

**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: 4/15/99 - 2/18/00
Site Identifier: S-0329	WRIA: 20.0329
River Mile Location: 35.3	RB/LB: RB
Local Name: Bear Creek	Trib. to: Sol Duc R (20.0096)
Legal Description: SW¼ Sec27 T30N R12W	County: Clallam

Habitat Type: Valley wall tributary

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

- National Forest, USFS
- Washington Dept of Natural Resources
- Various Timber Companies
- Small private land ownerships

Directions to site:

Lower reach: Starting at Forks (Tillicum Park), drive north on Highway 101 for 14.2 miles (mp 206) to Bear Creek Road. The egress of this creek is directly across the intersection of Bear Creek Road and HWY 101. Bear Creek Road parallels the lower reach of Bear Creek, and crosses several associated tributaries.

Upper reach: 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. FS 30 road parallels, crosses and parallels the mid and upper reaches of Bear Creek. It also crosses a number of associated tributaries.

Site Overview:

Bear Creek is large tributary of the Sol Duc River. It is classified as a fourth order stream with a drainage area of 17.9 square miles. The main channel is about 10.8 miles long, and fish were documented utilizing to about RM 10.3. Channel length has varied in a number of documents (\pm a mile). For this report, Bear Creek was hip chained and the lengths are close approximations.

Bear Creek was broken into five main reaches: The lowest reach from the channel egress to the first left bank tributary is approximately 2.5 miles long. It is characterized as a wide trough in the lower 3/4 section. It flows adjacently to commercial timberlands where there has been recent intensive logging. The full reach is lacking in large woody debris but there has been some recent recruitment from areas of blown-down RMZ. Gravel/cobble aggregate and boulders are the dominant substrate material in this area. The upper 1/4 reach flows through an area of land conversion - residential/agricultural. Bank instability is prominent in this area resulting in a concentration of fines in the substrate. Woody debris is also lacking in this area. The full reach offers numerous areas of spawning opportunity for coho, chinook, steelhead and cutthroat trout. There are two main tributaries that feed directly into this reach. One is a large tributary system that has nine recognized associated channels that may provide fish habitat.

The second reach is from the first left bank tributary (wetland complex) to the FS 3006 bridge. It is approximately 2.0 miles long. The lower 1/3 of this reach is wide and meanders through a mix forest. The lateral channel movement has cut into the banks resulting in recruitment of large

woody debris from the RMZ and also fines. Spawning material is plentiful in this area and there are also good resting pools. The mid 1/3 area is entrenched, characterized as a V-shaped valley. Boulders are prominent in the substrate. There is very little in channel woody debris. The RMZ is alder with conifers higher up the steep side slopes. The upper 1/3 has a widened channel. It meanders through a mixed forest but has a dominant alder RMZ. There is some spawning area, but also areas with higher concentration of fines and boulders. This area does have pools due to meanders and recent recruited downed alder. There are two tributaries that feed directly into this reach. One is minor and the other offers quality off-channel habitat in the form of a wetland complex.

The third reach is from the FS 3006 bridge to the FS 30 bridge and is about 1.8 miles long. The channel is broad and flat. The substrate has a suitable aggregate for spawning by coho, steelhead and cutthroat trout. Alder dominates this reach. There is a lack of instream woody debris except for about a 1/4 mile section near the powerlines. The Quileute Tribe did a bank protection, instream woody debris project in the powerline area which has resulted in good pool formation. There are four tributaries that feed directly into this reach: Two are minor and two are major.

The fourth reach is from the FS 30 bridge upstream for about 2.5 miles. The channel decreases in width, and the FS 30 road runs parallel along the right bank. In the lower 1/2 of this reach, alder is the prominent tree species but there has been some recent planting of conifers in patches. Older, large alders were found instream forming pools. Gravel and fines make up the substrate composition. The upper 1/2 area has a mixed substrate of gravel/fines/cobble/boulders. It lacks woody debris and there is some channel down cutting taking place. Alder and brush dominate this area. There are 11 tributaries that feed directly into this reach. They are mostly small with limited habitat due to bedrock falls/gradient.

