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): Powell

River System: Sol Duc

Date: 2/10/00, 3/8/01

Site Identifier: S-0333

WRIA: 20.0333

River Mile Location: 5.68

RB/LB: RB

Local Name: Redoubt Creek

Trib. to: 20.0329 (Bear Cr)

Legal Description: NE¼ Sec18 T30N R11W

County: Clallam

Habitat Type: Valley wall tributary

Landowner: (X) Federal (X) State () County () Other Government (X) Private
- Washington Dept of Natural Resources
- Bloedel Timber Company
- National Forest, USFS

Directions to site:
Starting at Forks (Tillicum Park), drive north on Highway 101 for 16.3 miles (mp 208) to West Twin Road (FS 30 Road). Take a left on this road and follow for 2.85 miles. At this point, the road and Bear Creek are at close proximity. There is a wide spot on the left-hand side of the road. Park here and cross Bear Creek. The egress of Redoubt Creek (S-0333) should be obvious.

Site Overview:
* The USFS (Soleduck Ranger District) surveyed this stream in 1994. Fish habitat conditions per Hankin and Reeves, Level II protocols were assessed from the confluence to RM 1.7 and were documented in a report. Information from that summary has been incorporated into this writeup. The WDFW survey was conducted beyond a series of large woody debris jams at RM 0.7 miles. It is assumed that these jams are presently blocking anadromous migration. Information including and beyond RM 0.9 that has been extrapolated from the USFS document is marked with * in this writeup.

This is a large major tributary to Bear Creek. This stream offers both spawning and rearing habitat for coho. The gradient averages ~ 2% up to where the channel becomes incised (RM 0.65). Above this point, there is a series of large, old growth woody debris jams that appear to be barriers to anadromous fish. The lower reach to the first large debris complex is characterized by the following: An alder dominant canopy throughout the stream length with conifers along the slopes and slope edges. There are moderate amounts of old large woody debris forming pools and cover. Cover is also provided by brush and overhang. There are areas of quality spawning gravel. Coho spawning is monitored from the egress to RM 0.9. Presently, no anadromous species have been detected beyond the debris jams. There is one associated tributary (S-333L-01) within this reach that also supports coho habitat. The incised reach is approximately 0.1 miles long and the large debris jams were encountered another 0.1 miles. This 0.2 mile area had several old growth woody debris jams that appeared impassable. The channel gains to ~ 10% gradient in the incised section, and bedrock becomes prominent. Beyond the last large debris complex, near the egress of S-333R-01, the valley floor begins to widen. *The upper reach to the extensive wetland is characterized as relatively pristine. There is an alder canopy with heavy brush along the channel margins. The channel gradient is ~ 2%.

The reach upstream of large woody debris jam was surveyed a year later. This upper reach, to the egress of the large wetland area, has a mix tree composition. Alder is the prominent species along the riparian area with few interspersed conifer. There are some areas of good pool formation from old woody debris and alder. Channel gradient maintains about 1 - 2%. There are areas of good gravel substrate to the egress of a main left bank tributary (S-333R-01). Upstream from this tributary, the channel becomes more slough like and wetland plants become prominent.

The wetland and associated ponds were only partially surveyed. It appears that the wetland receives water from left bank spring flows. A small number of coho fry were observed at the egress of the wetland down to the right bank tributary (S-333L-02).

Habitat Information:

Water source: Tributaries, springs and surface runoff

Intermittent/year-around:
- Year-around

Estimated flows (cfs): 10?

Water temperatures: 6° C

Adjacent stream temperature: 6° C

Other water observations: Tannic water from the wetland quickly dilutes from clear flows via S-333R-02 (upper left bank tributary).

