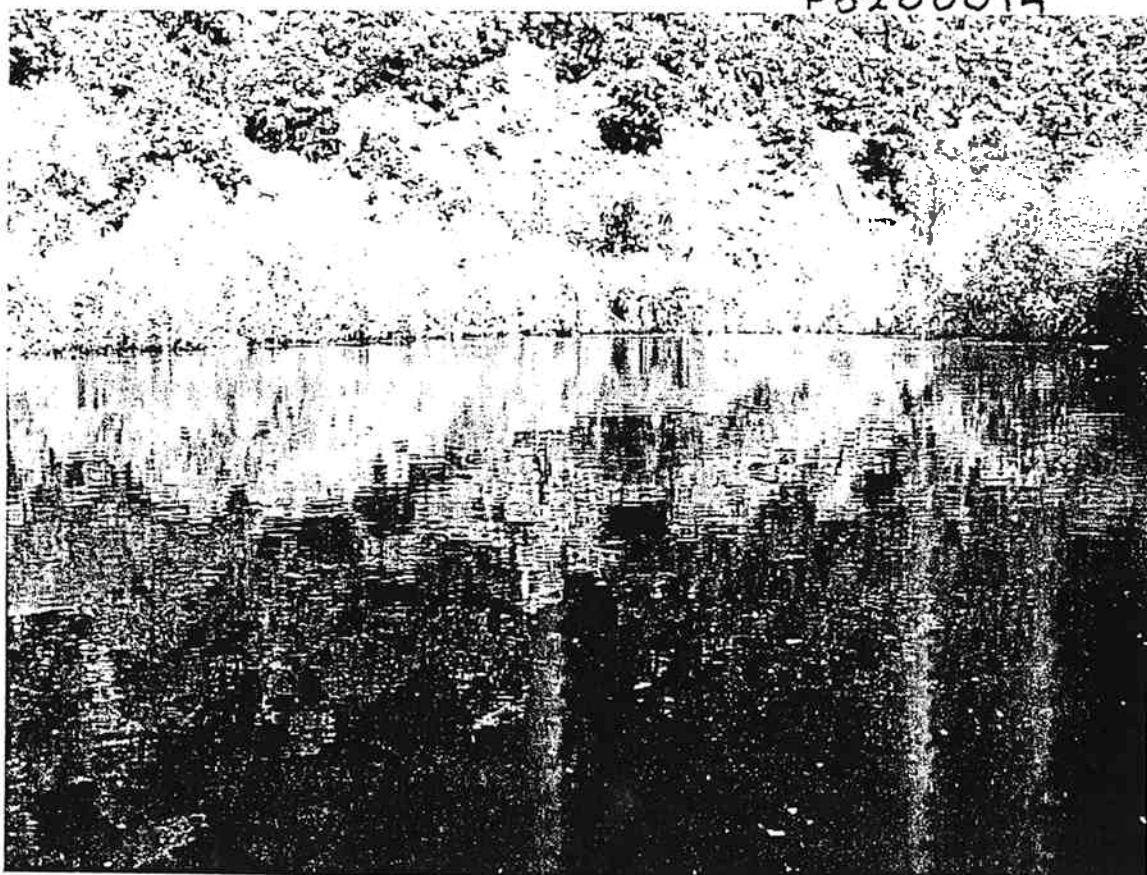
Possible RACT Subadult heard jumping into pond from floating log.

LAKE 4

P5200013



P5200014



# Aquatic Survey Data Sheet

Site: 4. clay

|                                               |                                  |                                       |                                            |
|-----------------------------------------------|----------------------------------|---------------------------------------|--------------------------------------------|
| Date: 04-15-03<br>(mm-dd-yy)                  | Begin Time: 1350                 | Total Time: 20 min                    | Observer(s): 1/23/4 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>St. (Pvt) Oth.   |
| County: Placer                                | Elevation: 1060 m                | North UTM: 4319396                    | East UTM: 345678 694000 10                 |
| Topographic Map: (7.5') 16" Foresthill        | North UTM:                       | East UTM:                             | 11                                         |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.9 km |                                            |

|                |               |      |              |              |                |
|----------------|---------------|------|--------------|--------------|----------------|
| Weather: Clear | Overcast      | Rain | Wind: 0 5-20 | Air Temp.: C | Water Temp.: C |
| PL Cloudy      | Mostly Cloudy | Snow | (mph) <5 >20 | (at 1 m) F   | (0.5 m out) F  |

|                                |             |                                    |                   |               |                  |                     |
|--------------------------------|-------------|------------------------------------|-------------------|---------------|------------------|---------------------|
| Habitat: Natural               | Altered     | Description: Lake                  | River             | Woodland      | Meadow/Wetl.     | Drainage: Permanent |
| 1 (2) 3 4 5                    |             | Ditch Pond Stream Grassland Spring |                   |               |                  | Seasonal            |
| Site                           | Aver.       | Aver.                              | Max               | Water Flow    | 0 7-11 sec.      |                     |
| Length: m                      | Width: m    | Depth: m                           | Depth: 3.7 m      | sec./10 ft.   | <7 sec. >11 sec. |                     |
| Water Clear                    | Turbid      | Mid-dry                            | Emergent          | Floating      |                  |                     |
| Turbidity: 1 (2) 3 4 5         | Shade: 10 % | Vegetation: %                      | Vegetation: %     | Vegetation: % |                  |                     |
| Water: X Natural               | Grazed      | X Logged (last 15 yr.)             | Substrate: X Silt | X < 2 mm      | 75 - 300 mm      |                     |
| shrub: Urban                   | Agricul.    | X Other Mining                     | Bedrock           | 2 - 75 mm     | >300 mm          |                     |
| Predominant Vegetation: Willow |             |                                    |                   |               |                  |                     |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (2) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                          | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------|-------------------------------|
| RACT    |        |           | 5      |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | 5      |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand                               | Voucher                       |

Site:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Date:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Comments:

Cut-off oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool  
 Mud day shade from riparian vegetation



# Aquatic Survey Data Sheet

Site: 4 night

|                                               |                                  |                                       |                                                |
|-----------------------------------------------|----------------------------------|---------------------------------------|------------------------------------------------|
| Date: 04-15-03<br>(mm-dd-yy)                  | Begin Time: 2015                 | Total Time: 20 min                    | Observer(s):<br>1/2/3/4 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (P/L) Oth.        |
| Country: PL/Dorado<br>Placer                  | Elevation: 1060 m                | North UTM: 4319396<br>(R) GPS Map     | East UTM: 694000 (10)<br>345678 11             |
| Topographic Map: 7.5° 15° Foresthill          | North UTM: GPS Map               | East UTM: 345678                      | 10<br>11                                       |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.9 km |                                                |

|                               |                           |              |                              |                            |                                 |
|-------------------------------|---------------------------|--------------|------------------------------|----------------------------|---------------------------------|
| Weather: Clear<br>(PL Cloudy) | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: C<br>(at 1 m) F | Water Temp.: C<br>(0.5 m out) F |
|-------------------------------|---------------------------|--------------|------------------------------|----------------------------|---------------------------------|

|                                 |                     |                                                         |                                      |
|---------------------------------|---------------------|---------------------------------------------------------|--------------------------------------|
| Habitat: Natural<br>1 (2) 3 4 5 | Altered             | Description: Lake<br>Ditch Pond Stream Grassland Spring | Drainage: Permanent<br>Seasonal      |
| Site Length: m                  | Aver. Width: m      | Aver. Depth: m                                          | Max Depth: 8.7 m                     |
| Water Turbidity: 1 (2) 3 4 5    | Mid-day Shade: 10 % | Emergent Vegetation: %                                  | Floating Vegetation: 0 %             |
| Water-shed: X Natural Urban     | Grazed Agricul.     | X Logged (last 15 yr.)                                  | Substrate: X Silt < 2 mm 75 - 300 mm |
|                                 |                     | X Other Mining                                          | Bedrock 2 - 75 mm > 300 mm           |
| Predominant Vegetation: Willow  |                     |                                                         |                                      |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s) | Other     |
|---------|--------|-----------|--------|------|-------|------------------|-----------|
| HYRE    | ~25    |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | (A) Aural TCS    | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |



Site:

| Species | Tiss. | Sex | Weight (g) | Length (cm) |
|---------|-------|-----|------------|-------------|
| 1       |       |     |            |             |
| 2       |       |     |            |             |
| 3       |       |     |            |             |
| 4       |       |     |            |             |
| 5       |       |     |            |             |
| 6       |       |     |            |             |
| 7       |       |     |            |             |
| 8       |       |     |            |             |
| 9       |       |     |            |             |
| 10      |       |     |            |             |
| 11      |       |     |            |             |
| 12      |       |     |            |             |

Date:

| Species | Tiss. | Sex | Weight (g) | Length (cm) |
|---------|-------|-----|------------|-------------|
| 1       |       |     |            |             |
| 2       |       |     |            |             |
| 3       |       |     |            |             |
| 4       |       |     |            |             |
| 5       |       |     |            |             |
| 6       |       |     |            |             |
| 7       |       |     |            |             |
| 8       |       |     |            |             |
| 9       |       |     |            |             |
| 10      |       |     |            |             |
| 11      |       |     |            |             |
| 12      |       |     |            |             |

Comments:

Cutoff oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool  
 Midday shade from riparian vegetation.

