STATE OF WASHINGTON

DEPARTMENT OF FISH & WILDLIFE

LANDS AND RESTORATION SERVICES PROGRAM

Salmonid Screening, Habitat Enhancement &
Restoration Division (SSHEAR)

OFF-CHANNEL SITE INVENTORY DATA

General Information:

Region: North Coast

Observer(s): Nettnin

River System: Sol Duc

Dates: 4/99 - 6/02

Site Identifier: S-0324

WRIA: 20.0324

River Mile Location: 7.8

RB/LB: RB

Local Name: Beaver Creek

Trib. to: Sol Duc

Legal Description: SE ¼ Sec 30 T30N R12W

County: Clallam

Habitat Type: Terrace Tributary

Landowner: (X) Federal (X) State () County () Other Government (X) Private

- U.S. Forest Service
- Washington Department of Natural Resources
- Rayonier Timber Operations Company
- Crown Pacific
- Numerous small landowners and residences.

Directions to site: This stream has good access to most reaches. The following directions are access points to the lower, middle and upper reaches.

Lower Reach: Go north from Forks on highway 101 to M.P. 203.8. Take a left on Rixon Road and follow for 0.3 mile to the old highway bridge which crosses Beaver Creek. This spot is near the egress of the creek.

Middle Reach: Go north from Forks on highway 101 to M.P. 203.9. Take a left onto SR-113 and follow for 2.0 miles to the Beaver Creek bridge.

Upper Reach: Go north from Forks on highway 101 to M.P. 203.9. Take a left onto SR-113 and follow for 5.1 miles. Turn right onto FSR- 3006 and follow for 0.4 mile to Beaver Creek.

Site Overview: Beaver Creek sources on the northeast face of Deadmans Hill. The channel flows in a northwesterly direction until it emerges from a narrow U-shaped valley. At this juncture it bends southerly and flows into a wetland complex of 280 acres (Wolcott, 1965) which includes Beaver Lake. The lake has a surface area of 36.3 acres, is 33 ft deep, and has an elevation of 550 feet. Its main use is for recreational fishing and duck hunting. After the channel leaves the wetland, the valley narrows. The channel contains numerous small rock cascades up to Beaver Falls. Downstream of the falls, the valley widens, however the channel remains confined as it continues to flow toward the Sol Duc River.

Beaver Creek is a major tributary to the middle reach of the Sol Duc River. It enters on the right bank at river mile 31.4, it is 7.8 miles long and drains 14.4 square miles (Phinney, 1975) of watershed. This stream supports chinook, coho, steelhead, cutthroat and rainbow trout in the reaches and tributaries below Beaver Falls. Resident cutthroat inhabit Cold Creek which is a tributary between the falls and Beaver Lake. Cutthroat are also found in the reach and tributaries above lake. Beaver Lake supports a variety of fish. It is suspected that the spiny rays have been introduced by locals.

The majority of the watershed is timberland. Much of the timber has been harvested or is regenerating from the 21 Blow. The 1921 storm blew down a large portion of timber in the watershed. Recreational use is mainly hunting in the timberlands and fishing in Beaver Lake. There may be some hiking on the old grades that follow the mainstem above the falls and in the headwaters.

There are several distinct reaches in Beaver Creek. The reach from the mouth to Beaver Falls is low gradient, less than 5 percent. Most of the gravel aggregate contains high levels of fines, but there are patches of clean gravel. The stream lacks large woody debris in most of this reach. There are deep pools where woody debris does exist. The riparian area contains mainly alders with scattered patches of conifers and an occasional large old growth conifer. There are several important tributaries that enter in this reach. The two largest are Johnson Creek and Rainey Creek. Both enter between the bridge at river mile three and Beaver Falls. There is also a large left bank riverine pond at river mile 1.0 which provides excellent rearing.

