FINAL REPORT
BERTRAND CREEK SALMONID HABITAT
ASSESSMENT
Whatcom Conservation District (WCD)
Prepared for
Washington State Department of Ecology
Clean Water Fund
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INTRODUCTION:
This project is a salmonid habitat assessment for Bertrand
Creek. Habitat is the living space, including physical, chemical
and biological conditions, required for plants and animals.
Bertrand Creek's fish populations include threatened and
depressed salmon and trout.   Salmon and trout are often jointly
referred to as salmonids and assessment of their habitat is an
essential step in understanding what needs to be done to
restore healthy populations from those that have been impaired
by over-exploitation and land use. There has been International
interest in assessment and recovery of Bertrand by the Bertrand
Watershed Keepers (Adopt-A-Stream Foundation, 1996). A
prominent short-term goal for that group was to conduct a
habitat inventory from headwaters to mouth. The present
project, funded by the Washington State Department of
Ecology's Centennial Clean Water Program, provides that
inventory. The watershed has been the subject of a number of
studies related to land-use patterns and habitat, e.g., (Walker,
1960;Obert, 1973; Schuett-Hames and Schuett-Hames, 1984;
Whatcom Conservation District, 1988).   The stream is included
in the Washington State Conservation Commission's Limiting

Factors Report for salmonids in Water Resource Inventory Area (WRIA) 01 (Smith 2002). That report provided useful analyses of the data collected for the present project in the context of WRIA 01 and state-wide factors limiting salmonids.

The purpose of this project is to refine the assessment of habitat conditions in the U.S. portion of Bertrand Creek by reviewing existing information and examining original data on in-stream habitat units, wood, and the riparian zone collected by the Nooksack Salmon Enhancement Association (NSEA) from 1998-2002. The purpose has two elements: (1) provide tools to assist in the identification of specific locations and types of projects needed for efficient improvement of salmonid habitat and make recommendations for implementation; and (2) to present this information in a form that it can be readily accessed and understood by both users of the land and habitat improvement project proponents. The latter purpose may make some of the material seem redundant for habitat biologists but its intended value should exceed the inconvenience.

From this report a number of findings were reported which are available in the full document. Listed here are the

Recommendations for Habitat Improvement Project Types for Bertrand Creek.

- Restore a more natural hydrology. This recommendation goes beyond the data available for this project (see recommendations for study) but is too important for fish to overlook. Emphasis should be on improvement of storage capacity through wetland recovery. Integration of this data set with land use data will aid in the identification of restoration options. Present hydrologic conditions result in higher peak stream flows in winter and lower flows in summer and fall.
- Replace blocking culverts and floodgates with fish friendly alternatives. This recommendation, and locations of some of these culverts were identified in the Limiting Factors Report (see Section 3).

- Ensure fish passage at the dam on Maberry Segment 12, Meter 1545.   This should receive high priority since it may liberate more than 2 miles of potential salmonid habitat, including numerous pools.
- Remove dikes and levees that disconnect the flood plain on both Bertrand Creek and Duffner Ditch. This recommendation was identified in the Limiting Factors report and should be conditioned by integrated information development, as discussed in the next section.
- Reduce bank hardening throughout. This recommendation was identified in the Limiting Factors Report and should be conditioned on information development. Artificial banks were a minor contributor to pool-forming function as identified in this project but the project did not comprehensively identify all hardened banks and/or assign priorities for treatment.
- Reduce the incidence of non-native vegetation.   Japanese Knotweed, Blackberry and Reed Canary Grass should be specifically targeted, and replaced with native vegetation as appropriate for the site That will result in well functioning RMZ's in the future (functional LWD recruitment, shade, reducing erosion, nutrients etc.). This recommendation was also identified in the Limiting Factors report. Locations of sites with non-native vegetation can be ascertained from the database.
- Monitor implementation of Agricultural Best Management Practices.
- Restore native vegetation in degraded areas. This recommendation was identified in the Limiting Factors Report. The database in our project provides specific information on the distribution of riparian types and vegetation classes.