TIOGA APPENDIX: IN STREAM GRAVEL & COARSE WOODY DEBRIS

Excerpts and Summaries Describing Condition of in Stream Gravel and Coarse Wood Debris
The reports referred to below are on file at the Coos Bay District Office.

A 1954 report on the Coos River splash dams includes a comment that "Much gravel is backed up behind" a 6-foot high, 100-foot wide dam constructed of 2 large logs with planks nailed between, located 8.3 miles above Dellwood. This obstruction was called the "deadhead" in the report and was the upper limit for chinook spawning at the time. Splash dam #1 was 11.4 miles above Delwood and the Tioga Splash dam was another 10 miles up stream.

A 1959 report noted that before removal of the splash dams on September 26, 1957, the upper most observed spawning chinook was 1 mile above the "deadhead". The following are notes by Ray Brewser, Oregon State Game Commission employee, on the South Fork Coos River taken while assessing the extent of up stream movement by chinook and their use of known bars for spawning. The mileages are the distances above Dellwood.

South Fork Coos -	
1.0 mi.	Coos Hatchery - 2 chinook spawning on gravel bar above rock
7.9 mi.	Deadhead
9.0 mi.	Gravel bar off mouth of Cox Creek. 8 chinook actively spawning. This is the highest point of chinook spawning prior to the removal of dams.
10.1 mi.	Large gravel bar. 6 adults spawning
10.9 mi.	Site of lower splash dam
14.7 to 15.1 mi	Long stretch of gravel with 15 live adults spawning & 10 dead adults counted in this area. 7 of these fish were examined, 3 female & 4 male, 4 of these showed evidence of gunshots. Menasha was removing gravel in this area one week prior to this survey.
21.0 mi.	Site of upper splash dam
21.6 mi.	Williams River - Tioga Creek confluence
Williams River -	
0.9 mi	1 spawned out dead female and 3 live adults were observed on riffle.
Tioga Creek -	
	? of gravel ? to Tioga pond disclosed no fish or gravel disturbance.

This marks the first time in 18 years (splash dams built 1941) that there is a record of chinook spawning beyond the 9.0 mile point above Dellwood.

Summary of Stream Survey Notes for Tioga Creek from 1953/54 (miles 0-8.9), 1955 (miles 8.9 to 11.1), 1958 (miles 11.1 to 12.4) and Comparison to the 1970 Stream Survey Summary

1953/54/55 data:						1970 data	
cumulative miles up stream	stream segment length	substrate distribution and size description	other notes on channel	segment length for vegetation descriptions	description of stream side vegetation (slopes are steep in all units described)	segments	description
0.0			Mouth of Tioga Creek	3.6 mi.	logged off with some hemlock remaining and scattered maple and myrtle.	Mile 0 to **1**	Mostly bedrock pools and large rocks with little spawning gravel.
0.6	0.6		Splash Dam 2 backwater				
1.3	0.7	50% boulders, 20% baseball-basket ball, 10% pea-walnut, 10% sand, 10% bedrock	gradient is moderate. 10% spawning area			Mile 1 to **2**	Mostly bedrock pools and large rocks with intermittent spawning gravel. There are some rather deep and long pools. Nongame fish (dace) more common than game fish.
2.3	1.0	25% boulders, 20% grapefruit-baseball-basketball, 10% egg-baseball, 40% pea-marble-walnut, 5% sand and silt.	30% spawning gravel			Mile 2 to **3**	Spawning gravel is lacking. Much large rock (4-6 ft in diameter) and pools. Hillsides were logged approximately 10 years ago. Ther 3 games species, coho, cutthroat and steelhead are scarse, with dace being abundent (>50 per 100 ft).
3.3	1.0	20% boulders, 60% basketball, 10% baseball-grapefruit, 10% pea-marble-walnut	10% spawning area			Mile3 to **4**	Mostly pool area and large rocks with little spawning area. Cutthroat are most abundant.
4.3	1.0	15% boulders, 45% grapefruit-basketball, 30% pea gravel-walnut, 5% sand-silt, 5% bedrock	20% spawning gravel	1.0 mi. (to 4.6 mi. above mouth)	Forested with cedar, hemlock, myrtle, and fir	Mile 4 to **5**	30% of this mile is good spawning area. Still, there is much pool area, bedrock, and large boulder. Anadromous species are more abundant.
5.1	0.8	Predominantly bedrock		0.9 mi. (to 5.5 mi. above mouth)	Almost completely logged off and burned	Nile 5 to **6**	One half is solid bedrock. One fifth is excellent spawning area. Cutthroat, coho, and dace are abundant.
5.2	0.1	25% baseball-basketball, 75% marble-egg sized gravel	above old rock crusher. 65% available to fish				
5.4	0.2	10% boulders, 90% bedrock					
5.8	0.4	mainly bedrock		0.9 mi. (to 6.4 mi. above mouth)	Logged off and burned		
5.9	0.1	Predominantly bedrock with scattered patches of pea-to walnut sized gravel					