The upper, fifth reach is to the headwaters and is about 2.3 miles long. The valley continues to stay narrow, and the FS 30 road continues to parallel the majority of the length. The lower 1/2 area has a mix substrate of gravel/fines/cobble/boulders; spawning is limited. Alders are dominant but there are spots with conifers too. There are some instream woody debris complexes but, overall, it is lacking. The upper 1/2 area, from the beaver ponds to the headwaters is less likely to be utilized by fish due to fluctuating/low flows. Adequate water (flows/depths) in this upper area has only been observed during rain events or long duration of precipitation.

Habitat Information:

Water source: Tributaries, springs, and surface runoff

Intermittent/year-around:

- Year-around

Estimated flows (CFS): Lower end - 30+ Upper end - 0.5

Water temperatures: 6° C

Adjacent stream temperature: 6° C (20.0096)

Other water observations:

- Water is primarily clear except for the upper forested wetland area which is tannic color.

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

Widths: Channel- 4 m - 11 m Ponds- NA Wetlands- NA

Depths: Channel- 10 cm - 13+ m Ponds- NA Wetlands- NA

Total length (includes ponds and wetlands): 17,585 m

Total existing habitat area (est.): 140,680+ m²

Over 60,000 m² of habitat was measured in adjacent tributaries - excluding 20.0332 and 20.0333.

Spawning Habitat conditions: None Poor Fair Good Excellent

Describe spawning habitat:

- There are a variety of substrate types which support chinook, coho, steelhead, and cutthroat trout.
- The lower 2.5 mile reach has a substrate mix of cobble and gravel. The full reach offers numerous areas of spawning opportunity for coho, chinook, steelhead and cutthroat trout.
- The next 2-mile reach has a variety of stream conditions but the lower 1/3 has plentiful spawning material and good resting pools.
- The third 1.8 mile reach has a smaller aggregate - it is a more suitable spawning substrate by coho, steelhead and cutthroat trout.
- The fourth 2.5 miles have a substrate composition of gravel and fines. The upper 1/2 area has a mixed substrate of gravel/fines/cobble/boulders. There are still suitable spawning areas for coho and trout.
- The upper 2.3 mile reach has limited spawning in the lower 1/2 area. The substrate is a mix of gravel/fines/cobble/boulders.
- Several large associated tributaries also offer numerous coho and trout spawning opportunities.

Rearing habitat conditions: None Poor Fair Good Excellent

Describe pond and other rearing habitat:

- The lowest reach flows through commercial timberlands. There has been recent intensive logging in this area resulting in less shade. This reach also lacks woody debris but there has been some recent contribution from blown down riparian trees.
- Further upstream, the channel meanders through residential/agricultural land. Lack of riparian species has led to eroding banks and also less shade. There are few woody debris structures in this area.
- In the lower second reach, the channel is wide and flows through a mixed forest. There has been some recent introduction of wood into the channel due to the stream cutting into the bank. An associated tributary offers high quality off-channel habitat in this area.
- Further upstream, the channel becomes entrenched. There are few woody debris pieces functioning in the channel, and the RMZ is alder.
- The third reach is characterized as a broad, flat channel. It has an alder dominant riparian zone. Overall, it lacks in-stream wood except where the Quileute Tribe did a bank protection/in-stream woody debris project. The project is functioning well and has provided numerous pools.
- The fourth reach has a narrow channel and is impacted by the paralleling FS 30 road. The lower 1/2 of the channel has larger, older alders with numerous in-stream complexes. There has been some alder conversion in a few areas; new conifer plots have been planted along the stream.
- The upper area of this reach lacks woody debris and channel down-cutting was noted. Numerous small tributaries with limited habitat flow into this stream reach. Many of these streams have blocking culverts.
- The fifth reach is narrow, and continues to parallel the road. There are some woody debris complexes but overall wood is lacking. The riparian is primarily alder with some areas of conifers.
- The upper section, from the beaver ponds to the headwaters is shallow and appears to lack water much of the year.