# Aquatic Survey Data Sheet

Site: 4. day

|                                               |                                  |                                       |                                            |
|-----------------------------------------------|----------------------------------|---------------------------------------|--------------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)                  | Begin Time: 1535                 | Total Time: 25 min                    | Observer(s): 1(2)34 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>St. (P) Oth.     |
| County: El Dorado/<br>Placer                  | Elevation: 1060 m                | North UTM: 4319396<br>(N) GPS Map     | East UTM: 694000 (10)<br>345678 11         |
| Topographic Map: 7.5' 15' Forest Hill         | North UTM:                       | East UTM:                             | 10<br>11                                   |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.9 km |                                            |

|                                                                 |                              |                            |                                 |
|-----------------------------------------------------------------|------------------------------|----------------------------|---------------------------------|
| Weather: (Clear) Overcast Rain<br>Pl. Cloudy Mostly Cloudy Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: C<br>F (at 1 m) | Water Temp.: C<br>F (0.5 m out) |
|                                                                 |                              |                            | 74 (F)                          |

|                                |                        |                                                                                      |                                |
|--------------------------------|------------------------|--------------------------------------------------------------------------------------|--------------------------------|
| Habitat: Natural 1 (2) 3 4 5   | Altered                | Description: (Lake) River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal |
| Site Length: m                 | Aver. Width: m         | Aver. Depth: m                                                                       | Max. Depth: 8.7 m              |
| Water: Clear Turbid            | Mid-day Shade: 10 %    | Emergent Vegetation: %                                                               | Floating Vegetation: %         |
| Turbidity: 1 2 (3) 4 5         | Shade: 10 %            | Vegetation: %                                                                        | Vegetation: %                  |
| Water: X Natural Grazed        | X Logged (last 15 yr.) | Substrate: X Silt < 2 mm 75 - 300 mm                                                 |                                |
| shad: Urban Agricul.           | X Other Mining         | Bedrock 2 - 75 mm > 300 mm                                                           |                                |
| Predominant Vegetation: Willow |                        |                                                                                      |                                |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                            | Other                         |
|---------|--------|-----------|--------|------|-------|---------------------------------------------|-------------------------------|
| RACT    |        |           | ~300   |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | ~150   |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

# Aquatic Survey Data Sheet

Site: 4 night

|                                               |                                  |                                       |                                       |
|-----------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)                  | Begin Time: 2055                 | Total Time: 25 min                    | Observer(s): G. Elliott, L. Elliott   |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (P) Oth. |
| County: El Dorado/<br>Placer                  | Elevation: 1060 m                | North UTM: 4319396                    | East UTM: 345678 694000 (10)          |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678                      | 11                                    |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.9 km |                                       |

|                                                                 |                                |                            |                                      |
|-----------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------------|
| Weather: (Clear) Overcast Rain<br>Pl. Cloudy Mostly Cloudy Snow | Wind: (0) 5-20<br>(mph) <5 >20 | Air Temp.: C<br>(at 1 m) F | Water Temp.: C<br>(0.5 m out) 72 (F) |
|-----------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------------|

|                                |                |                                                                                      |                                |
|--------------------------------|----------------|--------------------------------------------------------------------------------------|--------------------------------|
| Habitat: Natural 1 (2) 3 4 5   | Altered        | Description: (Lake) River Woodland Meadow/Well<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal |
| Site Length: m                 | Aver. Width: m | Aver. Depth: m                                                                       | Max Depth: 8.7 m               |
| Water Turbidity: 1 2 (3) 4 5   | Turbid         | Mid-day Shade: 10 %                                                                  | Emergent Vegetation: %         |
| Water: X Natural               | Grazed         | X Logged (last 15 yr.)                                                               | Substrate: X Silt              |
| shrub: Urban                   | Agricul.       | X Other Mining                                                                       | Bedrock 2-75 mm                |
| Predominant Vegetation: Willow |                |                                                                                      |                                |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s) | Other     |
|---------|--------|-----------|--------|------|-------|------------------|-----------|
| RACT    | 1      |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | (A) Aural TCS    | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |
|         |        |           |        |      |       | N Visual Hand    | Voucher   |
|         |        |           |        |      |       | A Aural TCS      | Pathology |
|         |        |           |        |      |       | A Dip Net Seine  | Photo     |

Site:

Date:

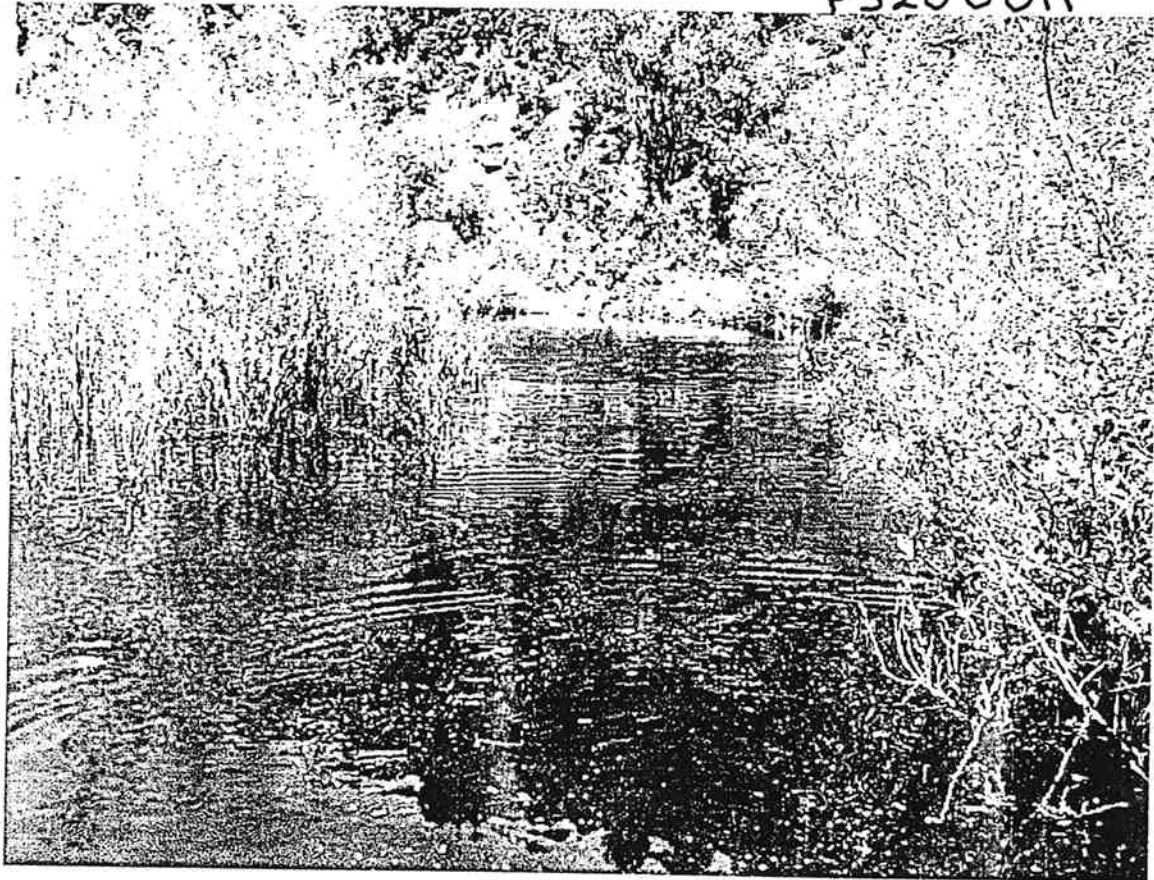
|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