1953/54/55 data:						1970 data	
cumulative miles up stream	stream segment length	substrate distribution and size description	other notes on channel	segment length for vegetation descriptions	description of stream side vegetation (slopes are steep in all units described)	segments	description
6.1	0.2	10% basketball, 10% volleyball, 10% grapefruit, 10% baseball, 60% egg-walnut	50% spawning gravel.			Mile 6 to **7**	One third very productive spawning area. A few redds are still evident. Cutthroat is the only game fish that is abundant. One large silt-pool ranging from 8 to 10 yards wide and 12 to 48 inches deep at 6.00 to 6.25 miles. 6.50 to 6.75 miles is almost exclusively sheet bedrock.
6.7	0.6	60% grapefruit-volleyball, 5% pea-walnut, 35% bedrock and boulders	no spawning area				
				0.3 mi. (to 6.7 mi. above mouth)	Willow and maple in stream bed. Scattered conifer on slope.	Mile 7 to **8**	This mile has a large amount of spawning areas interspersed by bedrock or silt pools. Other than dace, not many fish observed.
6.8	0.1	15% boulders, 75% pea-egg, 10% bedrock	60% spawning gravel	1.0 mi. (to 7.7 mi. above mouth)	Logged and burned with only an occasional fir or hemlock. Many small conifers and vines.		
7.8	1.0	Alternate patches of pea-egg gravel and boulders-bedrock	5% spawning area				
8.2	0.4	Predominantly boulders and bedrock, scattered patches of pea-egg size gravel	5% spawning area	1.2 mi. (to 8.9 mi. above mouth)	Numerous alder, willow, and maple.	Mile 8 to **9**	30% of this mile is good spawning area. Coho are abundant. R/P ratio approaching 50/50. The area is in a natural state with excellent streamside cover. A wooden fishladder at the falls (8.47 miles) should be replaced by a concrete structure.
8.3	0.1	45% baseball-volleyball, 30% pea-walnut, 25% sand and silt	numerous patches of algae & slime. 20% spawning area.				
8.5	0.2	15% baseball-grapefruit, 75% pea-egg, 10% bedrock	75% spawning area.				
8.9	0.4	Several patches of pea-marble-walnut gravel	several log jams causing water to slow and sand and silt to settle. In patches - 50% available for spawning.				
9.4	0.5	10% orange-grapefruit, 80% Egg-baseball, 10% sand and gravel	medium flowing over bedrock and small gravels	1.2 mi. (to 10.1 mi. above mouth)	Logged off area with vine maple and some brush on hillsides.	Mile 9 to **10**	25-30% is excellent spawning grounds. A few redds still remain. Ther area was logged 20 years. 50% of the gravel is in the marginal category. Few fish are present at this time. Rock-cut ladder at the falls is functional.
9.9	0.5	10% volleyball, 30% orange-grapefruit, 50% egg-baseball, 10% bedrock	medium flowing over bedrock and small gravels				