The second reach which is from Beaver falls to Beaver Lake consists of differing characteristics. The first mile upstream of the falls has numerous bedrock pools and small cascades. The water is turbulent and pushes the bed load aggregate. Due to this, the area has a gravel deficiency. The riparian area is mostly alder with scattered old growth conifers. The next half mile upstream has a wider channel, less turbulent flow, and contains gravel that is recruited from Cold Creek. The riparian area is similar. Above the Cold Creek and Beaver Creek confluence, there is no gravel in the substrate. The riparian area is primarily scrub-shrub due to the association with the wetland bordering Beaver Lake. Cold Creek is the only significant tributary entering in this reach.

The third reach is the lake itself. The description follows on the attached Lake Supplemental form.

There are two distinct reaches above the lake. The first mile is a low gradient forested wetland. It is fed by several spring channels and two valley wall tributaries. The associated channels have flows greater then 0.06 cms. In the 600 m below the confluence of 20.0328, the channel is not well defined creating many side channels and overflow channels. The riparian is alder and brush. There are some large conifers immediately above the lake and smaller conifer scatter along the rest of the riparian area.

The fifth reach is about two miles long, has a gradient of 5 - 10 percent and flows through a V-notch or narrow U-shaped valley. There are numerous small valley wall tributaries and two larger tributaries that merge in this reach.

Habitat Information:

Water source: Springs, tributaries and surface runoff

Intermittent/year-around: year-around

Estimated flows (cms): Lower end: 0.5 - 3.0 Upper end: 0.014 - 0.043

Water temperatures: Lower end: 5.0 - 9.0°C Upper end: 4.0 - 8.0°C

Adjacent stream temperature: 4.0 - 9.0°C

Other water observations: Water is clear

Site area measurements: () Indirect () Direct (X) Combination

Widths: Channel- 4.0 - 12.0 m Lake- 300 - 400 m Wetlands- 100 - 400 m
Depths: Channel- 0.3 - 1.0 m Lake- 11 m (Wolcott, 1965) Wetlands- 0.1 - 0.7 m
Total length surveyed (includes ponds and wetlands): 12,480 m (Phinney, 1975)

Total existing habitat area (est.): Area below the falls 124,230 m². Area above falls 250,870 m²

Spawning area b/f*: 3,600 m²	Tributaries: 15,350 m²	Total: 18,950 m²
Spawning area a/f*: 5,700 m²	Tributaries: 4,100 m²	Total: 9,800 m²
Impounded area b/f: 0 m²	Tributaries: 32,390 m²	Total: 32,390 m²
Impounded area a/f: 146,960 m²	Tributaries: 3,250 m²	Total: 150,210 m²
Other rearing area b/f: 44,400 m²	Tributaries: 28,430 m²	Total: 72,890 m²
Other rearing area a/f: 57,600 m²	Tributaries: 33,260 m²	Total: 90,860 m²

*b/f - below falls; a/f - above falls

Spawning Habitat conditions: (X) None () Poor () Fair () Good (X) Excellent

Describe spawning habitat:

- The gravel areas range from none to excellent.
- There is a lack of gravel recruitment. A feeder bank at RM 1.2, Boot Ck at RM 2.6 and Cold Ck at RM 4.6 are the three main locations where gravel is recruited for the reaches below Beaver Lake.
- Most of the gravel areas have a high percentage of fines.
- The gravel areas above the lake provide good spawning for resident fish.

Rearing habitat conditions: () None () Poor () Fair (X) Good (X) Excellent

Describe pond and other rearing habitat:

- The only impoundment in the mainstem is Beaver Lake (see Lake Supplement for further details).
- There is excellent off-channel rearing in a large impoundment of a lower reach tributary along with other tributaries below the falls (see the individual site reports).
- The channel is lacking in large woody debris. Where it exists, excellent pools form.
- Cover is provided by overhanging brush.
- There are several large, deep, back water eddies and pools that provide good rearing.
- The watershed is subject to occasional heavy flows due to rain-on-snow events.