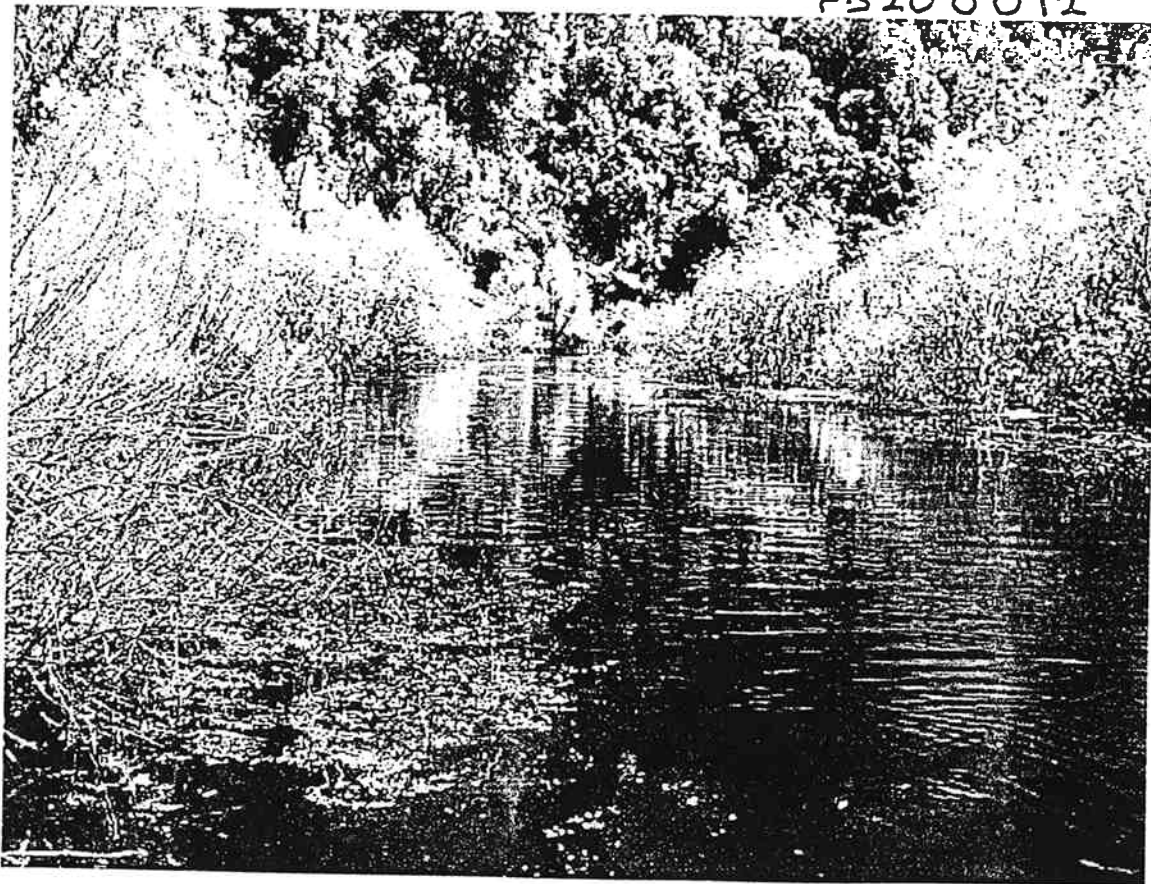
Comments:

LAKE 5

P5200011



P5200012





# Aquatic Survey Data Sheet

Site: 5 day

|                                               |                                  |                                       |                                             |
|-----------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------------|
| Date: 04-15-03<br>(mm-dd-yy)                  | Begin Time: 1345                 | Total Time: 30 min                    | Observer(s): 1 2 3 4 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (Pvt) Oth.     |
| County: El Dorado<br>Placer                   | Elevation: 1060 m                | North UTM: 4319296<br>GPS Map         | East UTM: 694080 10<br>345678 11            |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678 10<br>11             |                                             |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                             |

|                              |                           |              |                              |                            |                                 |
|------------------------------|---------------------------|--------------|------------------------------|----------------------------|---------------------------------|
| Weather: Clear<br>Pl. Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: C<br>F (at 1 m) | Water Temp.: C<br>F (0.5 m out) |
|------------------------------|---------------------------|--------------|------------------------------|----------------------------|---------------------------------|

|                                       |                    |                                          |                              |                          |                                 |
|---------------------------------------|--------------------|------------------------------------------|------------------------------|--------------------------|---------------------------------|
| Habitat: Natural<br>1 (2) 3 4 5       | Altered            | Description: Lake<br>Ditch Pond Stream   | Woodland<br>Grassland        | Meadow/Wet.<br>Spring    | Drainage: Permanent<br>Seasonal |
| Slope Length: m                       | Aver. Width: m     | Aver. Depth: m                           | Max. Depth: 3.5 m            | Water Flow: 0 sec/10 ft  | 7-11 sec. >11 sec.              |
| Water Turbidity: Clear<br>1 (2) 3 4 5 | Turbid             | Mid-day Shade: 10 %                      | Emergent Vegetation: %       | Floating Vegetation: 0 % |                                 |
| Water-shed: X Natural<br>Urban        | Grazed<br>Agricul. | X Logged (last 15 yr.)<br>X Other Mining | Substrate: X Silt<br>Bedrock | X < 2 mm<br>2 - 75 mm    | 75 - 300 mm<br>>300 mm          |
| Predominant Vegetation: Willow        |                    |                                          |                              |                          |                                 |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (?) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                            | Other                         |
|---------|--------|-----------|--------|------|-------|---------------------------------------------|-------------------------------|
| RACT    |        |           | 20     |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | 10     |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |



Site:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Date:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Comments:

Cut off oxbow channel from tunnel diversion  
 Lake is remnant river channel pool  
 Midday shade from riparian vegetation.

# Aquatic Survey Data Sheet

Site: 5. night

|                                              |                                  |                                       |                                             |
|----------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------------|
| Date: 04-15-03<br>(mm-dd-yy)                 | Begin Time: 2035                 | Total Time: 35 min                    | Observer(s): 1/2 3 4 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar. M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (PM) Oth.      |
| County: El Dorado<br>Placer                  | Elevation: 1060 m                | North UTM: 4319296<br>GPS Map         | East UTM: 694080<br>345678                  |
| Topographic Map: 7.5' 15' Forest Hill        | North UTM:                       | East UTM:                             | 10<br>11                                    |
| Distance to Mapped trail: km                 | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                             |

|                              |                           |              |                  |              |                            |                                 |
|------------------------------|---------------------------|--------------|------------------|--------------|----------------------------|---------------------------------|
| Weather: Clear<br>Pl. Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0<br>(mph) | 5-20<br>> 20 | Air Temp.: C<br>(at 1 m) F | Water Temp.: C<br>(0.5 m out) F |
|------------------------------|---------------------------|--------------|------------------|--------------|----------------------------|---------------------------------|

|                                      |                    |                                                         |                                             |                                                           |
|--------------------------------------|--------------------|---------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------|
| Habitat: Natural<br>1 2 3 4 5        | Altered            | Description: Lake<br>Ditch Pond Stream Grassland Spring | Woodland<br>Meadow/Wet.                     | Drainage: Permanent<br>Seasonal                           |
| Site                                 | Aver.              | Aver.                                                   | Max. 3.5<br>Depth: 6.7 m                    | Water Flow: 0 7-11 sec.<br>sec./10 ft. < 7 sec. > 11 sec. |
| Length: m                            | Width: m           | Depth: m                                                |                                             |                                                           |
| Water: Clear<br>Turbidity: 1 2 3 4 5 | Turbid             | Mid-day<br>Shade: 10 %                                  | Emergent<br>Vegetation: %                   | Floating<br>Vegetation: 0 %                               |
| Water-shed: X Natural<br>Urban       | Grazed<br>Agricul. | X Logged (last 15 yr.)<br>X Other Mining                | Substrate: A Silt < 2 mm<br>Bedrock 2-75 mm | 75-300 mm<br>> 300 mm                                     |
| Predominant Vegetation: willow       |                    |                                                         |                                             |                                                           |

|                             |                           |                                |
|-----------------------------|---------------------------|--------------------------------|
| Fishing Tackle:<br>Yes (No) | Fish Present:<br>Yes No ? | Species and<br>Approx. Number. |
|-----------------------------|---------------------------|--------------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)      | Other |
|---------|--------|-----------|--------|------|-------|-----------------------|-------|
| MYRE    | ~50    |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |
|         |        |           |        |      |       | N Visual Hand Voucher |       |
|         |        |           |        |      |       | A Aural TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo |       |

Site:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Date:

|    | Species | Tiss. | Sex | Weight (g) | Length (cm) |
|----|---------|-------|-----|------------|-------------|
| 1  |         |       |     |            |             |
| 2  |         |       |     |            |             |
| 3  |         |       |     |            |             |
| 4  |         |       |     |            |             |
| 5  |         |       |     |            |             |
| 6  |         |       |     |            |             |
| 7  |         |       |     |            |             |
| 8  |         |       |     |            |             |
| 9  |         |       |     |            |             |
| 10 |         |       |     |            |             |
| 11 |         |       |     |            |             |
| 12 |         |       |     |            |             |

Comments:

Cutoff oxbow channel from tunnel diversion.  
 Lake is remnant river channel pool.  
 Midday shade from riparian vegetation.

