

DESCRIPTIVE NOTES

INTRODUCTION

The Bay of Fundy is located on the east coast of Canada between the provinces of Nova Scotia and New Brunswick (Fig. 1). It is a macrotidal estuarine embayment (Amos et al., 1980) with the highest recorded tidal range of 17 m (Coffin et al., 2000; Greenberg, 2000). The map area covers the entire seafloor relief of the Bay of Fundy and topography of the surrounding areas in shaded-relief view...

MULTIBEAM BATHYMETRY DATA COLLECTION

Multibeam sonar water-depth data were collected by the Canadian Hydrographic Service, the Geological Survey of Canada, and the University of New Brunswick. The survey systems use a sonar beam over an area of about 150 metres across the ship's track and operate by emitting a narrow strip of sonar along track and detecting the seafloor by receiving the returned echo into multiple beams (Courtney and Shaw, 2000). The width of seafloor image on each survey line was generally 50 to 100 metres. Line spacing was about two to three times water depth to provide 50% overlap between adjacent lines. The survey employed a variety of survey vessels including:

BATHYMETRIC DATA DISPLAY

The multibeam sonar bathymetric data are presented at 5 m per pixel horizontal resolution. The shaded-relief image is presented with a vertical exaggeration of the bathymetry and an artificial illumination of the relief by a virtual light source positioned 60° above the horizon at an azimuth of 135°. The map area covers the entire seafloor relief of the Bay of Fundy and topography of the surrounding areas in shaded-relief view...

BAY OF FUNDY GEOMORPHOLOGY

The Bay of Fundy is a southward-trending funnel-shaped bay 155 km long that is 70 km wide at its entrance and tapers to 48 km wide at its northern end where it bifurcates into Chignecto Bay and Miramichi Bay (Fig. 1). The Bay of Fundy was covered by a proglacial sea that terminated to the south on the Scotian Shelf (Schubert et al., 2001; Huntford, 2003). The glacial maximum was followed by a rapid retreat (Fisher and Fader, 1985; Shaw et al., 2002; Shaw and Fader, 2003). The Bay of Fundy exhibits geomorphological features formed during the Quaternary glaciation and deglaciation of the area. Moraines, drumlins, and meltwater channels are prominent features in the Bay of Fundy (Amos and Zaitlin, 1985; Shaw et al., 2002; Fader and Fader, 1985; Huntford, 2003).

Geological history

Geological features revealed through mapping of the Bay of Fundy seafloor reflect the geological history of the region. The Bay of Fundy is situated within the Carboniferous-Triassic geological province (Goodfellow, 1984; Crosby, 1982; Williams et al., 1972). Exposed bedrock has been modified by glacial erosion and is overlain by a sequence of glacial till, sand, silt, and clay. The Bay of Fundy is a proglacial sea that terminated to the south on the Scotian Shelf (Schubert et al., 2001; Huntford, 2003). The glacial maximum was followed by a rapid retreat (Fisher and Fader, 1985; Shaw et al., 2002; Shaw and Fader, 2003). The Bay of Fundy exhibits geomorphological features formed during the Quaternary glaciation and deglaciation of the area. Moraines, drumlins, and meltwater channels are prominent features in the Bay of Fundy (Amos and Zaitlin, 1985; Shaw et al., 2002; Fader and Fader, 1985; Huntford, 2003).

Geomorphology of this map

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MAP 2187A SHADED SEAFLOOR RELIEF BAY OF FUNDY, SHEET 14 OFFSHORE NOVA SCOTIA-NEW BRUNSWICK. Includes scale bar, north arrow, and metadata.

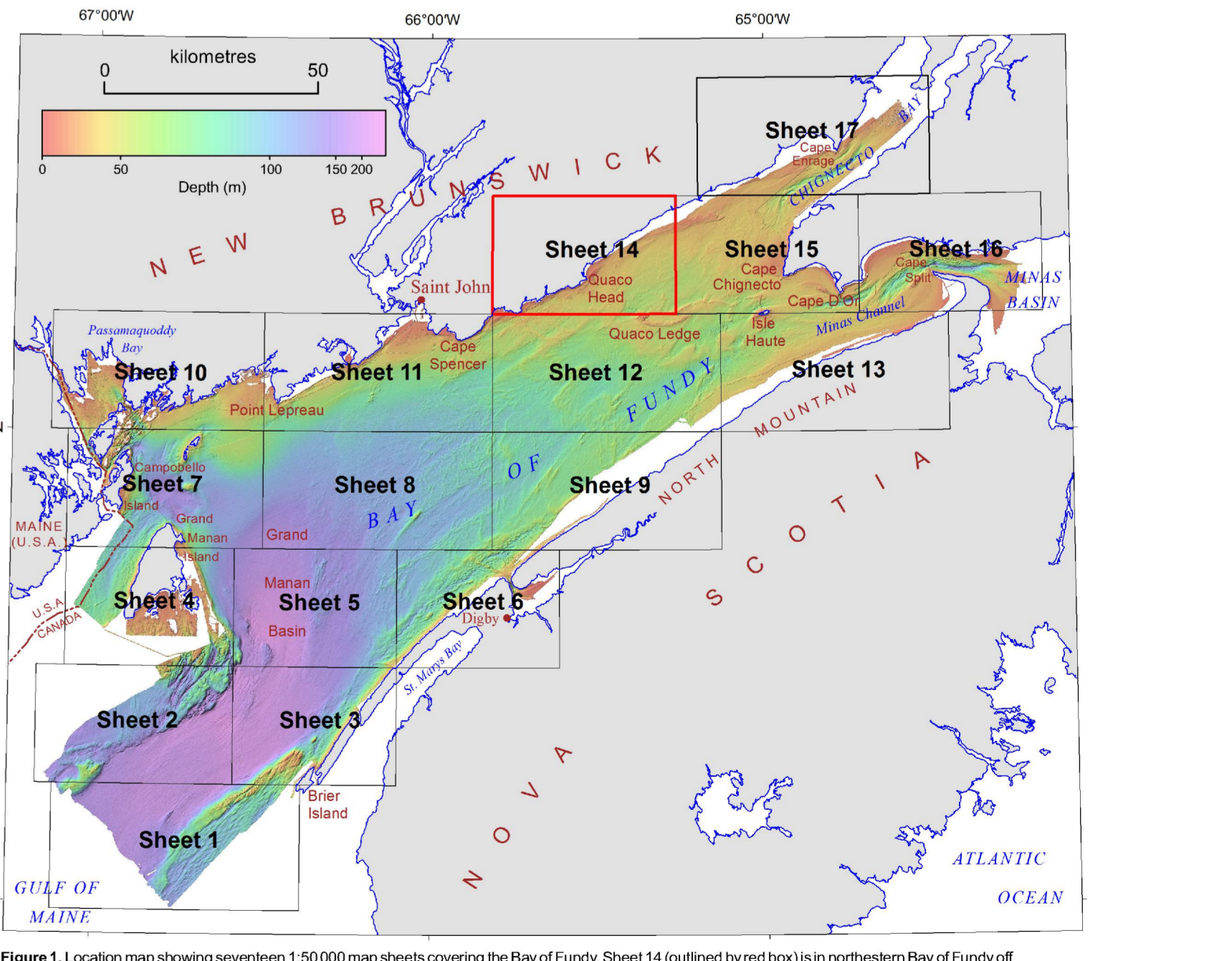


Figure 1. Location map showing seven 1:50 000 map sheets covering the Bay of Fundy. Sheet 14 (outlined by red box) is northern Bay of Fundy off Quaco Head, New Brunswick.