DETAILED DESCRIPTION OF STREAM CONDITIONS AND HABITAT TYPES IN REACH 4, REACH 5 AND REACH 6.

The Eklutna River was divided into study reaches (figure 1) prior to this site visit. Prominent geologic or man-made features that can be easily identified during successive studies divided the reaches. The reaches are consecutively numbered upstream from the mouth. Reaches number 4, 5 and 6 were surveyed during this site visit (figure 1). Due to the presence of a cascade that breaks the continuity of the stream flow, Reach 6 was divided in Reach 6a and Reach 6b. Thunderbird Creek-Reach 1 (658 m) was not divided in segments, but general information and photos were taken for this reach (Appendix 2).

The reaches in the Eklutna River from the confluence to the power plant were divided into 60 segments with a combined length of approximately 4 kilometers (km). The length of each segment was determined by natural breaks in visibility along the stream channel (i.e. the surveyor's line of sight). Distances were determined with a laser range finder. To facilitate the assessment of the stream, the reaches were grouped based on their similarities. The surveyed area is described in the following paragraphs and in figures 1. Photos of each segment of the Eklutna River are in Appendix 1. Figure 2 and Figure 3 are draft drawing of reaches 4, 5 and 6.

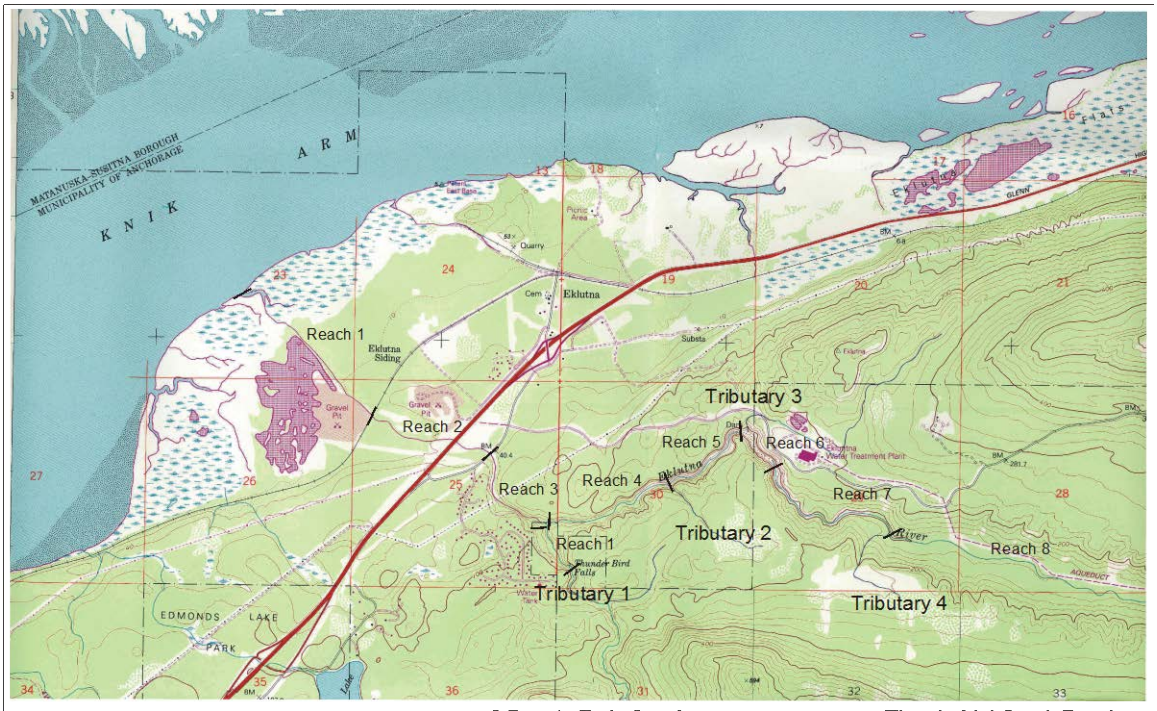

Figure 1: Eklutna River Reaches.

REACH No. 4.

