PART II: FACTORS OF DECLINE/CONDITIONS

2. Mainstem Green/ Duwamish River Conditions

2. MAINSTEM GREEN/DUWAMISH RIVER HABITAT CONDITIONS

SALMONID HABITATS IN THE MAINSTEM GREEN/DUWAMISH RIVER BASIN, WRIA 9

GENERAL OVERVIEW

The mainstem Green/Duwamish River is perhaps the most hydrologically and habitat altered large river system in the Puget Sound ecosystem. Changes in the landscape began when early Euro-American settlers started settling the lower basin sometime around 1850. These early settlers began altering the habitats of the lower river valley in the vicinity of what is now Kent and Tukwilla. Bank hardening projects probably started with the first railroad bridges in 1867, levee construction was initiated before 1875, the White River was diverted into the Puyallup River basin in 1906, the Black River diverted into Lake Washington in 1916, the City of Tacoma water diversion dam was finished in 1913, Howard Hanson Dam completed in 1962 and most of the Duwamish estuary had been filled by 1940. Currently, approximately 97 percent of the historic estuary has been filled or deepened, 70 percent of the historic watershed has been diverted out of the basin, and over 90 percent of the historic floodplain is no longer connected due to the construction of flood protection structures (including Howard Hanson Dam).

The Green/Duwamish River has its origins in the Cascade Mountains at an approximate elevation of 4500 feet south in the vicinity of Blowout Mountain and Snowshoe Butte. The river flows for over 93 miles in a northwesterly direction and enters the Puget Sound estuary via Elliot Bay. In this chapter, the mainstem Green/Duwamish River is subdivided into the habitat parameters that effect the survival of salmonids as follows:

- Hydrology (Chapter 2.1);
- Sediment Transport (Chapter 2.2);
- Hydromodification (Chapter 2.3);
- Riparian (Chapter 2.4);
- Fish Passage (Chapter 2.5); and
- Non-Natives (Chapter 2.6).

Each habitat parameter has been further broken into river reaches that have been determined by anthropogenic features. These river reaches are described by river miles in the manner of Williams (1975) and are:

- Green/Duwamish River estuary – RM 0.0 to 11.0;
- Lower Green River subwatershed - RM 11.0 to 32.0;
- Middle Green River subwatershed - RM 32.0 to 64.5; and
- Upper Green River subwatershed - RM 64.5 to RM 93 (headwaters).

Additionally, in the appropriate habitat parameters, we have included information on two tributary streams (Soos Creek and Newaukum Creek) that are particularly important to chinook salmon.