Describe unaccessible habitat:

- There is about 251,000 m² of habitat upstream of Beaver Falls. Beaver Lake, the 280-acre wetland, and associated spring channels are in this area.
- There is about 22,000 m² above secondary barriers. Most of this habitat is near the headwaters of the tributaries.

Describe wetland: () Bog (X) Marsh (X) Scrub-shrub Wetland (X) Forested Wetland

- There is a 280 acre wetland. The majority of the wetland is forested. The dominant species is alder with scattered patches of mixed conifers. The understory is dominated by salmonberry and vine maple. There are scrub-shrubs along the lake margin and along an open marsh about 800 meters upstream of the lake.

Fish Information:

Site entry condition to (name of stream): () Poor (X) Fair () Good

-Enters into a riffle area.

Coho access and use:

Juvenile- () Unknown () None () Poor () Fair (X) Good
Adult- () Unknown () None () Poor () Fair (X) Good

- Numerous adults and redds were observed during the survey.
- Juvenile coho were observed throughout the mainstem and tributaries below the falls.
- The Quileute Tribe has spawner survey data for the lower reach.

Other species access and use: () Chum () Pink () Sockeye (X) Chinook (X) Trout (X) Steelhead
- A very good producer of chinook and steelhead (verbal communications with Roger Lien, fish biologist with Quileute Tribe).
- The Quileute Tribe has chinook spawner data for the lower reach.
- Washington Department of Fish and Wildlife has steelhead spawner data for lower reach

Habitat Improvements:

Enhancement opportunities:

Possible project type:
- Connect existing off channel pond.
- Add large woody debris to the channel where it is deficient.
- There is equipment access to the pond site.

Additional Comments:

-At about RM 6.1, Beaver Creek flows through a multi-plate culvert. The bottom is worn with holes due to bedload movement.
- The US Forest Service has done stream surveys on lower Beaver Ck and Cold Ck.
- The Quileute tribe has spawner surveys.

References:

- Phinney, L.A. and P. Bucknell. 1975. A Catalog of Washington Streams and Salmon Utilization. Volume 2 Coastal Region. Washington Department of Fisheries, Olympia, WA.

- Wolcott, Ernest E. Water Supply Bulletin No. 14: Lakes of Washington. Volume I: Western Washington. Olympia, Washington: Dept. of Conservation, 1965.

Attachments Available:

Contact respective SSHEAR habitat biologist for the following checked items:

() Aerials	() Sketch	() Maps	() Culvert Report
(X) Other references	(X) Spawning surveys	() Juvenile trapping	() Fishway Report

RIVER SYSTEM: Sol Duc
SITE NUMBER: S-0324
LAKE NAME: Beaver Lake

POND DATA SUPPLEMENT

DATE: 2/01 - 4/01 **OBSERVER:** Nettnin

WATER TEMPERATURE:	**INLET**	**OUTLET**
LAKE SIZE: 36.3 acres	Not Taken	Not Taken

LENGTH - 600 m
WIDTH - 200 - 300 m
EST. MAXIMUM DEPTH - 11 m (Wolcott, 1965)