Reach number 4 extends from the confluence of the Eklutna River and Thunderbird Creek to the next upstream tributary entering the Eklutna River on the south bank (figure 1). This reach is 1,100 meters (m) long and includes segments 1 through 12. A description of these segments is in the following paragraphs.

Segments 1, 2, 3, 4 and 5: Segments 1 through 5 combined are 626 m long. The average wetted width is 6 m. The channel is shallow and scour pools are almost absent. Runs and glides dominate as habitat types. Gravel is almost absent and a thick layer of silt covers the cobble substrate.

Photos:

Reach 4- Segment 1/ upstream / photo 1114	**Reach 4-Segment 1/ downstream / photo 1113**
Reach 4-Segment 2/ upstream / photo 1112	
Reach 4-Segment 3/ upstream / photo 1110	**Reach 4-Segment 3/ downstream / photo 1108**
Reach 4-Segment 4/ upstream / photo 1109	**Reach 4-Segment 4/ downstream / photo 1107**
Reach 4-Segment 5/ upstream / photo 1106	**Reach 4-Segment 5/ downstream / photo 1103**

Segments 6: Segment 6 is 65 m long with an average wetted width of 5 m. Chum salmon spawn in this segment (M. Lamoreaux personal communication). Habitat types include a run, a low gradient riffle, and a pool. The low gradient riffle has a cobble substrate, is 22 cm deep, 3 m wide (cross section), and has a velocity of 0.6 m^{-1}. A lateral scour pool is below the low gradient riffles. The scour pool is 70 cm deep and has a silt substrate.

Photos:

Reach 4-Segment 6/ upstream / photo 1102	**Reach 4-Segment 6/ downstream / photo 1098**

Segments 7, 8, 9, 10 and 11: Segments 7 through 11 are 366 m long with an average wetted width of 4 m. Cobbles dominate low gradient riffles. This segment has 2 glides. Woody debris and overhanging branches are common. Riparian vegetation is abundant and dominated by alder and willow.

Photos:

Reach 4-Segment 7/ upstream / photo 1100	**Reach 4-Segment 7/ downstream / photo 1097**
Reach 4-Segment 8/ upstream / photo 1096	
Reach 4-Segment 9/ upstream / photo 1095	**Reach 4-Segment 9/ downstream / photo 1094**
Reach 4-Segment 10/ upstream / photo 1093	**Reach 4-Segment 10/ downstream / photo 1092**
Reach 4-Segment 11/ upstream / photo 1091	**Reach 4-Segment 11/ downstream / photo 1090**

Segment 12: This segment is at the upstream end of reach 4 (figure 1). Segment 12 is 44 m long with an average wetted width of almost 3 m. Habitat types include low gradient riffles, pools, and a run. The low gradient riffles are 28 cm deep and with a substrate that ranges from small gravel to small cobble. The substrate in shallow areas of runs with low velocity has a thin layer of silt on its surface. Coho salmon spawn in this reach (M. Lamoreaux personal communication). A lateral scour pool next to one low gradient riffle is 86 cm deep and 4 m wide with a silt substrate.

Grasses and sedges grow on the riverbank at the confluence of the small tributary that divides reach 4 from reach 5 (figure 1), and newly established alders and willows grow on a nearby gravel bar. A mature deciduous forest grows behind the riverbanks. The tributary could contribute gravel to the Eklutna River during the summer months, but it was frozen into an icefall during this survey.

Photos:

Reach 4-Segment 12/ Upstream / photo 1089	**Reach 4-Between Segment 12 and Segment 13 / Upstream / photo 1087**
Reach 4-End of Segment 12/ Tributary 2 / photo 1052	
Photos of gravel and cobbles found at the mouth of Tributary 2, between Segment 12 and Segment 13.	

REACH No. 5.

This reach extends from tributary No. 2 (figure 1) to the base of the diversion dam that was built in 1929. It is 694 m long and includes segments 13 through 24.

