



INTRODUCTION
The Bay of Fundy, located on the east coast of Canada between the provinces of Nova Scotia and New Brunswick (Fig. 1), is a macrotidal equatorial embayment (Amos et al., 1990) with the highest tide in the world (17 m according to O'Brien et al., 2003) and a Bay of Fundy shaded relief view and backscatter strength map at a scale of 1:50 000. The map is a composite of 17 map sheets (Fig. 1) that cover the entire Bay of Fundy and its surrounding waters. The map is a composite of 17 map sheets (Fig. 1) that cover the entire Bay of Fundy and its surrounding waters. The map is a composite of 17 map sheets (Fig. 1) that cover the entire Bay of Fundy and its surrounding waters.

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REFERENCES
Amos, C.L., Buckley, D.E., Dobson, G.R., Dalrymple, R.W., McCann, S.B., and Ross, M.J., 1990. Geomorphology and sedimentology of the Bay of Fundy. Geological Association of Canada, Field Trip Guidebook Trip 23, 82 p.
Bishop, R., 2008. Tides and the earth-moon system. In: Observer's handbook 2009. Royal Astronomical Society of Canada, p. 163-167.
Canadian Hydrographic Service, 1987. Natural Resource Chart 1516-A, bathymetry. Department of the Environment, Ottawa, Ontario, scale 1:250,000.
Canadian Hydrographic Service, 1974a. Natural Resource Chart 1514-A, bathymetry. Department of the Environment, Ottawa, Ontario, scale 1:250,000.
Canadian Hydrographic Service, 1974b. Natural Resource Chart 1514-B, bathymetry. Department of the Environment, Ottawa, Ontario, scale 1:250,000.
Chen, J., Hughes Clarke, J.E., Singh, S., Sams, M., Lamplugh, M., O'Brien, J., and Fenner, D.A., 2008. Using synthetic aperture radar to assess the stability of hydrodynamic models in the Bay of Fundy. In: Proceedings of the Canadian Hydrographic Conference and National Surveyors Conference, Victoria, British Columbia, Paper #2-239.
Coulmes, R.C. and Shaw, J., 2000. Multibeam bathymetry and backscatter imaging on the Canadian continental shelf. Canadian Journal of Earth Sciences, 37, 43-45.
Daport, F., Hamish, C.G., and Greenberg, D., 2000. Modelling the sea level of the upper Bay of Fundy. Atmosphere-Ocean, 4, 3-37.
Farr, C.B., King, L.A., and MacLean, B., 1977. Surficial geology of the eastern Gulf of Maine and Bay of Fundy. Marine Science Paper 19. Geological Survey of Canada, Paper 76-17, 230 p., 1 map, scale 1:300,000.
Folk, R.L., 1964. The relationship between grain size and mineral composition in sedimentary rock nomenclature. Journal of Sedimentary Petrology, 34, 344-358.
Garrett, C.J.R., 1972. Tide resonance in the Bay of Fundy and Gulf of Maine. Nature, 236, 441-443.
Greenberg, D.A., 1981. Modeling the mean sedimentary circulation in the Bay of Fundy and Gulf of Maine. Journal of Physical Oceanography, 11, 3, 888-904.
Greenberg, D.A., 1984. A review of the physical oceanography of the Bay of Fundy. In: Update of the Marine Environmental Geoscience of the Bay of Fundy. Department of the Environment, Ottawa, Ontario, p. 9-30.
Greenberg, D.A. and M.J. Doherty. Canadian Technical Report of Fisheries and Aquatic Sciences No. 1236, p. 30.

Table 1: Bay of Fundy survey by year, vessel, multibeam sonar instrument, and frequency of operation (adapted from D. Cartwright (unpublished report) and Hughes Clarke et al., 2008). Note that all multibeam sonar are manufactured by Edgetech.

Year	Vessel	Multibeam sonar	Frequency (kHz)
1992			
1993			
1994	CGS Frederick G. Creed	EM1000	95
1995			
1996			
1999			
2002	CSL Heron	EM3000	300
	CGS Frederick G. Creed	EM1002	93/98
2006	CSL Heron	EM3002	300
	CGS Frederick G. Creed	EM1002	93/98
	CGS Matthew	EM710	71-97
2007	CSL Heron	EM3002	300
	CSL Plover	EM3002	300
	CGS Frederick G. Creed	EM1002	93/98
	CGS Matthew	EM710	71-97
2008	CSL Heron	EM3002	300
	CSL Plover	EM3002	300
	CGS Matthew	EM710	71-97
2009	CSL Plover	EM3002	300

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BACKSCATTER STRENGTH AND SHADED SEA-FLOOR RELIEF
BAY OF FUNDY, SHEET 4
OFFSHORE NOVA SCOTIA-NEW BRUNSWICK
CANADA-UNITED STATES OF AMERICA
Scale 1:50 000/Échelle 1:50 000
Authors: B.J. Todd, J. Shaw, D.R. Fenner, J.E. Hughes Clarke, D. Cartwright, and S.E. Hayward
This map was produced by Natural Resource Canada in co-operation with Fisheries and Oceans Canada
Multibeam backscatter data collected by Canadian Hydrographic Service, 1993, 2006-2009; Geological Survey of Canada, 1999-2003, 2006-2009 and University of New Brunswick, 1993, 1994, 2002-2008
Multibeam backscatter data compiled by Canadian Hydrographic Service, Geological Survey of Canada, and University of New Brunswick, 1993-2010
Digital cartography by P.A. Melbourne and P. O'Regan, Data Dissemination Division (DDO); and G. Grant, S.E. Hayward and E. Patton, GSC (Atlantic)
Any revisions or additional geographic information known to the user would be welcomed by the Geological Survey of Canada
Digital base map (land area) from data compiled by Geomatics Canada, modified by GSC (Atlantic)
Digital bathymetric contours in metres supplied by Canadian Hydrographic Service and GSC (Atlantic)
Magnetic declination 2011, 17°27'W, decreasing 0.6" annually
Elevations in metres above mean sea level
Depth in metres below mean sea level