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

Widths: Channel- 3.5 m - 10 m Ponds- NA Wetlands- NA
Depths: Channel- 10 cm - 60 cm Ponds- NA Wetlands- NA
Total length (includes ponds and wetlands): 2865+ m (trout habitat above end point)
(*USFS measured 1.44 miles of channel.)
- Only the lower portion of the wetland was surveyed due to inaccessibility and time constraints

Total existing habitat area (est.): 15,500 m² (measured for these surveys)

Spawning area: 8000 m²
Impounded area: 0 m²
Other rearing area: 7500 m²

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

Describe spawning habitat:
- The lower reach to the first large woody debris jam had a gradient of 2% and had areas of good spawning gravel. Numerous old spawner survey flags were observed.
- There are moderate numbers of pools formed by old woody debris.
- The incised reach has some large, old growth debris jams that are presently assumed to be impassable to anadromous fish. The gradient is ~ 2% through most of this reach. It climbs to 10% in the bedrock area.
- Upstream of the last large debris jam, the valley floor widens and the channel gradient drops to 1 - 2%.
- There are varying amounts of good spawning substrate from the large jam to the left bank tributary, S-333R-02. This tributary is the main gravel producer for the upper reach.
- There are a few areas with bank failures causing siltation in the stream.
- A small number of coho fry were observed from the egress of the wetland to the right bank tributary (S-333L-2) immediately downstream.
- The *USFS observed resident trout to the wetland area.

Rearing habitat conditions: () None () Poor (X) Fair () Good () Excellent
Downstream of the large woody debris jams:

- There are moderate numbers of pools formed by old woody debris. The riparian is presently alder with some conifer along the slope bases and on the slopes. Alder has contributed to some of the in-stream woody debris.
- Brush, overhang and woody debris provide cover in the lower reach.
- The incised reach has numerous large woody debris pieces but a jam/fall in the lower end would exclude any migration of smaller fish.

Upstream of the large woody debris jams:

- There are moderate amounts of pool formation from old woody debris and blown over alder in this reach.
- Alder is the prominent species with a few conifer interspersed.
- No off-channel areas were encountered to the wetland reach.

Describe pond and other rearing habitat:

- The lower part of the wetland starts where S-333R-02 egresses. It has slough characteristics: about 2.5 meters wide and about 1 meter deep.
- The channel has varieties of brush, sedges and other wetland plants.
- It braids for a short section at the egress of the ponded area of the wetland complex.
- A few small beaver dams were encountered in this area.

Describe unaccessible habitat:

- Anadromous fish have not been documented beyond ~ RM 0.7 in recent years. It was assumed the large woody debris jam was a barrier during most flows.
- A small number of coho fry were observed from the egress of the wetland to the right bank tributary (S-333L-02) immediately downstream, during the second survey (3/22/01).

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

- There is an extensive wetland at the head end of this stream.
- Only the lower portion of the wetland was surveyed due to inaccessibility and time constraints.
- It has slough characteristics in the lower segment.
- It braids near the upper end of the slough area.
- A wooded wetland is directly upstream of the slough. Numerous small spring fed channels emanate along the left bank in this area.

Flooding potential: () Low (X) Medium () High

- This channel appears to have flushing flows at times.
- The upper channel is influenced by S-333R-02 which appears to have flashy flows.

Fish Information:

Site entry condition to (20.0329): ()Poor () Fair (X) Good

- There is open egress into Bear Creek.

Coho access and use:

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

- Spawner surveys are conducted on the lower 0.9 miles of this stream.
- A small number of coho fry were observed from the egress of the wetland to the right bank tributary (S-333L-02) immediately downstream, during the second survey (3/22/01).

Other species access and use: () Chum () Pink () Sockeye () Chinook (X) Trout

- Trout can utilize this stream.
- *Resident trout were observed to the upper wetland.

Habitat Improvements:

Enhancement opportunities:

- Manipulate debris jams for fish passage? This is an incised bedrock area that may always be a natural lodging area for debris.