Segments 13: Segment 13 is 100 m long with an average wetted width of almost 3 m. Major habitat types include low gradient riffles, pools, and runs. Low gradient riffles are 28 cm deep and have abundant small to medium size gravel. The gravel exposed to fast flowing water looks clean on the surface, but the gravel in the slow and shallow areas of the runs is covered by a thin layer of silt. Small numbers of coho salmon spawn on these riffles (M. Lamoreaux personal communication). A lateral scour pool next to a low gradient riffle is 86 cm deep and 4 wide, and has a silt substrate.

Photos:

Reach 5-Segment 13 / downstream / photo 1084	**Reach 5-Segment 13 / downstream / photo 1082**

Segments 14, 15 and 16: The combined length of segments 14,15, and 16 is 249 m. The average stream wetted width is 4 m. Major stream habitat types are low gradient riffles and runs. The river bottom is composed of course gravel and medium-size gravel and cobbles. The substrate looks clean, but has a modest amount of fine sediments.

Photos:

Reach 5-Segment 14 / upstream / photo 1080	**Reach 5-Segment 14 / downstream / photo 1079**
Reach 5-Segment 15 / upstream / photo 1078	**Reach 5-Segment 15 / downstream / photo 1077**
Reach 5-Segment 16 / upstream / photo 1076	

Segments 17, 18, 19 and 20: Segments 17, 18, 19 and 20 combined are approximately 238 m long with an average wetted width of 3 m. Major habitat types are low gradient riffles and runs with gravel bars on the sides and middle, large rocks with dammed pools upstream and scour pools downstream of the rocks. Lateral scour pools form where the stream runs against bedrock walls. Boulders and cobbles form step pools and runs.

The bottom is cobble and gravel in the runs and low riffles and muddy in the pools. The substrate appears clean, but has an accumulation of fine sediment. Riverbanks and gravel bars are vegetated with alder, but alder is almost absent where large boulders are the main

habitat type. Mature alder/willow vegetation is mostly present on colluvial slopes where the soil is deeper.

Photos:

Reach 5-Segment 17 / downstream / photo 1072	**Reach 5-Segment 17 / downstream / photo 1075**
Reach 4-Segment 18 / downstream / photo 1071	**Reach 4-Segment 18 /upstream / photo 1074**
Reach 5-Segment 19 / downstream / photo 1069	**Reach 5-Segment 19 / upstream / photo 1070**
Reach 5-Segment 20 / upstream / photo 1067	**Reach 5-Segment 20 / downstream / photo 1066**

Segment 21: The segment is 50 m long with an average wetted width of 13 m. A colluvial fan forms a large pool with a thick silt bottom in this segment. The colluvial fan is includes large boulders that form a natural dam that narrows the river from about 30 m to 1 m wide. This natural dam is followed by a sequence of step pools.

Photos:

Reach 5-Segment 21 / downstream / photo 1060	**Reach 5-Segment 21 / downstream / photo 1063**

Segments 22, 23 and 24: Segments are 22, 23 and 24 are immediately below an abandoned diversion dam. Their combined length is 57 m and their average wetted width is 6 m. A large pool is at the base of the dam. The channel downstream of the large pool consists of low gradient riffles and small scour pools until a colluvial fan constricts it. Cobbles and medium to large boulders dominate the substrate. The floodplain is narrow and confined by the canyon steep slopes. Vegetation is scarce because bare boulders cover the riparian zone.

Photos:

Reach 5-Segment 22 / upstream / photo 1061	**Reach 5-Segment 22 / downstream / photo 1058**
Reach 5-Segment 23 / downstream / photo 1055	**Reach 5-Segment 23 / upstream / photo 1059**
Reach 5-Segment 24 / upstream / photo 1054	**Reach 5-Segment 24 / upstream / photo 1052**

REACH No. 6a.

Reach extends upstream from the top of the abandoned diversion dam (segment 25) to the cascade at the end of segment 50 and includes the pool behind the dam. The pool was filled with water when the dam was in operation, but is now fill with sand, gravel, and silt. The combined length of the segments contained in this reach is 1,607 m.