1953/54/55 data:						1970 data	
cumulative miles up stream	stream segment length	substrate distribution and size description	other notes on channel	segment length for vegetation descriptions	description of stream side vegetation (slopes are steep in all units described)	segments	description
10.4	0.5	40% boulder, 20% grapefruit, 30% orange-grapefruit, 10% walnut-egg	fast flowing over larger gravels			Mile 10 to **11**	This mile is characterized by bedrock or silt pools and marginal gravel. Only a few fish observed.
				1.0 (to 11.1 mi. above mouth)	natural watershed		
11.1	0.7	80% boulder, 10% basketball, 10% egg-grapefruit.	fast flowing over larger gravels				
11.2	0.057	20% volleyball, 20% orange-grapefruit, 40% pea-marble-walnut, 20% boulder & bedrock	30% spawning area	1.3 mi. (to 12.4 mi. above mouth)	Most of area surveyed was through watershed in its natural state, with Douglas-fir, hemlock, and redcedar growth along slopes and red alder and berrybrush along the stream.	Mile 11 to **12**	All 3 species are abundant. Fair gravel supply. Good R/P ratio. The area was logged 25 years ago. Good streamside cover.
11.3	0.1	15% volleyball-basketball, 25% orange-grapefruit, 25% pea-marble-walnut, 15% boulder & bedrock	15% spawning gravel				
11.3	0.057	15% orange-grapefruit, 5% pea-marble-walnut, 80% boulder & bedrock	No spawning area				
11.4	0.057	20% orange-grapefruit, 10% pea-marble-walnut, 70% boulder & bedrock	No spawning area				
11.4	0.074	100 % basketball-boulder & bedrock	No spawning area				
11.5	0.07	20% volleyball-basketball,25 % orange-grapefruit, 30% pea-marble-walnut, 25% boulder & bedrock	25% spawning area				
11.6	0.1	20% volleyball-basketball,25 % orange-grapefruit, 40% pea-marble-walnut,15 % boulder & bedrock	35% spawning area				
11.7	0.1	35% basketball-boulder, 40% orange-grapefruit, 25% pea-marble-walnut	15% spawning area				
11.8	0.074	25% volleyball-basketball, 20% orange-grapefruit, 35% pea-marble-walnut, 25% boulder & bedrock	25% spawning area				
11.9	0.1	25% volleyball-basketball, 30% orange-grapefruit, 25% pea-marble-walnut, 20% boulder & bedrock	15% spawning area				
12.0	0.085	50% volleyball-basketball, 25% orange-grapefruit, 25 % boulder & bedrock	No spawning area				

1953/54/55 data:						1970 data	
cumulative miles up stream	stream segment length	substrate distribution and size description	other notes on channel	segment length for vegetation descriptions	description of stream side vegetation (slopes are steep in all units described)	segments	description
12.0	0.057	90% pea-marble-walnut, 10% other	85% spawning area				
12.1	0.057	20% volleyball-basketball, 35% orange-grapefruit, 15% pea-marble-walnut, 30% boulder & bedrock	No spawning area			Mile 12 to **13**	Coho, cutthroat, and steelhead are abundant (8/ 100 ft.). 25% of the mile is good spawning gravel. 50% is large rock the size of a basketball. Some cascade-boulder. The area is in a natural state. P/R ratio is about 50/50. A log jam at 12.75 mile may be hindering fish passage.
12.2	0.1	30% volleyball-basketball, 30% orange-grapefruit, 10% pea-marble-walnut,30 % boulder & bedrock	No spawning area				
12.3	0.1	20 % volleyball-basketball, 25% orange-grapefruit, 5% pea-marble-walnut, 50% boulder & bedrock	No spawning area				
12.4	0.1	100% basketball-boulder & bedrock	No spawning area				