# Aquatic Survey Data Sheet

Site: 5 day

|                                               |                                  |                                       |                                             |
|-----------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)                  | Begin Time: 1503                 | Total Time: 35 min                    | Observer(s): 1/2/3/4 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - H.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (P/L) Oth.     |
| County: El Dorado/<br>Placer                  | Elevation: 1060 m                | North UTM: 4319296<br>GPS Map         | East UTM: 694080 10<br>345678 11            |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678 10<br>11             |                                             |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                             |

|                             |                           |              |                              |                               |                                    |
|-----------------------------|---------------------------|--------------|------------------------------|-------------------------------|------------------------------------|
| Weather: Clear<br>PL Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: 92 C<br>(at 1 m) E | Water Temp.: 72 C<br>(0.5 m out) F |
|-----------------------------|---------------------------|--------------|------------------------------|-------------------------------|------------------------------------|

|                                  |                |                                                                                    |                                      |
|----------------------------------|----------------|------------------------------------------------------------------------------------|--------------------------------------|
| Habitat: Natural 1 2 3 4 5       | Altered        | Description: Lake River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: Permanent Seasonal         |
| Site Length: m                   | Aver. Width: m | Aver. Depth: m                                                                     | Max. Depth: 3.5 m                    |
| Water Turbidity: Clear 1 2 3 4 5 | Turbid         | Mid-day Shade: 10 %                                                                | Emergent Vegetation: %               |
| Water-shed: X Natural Urban      | Grazed         | X Logged (last 15 yr.)                                                             | Substrate: X Silt < 2 mm 75 - 300 mm |
|                                  | Agri. cul.     | X Other Mining                                                                     | Bedrock 2 - 75 mm > 300 mm           |
| Predominant Vegetation: Willow   |                |                                                                                    |                                      |

|                        |                        |                             |
|------------------------|------------------------|-----------------------------|
| Fishing Tackle: Yes No | Fish Present: Yes No ? | Species and Approx. Number. |
|------------------------|------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                              | Other                         |
|---------|--------|-----------|--------|------|-------|-----------------------------------------------|-------------------------------|
| RACT    | 1      |           | ~750   |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | ~400   |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

# Aquatic Survey Data Sheet

Site: 5. night

|                                              |                                  |                                       |                                              |
|----------------------------------------------|----------------------------------|---------------------------------------|----------------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)                 | Begin Time: 2125                 | Total Time: 50 min                    | Observer(s): 1/2, 3/4 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar- M.R. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (P) Oth.        |
| County: El Dorado/<br>Placer                 | Elevation: 1060 m                | North UTM: 4319296<br>(1) (2) GPS Map | East UTM: 694080 (10)<br>345678 11           |
| Topographic Map: 7.5' 15' Forest Hill        | North UTM:                       | East UTM: 10<br>345678 11             |                                              |
| Distance to Mapped trail: km                 | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                              |

|                                                                 |                                |                            |                                      |
|-----------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------------|
| Weather: (Clear) Overcast Rain<br>Pl. Cloudy Mostly Cloudy Snow | Wind: (0) 5-20<br>(mph) <5 >20 | Air Temp.: C<br>(at 1 m) F | Water Temp.: C<br>(0.5 m out) 70 (F) |
|-----------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------------|

|                                    |                |                                                                                      |                                      |
|------------------------------------|----------------|--------------------------------------------------------------------------------------|--------------------------------------|
| Habitat: Natural 1 (2) 3 4 5       | Altered        | Description: (Lake) River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal       |
| Site Length: m                     | Aver. Width: m | Aver. Depth: m                                                                       | Max. Depth: 3.5 m                    |
| Water Turbidity: Clear 1 2 (3) 4 5 | Turbid         | Mid-day Shade: 10 %                                                                  | Emergent Vegetation: %               |
| Water-shed: X Natural Urban        | Grazed         | X Logged (last 15 yr.)                                                               | Substrate: X Silt < 2 mm 75 - 300 mm |
|                                    | Agricul.       | X Other Mining                                                                       | Bedrock 2 - 75 mm > 300 mm           |
| Predominant Vegetation: Willow     |                |                                                                                      |                                      |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: Yes No (7) | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                            | Other                         |
|---------|--------|-----------|--------|------|-------|---------------------------------------------|-------------------------------|
| RACT    | 3      |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    | 12     |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

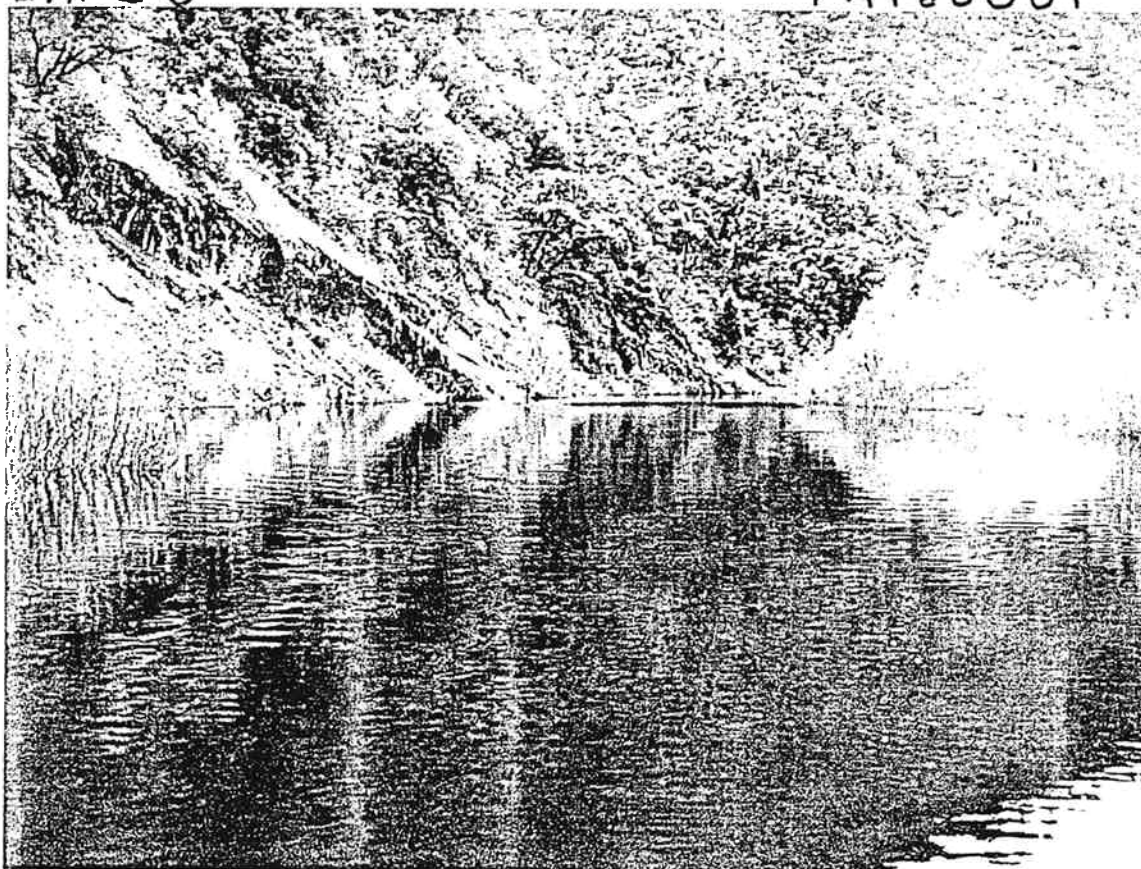
|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