Describe unaccessible habitat:

- The upper most reach, from the beaver ponds to the headwaters, appears to be unaccessible due to fluctuating/low flows. Adequate water (flows/depths) in this upper area has only been observed during rain events or long duration of precipitation.

Describe wetland: Bog Marsh Scrub-shrub Wetland Forested Wetland

- Water pools and braids through the alder/brush dominant forest in the upper reach. Depths are shallow, and support sedges and various other wetland plants. The wetland primarily extends along the right bank. This area near the beaver ponds is influenced by numerous small springs.

Flooding potential: Low Medium High

- Flushing flows within the system.

Fish Information:

Site entry condition to (20.0096): Poor Fair Good

- Open egress into the Sol Duc River.

Coho access and use:

Juvenile- Unknown None Poor Fair Good

Adult- Unknown None Poor Fair Good

- The Quileute Tribe conducts coho spawner surveys on this stream and associated tributaries.

Other species access and use: Chum Pink Sockeye Chinook Trout

- The Quileute Tribe conducts chinook and steelhead spawner surveys on this stream.

Habitat Improvements:

Enhancement opportunities:

- Bank protection in residential/agricultural area.

- Remove rotting culvert in the upper reach.

Additional Comments:

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

Attachments Available:

Contact respective SSHEAR habitat biologist for the following checked items:

Aerials

Sketch

Maps

Culvert Report

Other references

Spawning surveys

Juvenile trapping

Fishway Report

NORTH COAST OFF CHANNEL SURVEY
SUBSEQUENT SITE EVALUATION FORM

River System: Sol Duc

Site No.: S-0329
Site Name: Bear Cr.
WRIA: 20.0329

DATE: 3/19/99

OBSERVER: Powell

It has been raining. The upper end twin culverts on FS 30 Road were flowing.

MINNOW TRAPPING REPORT

TRAP	DATE		DATE		COHO	CATCH			COTTID
	SET	TEMP	PULLED	TEMP		TROUT			
						RBT	CUTT	0+	
1	2/26	7.0°C	2/27	6.0°C	0	0	0	0	0
2	2/26	7.0°C	2/27	5.0°C	0	0	0	0	2
3	2/26	7.0°C	2/27	5.0°C	0	0	0	0	1
4	2/26	7.0°C	2/27	5.0°C	0	0	4	0	0
5	2/26	7.0°C	2/27	5.0°C	0	0	0	0	2
6	2/26	7.0°C	2/27	5.0°C	0	0	3	0	21
7	2/26	7.0°C	2/27	5.0°C	0	0	2	0	27
TOTALS:					0	0	9	0	53

