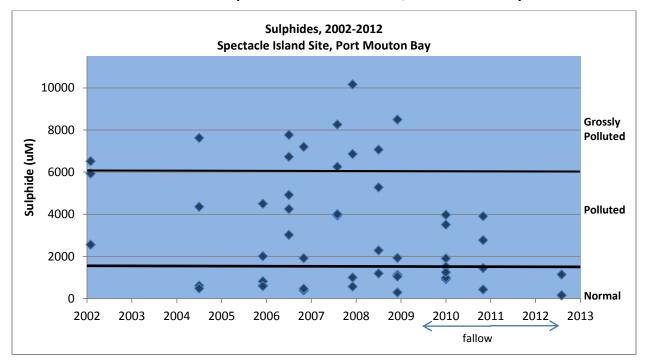
Environmental Record at Spectacle Island Fish Farm, Port Mouton Bay



NS Department of Fisheries and Aquaculture (NSDFA) measures sulphides in the seabed as a means of determining the environmental performance of open net finfish aquaculture. The Spectacle Island fish farm site has a sulphide record which repeatedly indicates polluted to grossly polluted conditions. In July 2012, after 3 years of fallow, sulphides were lower but with extensive white *Beggiatoa sp.* bacteria cover present at one location on the site.

Sulphide data

Sulphide data in the figure above are based on the average of <u>triplicate</u> grab sediment samples provided by the NSDFA Environmental Monitoring Program between 2004 -2009 and by Sweeney International in 2012.

Single grab samples were analyzed by Dominator Marine Services in 2002 and by Dalhousie University in 2010.

2011 sulphide data were not available due to failure of a laboratory instrument.

The highest sulphide measurement in 2012 was 1911 μM . (The average of 1443 μM is shown).

Reference data

Baseline sulphide data from <u>outer Port Mouton</u> Bay in sediments of similar grain size indicating levels in a normal range of 10-106 μ M were provided by Dominator Marine Services in 2007. These are not shown in the figure.

Bacterial cover

In 2002, Dominator Marine Services reported, "Dense mats of anaerobic bacteria (*Beggiatoa sp.*) and sediment outgassing were noted on the seafloor beneath the cages" at the Spectacle Island site.

In 2010, a diver reported 85% cover of Beggiatoa sp. at a station 100 m from the boundary of the lease site.

In July 2012, after 3 years of fallow, extensive *Beggiatoa sp.* was observed at one of the survey positions on the site.

The site was re-stocked with 350,000 rainbow trout in June 2012. Further polluted conditions are anticipated.