INSTREAM FLOW SITE VISIT

Blue Lake Hydroelectric Project (FERC No. 2230) Relicensing

March 4, 2004

The site visit was conducted to provide first hand observation of the features of Sawmill Creek habitat and flow regimes. The following individuals participated:

Name	Affiliation	Email
Dean Orbison	City of Sitka	dean@cityofsitka.com
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Mike Prewitt	City of Sitka	cmikeprewitt@aol.com

Prior to the site visit the Fish Valve Unit (FVU) hydro generation was set to discharge 55 cubic feet per second (cfs) to minimize flow and improve Sawmill Creek access. The Upper Staff Gage (at the bridge just downstream of the FVU) recorded 57 cfs. The Lower Staff Gage near the Blue Lake powerhouse recorded 55 cfs.

Photos of the Index Pool and the Falls at Stream Mile (SM) 0.84, taken at a flows of 55 cfs on March 4 and at 104 cfs on March 5 are in Attachment I. These photos allow visual comparison of stream features at the two different flows.

A primary field trip objective was to familiarize participants with the areas in Karl Wolfe's ongoing fisheries survey reports. Extensive reference was made to sampling and observation areas in Karl's reports. In addition, reference was made to the US Forest Service (USFS) Tier III stream habitat survey (referenced as "Tier III" in this report) conducted on February 9, 2004 by CBS and USFS.

Stream maps were provided for each participant, and were encouraged to mark sites of interest on their maps. All references to left or right bank in the following are looking downstream.

Participants began at the powerhouse, then walked or waded from the bridge to the top of Reach 3, and observed, in the following Reaches or areas:

Reach 1

1. The Index Pool and areas of known fish utilization in the Reach. Dean and Karl described that Reach "0" extended from the powerhouse downstream to tidewater and had been added in 2003;
2. Thermographs measuring water temperature at the Blue Lake Hydro tailrace, end of bypass reach and Sawmill Creek;
3. Locations of the manual and continuous monitoring Lower Staff Gages on the left bank just downstream of the bridge;
4. Location of the Tier III survey transect representing Reach 1-2;

Reach 2

1. The Concrete Area (CA) and concrete structures remaining from power generation equipment foundations constructed in 1937;
2. Fish spawning and feeding areas in the Reach;.
3. The location of the Pulp Mill Feeder Unit (PMFU) hydro generation plant and the point of its discharge. The PMFU was shut down at the time to facilitate the site visit.

Reach 3

1. The Pulp mill Outflow (PMO) Pool, and associated fish utilization areas;
2. The narrow cascade section of reach 3 extending to the Falls Pool. Karl explained that the Falls Pool supported the majority of Sawmill Creek steelhead and coho spawning activity;
3. Spawning, holding and rearing areas in the Falls Pool;
4. Location of the Reach 3 Tier III survey transect.

Reach 4

Participants climbed the Falls on the left bank to access Reach 4. In Reach 4, they observed:

1. The Falls and Falls Pool from the bedrock shelf crest at the top of the Falls;
2. Explanation of the Powers and Osborne fish passage survey conducted at the falls by CBS;
3. The collapsed wooden dam constructed in 1919 as part of the original hydro plant;
4. Reach 4, which is predominantly riffle, extending from the top of the Falls to the Slot, showing the predominantly riffle habitat to the to the pool below the Slot;
5. The Reach 4 Tier III survey transect location;
6. The pool below the Slot. It was explained that few fish have been observed at this location.

Reach 5

Due to the inaccessibility of the Slot, participants climbed out of the canyon to the USFS Blue Lake access road. From the road, participants observed:

1. A representative segment of Reach 5 described as cascades, riffles, and glides;
2. Spring Creek which enters Sawmill Creek on the left bank. Spring Creek is fed by ground-water and is not generally dependant on Sawmill Creek streamflow.

Participants then drove to the USFS Campground and walked down Sawmill Creek, observing:

1. The Side Channel on the left bank from the campground footbridge down to its confluence with Sawmill Creek's main channel. The Side Channel is fed by overtopping at the upstream end at higher flows, but was being fed primarily by subsurface water at the time of the visit.
2. The reach 5 Tier III survey transect in the main channel;
3. A location just downstream of the footbridge described as a recurring holding area for trout and possible study point;
4. The Upper Staff Gage, on the footbridge. Dean discussed how the Staff Gages are used to generate hydrologic data;
5. The location of the thermographs at the FVU tailrace and the beginning of the dewatered reach.

Reach 6

Participants walked to the FVU powerhouse and continued up Reach 6, observing:

1. Pools number 1,2 and 3 in the lower segment of Reach 6.
2. Flow of approximately 5 cfs, mostly from Beaver Lake outflow;
3. The predominantly bedrock and boulder streambed throughout the entire Reach;
4. The abandoned access road used during Blue Lake dam construction;
5. Beaver Lake Falls;
6. The plunge pool. Dean and Karl described its characteristics and history of fish utilization.
7. The downstream dam face and the Howell-Bunger valve. Dean described access to and operation of the Howell-Bunger valve.

Blue Lake Reservoir

Participants drove to the lookout at the end of the Blue Lake road and observed Blue Lake Reservoir. Dean described the location of the intake and noted that the reservoir elevation at the time of the visit was approximately 327 ft. Dean said that the reservoir was 482 feet deep and that the deepest point was 140 below sea level.

ATTACHMENT I

Photos of Index Pool and Falls Pool at 55 and 104 cfs, for visual comparison purposes.

Index Pool at 55 cfs.

Index Pool at 104 cfs

Falls Pool at 55 cfs

Falls Pool at 104 cfs