<table>
<thead>
<tr>
<th>FOREST</th>
<th>Georgetown</th>
<th>DISTRICT</th>
<th>Rubicon River</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. OF STREAM</td>
<td>Long Canyon Creek (South Fork)</td>
<td>2. RIVER SYSTEM</td>
<td>Rubicon River</td>
</tr>
<tr>
<td>TRIBUTARY TO</td>
<td>Rubicon River</td>
<td>4. TOTAL LENGTH</td>
<td>14 miles</td>
</tr>
<tr>
<td>FROM.</td>
<td>Blacksmith Flat footbridge</td>
<td>(near)</td>
<td>National Forest Boundary headwater</td>
</tr>
<tr>
<td>TO.</td>
<td>National Forest Boundary</td>
<td>6. LOCATION OF NORTH OR LOWERMOST POINT</td>
<td>13N 12E</td>
</tr>
<tr>
<td>TOWNSHIP</td>
<td>13N 12E</td>
<td>SECTION 7</td>
<td>7</td>
</tr>
</tbody>
</table>

7. DESCRIPTION OF STREAM: (USE PAGE 4 OR SEPARATE SHEET TO RECORD NOTES MADE DURING SURVEY).

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>LOWER</th>
<th>MIDDLE</th>
<th>August 9, 1973</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWP RG SEC</td>
<td>TWP 13N RG</td>
<td>TWP 14N RG</td>
<td>46 613E SEC 24</td>
</tr>
<tr>
<td>F.T. TO F.T.</td>
<td>4,640</td>
<td>6,080</td>
<td>640</td>
</tr>
<tr>
<td>RANGE</td>
<td>FT. AVE FT.</td>
<td>RANGE 1-3FT. AVE FT.</td>
<td>RANGE 0-6 FT. AVE FT.</td>
</tr>
<tr>
<td>F.T.</td>
<td>3,280</td>
<td>6,130</td>
<td>45</td>
</tr>
<tr>
<td>FT.</td>
<td>3,280</td>
<td>6,130</td>
<td>45</td>
</tr>
</tbody>
</table>

14. AIR TEMPERATURE | °F | 62 °F | 64°F |
15. WATER TEMPERATURE | °F | 52 °F | 54°F |

15. HOUR AND SKY | HOUR 1000 SKY Clear | Common |
16. HOUR AND SKY | DAY 1000 SKY Clear | Common |

20. SHADE CANOPY | A. Species | Indian rhubarb-conifer, Alder, oak |
21. AQUATIC VEGETATION | Unidentified | None seen |

22. AQUATIC FOOD ORGANISMS | Abundant larvae | Abundant (larvae) |
23. OVERALL AQUATIC FOODS | Above Big Meadow few | Below " " Abundant |

24. FISHES PRESENT | Abundant | Below " " Abundant |
| a. All Species Combined | Abundant | Below " " Abundant |
| b. Species | Abundant | Below " " Abundant |
| (1) Abundance | Abundant | Below " " Abundant |
| (2) Ave. No. per 100 ft. | 50 | Below " " Abundant |
| (3) Length Range | Fry 9 INCHES | Fry 8 INCHES |
| (4) Ave. Length | 7 INCHES | 5 INCHES |
### STREAM MANAGEMENT ANALYSIS

1. **TYPE OF FISHERY**
   - Cold

2. **PRIMARY SPECIES**
   - Rainbow trout

3. **OVERALL PRESENT FISHERY RATING**
   - Good

4. **IMPROVEMENT POTENTIAL**
   - Fair - Increase of summer flows is basic need.

5. **FISH MANAGEMENT RECOMMENDATIONS:**
   - **a. Chemical Rehabilitation**
     - No
   - **b. Fishery Regulation**
     - No
   - **c. Regulation of Other Activities**
     - Regulate road-crossing, water chances
   - **d. Introduction of Exotic Fish Species**
     - No
   - **e. Maintenance Stocking of Established Fish Species**
     - No
   - **f. Others**
     - None

6. **HABITAT MANAGEMENT:**
   - **a. Watershed Management**
     - Encourage sound logging practices.
   - **b. Stream Protection Belt Management**
     - Keep streamside disturbance to a minimum.
   - **c. Water Quality Management**
     - Monitor siltation from road crossing, water chances, logging.
   - **d. Physical, Corrective Measures**
     - Remove major areas of slash to reduce streambank erosion.
   - **e. Others**
     - Get water chances out of streamed.
   - **f. XXXXX**
     - Have CA F&G enforce streambed alteration laws.

7. **PUBLIC USE FACILITIES**
   - Develop camp area at Georgetown Road Bridge crossing.
Map of Upper Section of Long Canyon Ch. (S. Fork)

Logging Rd. Dam

Log Falls

Forest Service Dam

dry

dry

Rock Falls
rock falls

dry

dry

Big Meadow Rd.

Black Falls

many Rock Falls

Middle Meadow Trail

water channe

fall

day

middle Meadow Campground

complete barrier

South Division (complete barrier)

Scale: 2 inches = 1 mile
Notes on Upper Section of South Fork of Long Canyon Creek:

The upstream end of the upper section runs from the National Forest boundary (approximately) to the south diversion near lower Meadow.

