



**OPEN FILE 7009**  
**BACKSCATTER STRENGTH AND SHADED SEAFLOOR RELIEF**  
**BAY OF FUNDY, SHEET 16**  
**OFFSHORE NOVA SCOTIA—NEW BRUNSWICK**

Scale 1:50 000 / Échelle 1:50 000

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This map was produced by Natural Resources Canada in co-operation with Fisheries and Oceans Canada

Maplet: Bathymetric contours in metres supplied by Canadian Hydrographic Service and GSC (Atlantic)

Digital bathymetric contours in metres supplied by Canadian Hydrographic Service and GSC (Atlantic)

Magnetic declination 2011, 16°12' W, decreasing 7.7 annually

Elevations in metres above mean sea level

Depth in feet below mean sea level

UNIVERSAL TRANSVERSE MERCATOR PROJECTION AND NORTH AMERICAN DATUM 1983

PROJECTION TRANSVERSE UNIVERSELLE DE MÉRIDIEN ET DATUM NORD AMÉRICAIN 1983

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Carte produite en collaboration avec le ministère des Pêches et des Océans

Carta prodotta in collaborazione con il Ministero delle Attività Marittime e della Pesca

Maplet: Bathymetric contours in metres supplied 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 (DDC), and G. Grant, S.E. Hayward and E. Patton, GSC (Atlantic)

**DESCRIPTIVE NOTES**

**INTRODUCTION**  
 The Bay of Fundy, located on the east coast of Canada between the provinces of Nova Scotia and New Brunswick (Fig. 1), has been the subject of a long and varied scientific history. The first scientific work in the waters of the Bay of Fundy was conducted by the geologist and geographer William Smith in 1807. The Bay of Fundy was first mapped by the geologist and geographer William Smith in 1807. The Bay of Fundy was first mapped by the geologist and geographer William Smith in 1807.

**MULTIBEAM SONAR SURVEYS**  
 The University of New Brunswick, the Canadian Hydrographic Service and the Geological Survey of Canada conducted Bay of Fundy multibeam sonar surveys from 1993 to 2009. During these surveys, multibeam sonar systems were used to map the seafloor. The work employed the following survey vessels (also see year-by-year version in Table 1):

- The Canadian Coast Guard (CCG) vessel CCGS Frederick G. Creed (EM1000) from 1993 to 1999.
- The Canadian Coast Guard (CCG) vessel CCGS Matthew (EM1010) from 2000 to 2002.
- The Canadian Coast Guard (CCG) vessel CCGS Plover (EM1020) from 2003 to 2009.

**ACKNOWLEDGMENTS**  
 B. McCowan, M. Lamontagne and J. Griffin of the Canadian Hydrographic Service (CHS) organized the multibeam sonar surveys of the Bay of Fundy and oversaw data processing. The Canadian Hydrographic Service provided the data to the Geological Survey of Canada (GSC) for further processing and interpretation. J.E. Hughes Clarke of the Ocean Mapping Group (OMG), Department of Geology and Geomatics Engineering, University of New Brunswick (UNB), supervised the satellite collection of multibeam sonar data in the 1990s. Subsequent systematic mapping of the coastal area of New Brunswick, Multibeam sonar data in Saint John Harbour, New Brunswick, were collected by D. Bevier (GSC), the University of New Brunswick and the Saint John Port Authority. CHS (GSC) processed the backscatter strength data under contract to the GSC. The authors thank the masters and crews of the survey vessels for their efforts in sea, Geographical Information Systems and cartographic support was provided by S.E. Hayward, E. Patton, P. O'Regan, G. Grant, and P. Melbourne. The authors thank M.J. Li for scientific review of the map.

**REFERENCES**  
 Arma, C.L., Buckley, D.E., Dutton, G.H., Demayock, R.W., MacCam, S.B., and Rik, M.J., 1980. Geomorphology and sedimentology of the Bay of Fundy. Geological Association of Canada, Field Trip Outdoor File 23, 82 p.

**TABLE 1**  
 Year, Vessel, Multibeam sonar, Frequency (kHz)

Year	Vessel	Multibeam sonar	Frequency (kHz)
1993	CCGS Frederick G. Creed	EM1000	95
1994	CCGS Frederick G. Creed	EM1000	95
1995	CCGS Frederick G. Creed	EM1000	95
1996	CCGS Frederick G. Creed	EM1000	95
1997	CCGS Frederick G. Creed	EM1000	95
1998	CCGS Frederick G. Creed	EM1000	95
1999	CCGS Frederick G. Creed	EM1000	95
2000	CCGS Matthew	EM1010	93/98
2001	CCGS Matthew	EM1010	93/98
2002	CCGS Matthew	EM1010	93/98
2003	CCGS Plover	EM1020	71-87
2004	CCGS Plover	EM1020	71-87
2005	CCGS Plover	EM1020	71-87
2006	CCGS Plover	EM1020	71-87
2007	CCGS Plover	EM1020	71-87
2008	CCGS Plover	EM1020	71-87
2009	CCGS Plover	EM1020	71-87

**Figure 1**: Location map showing a 1:50 000 map sheets covering the Bay of Fundy. Sheet 16 (outlined by red box) is in northeastern Bay of Fundy encompassing Minas Passage and Minas Basin, Nova Scotia.

**Figure 2**: Location map showing the survey extents of multibeam sonar vessels and the year of the survey in the Bay of Fundy. Colours refer to the multibeam sonar system and frequency used in 1 Table.