Log jam descriptions from 1953/54 1955 and 1958 for Tioga Creek				
location & distance above mouth	height	width	length	fish passage and other notes
A-1: 6.1 mi.	4 to 12 ft.	20 to 100 ft.	600 ft.	Very difficult passage. May be impassable. Caused by logging and bridging. Surveyor recommended removal.
A-2: 7.3 mi.	6 to 8 ft.	30 to 50 ft.	300 ft.	Partially by-passed and probably passable
A-3: 8.3 mi.	6 to 8 ft.	30 to 50 ft.	75 ft.	passable
A-4: 8.5 mi.	6 to 8 ft.	40 to 50 ft.	450 ft.	Jam has a by-pass making it passable
A-5: 8.7 mi.	4 to 6 ft.	30 to 50 ft	600 ft.	With difficulty, passable
A-6: 9.1 mi.	10 ft.	40 ft.	not recorded	might give some trouble to fish.
upper extent of logging at 10.1 mi.				
A-7: 11.1 mi	6 to 8 ft.	30 ft.	20 ft.	passable with difficulty. Surveyor recommended removal if splash dams are removed.
A-8: 11.16 mi.	6 to7 ft.	15 ft.	30 ft.	passable around one end
A-9: 11.33 mi.	5 to 12 ft.	50 ft.	15 ft.	passable around one end
A-10: 11.45 mi.	6 ft.	20 ft.	10 ft.	passable
A-11: 11.73 mi.	6 to 9 ft.	40 ft.	80 ft.	passable with difficulty
A-12: 12.0 mi.	10 ft.	30 ft.	25 ft.	impassable
A-13: 12.4 mi.	5 to 6 ft.	N/A.	N/A	Waterfalls passable with difficulty
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At 1962 report noted the observance of numerous coho spawning from the mouth of Tioga Creek up to the falls near the tioga Guard Station November 1961. The only prior observance of adult and jack coho in Tioga Creek were December 1958 at Burnt Creek and 1960 below the falls. The reports also notes that coho from the 1958 and 1959 broods were planted in Tioga Creek.

A 1967 report that proposed improving fish passage over falls on Tioga Creek in section 36, T.26S.R10W, and sections 1 & 12 T.27S,R.10W. justified the work in part by indicating 9-miles of spawning or rearing habitat above the lower falls, and noted there were few spawning bars or tributaries below the lower falls contributing Coho rearing stock to the 8 miles of Tioga Creek below the falls or to Coos River.

In 1973 the BLM, Oregon State Game Commission (OSGC)and Menasha had become concerned that accumulation of log jams, drifts and debris along Tioga Creek were threatening fisheries, water quality, public safety, capital improvements, and blocked anadromous fish access to about 6 miles of suitable habitat. Fish Habitat surveys at that time focused on identifying log jams that impeded fish passage. Notes from that time indicated that the presence of gravel suitable for spawning above a jam was a consideration for deciding which jams to remove. Logging debris (short pieces) accumulation and the silting in of channels behind the log jams were sometimes noted and appeared to be factors that argued for removal of some jams. The following jams were removed through the cooperation of BLM, OSGC and Menasha:

Location	Length
Hog Ranch - Section 30, T.26S.,R.9W.	4,000 ft
Hatcher Ck - Section 18, T.26S.,R.9W.	5,500 ft
Tributary 8R -Section 36, T.26S.,R.10W.	5,280 ft
Beaver Slider Ck - Section 35 & 26, T.26S.,R.10W.	5,280 ft
West Branch - Section 35 & 36, T.26S.,R.10W.	10,560 ft
Tributary 12R -Section 1 & 2, T.27S.,R.10W.	2,640 ft
log jam on Main Tioga Ck - Section 12, T.27S.,R.10W.	500 ft (this jam was a block rather than occupying space like the other jams)