The headwaters of the creek are densely shaded by stands of alder and mature conifers (photo A-1). The streamflow here is approximately 1 cfs gradually increasing to 2 cfs by the south diversion.

There are several natural barriers upstream from Big Meadows Road crossing. Near the end of the Forest Service gravel road which follows the south side of the stream a logging road crossing with a large culvert becomes a complete barrier. (Photo A-2). There is evidence of heavy equipment operation in and near the creekbed at this site (Photo A-3). Approximately 1/2 to 3/4 mile downstream from this road crossing is an old concrete dam (Forest Service) to provide a water source for the Big Meadows Campground and the Forest Service barracks (Photo A-5). Downstream movement of rubble has completely filled the pool in back of this structure and it is a complete barrier to fish movements. The creekbed is dry for several hundred yards below this structure possibly due to water removal at this site. From this area to the Big Meadows Road crossing there are several natural barriers - mostly boulder and bedrock waterfalls, a few incomplete slash barriers, and several places where the stream runs underground. Immediately upstream from the Big Meadows Campground the creekbed is dry for approximately one-third mile.

Approximately one-quarter mile below the Big Meadows Road crossing the creek makes a north-south loop. This is fairly steep terrain and there are several natural barriers where the creek cascades over bedrock. There are several deep pools in this area essential to fish survival during low flows in the fall.
There are several areas around Middle Meadow where there is extensive slash in and near the streambed. These are incomplete barriers to fish movements.

The creek again runs dry at the downstream end of Middle Meadows and does not reappear for approximately one-eighth mile.

The Middle Meadows Campground Road is a complete barrier with water flowing over the blacktop (Photo A-11). Apparently downstream movement of rubble and gravel have filled the road's culverts.

The South Diversion Dam is also a complete barrier to fish movements (Photo A-12).

The headwaters of South Fork Long Canyon Creek were devoid of fish life to a point just upstream of the Forest Service Dam. Rainbow trout are the only fish species present and occur in scattered populations all the way down to Big Meadow (Photo A-6). Although relatively rare upstream from the Big Meadows Road crossing they become abundant immediately downstream from the road culvert. With the exception of the dry portion of stream by Middle Meadow they are abundant to the South Diversion Dam.

All fish observed were less than nine inches long. Fry and fingerling were common throughout the upper section. Sexually mature trout were noted at a length of finches. Spawning gravels, food availability, temperature and dissolved oxygen are not limiting factors. In my opinion the limiting factor for this stretch of stream is space. The minimum low flows each year directly determine the carrying capacity. Competition for space has resulted in the small size of the fish in this population.
MANAGEMENT RECOMMENDATIONS:

The upper sections of this stream are marginal salmonid habitat due to the low flows. One possible remedy would be the construction of a dam near the headwaters to conserve water for a minimum flow release during the late summer. I did not observe any suitable sites and I doubt if this plan would be economically feasible.

The slash areas around Middle Meadow pose no direct threat to fish production in this creek (Photo A-10). The barriers are incomplete and fish would have little difficulty moving by them during the spawning season (during spring runoffs for rainbow trout). In some cases where slash build up is excessive the decaying vegetation consumes dissolved oxygen or creates bacterial slimes both potentially lethal to salmonids. This appeared not to be a problem in this area.

Some slash areas do pose an indirect threat, however, in that they cause partial blockage of high streamflows forcing the current out into surrounding streambanks where serious erosion occurs. This erosion not only increases the silt load in the stream but aggravates the problem when mature trees topple into the water. A small amount of slash is good cover area for trout.

I recommend that some of the heavy slash areas be removed from the Middle Meadow area. If possible heavy equipment should not be used in the stream channel.

There is a water change for tanker trucks near the upstream end of Middle Meadow (Photo A-9). This poses a siltation threat, especially during high flows. Possibly a small swimming pool or similar apparatus can be constructed 25 to 40 feet from the stream channel with a water pump to fill
Map of Middle Section of Long Canyon Creek
cont'd. Sept 73

N
E
BLACKSMITH FLAT
TRAIL
footbridge
natural rock falls barrier

Scale: 2" = 1 mile
it. The filling area could be graveled with crushed rock from the tunnel material deposited by the road crossing several miles downstream. This would ease the problem of slop-over as the truck leaves with its load of water.

The Middle Meadows Campground Road should be rebuilt with adequate culverts.
Notes on Middle Section of South Fork of Long Canyon Creek:
The middle section of the creek extends from the South Diversion Dam
downstream to the Blacksmith Flat Footbridge.

Several hundred yards downstream from the South Diversion Dam the creek
flows over a section of bedrock with a fairly steep gradient. There are
many rock-caused falls that are complete barriers to upstream fish move-
ment (Photo A-13).

Approximately one-half mile, two-thirds mile and three-quarter mile down-
stream from the dam there are areas of slash in the stream channel (Photos
A-14 and A-16). These are all incomplete barriers to fish movements.
The last slash area and logjam (three-quarter mile is a result of mature
trees falling into the stream because of streambank erosion.

