

Dinoflagellate cysts in recent sediments from fjords of western Vancouver Island (British Columbia, Canada): preliminary results

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Surface sediment samples from coastal inlets of western Vancouver Island and shallow bays of the Broughton Archipelago were investigated for dinoflagellate cysts and other marine palynomorphs. Well preserved dinoflagellate cyst assemblages have been recovered and a total of 45 cyst types, representing 18 genera of 3 orders were identified. Cyst assemblages were dominated by *Operculodinium centrocarpum*, *Spiniferistes* spp. and *Brigantedinium* spp.

Total dinoflagellate cyst concentrations vary two orders of magnitude from 7.489 to 918.584 cysts per gram of dry sediment, with the highest values observed in samples from Tofino Inlet. Cyst concentrations and assemblage diversity yielded higher values in Sydney Inlet in the Clayoquot Sound, Neroutos Inlet in the Quatsino Sound and Kashutl Inlet in the Kyuquot Sound, compared to the shallow bays of the Broughton Archipelago where the values were the lowest. Tofino Inlet had the highest abundance of *Operculodinium centrocarpum*, whereas Neroutos Inlet samples were characterized by high concentrations of *Centropyxis* cf. *aculeatum*, a testate amoeba. Cyst produced by heterotrophic dinoflagellates, mainly *Brigantedinium* spp. and indeterminate round brown cysts, dominated cyst assemblages in Sydney Inlet in the Clayoquot and in Amai Inlet in the Kyuquot Sound. These sites were also characterized by the elevated values of sedimentary biogenic silica (BioSi).

Resting cysts of the ichthyotoxic species *Cochlodinium polykrikoides* sensu Pospelova and Kim (2010) were recorded in Stewardson and Sydney Inlets in Clayoquot Sound, Neroutos Inlet in Quatsino Sound and Kashutl Inlet in Kyuquot Sound. These locations correspond to the areas where blooms of *Cochlodinium polykrikoides* were previously reported. Cysts of the potentially toxic dinoflagellate *Alexandrium* spp. were found in most of the samples with the highest abundance from the Kashutl Inlet in the Kyuquot Sound and Holberg Inlet in the Quatsino Sound.

Process lengths of *Operculodinium centrocarpum* were measured and compared to variations in salinity and temperature.

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