

Seaward Park Abstract

Dean Paron

The City of Seattle Parks Department owns and maintains Seward Park, located in King County along the Bailey Peninsula in southwestern Lake Washington. Throughout the years in response to erosion the City developed bank protection structures on various portions of the shoreline. Erosion primarily occurs at the park in the form of wave action induced from heavy boat traffic or wind. In many cases it appears that the bank protection methods used have reduced shoreline vegetation and nearshore habitat for fish and wildlife. The City is now interested in rehabilitating the shoreline in many locations in the park to provide more reliable bank protection while enhancing the habitat available to fish and wildlife. In order to achieve this goal the City of Seattle began a Planning Assistance to the States (PAS) study with the US Army Corps of Engineers (Corps) under Section 22 Program of the 1974 Water Resources Development Act in the fall of 1999.

The overall purpose of the Seward Park Rehabilitation Study was to identify potential areas and conceptual rehabilitation techniques that could be used along the shoreline of Seward Park to provide enhanced habitat for juvenile and adult salmonids. Therefore an engineering analysis of existing bathymetry, direction of wave approach and beach profiles was conducted in an effort to help identify potential rehabilitation areas. Littoral zone fish community interactions and the effects of shoreline modification are poorly understood throughout the country. This is especially the case in the Lake Washington system. Consequently a year long field study was also conducted to address this information gap. Beach seine and snorkel field surveys were used to determine monthly changes in diel distribution and abundance of salmon fry, overyearlings, and potential predators and their use of various bank features in the nearshore area of Seward Park. These surveys found the highest use of shoreline by juvenile salmonids to have occurred along sections of shoreline that contained overhead cover, complex substrate, shallow-sloping bank and nearshore contours, and banks without armoring. A spawning survey was also conducted in the fall to identify any potential beach spawning by salmonids. Only one redd was found; however the presence of adult sockeye carcasses on the beach throughout October, November, and December indicates that some deepwater spawning may be occurring along the Bailey Peninsula.

Based on the engineering analysis and the information gained from the field surveys, the Corps recommended three strategies for future rehabilitation of Seward Park shoreline:

- a) rehabilitating the nearshore area by placing a layer of sand, gravel, and cobbles over the selected portions of the shoreline that are now covered with angular rock. Also, small woody debris would be placed at a number of locations to create additional shoreline complexity.
- b) re-vegetating areas in and immediately above the existing bank along the west and north shorelines.

c) creating a shallow nearshore area by excavating upland material along a 500-foot-long section of the southeast shoreline and by allowing natural erosion processes to shape a portion of the adjacent shoreline.