Segments 25 and 26: Segments 25 and 26 are about 70 m long. The bottom is sand and gravel with a thin layer of silt on top. The silt is thicker closer to the dam. Lateral sand and gravel bars are present. The average width of the floodplain upstream of the dam is 41 m. Glides and shallow pools are the dominant stream habitat types. The channel narrows to 1.2 m and 20 cm deep where it is confined by an alluvial gravel fan. This narrow channel had a velocity of 1m-1. Alders and willows dominate the floodplain vegetation, while mature and structured deciduous trees dominate the steep canyon slopes. Taller deciduous trees and conifers growing on the canyon slopes are probably the source of the medium-size logs found along the channel. The canopy under the trees

consists of mainly sedges, grasses, and ferns. There is no indication of bank erosion along these reaches.

Photos:

Reach 6-Segment 25 / upstream / photo 189	**Reach 6-Segment 25 / downstream / photo 198**
Reach 6-Segment 25 / upstream / photo 188	**Reach 6-Segment 25 / downstream / photo 195**
Reach 6-Segment 26 / upstream / photo 201	**Reach 6-Segment 26 / downstream / photo 208**
Reach 6-Segment 26 / upstream / photo 205	

Segments 27 and 28: Segments 27 and 28 have a combined length of about 134 m. The average width of the floodplain is 39 m. The dominant habitat type is glides and shallow pools. The channel bottom is mainly silt with silt-covered gravel edges. Willows and alders grow along the stream bank. Mature deciduous trees and conifers grow on the canyon slopes. Small piles of woody debris in the stream produce low habitat complexity. Sedges, grasses, and ferns grow on the stream bank and on the bedrock walls. There is no indication of bank erosion along these reaches.

Photos:

Reach 6-Segment 27 / upstream / photo 207	**Reach 6-Segment 27 / downstream / photo 209**
Reach 6-Segment 28 / upstream / photo 210	**Reach 6-Segment 28 / downstream / photo 212**

Segments 29, 30 and 31: Segments 29, 30, and 31 have a combined length of 351 m. The average floodplain width is 19 m. Canyon walls confine the floodplain to about 5 m wide in some areas. Glides and shallow pools are the dominant habitat type. A large lateral gravel bar is present. The channel bottom is silt with gravel edges. The gravel is covered with fine sediments. Mature willow and alder vegetate the stream bank. Vegetation is more structured with mature conifers and deciduous trees on the canyon slopes. Small piles of woody debris are found in the stream, but they create little habitat complexity. Sedges, grasses, and ferns are established in the stream bank and in the bedrock walls. There is no indication of bank erosion.

Photos:

Reach 6-Segment 29 / upstream / photo 211	
Reach 6-Segment 30 / upstream / photo 213	**Reach 6-Segment 30 / gravel / photo 215**
Reach 6-Segment 31 / upstream / photo 216	**Reach 6-Segment 31 / downstream / photo 218**

Segments 32, 33, and 34: Segments 32, 33, and 34 have a combined length of 161 m. The average width of the floodplain is 29m. Low gradient glides are the major habitat type. The river bottom is silt with side gravel bars. A colluvial fan of cobble size debris forms a short low gradient riffle in segment 33. Small woody debris is abundant in the floodplain. A logjam has dammed a small pool in segment 34. Riparian vegetation is alder and willow. There is no indication of bank erosion.

Photos:

Reach 6-Segment 32 / upstream / photo 219	**Reach 6-Segment 32 / downstream / photo 221**
Reach 6-Segment 33 / upstream / photo 222	**Reach 6-Segment 33 / downstream / photo 223**
Reach 6-Segment 34 / upstream / photo 224	**Reach 6-Segment 34 / downstream / photo 228**

Segments 35, 36 and 37: Segments 35, 36, and 37 have a combined length of 188 m. The average width of the floodplain is 21 m. Major habitat types include glides with lateral gravel bars, and a scour pool below a large boulder in the middle of the channel. Young alders are growing on the gravel bars. A small colluvial fan is found in segment 12. The bottom of the river is covered with silt, but clean gravel can be found where the river forms thalwegs.

