

## Daily Oil Pollution Monitoring with RADARSAT-2 ScanSAR – First Impressions

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Along with its mandate to monitor coastal ice conditions, Environment Canada's Canadian Ice Service (CIS) is also responsible for the daily monitoring of Canadian coastal waters for the presence of oil-based pollution and potential sources (e.g. ships). The Integrated Satellite Tracking of Pollution (ISTOP) program uses RADARSAT-1 data to vector pollution surveillance to areas where oil discharges/spills are suspected in support of enforcement and/or cleanup efforts. Both automated and visual detection techniques are used to identify potential pollution and source targets.

RADARSAT-2's new imaging capabilities and ground system promises significant improvement's in ISTOP's ability to detect and report on oil pollution. To support the transition of ISTOP to the RADARSAT-2 system, an evaluation will take place in 2008. The CIS will collect RADARSAT-2 dual mode VV/VH ScanSAR imagery along with nearly concurrent RADARSAT-1 HH data. Of specific interest is the potential of the ScanSAR VV image mode to improve the detection of potential oil pollution compared to data collected at HH polarization. Since detection of hard targets like ships and platforms is also important to ISTOP, the utility of the ScanSAR VH image mode to concurrently detect hard targets will also be examined. Detection performance will be assessed using output from both automatic and visual extraction of oil and ship targets. This work will report on the initial findings of this evaluation.