

## **Additional Scientific Reasons for not granting open pen licenses to Snow Island in Shoal Bay, from Inka Milewski**

The province is being very selective regarding DFO Science when it singles out Atlantic salmon as the reason for rejecting the site. While Atlantic Salmon is an issue DFO also flagged potential problems with the large area of seabottom that would become anoxic or dead and lobster. Below are the main points from the DFO Science Advice document regarding the proposed Shoal Bay site.

- large area (41,800 m<sup>2</sup>) of sea bottom under the net pens will experience sediment hypoxia or polluted conditions including 16,700 m<sup>2</sup> that could potentially lead to sediment anoxia or grossly polluted conditions.

- Considerable reduction in feed and stocking rates (from proposed stocking of 15,150 fish per cage to below 3,200 fish per cage) would be required to reduce the area of sea bottom affected and keep the deposition rates less than or below 5 gram of carbon per square metre (above this level of carbon habitat effects begin to occur)

- It is highly likely that lobster larvae are found from July to late September over a large part of Shoal Bay; however, it is not possible to determine the relative abundance of larvae within the area of the proposed aquaculture site. To address this question, field studies of the distribution of planktonic larvae are required. The identification of berried (ovigerous) female lobsters in the area during and after fishing season would also help address this question.

- Eels should be assumed to be present in the near shore and non-tidal waters lying adjacent to (and in some cases within) any aquaculture sites that are proposed or existing within the coastal areas of Halifax and Guysborough Counties. For eels, potentially affected attributes include: migration routes of recruiting elvers, and sea-going adults; alteration of habitat within the immediate vicinity of the aquaculture grow-out site for marine-phase yellow eels.

- The proposed aquaculture site is location in the Southern Upland DU of Atlantic Salmon. The Southern Upland of Atlantic Salmon was assessed as Endangered by COSEWIC in November 2010. The available indices suggest that abundance of Atlantic salmon is very low in the Southern Upland DU and declining from levels observed in the 1980s. In addition to ongoing effects of acidification, contemporary declines in non-acidified rivers indicate that other factors (including invasive fish species; dams, water diversion and permanent structures; illegal fishing and poaching; marine ecosystem changes; and salmonid aquaculture) are also thought to be impacting populations. Threats to populations were identified in the RPA, and when populations are low and declining, as is clear for salmon populations from this area, these threats would increase the potential for extirpation if not mitigated.

In summary, the proposed fish farm in Shoal Bay will degrade a large area of sea bottom and potentially impact other fisheries in the area as well as the recovery to Southern Upland Atlantic salmon.

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