Approximately in the middle of Lower Meadow there is a water chance for
tanker trucks followed immediately by a logging road crossing (Photos
A-17 and A-18). The water chance road descends a steep grade vertically
for 100 feet (estimate) to the stream channel. Several yards of fill
dirt have been pushed into the dry portion of the stream channel to extend
the road to the water's edge. Truck slop-over is evident.

The logging road crossing consists of several logs lying parallel to the
streamflow covered with dirt (Photos A-19 and A-20). There is considerable
local disturbance of the ground cover in this area increasing the siltation
potential,

The 100 yards of creek immediately downstream from this area contains
light to moderate amounts of silt. A live tributary enters the creek
approximately one-quarter mile downstream from this point. It is flowing
at less than ½ cfs (estimate) and is shown on the map as being in the
eastern portion of Section 26, T.14N., R.13E.

Approximately one mile downstream from this point the North Fork of Long Canyon Creek enters the stream on the north bank. Its flow is negligible.

Approximately one-eighth mile upstream from the road 14N08 bridge there is a large rock pile (tunnel muck). This area appears to have little effect on the stream.

The water gauge at the pump house by the bridge read 3.22.

There are several people camped by the bridge crossing with no apparent sanitary facilities. This could prove to be a source of pollution.

A complete barrier is to be found one-eighth mile downstream from the road 14N08 crossing, formed by bedrock waterfalls. There is extensive bedrock formations approximately one mile downstream from the 14N08 road crossing (Photo A-24). There are many falls and pool areas in this area. The barrier one-half mile upstream from Ramsey's crossing, is also bedrock.

At Ramsey's Crossing there is a water chance (Photos A-27 and A-28). Again fill materials have been pushed into the dry stream channel and are in danger of washing out during the spring runoff.

The only fish species in this section is the rainbow trout (Photo A-25). Fry, fingerling, and adult fish were abundant throughout this section with the exception of the bedrock areas where they were few to common. Adult fish again were small with a nine inch fish rare. Aquatic organisms were common throughout this section with the exception of the bedrock areas where they were few.
There are light amounts of silt in the stream immediately below Ramsey Crossing due to the bridge construction and associated disturbances.

There are numerous bedrock and rock falls from Ramsey Crossing to Blacksmith Flat Footbridge (Photo A-30). These are mostly complete barriers to fish movements.

A live tributary flows into the creek approximately one-quarter mile downstream from Ramsey Crossing on the north bank (Photo A-29). This flow adds less than 1/4 cfs to the stream.

There are several areas where a considerable amount of insolation reaches the stream due to a lack of sufficient canopy. This occurs in areas of bedrock and boulders. This causes slightly higher water temperatures. The temperature was 59°F at 0930 at Ramsey Crossing as opposed to 54°F at 1000 near the headwaters.

**MANAGEMENT RECOMMENDATIONS:**

There are three areas of moderate to heavy slash between the South Diversion Dam and the logging road crossing at Lower Meadow. These are all incomplete barriers to fish movements. They should be removed from the channel, however, as the bank erodes around both sides of the jams and introduces more silt into the stream channel. Mature trees then topple into the creek further compounding the problem.

The water chance and road crossing in the Lower Meadow area are a potential siltation problem during spring runoff. Presently only light amounts of silt are present in this area. The road to the water chance has been pushed across the now dry streambed to reach the present streamflow. This fill material crosses the stream channel below the high flow mark and
will be washed out if it is not removed this fall. Water chances should be constructed away from the stream channel to avoid this problem.

The road to the water chance descends a steep slope. Water bars or slash should be placed on this road to prevent soil slippage.

The logging road crossing immediately downstream from the water chance, consists of a series of logs parallel to the streamflow over which dirt has been piled. This entire "bridge" will wash out during the spring runoff. It should be removed this fall. There is considerable local disturbance of the soil in this area. Proper arrangement of slash and water bars could help this situation.

Install sanitary facilities or post as "no camping" the area where the creek flows under the bridge on the Georgetown Road (14N48).

Remove the water chance at Ramsey Crossing from stream channel.

This stream should not be planted with catchable trout in the future. It appears to be at the maximum carrying capacity now and addition of more fish would further reduce the rate of growth for the individuals now present.
Notes on the Lower Section of Long Canyon Creek:

The last five miles of stream from Blacksmith Flat to the Rubicon River was not checked at this time.

Access is by the Blacksmith Flat Trail or by the Tilletson Trail which runs from Ralston Corral to a point approximately two miles upstream from the confluence with the Rubicon River.

This section of stream flows through exceedingly steep canyon and is difficult to traverse. From personal communications with individuals who have been through this area the creek becomes a series of cascading waterfalls and pools. A population of rainbow trout exists. Brown trout are known to exist in the lower section from the mouth to the first major falls (approximately one-quarter mile).

Because of the steep terrain the canyon walls would be extremely sensitive to disturbance. Forest fire or poor logging technique could have a serious effect on this drainage.