WATER SOURCE: Beaver Creek and small tributaries

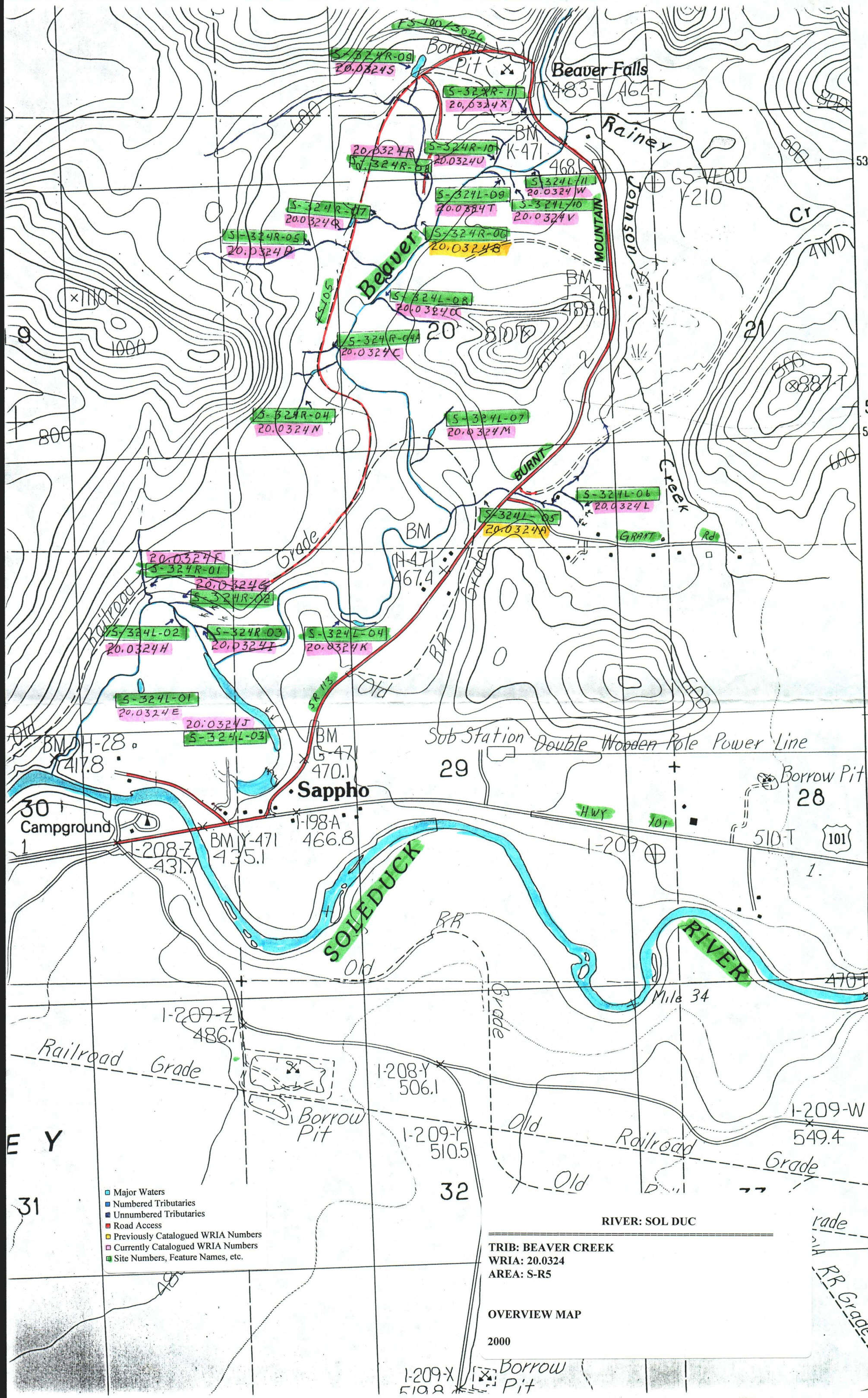
FISH ACCESS & CURRENT USE: The lake is located upstream of an anadromous fish barrier, Beaver Falls. There is a population of cutthroat trout in the lake. There has been a history of yellow perch, small mouth bass and crappie (verbal communication, Bill Freymond, WDFW) inhabiting the lake. These spiny rays were apparently planted by locals.

