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KLASKISH RIVER ECOLOGICAL RESERVE
Estuary Survey for Native Oyster *Ostrea lurida*

SATURDAY JUNE 21 1997

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METHOD: The estuary of Klaskish Basin was surveyed by walking lateral transects about 20 metres apart starting at the low tide 8:00 am <1m above datum completed by 11:00 am at the edge of the sedge zone (just below the high water level). We also examined the underside of rocks at many locations in the reserve and on pocket beaches in the general area.

OBSERVATIONS:

TOPOGRAPHY: The estuary is characterized by moderately undulating terrain across a U-shaped basin, shallow sloping from the river flood plain to the low tide line. The margins are mostly rock walls or boulder beaches giving way to muddy sediments. The main flats are firm gravel sand mud with the banks of the established stream channel mostly gravel. There are lateral troughs observable in the gravel banks of the stream. These troughs are near rectangular in profile (1.5 m wide x 0.5 m deep) probably not formed by fluvial processes. The best explanation is that these are scars from the bulldozer work in the mid-sixties.

Another feature of the main tide flats are the numerous perched pools. The pools are mostly old stream channels meandering across the flats. The sides of these pools do not differ from the surrounding substrate but in some pools the bottom can be deep soft mud.

Throughout the estuary, especially on the Northwest side where it outcrops near the old causeway, there is evidence of a compacted organic layer about 30 - 50 cm thick. This layer is a mixture of ground organic fibre, sticks (up to 5cm in diameter and 1 m in length), sediments and some gravel; it is firm with a spongy texture. At low tide we noticed gas bubbles breaking the surface all around the area of the fixed mooring buoys - this could be associated an extension of the organic layer observed in the intertidal zone.

MOLLUSCS: No evidence of native oyster (*Ostrea lurida*) was found - either live or shell remains. Shell remains of one native oyster was found attached to the underside of a rock mid-tide level (2 m) on a beach just inside the entrance to Klaskish Basin. This is outside the ER. The beach supports a healthy population of little-neck, manila and soft shell clams with little-neck dominant. Limpets and snails (*Littorina*) were also abundant.

Species note: I observed shell remains in the lower elevations (0 - 1.0 metre) of the beach, associated with firm mud sand substrate along the Northwest side that may have been Mya truncata. These species is described in The Intertidal Bivalves of BC by D.B. Quayle as 'not abundant'.

Distribution of little-neck, manila, and soft-shell clams was not rigorously determined however there did not seem to be the stratification by tide level one normally sees (as on steeper beaches). Evidence of clams was observed (siphon holes and shells fragments and suitable substrates) along practically all the transects especially in perched pools.

The firmness of the substrate and the existence of perched pools provide excellent habitat for native oyster. The lack of a thriving population may be attributed to the extensive bulldozer work reported in previous documents. J Pojar reports that in meetings in the seventies where they discussed this proposed ER Dr. Quayle indicated that he had observed healthy populations of natives at this location. It is possible that Quayle made these observations before the bulldozer work. It now seems likely that much of the

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population was scraped up into the causeway. Any surviving numbers were then insufficient to survive the time required for the estuary to restabilize.

MARINE VEGETATION: The lower tide levels support an extensive fringe of eel grass not mentioned in earlier reports. The eel grass extends into the lower potions in many of the pools. Fucus, enteromorpha and other algal species are found at the typical tide heights and are more widely distributed than in the original ER survey.

FISH: We did not take the time to collect and identify fish observed in the estuary but some notes are possible. Sculpins and flatfish and were seen in the pools, stream and tide waters. A midshipman was found while turning over rocks in search of native oysters. Blennys were commonly seen when turning over rocks. Salmon fry most likely Coho were noted in the deeper tide pools along the Northwest side where cover such as overhanging banks or fall tree stems was available. I also noted one Chinook or Steelhead fry in the Klaskish River about 500 m upstream from the estuary and more Coho fry (<100) in the lower stretches entering the estuary.

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