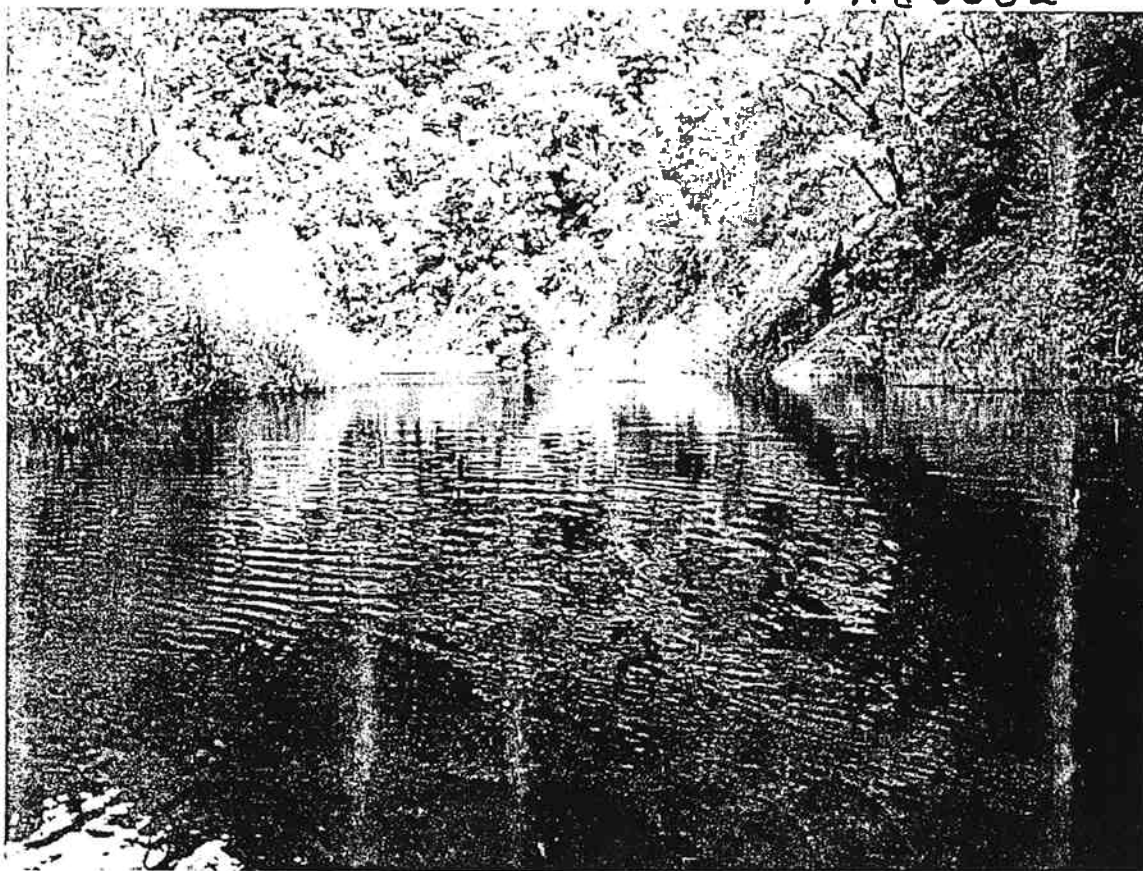


LAKE 6

P4180001



P4180002



# Aquatic Survey Data Sheet

Site: 6. dam

|                                               |                                  |                                       |                                                                                              |
|-----------------------------------------------|----------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------|
| Date: 04-18-03<br>(mm-dd-yy)                  | Begin Time: 1405                 | Total Time: 55 min                    | Observer(s): 1/234 G. Elliott, L. Elliott                                                    |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS <input checked="" type="radio"/> FS <input type="radio"/> BLM<br>SL PVL Oth. |
| Country: <del>USA</del> <u>EXDowd</u>         | Elevation: 1060 m                | North UTM: 4319141                    | East UTM: 694013 <input checked="" type="radio"/> 10<br>11                                   |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678                      | 10<br>11                                                                                     |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                                                                              |

|                                                                                                                                                                                                                                                   |                                 |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------|
| Weather: Clear <input checked="" type="radio"/> Overcast <input type="radio"/> Rain <input type="radio"/> Wind: 0 5-20<br>Pl. Cloudy <input checked="" type="radio"/> Mostly Cloudy <input type="radio"/> Snow <input type="radio"/> (mph) <5 >20 | Air Temp.: 72 C<br>(at 1 m) (F) | Water Temp.: 55 C<br>(0.5 m out) (F) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------|

|                                                                                                                                                                                                                                                                                                                                            |                                                                                    |                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Habitat: Natural <input checked="" type="radio"/> Altered <input type="radio"/> Description: <input checked="" type="radio"/> Lake <input type="radio"/> River <input type="radio"/> Woodland <input type="radio"/> Meadow/Wetl. <input type="radio"/> Drainage: <input checked="" type="radio"/> Permanent <input type="radio"/> Seasonal | 1 2 3 4 5                                                                          | Ditch Pond Stream Grassland Spring                                     |
| Site Length: m                                                                                                                                                                                                                                                                                                                             | Aver. Width: m                                                                     | Aver. Depth: m                                                         |
| Water Clear <input checked="" type="radio"/> Turbid <input type="radio"/> Mid-day Shade: 70 %                                                                                                                                                                                                                                              | Emergent Vegetation: %                                                             | Floating Vegetation: %                                                 |
| Water-shed: <input checked="" type="radio"/> Natural <input type="radio"/> Grazed <input type="radio"/> Logged (last 15 yr.) <input type="radio"/> Substrate: <input checked="" type="radio"/> Silt <input type="radio"/> < 2 mm <input type="radio"/> 75 - 300 mm                                                                         | Urban <input type="radio"/> Agricul. <input checked="" type="radio"/> Other Mining | Bedrock <input type="radio"/> 2 - 75 mm <input type="radio"/> > 300 mm |
| Predominant Vegetation: Willow                                                                                                                                                                                                                                                                                                             |                                                                                    |                                                                        |

|                                                                               |                                                                               |                                                                                                       |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Fishing Tackle: Yes <input checked="" type="radio"/> No <input type="radio"/> | Fish Present: Yes <input checked="" type="radio"/> No <input type="radio"/> ? | Species and Approx. Number: 6 small fish (~1.5 inch length) swimming together near surface - Gambusia |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                          | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------|-------------------------------|
| RACT    |        |           | 20     |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | 5      |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cutoff oxbow channel from tunnel channel.  
 Lake is remnant river channel pool.  
 Midday shade from cliff and steep canyon  
 wall on south side of lake.

# Aquatic Survey Data Sheet

Site: G. night

|                                                      |                                        |                                              |                                                                                                                                                              |
|------------------------------------------------------|----------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date: <u>04-18-03</u><br>(mm-dd-yy)                  | Begin Time: <u>2100</u>                | Total Time: <u>45</u> min                    | Observer(s): <u>G. Elliott, L. Elliott</u>                                                                                                                   |
| Locality: <u>Horseshoe Bar - H.F. American River</u> |                                        |                                              | Owner: <u>7</u><br>NPS <input checked="" type="checkbox"/> FS <input type="checkbox"/> BLM<br>SL <input type="checkbox"/> Ptl. <input type="checkbox"/> Oth. |
| County: <u>El Dorado</u>                             | Elevation: <u>1060</u> m               | North UTM: <u>4319141</u>                    | East UTM: <u>694013</u> <u>10</u>                                                                                                                            |
| Topographic Map: <u>Forest Hill</u>                  | GPS Map                                | North UTM:                                   | East UTM: <u>10</u>                                                                                                                                          |
| (7.5) 15'                                            | GPS Map                                | GPS Map                                      | 345678 <u>11</u>                                                                                                                                             |
| Distance to Mapped trail: _____ km                   | Distance to Public dirt road: _____ km | Distance to Public paved road: <u>3.7</u> km |                                                                                                                                                              |

|                                                    |                                    |                        |                         |
|----------------------------------------------------|------------------------------------|------------------------|-------------------------|
| Weather: <u>Clear</u> <u>Overcast</u> <u>Rain</u>  | Wind: <u>0</u> 5-20                | Air Temp.: <u>52</u> C | Water Temp.: <u>0</u> C |
| <u>Pl. Cloudy</u> <u>Mostly Cloudy</u> <u>Snow</u> | (mph) <u>&lt; 5</u> <u>&gt; 20</u> | (at 1 m) <u>52</u> (F) | (0.5 m out) <u>F</u>    |