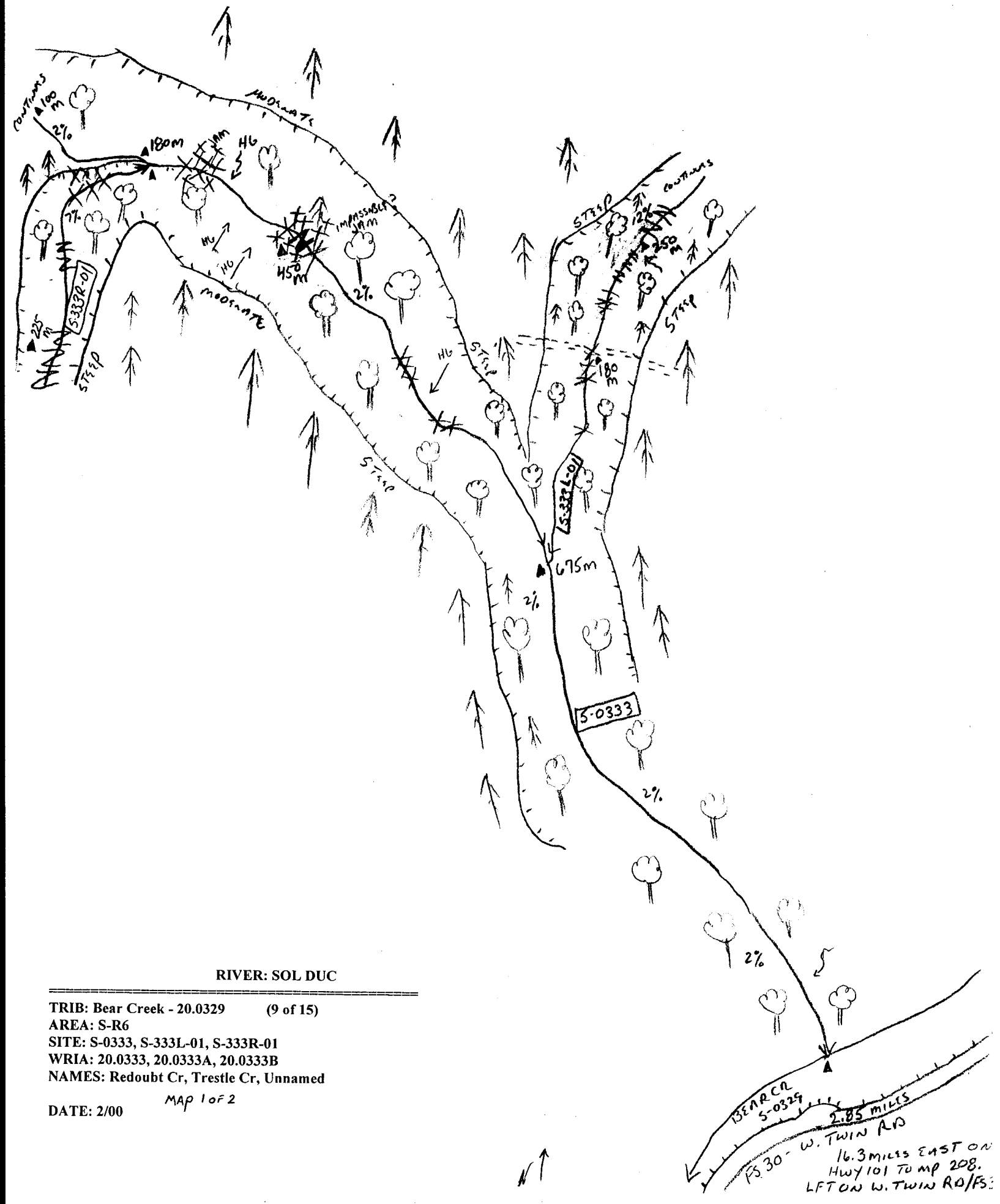
Additional Comments:

- The US Forest Service (Sol Duc Ranger Station) produced a report on stream habitat conditions for Redoubt Creek in 1994.

