

Summary of Rocky Reach Macroinvertebrate Sampling

June 19, 2000

Duke Engineering & Services sampled macroinvertebrates in the Rocky Reach Reservoir and two of its tributaries in September and October of 1999. The late summer sampling period was chosen to maximize the diversity of organisms that could be collected. Since spring and fall are times of maximal emergence, the collecting of invertebrates just before this reproductive period is optimal (Plafkin et al., 1989). In addition, presence/absence surveys were conducted for Washington State Sensitive mollusk species.

Macroinvertebrates were collected using artificial sampling units (a.k.a. rock baskets) or with and Ekman dredge. Drift samples were taken with three 500-micron drift nets spanning the width of the channel. Drift nets were deployed for a period of two hours during daylight (10:00-12:00) and nighttime (22:00-24:00) hours of a 24-hour cycle. A velocity and depth measurement was taken at the 0.45 m² opening of the drift net when it was initially deployed (T=0 hrs) and just before it was removed from the channel (T=2 hrs). Organisms trapped in the 3 nets were composited into one sample to represent the daytime or nighttime sampling period. Table 1 summarizes the macroinvertebrate sampling effort in 1999.

Table 1. Rocky Reach Reservoir Macroinvertebrate Sampling Locations with Corresponding Sampling Methodology.

<u>Sampling Location</u>	<u>Sample Date</u>	<u>Number of Replicates/ Sample Type</u>
Upstream Beebee Bridge RB	20 Oct 99	3/Artificial Sampling Units (Rock Baskets)
Upstream Beebee Bridge LB	20 Oct 99	3/Artificial Sampling Units (Rock Baskets)
Stayman Flats	20 Oct 99	3/Artificial Sampling Units (Rock Baskets)
Goosetail Rock	20 Oct 99	3/Artificial Sampling Units (Rock Baskets)
Rocky Reach Tailrace	20 Oct 99	3/Artificial Sampling Units (Rock Baskets)
Daroga Park	20 Oct 99	3/Ekman Dredge
Entiat River Delta	20 Oct 99	3/Ekman Dredge
Turtle Island	20 Oct 99	3/Ekman Dredge
Chelan River	15 Sep 99	1 Daytime & 1 Evening Drift
Chelan River	20 Oct 99	1 Daytime & 1 Evening Drift
Entiat River	15 Sep 99	1 Daytime & 1 Evening Drift
Entiat River	20 Oct 99	1 Daytime & 1 Evening Drift

Surveys for freshwater mollusk species were conducted in the Rocky Reach Reservoir in November of 1999. Time constraint and 40 meter transect surveys took place in preferred mollusk habitats utilizing SCUBA divers. At wadeable sampling locations, an additional field

biologist searched the shallow water margin habitat with the aid of a view tube. Divers collected 1-3 specimens of each apparent species present at a given sampling location. Table 2 summarizes the sampling locations for the mollusk surveys.

Table 2. Rocky Reach Reservoir Aquatic Mollusk Survey Locations.

<u>Site Number - Location</u>	<u>Sample Date</u>
Site 1 - RB backeddy in Wells Dam tailrace	10 Nov 99
Site 2 - LB cove near Transect 39	10 Nov 99
Site 3 - LB backwater near Transect 35	10 Nov 99
Site 4 - LB backwater b/t Transects 32 & 31	10 Nov 99
Site 5 - LB mouth of Chelan River	12 Nov 99
Site 6 - RB run near Transect 25	12 Nov 99
Site 7 - Stayman Flats on LB b/t Transects 23 & 22	12 Nov 99
Site 8 - Goosetail Rock	11 Nov 99
Site 9 - LB island near Transect 14	11 Nov 99
Site 10 - mouth of Entiat River	11 Nov 99
Site 11 - East shore of island near Transect 7	11 Nov 99
Site 12 - West shore of Turtle Rock	11 Nov 99

Results

As of June 15, 2000 the macroinvertebrate and mollusk taxonomic data has been completed. At this time, a thorough analysis of the data has not been completed for the discussion of trends. However, all field surveys and taxonomy work is completed so that delivery of draft reports should meet projected deadlines.

References

Plafkin et al. 1989. Rapid Bioassessment Protocols for use in streams and rivers: benthic macroinvertebrates and fish. EPA/444/4-89-001.