|                                                                           |                                                                          |                                            |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------|
| Habitat: <u>Natural</u> <u>Altered</u>                                    | Description: <u>Lake</u> <u>River</u> <u>Woodland</u> <u>Meadow/Wet.</u> | Drainage: <u>Permanent</u> <u>Seasonal</u> |
| 1 <u>2</u> 3 4 5                                                          | Ditch Pond Stream Grassland Spring                                       |                                            |
| Site Length: _____ m                                                      | Aver. Width: _____ m                                                     | Aver. Depth: _____ m                       |
| Water Turbidity: <u>1</u> 2 3 4 5                                         | Mid-day Shade: <u>70</u> %                                               | Emergent Vegetation: _____ %               |
| Water: <u>X</u> Natural <u>___</u> Grazed <u>X</u> Logged (last 15 yr.)   | Substrate: <u>X</u> Silt <u>___</u> < 2 mm <u>___</u> 75 - 300 mm        | Floating Vegetation: _____ %               |
| shaded: <u>___</u> Urban <u>___</u> Agricul. <u>X</u> Other <u>Mining</u> | Bedrock <u>___</u> 2 - 75 mm <u>___</u> > 300 mm                         |                                            |
| Predominant Vegetation: <u>Willow</u>                                     |                                                                          |                                            |

|                                      |                                      |                             |
|--------------------------------------|--------------------------------------|-----------------------------|
| Fishing Tackle: <u>Yes</u> <u>No</u> | Fish Present: <u>Yes</u> <u>No</u> ? | Species and Approx. Number: |
|--------------------------------------|--------------------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)           | Other |
|---------|--------|-----------|--------|------|-------|----------------------------|-------|
| HYRE    | ~40    |           |        |      |       | Visual Hand Voucher        |       |
|         |        |           |        |      |       | <u>Aural</u> TCS Pathology |       |
|         |        |           |        |      |       | A Dip Net Seine Photo      |       |
|         |        |           |        |      |       | Visual Hand Voucher        |       |
|         |        |           |        |      |       | Aural TCS Pathology        |       |
|         |        |           |        |      |       | A Dip Net Seine Photo      |       |
|         |        |           |        |      |       | Visual Hand Voucher        |       |
|         |        |           |        |      |       | Aural TCS Pathology        |       |
|         |        |           |        |      |       | A Dip Net Seine Photo      |       |
|         |        |           |        |      |       | Visual Hand Voucher        |       |
|         |        |           |        |      |       | Aural TCS Pathology        |       |
|         |        |           |        |      |       | A Dip Net Seine Photo      |       |
|         |        |           |        |      |       | Visual Hand Voucher        |       |
|         |        |           |        |      |       | Aural TCS Pathology        |       |
|         |        |           |        |      |       | A Dip Net Seine Photo      |       |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cut-off or bow channel from tunnel diversion  
 Lake is remnant river channel pool  
 Midday shade from cliff and steep canyon  
 wall on south side of lake.



# Aquatic Survey Data Sheet

Site: 6 day

|                                            |                                  |                                       |                                             |
|--------------------------------------------|----------------------------------|---------------------------------------|---------------------------------------------|
| Date: 05/20/03<br>(mm-dd-yy)               | Begin Time: 1414                 | Total Time: 41 min                    | Observer(s): 1/2/3/4 G. Elliott, L. Elliott |
| Locality: Horse shoe Bar MF American River |                                  |                                       | Owner: 7<br>NPS (FS) BLM<br>SL PVL Oth.     |
| County: El Dorado                          | Elevation: 1060 m                | North UTM: 4319141                    | East UTM: 345678 694013                     |
| Topographic Map: 7.5' 15' Foresthill       | North UTM: GPS Map               | East UTM: 345678                      | 10 11                                       |
| Distance to Mapped trail: km               | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                             |

|                              |                           |              |                              |                                 |                                      |
|------------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|
| Weather: Clear<br>Pl. Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: 92 C<br>(at 1 m) (F) | Water Temp.: 73 C<br>(0.5 m out) (F) |
|------------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|

|                                    |                |                                                                           |                                      |
|------------------------------------|----------------|---------------------------------------------------------------------------|--------------------------------------|
| Habitat: Natural 1 (2) 3 4 5       | Altered        | Description: Lake Pond River Stream Woodland Grassland Meadow/Wet. Spring | Drainage: Permanent Seasonal         |
| Site Length: m                     | Aver. Width: m | Aver. Depth: m                                                            | Max. Depth: 6.5 m                    |
| Water Turbidity: Clear 1 (2) 3 4 5 | Turbid         | Mid-day Shade: 70 %                                                       | Emergent Vegetation: %               |
| Water-shed: X Natural Urban        | Grazed         | Logged (last 15 yr.)                                                      | Substrate: X Silt < 2 mm 75 - 300 mm |
|                                    | Agricul.       | X Other Mining                                                            | Bedrock 2 - 75 mm > 300 mm           |
| Predominant Vegetation: Willow     |                |                                                                           |                                      |

|                          |                          |                                                           |
|--------------------------|--------------------------|-----------------------------------------------------------|
| Fishing Tackle: Yes (No) | Fish Present: (Yes) No ? | Species and possible Calif. touch - several schools of 20 |
|                          |                          | Approx. Number:                                           |

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                          | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------|-------------------------------|
| RACT    | 1      |           | ~600   |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYPER   |        |           | ~450   |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual Hand<br>Aural TCS<br>Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:



# Aquatic Survey Data Sheet

Site: 6. night

|                                      |                                  |                                       |                                             |
|--------------------------------------|----------------------------------|---------------------------------------|---------------------------------------------|
| Date: 05-20-03<br>(mm-dd-yy)         | Begin Time: 2225                 | Total Time: 60 min                    | Observer(s): 1/2/3/4 G. Elliott, L. Elliott |
| Locality:                            |                                  |                                       | Owner: 7<br>NPS (FS) BLM<br>SL PL Oth.      |
| County: El Dorado                    | Elevation: 1060 m                | North UTM: GPS Map 4319141            | East UTM: 345678 694013 (10)                |
| Topographic Map: 7.5' 15' Foresthill | North UTM: GPS Map               | East UTM: 345678                      | 11                                          |
| Distance to Mapped trail: km         | Distance to Public dirt road: km | Distance to Public paved road: 3.7 km |                                             |

|                                                                |                                |                                 |                                      |
|----------------------------------------------------------------|--------------------------------|---------------------------------|--------------------------------------|
| Weather: (Clear) Overcast Rain<br>PL Cloudy Mostly Cloudy Snow | Wind: (0) 5-20<br>(mph) <5 >20 | Air Temp.: 64 C<br>(at 1 m) (E) | Water Temp.: 70 C<br>(0.5 m out) (F) |
|----------------------------------------------------------------|--------------------------------|---------------------------------|--------------------------------------|

|                                |                |                                                                                      |                                |
|--------------------------------|----------------|--------------------------------------------------------------------------------------|--------------------------------|
| Habitat: Natural 1 (2) 3 4 5   | Altered        | Description: (Lake) River Woodland Meadow/Wet.<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal |
| Site Length: m                 | Aver. Width: m | Aver. Depth: m                                                                       | Max. Depth: 6.5 m              |
| Water Turbidity: 1 (2) 3 4 5   | Turbid         | Mid-day Shade: 70 %                                                                  | Emergent Vegetation: %         |
| Water- X Natural               | Grazed         | X Logged (last 15 yr.)                                                               | Substrate: X Silt              |
| shod: Urban                    | Agricul.       | X Other Mining                                                                       | Bedrock                        |
| Predominant Vegetation: Willow |                |                                                                                      |                                |

|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| Fishing Tackle: Yes (No) | Fish Present: (Yes) No ? | Species and Approx. Number: |
|--------------------------|--------------------------|-----------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                                | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------------|-------------------------------|
| RACT    | 13     |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    | 1      |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