Attachments Available:

Contact respective SSHEAR habitat biologist for the following checked items:

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

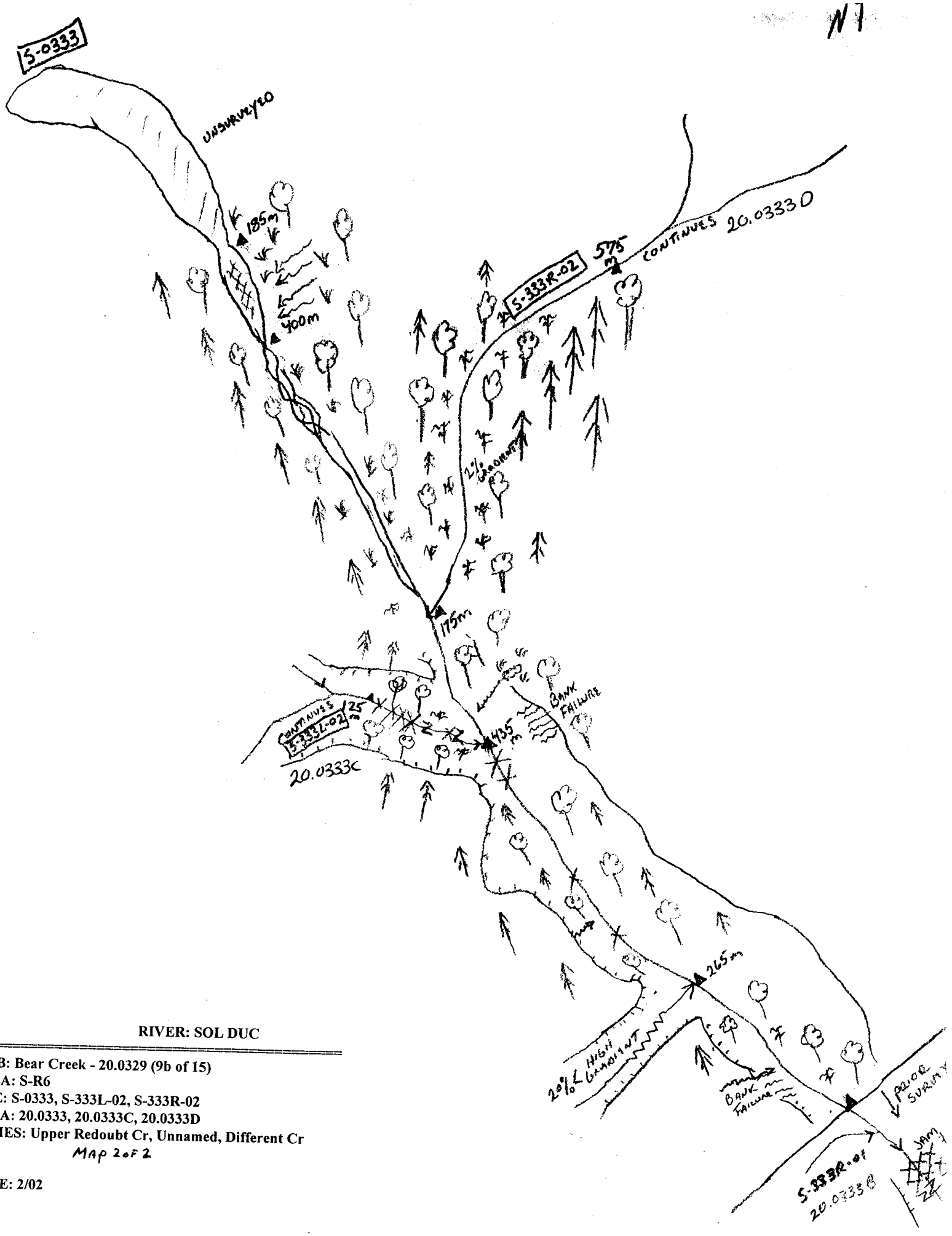


RIVER: SOL DUC

TRIB: Bear Creek - 20.0329 **(9 of 15)**
AREA: S-R6
SITE: S-0333, S-333L-01, S-333R-01
WRIA: 20.0333, 20.0333A, 20.0333B
NAMES: Redoubt Cr, Trestle Cr, Unnamed