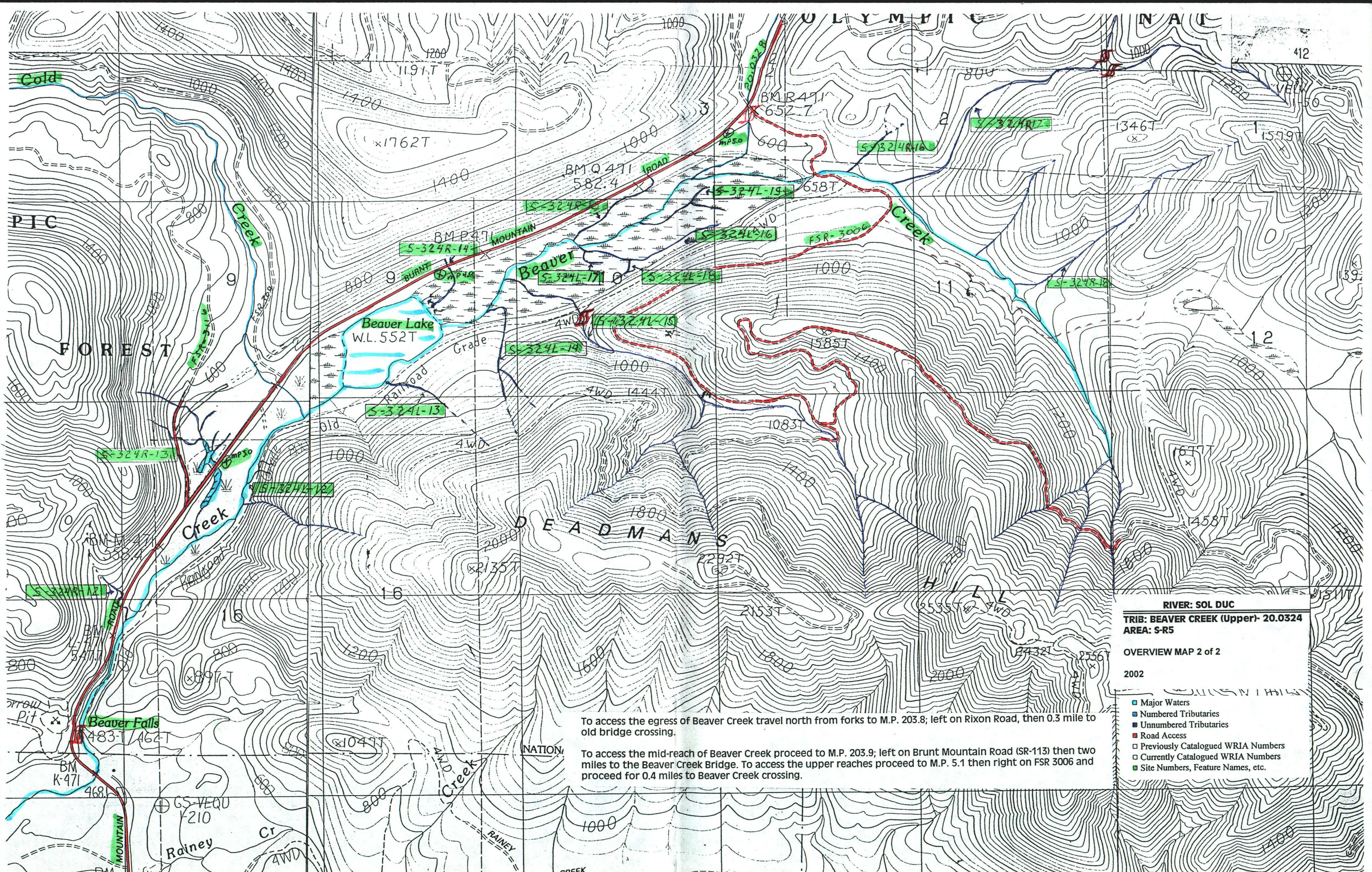
Fish have open access to move both below and above the lake.

TYPE & AMOUNT OF IN WATER COVER: There are some woody debris and abundant aquatic vegetation along the shores.

COMMENTS & RECOMMENDATIONS:

Bill Freymond and Bill Collins, WDFW fish biologists, netted the lake in1982 to estimate fish populations. They captured yellow perch, small mouth bass and a crappie along with cutthroat trout.