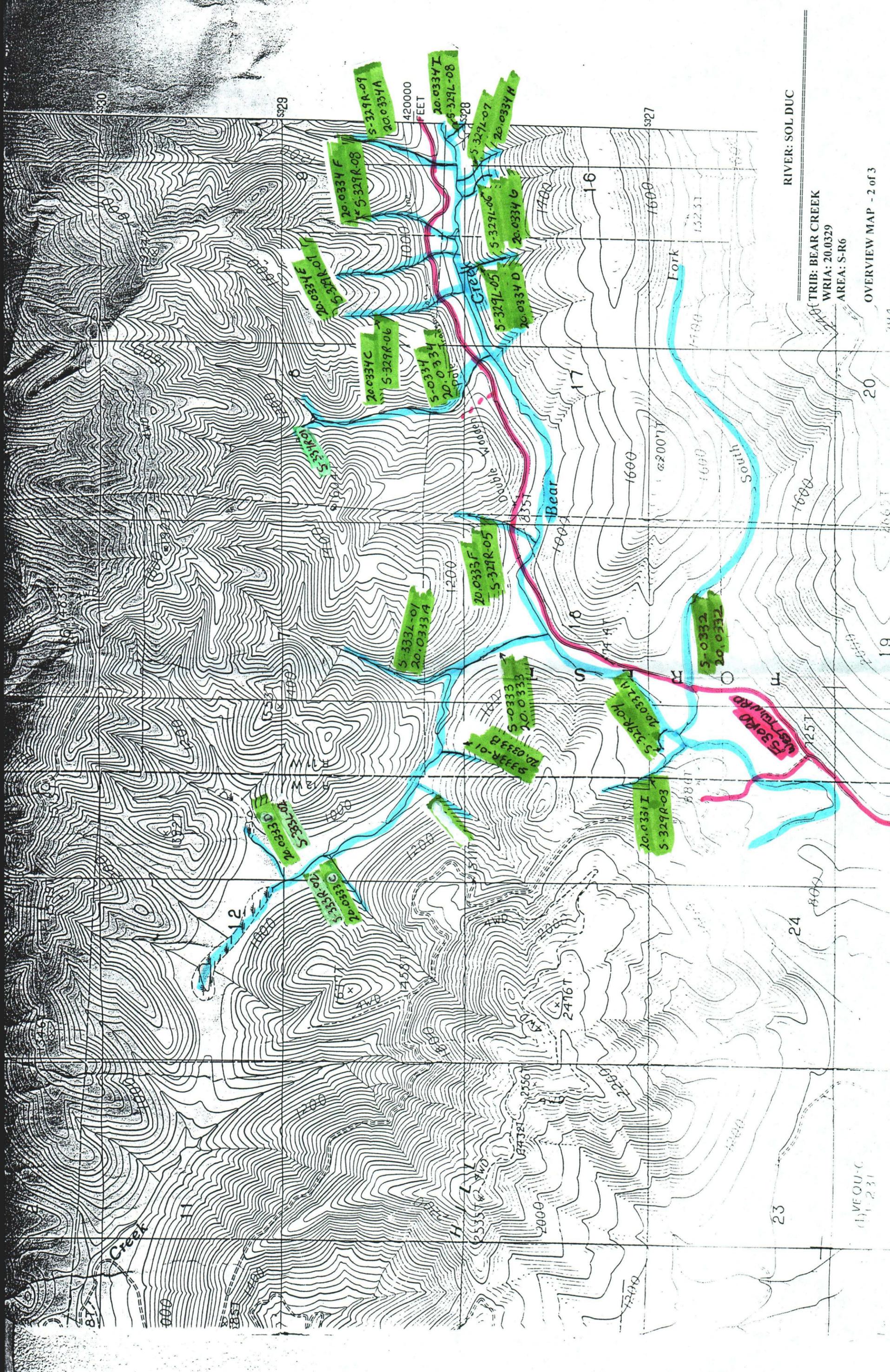
COMMENTS:

- Trap #1 was placed ~ 10 feet upstream of twin culverts (FS 30 Road).
- Traps #2 and #3 were placed at the upper end of the system, upstream of the beaver dams. The road marker on FS 30 road was mp 7.
- Traps #4 and #5 were placed about 100 - 150 m downstream of traps #2 and #3.
- Traps #6 and #7 were placed in the first large beaver pond about 150 m upstream of S-329R-16.

DATE: 5/15/03

OBSERVER: Powell

Large culvert in the upper end was removed. Steep slopes are grassing up. Alders were placed in the stream channel. Looks good.



