

Gary Williams, Wetland Ecologist; G.L. Williams Associates

Presentation: Foreshore Restoration

Over the past century, most of our historical natural foreshore habitat has been lost, owing to industrial growth and other development. This trend gave rise to the federal fisheries policy of "no-net-loss" of habitat when further foreshore development has been contemplated. As a result, there arose a need and a desire to create and protect foreshore habitat.

Gary Williams is a recognized expert in creating new wetlands for foreshore restoration and foreshore habitat compensation. He has been involved in dozens of restoration projects, many of which are visible to users of trail systems along the shores of the tidally influenced Fraser River. Some of these have been built and dedicated by the Port as "habitat banks", intended to provide an extra available source of productive habitat area that can be purchased by foreshore developments that cannot reasonably provide their own on-site compensatory habitat.

Gary explained that "productive" foreshore habitat designs must consider not only the areas exposed by tides and fluctuating water flows, but also the deeper sediments and adjacent riparian areas located upland. The ecological cycle provided by insects and amphibians, detritus and other nutrients falling into the marsh, plus the shade and protective cover from living and dead riparian vegetation, combine to create an attractive haven for migrating, feeding and resting juvenile fish.

Over years of experience, Gary has identified the key design parameters necessary for a foreshore habitat restoration project in our region to be successful. By presenting visuals of both successful and unsuccessful habitat projects, Gary illustrated the many issues that need to be addressed in design and implementation. Designers must consider whether the site is saline, brackish, freshwater or ocean influenced. They must select substrate soils that will not wash away from the site, address the proper elevation and slope for installation, prevent erosion from tides and from natural and manmade currents and wave action, and select site-appropriate species for planting.

Recent advances in construction practices have reduced the effort and cost of coring naturally occurring plants for relocation, by the invention of more effective planting techniques and by collaborating with nurseries to provide appropriate wetland plant stock. Construction of foreshore marshes has also provided training and employment opportunities for First Nations people interested in improving fish habitat.

Provisions for ongoing operation and maintenance must address intrusion by invasive plants, destruction by grazing of plantings by waterfowl, and the removal of excess accumulations of destructive escaped logs and large debris. When properly constructed and maintained, constructed wetlands provide a valuable contribution to the development and preservation of fish stocks and the foreshore environment. Although changes enacted a few years ago to the Fisheries Act reduced the regulatory pressure to create and maintain habitat, the federal trend now appears to be toward greater emphasis on environmental protection.