Photos:

Reach 6-Segment 35 / upstream / photo 229	**Reach 6-Segment 35 / downstream / photo 230**
Reach 6-Segment 36 / upstream / photo 231	**Reach 6-Segment 36 / downstream / photo 232**
Reach 6-Segment 37 / upstream / photo 233	**Reach 6-Segment 35 / downstream / photo 234**
Reach 6-Segment 37 / upstream / photo 235	**Reach 6-Segment 37 / downstream / photo 236**

Segments 38, 39, 40 and 41: Segments 38, 39, 40 and 41 have a combined length of 207 m. The average width of the floodplain is 12 m. The canyon bedrock walls floodplain entrenches the stream channel. A sequence of runs and glides are the major habitat types. A detailed survey was conducted in 203 m along these segments. The results show that 75% are glides and runs and 25% are riffles and pools. See table below.

Habitat Type	**Total Length (m)**	**Percentage**	**Flow Velocity (ft/sec)**	**Depth (cm) -Average-**
Runs	50	25%		88
Glide/run combined	80	39%	1.0	20
Glides	23	11%		28
Riffles	9	4%	2.7	18
Low Gradient Riffles	14	7%	2.0	11
Pools	28	14%		87
Totals	**203**	**100**		

Bedrock walls entrenching the channel have form lateral scour pools and medium-size boulders have created small water pockets. Small gravel bars of colluvial and alluvial origin are found in this confined segment of the river. The gravel bar material is mainly small cobbles and medium-size gravels, which are highly embedded in fine sediments.

The riparian vegetation has low density. Most of the vegetation cover is found in the steep slopes of the canyon (mature deciduous forest - birches, aspen, cottonwoods- and few conifers). Large size down wood has fell from the canyon upper slopes and hangs against the canyon walls.

Photos:

Reach 6-Segment 38 / upstream / photo 237	**Reach 6-Segment 38 / downstream / photo 238**
Reach 6-Segment 39 / upstream / photo 239	**Reach 6-Segment 39 / downstream / photo 241**
Reach 6-Segment 40 / upstream / photo 242	**Reach 6-Segment 40 / downstream / photo 243**
Reach 6-Segment 41 / upstream / photo 244	**Reach 6-Segment 41 / downstream / photo 247**

Segments 42, 43, 44 and 45: Segments 42, 43, 44 and 45 have a combined length of 255 m. The average width of the floodplain is 14 m. A sequence of runs and glides with a

couple of low gradient riffles in between are the major habitat types. Other habitat types include a 3.5-foot scour pool in segment 42 and a plunged pool created by a large down log posted across the channel in segment 45. Gravel bars and shallow areas in segment 44 are covered with a layer of fine sediments. A colluvial fan found on the right side of segment 45 has entrenched the stream towards the left. A small sandy bar has formed in the middle of the channel of segment 45. Large down wood debris is observed hanging down the canyon walls and in the floodplain.

Photos:

Reach 6-Segment 42 / upstream / photo 248	**Reach 6-Segment 42 / downstream / photo 249**
Reach 6-Segment 43 / upstream / photo 252	**Reach 6-Segment 43 / downstream / photo 253**
Reach 6-Segment 44 / upstream / photo 254	**Reach 6-Segment 44 / downstream / photo 256**
Reach 6-Segment 45 / upstream / photo 257	**Reach 6-Segment 45 / downstream / photo 258**

Segments 46, 47 and 48: Segments 46, 47 and 48 have a combined length of 142 m. The average width of the floodplain is 15 m. Low gradient riffles and runs are the major habitat types, with a few shallow pools and glides. Boulders are common in the channel and course gravels and cobbles are more conspicuous than in the previous segments. The accumulation of small and medium-size log debris has created a dammed pool below a riffle-run sequence. In the riparian zone, pole-size alders and willows comprise more than 50% of the vegetation cover. Overhanging branches and woody debris are abundant in the riparian vegetation. The water flow has more velocity in these segments and there is not much evident of fine sediment accumulation.

