August 2020

BROADSCALE ENVIRONMENTAL MONITORING PROGRAM (BEMP)

- The Tasmanian salmon industry leads the world in terms of best-practice monitoring for potential broadscale effects.
- The Broadscale Environmental Monitoring Program (BEMP) was initiated in 2009 (by the State Government) to provide knowledge and information on ecosystem function in the D'Entrecasteaux Channel and Huon Estuary. The objective of the program remains to document broadscale spatial and temporal trends for key environmental parameters, allowing assessment of the environmental effects of finfish aquaculture in the region. All elements of the BEMP were included (at that point) as licence conditions on Marine Farming Licences.
- The BEMP program has long been the only fish farm monitoring program in the world assessing effects outside Allowable Zone of Effect (AZE's) or close to/inside the farm boundaries.
- The BEMP program includes assessment of water column and sediment health at a broadscale level across the study area, and was largely structured around recommendations of CSIRO and IMAS (UTAS as it was then) taking into account previous studies undertaken in the region. In recent times, the scope of monitoring has expanded to include reef, deep-reef and seagrass monitoring.
- Sediment sampling includes benthic infauna, stable isotopes, particle size, visual assessment, redox analysis, and sulphide measurements. Visual assessment, redox and sulphide analysis is carried out each year, while analysis of benthic infauna, stable isotopes and particle size is undertaken every four years. In the intervening years these samples are collected, preserved and retained.
- Water quality analytes include physico-chemical parameters (temperature, dissolved oxygen and salinity), nutrients (dissolved nutrients: ammonia, nitrate, phosphate, and silicate. Total nutrients: total nitrogen, total phosphorous), chlorophyll a and phytoplankton species counts. Water quality sampling is undertaken monthly from May to January and fortnightly from February to April.
- A total of 15 sites are included in the monthly monitoring program; including nine sites in the D'Entrecasteaux Channel MFDP, five sites in the Huon River/Port Esperance MFDP's and a control site at Recherche Bay, south of Southport Lagoon.
- In 2011, a similar BEMP was initiated for a range of environmental parameters in Macquarie Harbour, and the first BEMP for Storm Bay will be publicly released in Spring 2020.
- All BEMP reports are publicly available at https://epa.tas.gov.au/regulation/salmon-aquaculture/dentrecasteaux-channel-huon-and-port-esperance/bemp-monitoring