MAP 1 OF 2

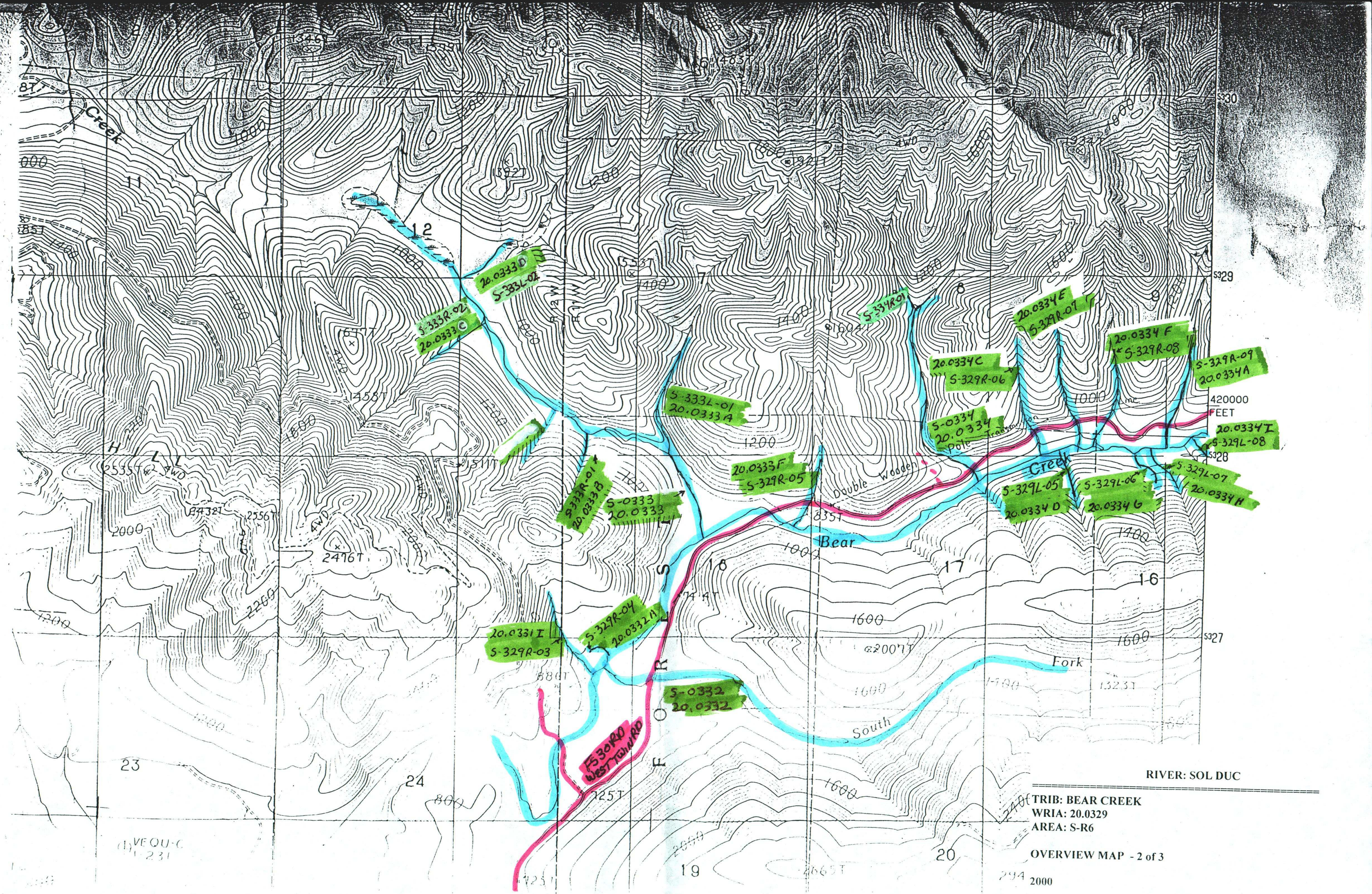
DATE: 2/00



RIVER: SOL DUC

TRIB: Bear Creek - 20.0329 (9b of 15)
AREA: S-R6
SITE: S-0333, S-333L-02, S-333R-02
WRIA: 20.0333, 20.0333C, 20.0333D
NAMES: Upper Redoubt Cr, Unnamed, Different Cr
MAP 2 OF 2

DATE: 2/02



RIVER: SOL DUC

TRIB: BEAR CREEK
WRIA: 20.0329
AREA: S-R6

OVERVIEW MAP - 2 of 3

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