Fish Submissions to the Animal Health Centre
July 1, 1999 to February 29, 2000

Over the course of the last 8 months, fish accessions to the Animal Health Center (AHC) increased approximately fifty percent between the period of July 1 to December 31 and January 1 to February 29, 2000. Between July and December1999, there were 15 Pacific and 66 Atlantic salmon, versus 8 Pacific and 29 Atlantic salmon in the first two months of the year 2000. As well, the number of ancillary diagnostic tests increased from 12 to 40 per month between the first and second time periods. The majority of cases are presented as biopsy or fixed, post mortem tissues with significantly fewer whole fish or fresh and fixed accessions.

Case findings were consistent between the two time intervals and salmon species with the majority of either infectious or inflammatory conditions.

In on-growing Atlantic salmon, the majority of infectious disease consisted of furunculosis (Aeromonas salmonicida) which was diagnosed by routine culture, presumptively by histopathology, and in 1 case, by polymerae chain reaction on histology sections. In the month of February, 2000, with the introduction of smolts to salt water net pens, there have been increased submissions of fish with ulcerative dermatitis attributed to Cytophaga spp. More sporadic diagnoses in this category include iatrogenic peritonitis associated with vaccination, a mycotic colitis, and occasional parasitism attributed to Loma salmonis, Kudoa thyristes and cestodiasis.

In contrast, fresh water submissions of Atlantic salmon with an infectious diagnosis had mycotic branchitis, superficial myxobacterial infections, fewer confirmed cases of furunculosis and a single case of enteric redmouth septicemia (Yersinia ruckerii).

Early life conditions include fry with a subcutaneous protuberance in the midsaggital region of the cranium. Histopathology disclosed a meningoencephalocoele characterized by a defect in the cranium with partial protrusion of meninges and a malformed brain tissue through the defect; while this condition is reported in coho salmon and rainbow trout, it is less frequently recognized in Atlantic salmon fry. A more commonly identified developmental anomaly was schistocoelia characterized by a breach of the caudal aspect of the coelomic cavity with herniation of yolk sac and contents. The precise cause of either of these conditions remains enigmatic; however, environmental, congenital and possibly nutritional factors are prime considerations.

Environmental conditions included two hatcheries with gas bubble disease diagnosed initially by histopathology and later confirmed by testing water with a saturometer. Additional environmentally related diagnoses included nephrocalcinosis associated with elevated water, carbon dioxide levels and respiratory epithelial hyperplasia attributed with suboptimal water quality. An accidental loss of stock was associated with malfunction of a header, supply tank and disrupted water flow.

The AHC was also involved in the diagnostic evaluation of escaped, Atlantic salmon recovered in a spawning bed within the northern region of Vancouver Island. Extensive diagnostic evaluation including histopathology, bacteriology and molecular diagnostics failed to reveal any infectious agents that could have adversely affected wild Pacific salmon stocks.

In collaboration with the Fish Health Section, Department of Fisheries and Oceans, the Animal Health Center assisted with the investigation into the massive epizootic affected migrating, sockeye salmon. Histologic investigations revealed massive renal infections with a protozoal parasite, Parvicapsula minibicornis. Although there was considerable mention in the lay media regarding possible recruitment of this parasite from production stocks, review of archived case material from both facilities failed to reveal any confirmed cases in Atlantic or chinook salmon.