Photos:

Reach 6-Segment 46 / upstream / photo 259	**Reach 6-Segment 46 / downstream / photo 260**
Reach 6-Segment 47 / upstream / photo 261	**Reach 6-Segment 47/ downstream / photo 262**
Reach 6-Segment 48 / upstream / photo 263	**Reach 6-Segment 48 / downstream / photo 266**

Segments 49 and 50: Segments 49 and 50 have a combined length of 99 m. The average width of the floodplain is 10 m. Large size boulders and cobbles are the main cover in the floodplain. Dominant habitat types are those related to the presence of large cobbles and boulders in the stream such as sequences of step pools and high gradient riffles. A 1-m deep scour pool created by large size boulder is found in segment 50. Small accumulation of colluvial debris is found where the canyon bedrock walls confines the floodplain. No much riparian vegetation has been established in the floodplain. A most dense canopy deciduous forest grows above the canyon bedrock walls, which seems to be the main source of down wood materials to the floodplain.

Photos:

Reach 6-Segment 49 / upstream / photo 267	**Reach 6-Segment 49 / downstream / photo 269**
Reach 6-Segment 50 / upstream / photo 268	**Reach 6-Segment 50 / downstream / photo 275**

REACH 6b.

This reach goes from the cascade (segment 51) to just below the Eklutna treatment Plant (segment 60). This reach includes segments 51 through 60 with a total length of 506 m.

Segments 51, 52, and 53: Segments 51, 52 and 53 have a combined length of 104. High gradient riffles, runs and step pools are the dominant stream habitat types. Other habitat

types found in these segments are pocket pools created by boulders or by woody debris jams. In the riparian zone, a young deciduous forest (aspen, willows, and birches) is the dominant plant community with common overhanging branches. Mature birches and conifers are established in the upper slopes of the canyon. Medium/small size down wood is abundant in the riparian zone.

Photos:

Reach 6-Segment 51 / upstream / photo 276	**Reach 6-Segment 51 / downstream / photo 277**
Reach 6-Segment 52 / upstream / photo 278	**Reach 6-Segment 52 / downstream / photo 281**
Reach 6-Segment 53 / upstream / photo 280	

Segments 54, 55 and 56: Segments 54, 55, and 56 have a combined length of 183 m. The width of floodplain was not recorded. The channel is entrenched by large boulders, and in some sections by the presence of a terrace higher than the stream level. Scour pools, sequence of step pools, and high gradient riffles are the habitat types created due to the abundance of boulders. Apple-size gravel and small cobbles are the dominant substrate material, whereas pea-size gravel is scarce in the segments. A thing layer of fine sediments (flour silt) can be observed in the shallower areas of the stream. The abundance of boulders and woody debris in the stream has created the major habitat types. A few dammed pools were created due to woody debris jams.

Photos:

Reach 6-Segment 54 / upstream / photo 282	**Reach 6-Segment 54 / downstream / photo 283**
Reach 6-Segment 55 / upstream / photo 287	**Reach 6-Segment 55 / downstream / photo 285**
Reach 6-Segment 56 / upstream / photo 286	**Reach 6-Segment 56 / downstream / photo 287**

Segments 57, 58, 59 and 60: Segments 57, 58, 59 and 60 have a combined length of 219 m. The floodplain is unconfined, but the channel is entrenched by a fluvial terrace. Runs and a mix of high and low gradient riffles are the dominant habitat types found in the segment. In the stream cobbles and medium size boulders are the dominant substrate. The riparian vegetation is dense and with abundant overhanging branches. Medium to large woody debris jams has contributed to create dammed pools in the channel.

Photos:

Reach 6-Segment 57 / upstream / photo 288	**Reach 6-Segment 57 / downstream / photo 284**
Reach 6-Segment 58 / upstream / photo 291	**Reach 6-Segment 58 / downstream / photo 292**
Reach 6-Segment 59 / upstream / photo 293	**Reach 6-Segment 59 / downstream / photo 294**
Reach 6-Segment 60 / upstream / photo 295	