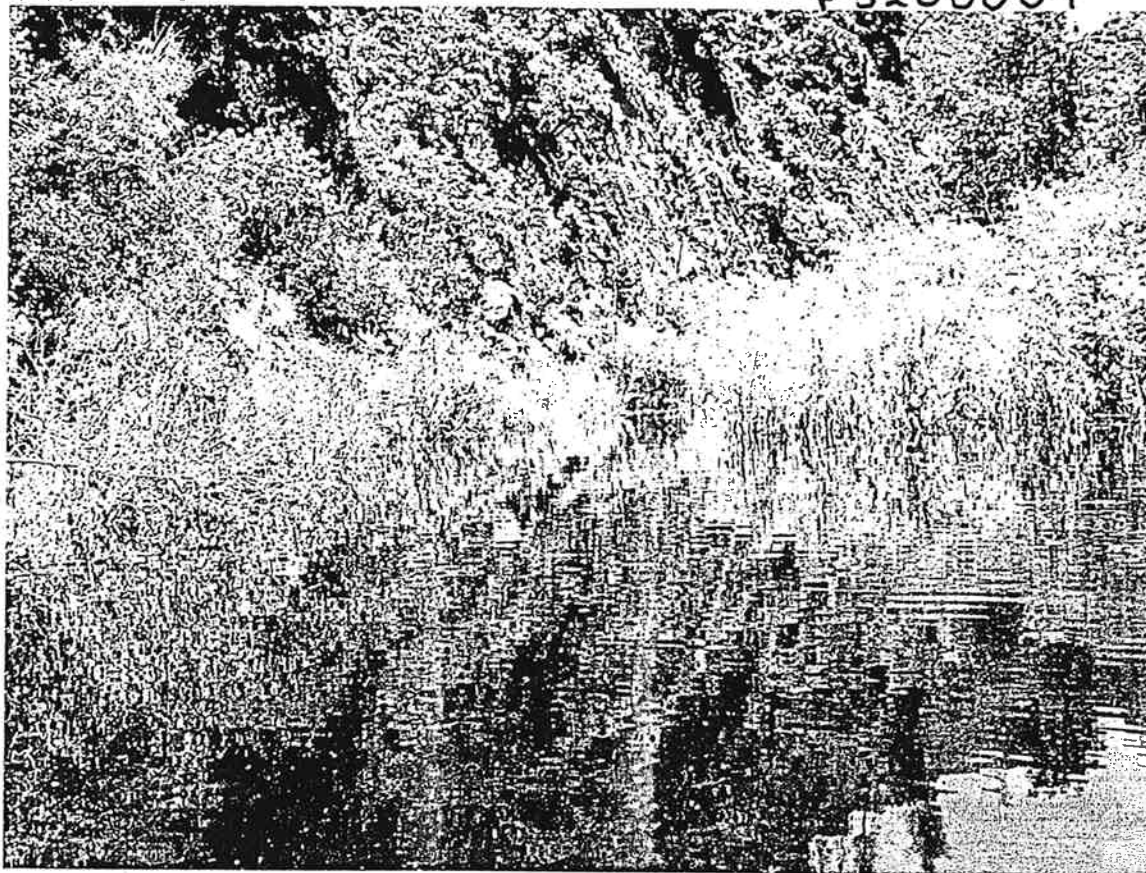
Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

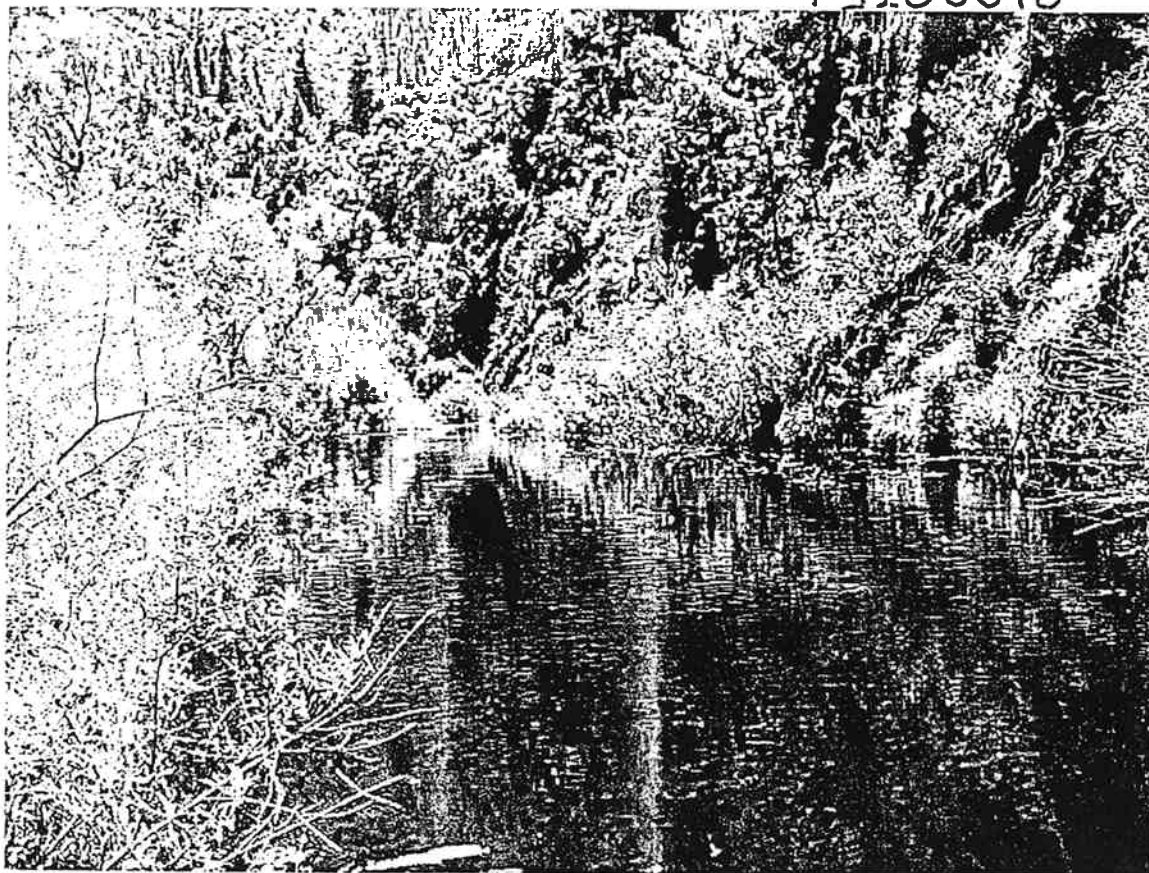
Comments:

LAKE 7

P5200009



P5200010



# Aquatic Survey Data Sheet

Site: 7 day

|                                               |                                  |                                       |                                          |
|-----------------------------------------------|----------------------------------|---------------------------------------|------------------------------------------|
| Date: 04-22-03<br>(mm-dd-yy)                  | Begin Time: 1700                 | Total Time: 35 min                    | Observer(s): 1234 G. Elliott, L. Elliott |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: ?<br>NPS FS BLM<br>SL (P) Oth.    |
| County: Placer                                | Elevation: 1030 m                | North UTM: 4319675                    | East UTM: 693472                         |
| Topographic Map: Foresthill                   | North UTM: 75' 15'               | GPS Map                               | East UTM: 345678                         |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.4 km |                                          |

|                             |                           |              |                              |                                 |                                      |
|-----------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|
| Weather: Clear<br>PL Cloudy | Overcast<br>Mostly Cloudy | Rain<br>Snow | Wind: 0 5-20<br>(mph) <5 >20 | Air Temp.: 62 C<br>(at 1 m) (F) | Water Temp.: 54 C<br>(0.5 m out) (F) |
|-----------------------------|---------------------------|--------------|------------------------------|---------------------------------|--------------------------------------|

|                                       |                    |                                                         |                                            |                                                       |
|---------------------------------------|--------------------|---------------------------------------------------------|--------------------------------------------|-------------------------------------------------------|
| Habitat: Natural<br>1 (2) 3 4 5       | Altered            | Description: Lake<br>Ditch Pond Stream Grassland Spring | River Woodland Meadow/Wetland              | Drainage: Permanent<br>Seasonal                       |
| Site Length: m                        | Aver. Width: m     | Aver. Depth: m                                          | Max. Depth: 3.1 m                          | Water Flow: 0 7-11 sec.<br>sec/10 ft <7 sec. >11 sec. |
| Water Turbidity: Clear<br>(1) 2 3 4 5 | Turbid             | Mid-day Shade: 15 %                                     | Emergent Vegetation: 2 %                   | Floating Vegetation: %                                |
| Water-shed: X Natural<br>Urban        | Grazed<br>Agricul. | X Logged (last 15 yr.)<br>X Other Mining                | Substrate: X Silt <2 mm<br>Bedrock 2-75 mm | 75-300 mm<br>X >300 mm                                |
| Predominant Vegetation: Willow        |                    |                                                         |                                            |                                                       |

|                          |                          |                                                            |
|--------------------------|--------------------------|------------------------------------------------------------|
| Fishing Tackle: Yes (No) | Fish Present: (Yes) No ? | Species and Approx. Number: Species unknown - 3 fish ~15in |
|--------------------------|--------------------------|------------------------------------------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                              | Other                         |
|---------|--------|-----------|--------|------|-------|-----------------------------------------------|-------------------------------|
| RACT    |        |           | 3      |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | 1      |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cutoff oxbow channel from tunnel diversion  
 Lake is remnant river channel pool.  
 Midday shade from riparian vegetation.  
 Poor conditions for visual survey.



