

**Environmental and economic impacts of future shallow placer mining in Newfoundland: a pilot study**

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This paper reports on the first year of a test program to determine the environmental and economic impact of off-shore placer mining on the fishery in Newfoundland. The area chosen for the study is the North-East coast of the island where there is felt to be potential for placer gold deposits.

The first part of the program is devoted to establishing a suitable test site for the work. In the first year, regional mapping was undertaken by the Atlantic Geoscience Centre, with input from C-CORE, off part of the northeast coast. A preliminary cruise was carried out in late June, and a more detailed study in August. The work included geophysical surveys to determine sediment volumes and types, and collection of bottom samples. Samples from both cruises have been submitted for assay, and results from the preliminary cruise have been released as an open file. No results have yet been released for the second visit. Further regional mapping is expected for the area in this coming summer.

Once the regional work is complete, detailed sampling in areas of greatest promise will be used to decide on the test site. At the same time background data will be compiled on benthic organisms present in the area.

Once an appropriate site is identified, a one-month mining operation will be undertaken. During the mining a very intensive monitoring program will be carried out, to monitor sediment suspension and fallout, plume generation and dissipation, water chemistry and impact on the biota of the area. After a month mining will cease, and the recovery of the site will be monitored for two years. If necessary, a second mining experiment may be undertaken, with mining techniques modified in the light of the first test. Finally both sites will be monitored to assess the longer-term impact of the mining activities on the seabed and on the biological species.

The program will have the advice of an advisory committee, which includes government representatives responsible for monitoring environmental impact of marine operations. Because a full yearly report will be published, this program will provide a basis of fact in the public domain. From this basis it is expected that regulations can be formulated to govern future marine mining operations. An unbiased pilot study of this stature will provide sufficient information to permit rational public discussion of the potentially contentious issue of marine mining in an area of rich fisheries.