FS-100/3021
S-324R-09
20.0324S
Borrow Pit
Beaver Falls
483-T/462-T
S-324R-11
20.0324X
BM K-471
468.6
Rainey
S-324R-10
20.0324U
20.0324R
S-324R-08
S-324L-11
20.0324W
S-324L-09
20.0324T
S-324L-10
20.0324V
GS-VEQU
I-210
Johnson
MOUNTAIN
Cr
S-324R-07
20.0324Q
S-324R-05
20.0324P
S-324R-06
20.0324S
Beaver
FS105
BM K-471
488.6
S-324L-08
20.0324C
20
21
9
1110-T
1000
S-324R-04A
20.0324C
S-324R-04
20.0324N
S-324L-07
20.0324M
BURNT
Creek
S-324L-06
20.0324L
S-324L-05
20.0324A
GRANT
Rd
Grade
20.0324F
S-324R-01
20.0324G
S-324R-02
Railroad
BM K-471
467.4
Grade
S-324L-02
20.0324H
S-324R-03
20.0324I
S-324L-04
20.0324K
SR 113
Old
RR
S-324L-01
20.0324E
20.0324J
S-324L-03
Old
BM H-28
417.8
Sub Station
Double Wooden Pole Power Line
29
Borrow Pit
28
Sappho
30
Campground
1
I-198-A
466.8
HWY
101
510-T
I-208-Z
431.7
BM Y-471
435.1
I-209
SOLEDUCK
RIVER
RR
Old
Grade
Mile 34
470-T
I-209-Z
486.7
Railroad
Grade
I-208-Y
506.1
Borrow Pit
I-209-Y
510.5
Old
Railroad
Grade
I-209-W
549.4
32
31
I-209-X
519.8
Borrow Pit
5327
5326
5325
5324
5323
5322
5321
Major Waters
Numbered Tributaries
Unnumbered Tributaries
Road Access
Previously Catalogued WRIA Numbers
Currently Catalogued WRIA Numbers
Site Numbers, Feature Names, etc.
RIVER: SOL DUC
TRIB: BEAVER CREEK
WRIA: 20.0324
AREA: S-R5
OVERVIEW MAP
2000


RIVER: SOL DUC
TRIB: BEAVER CREEK (Upper)- 20.0324
AREA: S-R5
OVERVIEW MAP 2 of 2
2002
Major Waters
Numbered Tributaries
Unnumbered Tributaries
Road Access
Previously Catalogued WRIA Numbers
Currently Catalogued WRIA Numbers
Site Numbers, Feature Names, etc.
To access the egress of Beaver Creek travel north from forks to M.P. 203.8; left on Rixon Road, then 0.3 mile to old bridge crossing.
To access the mid-reach of Beaver Creek proceed to M.P. 203.9; left on Brunt Mountain Road (SR-113) then two miles to the Beaver Creek Bridge. To access the upper reaches proceed to M.P. 5.1 then right on FSR 3006 and proceed for 0.4 miles to Beaver Creek crossing.
OLYMPIC NAT
PIC FOREST
DEADMANS HILL
Beaver Lake
W.L. 552T
Beaver Creek
Beaver Falls
Cold Creek
Rainey Cr
S-324R-14
S-324L-13
S-324L-14
S-324L-17
S-324L-16
S-324L-19
S-324R-16
S-324R-17
S-324R-18
S-324R-13
FSR-3006
Grade
Railroad

RIVER: SOL DUC RIVER

AREA: S-R5

AREA MAP

9/96

S-R5-01

S-LS-01

S-LS-02
20.0328A

Hwy 101

BEAR CR

Sappho

Campground

Bear Creek Campground

Bear Springs Rearing Pond

Boat Ramp

SOLEDUCK RIVER

NATIONAL FOREST BOUNDARY

T 30 N
T 29 N