Table1: Summary of most common habitat types and riparian conditions by Reach

				IN STREAM											RIPARIAN ZONE		
Reach	Segment	Length (m)	Wetted width (m)	Low Gradient Riffles	Runs	Glides	Pool	High Gradient Riffles	Scour Pool	Step Pool	Fine sediments	Cobbles	Boulders	Gravel	Riparian Veg.	Gravel Bars	Boulders
Reach 4	1, 2,3, 4	626	6		X	X					X				X		
	6	65	5	X	X				X		X	X			X		
	7, 8, 9, 10, 11	366	4	X		X					X	X			X		
	12	44	3	X	X		X				X	X		X	X		
Reach 5	13	100	3	X	X		X		X		X			X	X		
	14, 15, 16	249	4	X	X						X	X		X	X		
	17, 18, 19, 20	238	3	X	X		X		X	X	X	X	X		X	X	
	21	50	13				X				X				X		X
	22, 23, 24	57	6	X			X		X			X	X				X
Reach 6a	25, 26	70				X	X*				X			X	X	X	
	27, 28	134				X	X*				X			X	X		
	29, 30, 31	351				X	X*				X				X	X	
	32, 33, 34	161				X	X**								X		
	35, 36, 37	188	21			X			X		X			X	X	X	
	38, 39, 40, 41	207			X	X					X			X		X	
	42, 43, 44, 45	255		X	X	X	X**		X		X					X	
	46, 47, 48	142		X	X	X	X**					X	X		X		
	49, 50	142						X	X	X		X	X				X
Reach 6b	51, 52, 53	104			X		X***	X				X	X		X		
	54, 55, 56	183						X	X	X	X	X	X				X
	57, 58, 59, 60	219		X	X		X**	X				X	X		X		
Thunder - bird Creek Reach 1	1	657					X**	X	X					X	X		

x*= Shallow pools
x**=Jam debris pools
x***=Pocket pools

The observations recorded in table 1 seem to indicate the following:

- Riparian vegetation provides good cover in all reaches, with exception to some segments where the floodplain is confined and covered by large boulders.
- The most conspicuous gravel bars located in the surveyed area are found in Reach 6a (above the dam).
- Gravel substrates with little fine sediment accumulation were identified between reaches 4 and 5, in the vicinity of Tributary No. 2, along segments 12 through 16. Gravelly substrates were also identified above the dam, with a thick layer of silt if located in shallow areas, but cleaner in thalweg zones of runs.
- Boulders and large size cobbles are more abundant in Reach 6b (toward the treatment plant). Thus, high gradient riffles and step pools are also the most common habitat types observed in this area. No gravel bars were identified in this area.
- Although detail data on depth were not collected, pools were identified in some of Reach 5's segments. Dammed pools created by jam woody debris were more commonly observed in Reach 6.
- Low gradient riffles were frequent in Reach 5, the upper segments of Reach 4, and Reach 6b. This is also illustrated in the photos taken by segments (see Appendix 1).

THUNDERBIRD CREEK – REACH 1:

This reach goes from the confluence of the Eklutna River and Thunderbird Creek to Thunderbird Creek Falls. This reach, with an approximate length of 657 m, was not divided in segments. No data was systematically recorded for this reach, but a general description of its main features.

Fast currents characterize this reach, with high gradient riffles and runs as the mayor habitat types. Closer to the confluence with the Eklutna River, Thunderbird Creek recorded a velocity of 4 f/s. Low turbidity, little fine sediment accumulation, and abundance of cobbles and gravels of diverse size are also typical in this reach. Few erratics located at the side of the stream have created a couple of lateral scours. Similarly woody debris has created a couple of lateral dammed pools and a big down log has created a large dammed pool in the mid section of the stream. The riparian vegetation is pretty much undisturbed; with exception to the area adjacent to the Thunderbird Falls trail. A tall and dense deciduous forest makes up the riparian vegetation with large size mature cottonwoods in the upper canopy, and alders, willows, and devil's club overhanging the stream. Grasses, sedges, and forbs form a dense undercanopy.

In general, Thunderbird Creek contains some of the features required for salmon spawning: diverse substrate with abundance of gravels and cobbles, lack of fine sediment accumulation, and low turbidity (visual observation). The low occurrence of slow water habitat types to provide instream cover and gravel traps (dammed pools, scours pools, etc) could be considered one of the limitations for salmon resting and rearing habitat observed in these reach.

Photos: See Appendix 2.