RIVER: SOL DUC

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

OVERVIEW MAP - 2 of 3

2994 2000

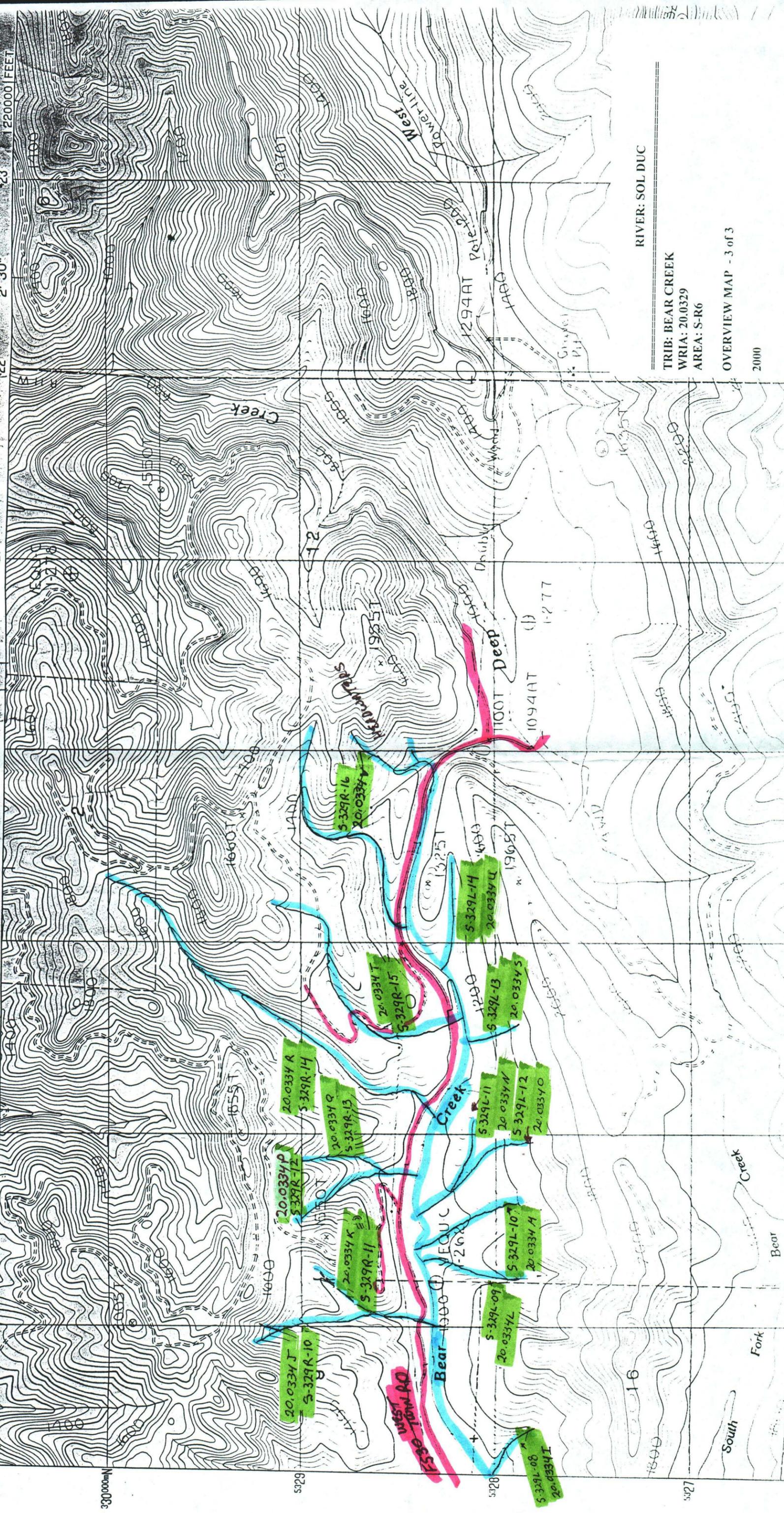
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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

124° 07' 30" W
7' 30" E

1220000 FEET

418 419 420 421 422 423



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

OVERVIEW MAP - 3 of 3
2000

