

RV Maria S. Merian  
Cruise MSM103 (GPF 20-2-046)  
12.09. – 15.11.21, Emden – Emden

**PRINCE**  
**Groundwater resources offshore**  
**Prince Edward Island, Canada**

**Weekly Report No.5**  
**11.10. – 17.10.2021**

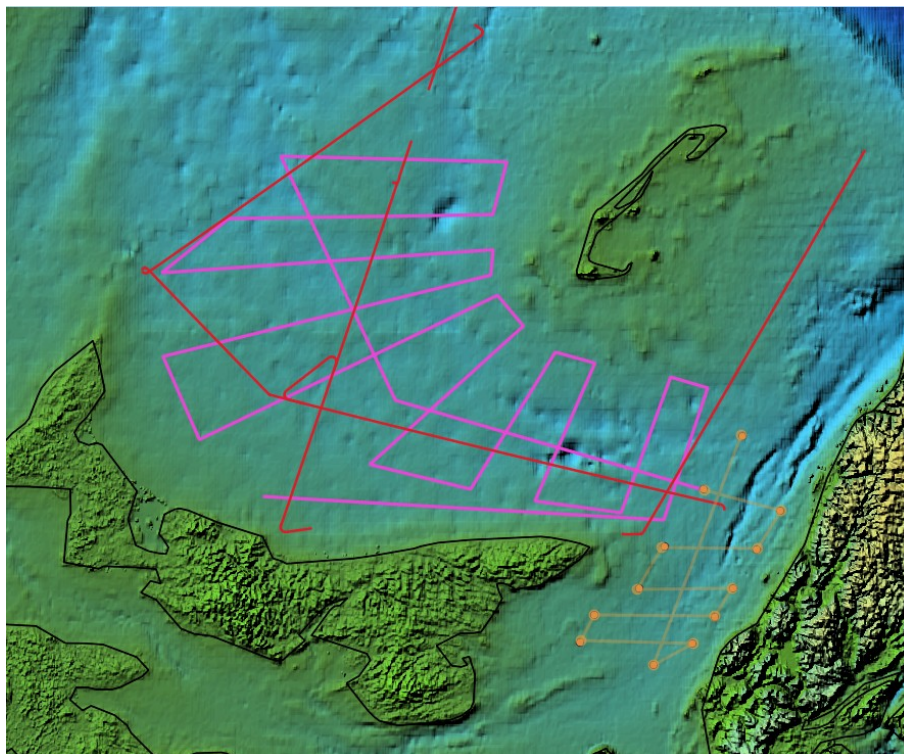
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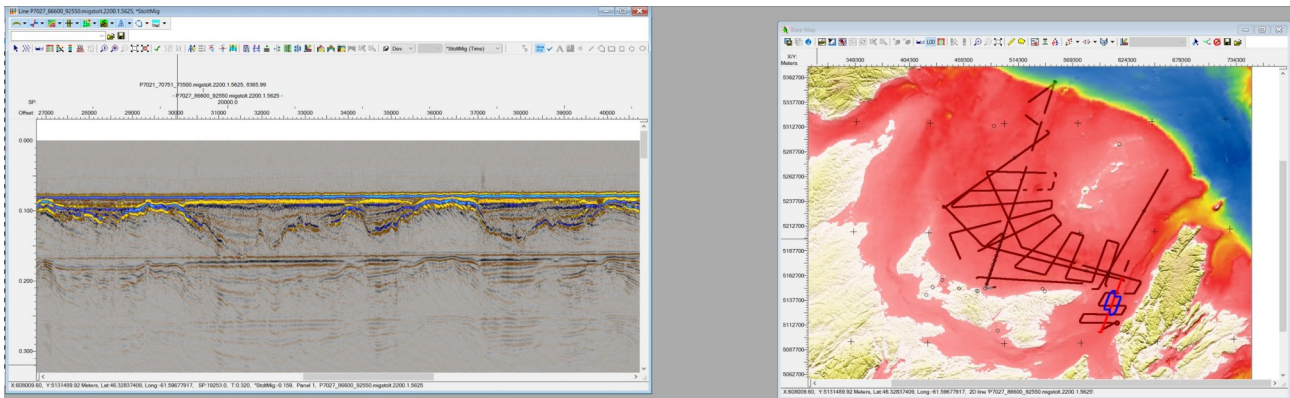
We spent the better part of last week with streamer seismics measurements along profile lines between the Prince Edward Island (PEI) and the Magdalene Islands (IdM) (magenta line in Fig. 2), which we had already started last week. In the north-western area in particular, these measurements had to be interrupted numerous times due to sightings by the whale watchers (dolphins, minke whales, blue whales, leatherback turtles, see Fig. 1).



*Fig. 1: Dolphin school in the northwest part of the bay.*



*Fig. 2: Position of the seismic profile lines after completion of the measurements.*



*Fig. 3: Example of seismic data recorded east of the PEI. In parts of the section of raw data, the filled channels of the PEI drainage system can be clearly seen.*

Since we will no longer be able to take seismic measurements in the second half of the project – the whale watchers will leave the ship tomorrow on October 18<sup>th</sup> in Halifax – we decided to extend the profile line towards the area east of the PEI (orange line in Fig. 2). This area is of interest for our research question, since a large part of the PEI drained over the southern coast during and after the last ice age, which had already been demonstrated in multibeam data (see Shaw, Géographie physique et Quaternaire, 2005). In the seismic data measured by us, filled channels of this drainage systems can clearly be recognized in the raw data (Fig. 3).

After the seismic measurements were completed in the early morning hours of October 15<sup>th</sup> we have deployed our twelve OBEM stations in an array northeast of the PEI. The stations were placed around a small channel system, which we had identified in the seismic data. We then used the few hours before the transit to Halifax to measure along some densely spaced hydroacoustic profiles over this channel structure. The measurements with the CSEM transmitter are scheduled for next week.

In the meantime we have been on the ship for more than a month, thus, making it halfway through the cruise. Currently, we are in transit to Halifax where we will arrive tomorrow on October 18<sup>th</sup> for stashing up supplies. The following 36 hours of transit back to the working area will then give us some time for sorting and reviewing the collected data and to also recover from the night shifts of the past weeks.

With best regards on behalf of the crew of cruise MSM103

Sebastian Hölz

(GEOMAR – Helmholtz Centre for Ocean Research Kiel)