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- 1 A folder **Atlantic Canada DEM in Various Output Formats**. This contains a digital elevation model (DEM) of Atlantic Canada in four formats: Surfer; ESRI ARCINFO ASCII format; a USGS 16 bit Geotiff DEM format; and an ASCII Latitude-Longitude-Elevation (xyz) format. The folder also includes a file containing projection information. The data in these formats can be imported into the GIS system of choice.
- 2 A folder **Atlantic Canada Colour Overlays**. This contains two colour overlay schemes for the DEM, in TIFF format. The projection information is contained in a .txt file in the folder. These geographically registered files can be opened using various graphics software in addition to a GIS system.
- 3 A folder **USGS Public Domain Display Software**. This contains a URL pointing to USGS public domain display software, dlgv32 Pro (a restricted version of Global Mapper). Click on the URL to download the most recent version of the restricted display program. However, some capabilities are absent from the free program, including the ability to export data in various formats. The full program, Global Mapper, can be obtained at: <http://www.globalmapper.com>.
- 4 A folder **Global Mapper files** containing two Global Mapper command files that will automatically load and display the Atlantic Canada DEMs with colour overlays. Click on these files and the dlgv32 Pro/Global Mapper will launch. Note: for this operation, the files have first to be transferred from the CD onto the hard drive.
- 5 A folder **Atlantic Canada Colour-shaded Reliefs** contain two geotiff files with differing colour schemes. The georeference information is the same as for the colour overlay schemes.

CONSTRUCTION OF THE DIGITAL ELEVATION MODEL

The digital elevation model (DEM) of Atlantic Canada was produced for the purpose of reconstructing palaeogeographic changes in response to changing relative sea levels. The bathymetry data sources consist of: digital 1:250,000 Natural Resource Chart bathymetric contours, digital 1:1,000,000 NESS

bathymetry contours, and a digital point dataset derived from the Geological Survey of Canada/Canadian Hydrographic Service northwest Atlantic bathymetric single beam survey data set (1950's-1980's). The topographic elevation source data are based on the United States Geological Survey GTOPO30 gridded 30-arc seconds DEM of the world. We discovered that these data were incorrect in western Anticosti Island, in the Gulf of St. Lawrence. We remedied this problem by replacing all Canadian data with data from the Canada3D 30 arc-second DEM, available from Natural Resources Canada.

There are several errors in the data that we are unable to remedy at present due to lack of resources and commitments to new projects. Bad data are in evidence immediately south of Saint Paul Island, northeast Cape Breton Island, Nova Scotia. Other patches of bad data occur in the Saint Lawrence Estuary, Quebec, between Sept Isles and Baie Comeau.

DESCRIPTION OF THE DATA

The imagery clearly shows the Laurentian Channel as a dominant feature in the region. The channel extends to depths of >450 m and was over-deepened by glaciers during the Quaternary Era. The channel is linked to a pair of convergent channels in the northeastern Gulf of St. Lawrence, also over-deepened by glaciers. Other deep channels, including the Notre Dame Channel, occur on the northeast Newfoundland Shelf. These, together with channels radiating outwards from the south and east coasts of the islands, were deepened by ice that flowed out from the interior of the island. The channels on the Scotian Shelf are less marked.

ACKNOWLEDGEMENTS

The basis of the DEM was the bathymetric DEM of the region built primarily by G. Oakey, at GSCAtlantic, with assistance from the late Alan Starkey and others. Pierre Gareau undertook refinement of the DEM prior to his departure from the GSC. We acknowledge the efforts of the many others who collected bathymetric data in Atlantic Canada over the past several decades on behalf of the Department of Fisheries and Oceans and the Geological Survey of Canada, part of Natural Resources Canada. We made use of the DEM for Canada provided for public use by The Canadian Forestry Service, Natural Resources Canada. Phil Moir reviewed the Open File Report.