8th: 7-night

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                                       | Other                         |
|---------|--------|-----------|--------|------|-------|--------------------------------------------------------|-------------------------------|
| RACT    | 2      |           | 5      |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine<br>Photo | Voucher<br>Pathology<br>Photo |
| HYRE    | ~75    |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine<br>Photo | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine<br>Photo | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine<br>Photo | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine<br>Photo | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>Aural TCS<br>A Dip Net Seine<br>Photo | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

Cut-off oxbow channel from tunnel diversion  
 Lake is remnant river channel pool.  
 Midday shade from riparian vegetation.



# Aquatic Survey Data Sheet

Site: 7 day

|                                                              |                                        |                                              |                                                       |
|--------------------------------------------------------------|----------------------------------------|----------------------------------------------|-------------------------------------------------------|
| Date: <u>05-10-03</u><br>(mm-dd-yy)                          | Begin Time: <u>1245</u>                | Total Time: <u>46</u> min                    | Observer(s): <u>G. Elliott, L. Elliott</u>            |
| Locality: <u>Horseshoe Bar - M.F. American River</u>         |                                        |                                              | Owner: <u>7</u><br>NPS FS BLM<br>SL <u>(P/L)</u> Oth. |
| Country: <u>El Dorado</u><br><u>Placer</u>                   | Elevation: <u>1030</u> m               | North UTM: <u>4319675</u>                    | East UTM: <u>693472</u> <u>(10)</u>                   |
| Topographic Map: <u>Foresthill</u><br><u>7.5'</u> <u>15'</u> |                                        | North UTM: <u>GPS Map</u>                    | East UTM: <u>345678</u> <u>11</u>                     |
| Distance to Mapped trail: _____ km                           | Distance to Public dirt road: _____ km | Distance to Public paved road: <u>3.4</u> km |                                                       |

|                                  |               |      |                                  |                        |                          |
|----------------------------------|---------------|------|----------------------------------|------------------------|--------------------------|
| Weather: <u>Clear</u> <u>(F)</u> | Overcast      | Rain | Wind: <u>0</u> 5-20              | Air Temp.: <u>90</u> C | Water Temp.: <u>65</u> C |
| PL Cloudy                        | Mostly Cloudy | Snow | (mph) <u>&lt;5</u> <u>&gt;20</u> | (at 1 m) <u>(F)</u>    | (0.5 m out) <u>(F)</u>   |

|                                                 |                               |                                                           |                                     |
|-------------------------------------------------|-------------------------------|-----------------------------------------------------------|-------------------------------------|
| Habitat: Natural <u>(2)</u> 3 4 5               | Altered                       | Description: <u>Lake</u> River Woodland Meadow/Wet.       | Drainage: <u>Permanent</u> Seasonal |
| Site Length: _____ m                            | Aver. Width: _____ m          | Aver. Depth: _____ m                                      | Max Depth: <u>3.1</u> m             |
| Water: <u>Clear</u> <u>(1)</u> 2 3 4 5          | Turbid                        | Mid-day Shade: <u>15</u> %                                | Emergent Vegetation: <u>2</u> %     |
| Turbidity: <u>(1)</u> 2 3 4 5                   |                               | Substrate: <u>X</u> Silt <u>X</u> < 2 mm <u>75-300 mm</u> | Flotting Vegetation: _____ %        |
| Water-shed: <u>X</u> Natural _____ Grazed _____ | <u>X</u> Logged (last 15 yr.) | Bedrock <u>2-75 mm</u> <u>X</u> > 300 mm                  |                                     |
| Predominant Vegetation: <u>Willow</u>           |                               |                                                           |                                     |

|                                 |                                 |                                                                                                                                  |
|---------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Fishing Tackle: Yes <u>(No)</u> | Fish Present: <u>(Yes)</u> No ? | Species and Approx. Number: <u>possible cutt. roach - 100's / 1-1.5 in. len</u><br><u>possible squawfish - 15 / 9-12 in. len</u> |
|---------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)                                | Other                         |
|---------|--------|-----------|--------|------|-------|-------------------------------------------------|-------------------------------|
| RACT    | 1      | 2         | 95     |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
| HYRE    |        |           | 50     |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | N Visual Hand<br>A Aural TCS<br>A Dip Net Seine | Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments:

BUBC Adult seen on road near pond @ 2340

# Aquatic Survey Data Sheet

Site: 7. night

|                                               |                                  |                                       |                                           |
|-----------------------------------------------|----------------------------------|---------------------------------------|-------------------------------------------|
| Date: 05-21-03<br>(mm-dd-yy)                  | Begin Time: 2150                 | Total Time: 40 min                    | Observer(s): 1(2) 4 G. Elliott, J. Hanson |
| Locality: Horseshoe Bar - M.F. American River |                                  |                                       | Owner: 7<br>NPS FS BLM<br>SL (P) Oth.     |
| County: El Dorado/<br>Placer                  | Elevation: 1030 m                | North UTM: 4319675                    | East UTM: 345678 693472 (10) 11           |
| Topographic Map: 7.5' 15' Foresthill          | North UTM: GPS Map               | East UTM: 345678                      | 10 11                                     |
| Distance to Mapped trail: km                  | Distance to Public dirt road: km | Distance to Public paved road: 3.4 km |                                           |

|                                                                 |                                |                            |                                      |
|-----------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------------|
| Weather: (Clear) Overcast Rain<br>Pl. Cloudy Mostly Cloudy Snow | Wind: (0) 5-20<br>(mph) <5 >20 | Air Temp.: C<br>(at 1 m) F | Water Temp.: 60 C<br>(0.5 m out) (F) |
|-----------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------------|

|                                |                |                                                                                         |                                        |
|--------------------------------|----------------|-----------------------------------------------------------------------------------------|----------------------------------------|
| Habitat: Natural 1 (2) 3 4 5   | Altered        | Description: (Lake) River Woodland Meadow/Wetland<br>Ditch Pond Stream Grassland Spring | Drainage: (Permanent) Seasonal         |
| Site Length: m                 | Aver. Width: m | Aver. Depth: m                                                                          | Max. Depth: 3.1 m                      |
| Water Turbidity: (1) 2 3 4 5   | Turbid         | Mid-day Shade: 15 %                                                                     | Emergent Vegetation: 2 %               |
| Water-shed: (X) Natural Urban  | Grazed         | (X) Logged (last 15 yr.)                                                                | Substrate: (X) Silt < 2 mm 75 - 300 mm |
|                                | Agri. cul.     | (X) Other Mining                                                                        | Bedrock 2 - 75 mm (X) >300 mm          |
| Predominant Vegetation: Willow |                |                                                                                         |                                        |

|                          |                          |                                                                 |
|--------------------------|--------------------------|-----------------------------------------------------------------|
| Fishing Tackle: Yes (No) | Fish Present: (Yes) No ? | Species and Approx. Number: possible suckers - 2 / 10-12 in. l. |
|--------------------------|--------------------------|-----------------------------------------------------------------|

| Species | Adults | Subadults | Larvae | Eggs | DNA # | Survey Method(s)           | Other                                                 |
|---------|--------|-----------|--------|------|-------|----------------------------|-------------------------------------------------------|
| RACT    | 3      |           |        |      |       | Visual<br>Aural<br>Dip Net | Hand<br>TCS<br>Seine<br>Voucher<br>Pathology<br>Photo |
| HYRE    | 40     |           |        |      |       | Visual<br>Aural<br>Dip Net | Hand<br>TCS<br>Seine<br>Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual<br>Aural<br>Dip Net | Hand<br>TCS<br>Seine<br>Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual<br>Aural<br>Dip Net | Hand<br>TCS<br>Seine<br>Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual<br>Aural<br>Dip Net | Hand<br>TCS<br>Seine<br>Voucher<br>Pathology<br>Photo |
|         |        |           |        |      |       | Visual<br>Aural<br>Dip Net | Hand<br>TCS<br>Seine<br>Voucher<br>Pathology<br>Photo |

Site:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Date:

|    | Species | Time | Sex | Weight (g) | Length (cm) |
|----|---------|------|-----|------------|-------------|
| 1  |         |      |     |            |             |
| 2  |         |      |     |            |             |
| 3  |         |      |     |            |             |
| 4  |         |      |     |            |             |
| 5  |         |      |     |            |             |
| 6  |         |      |     |            |             |
| 7  |         |      |     |            |             |
| 8  |         |      |     |            |             |
| 9  |         |      |     |            |             |
| 10 |         |      |     |            |             |
| 11 |         |      |     |            |             |
| 12 |         |      |     |            |             |

Comments: