

Eighth GEBCO Science – presentation abstract

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Oral presentation title: Postseismic crustal movement of the 2011 Tohoku Earthquake and its impacts on hydrographic surveys and charts

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Abstract

On 11 March 2011, a huge earthquake (M9.0) occurred on the interplate boundary off the Pacific coast of northeastern Japan and generated tsunami waves which devastated the coastal region. Even now when more than two years has passed since the disaster, postseismic, very-slow crustal movement is still observed over the northeastern Japan. Especially, most of the coastal region has undergone a large postseismic uplift, and its total amount locally has reached up to several-tens centimeters.

Since the disaster, the Hydrographic and Oceanographic Department of Japan (JHOD) has devoted lots of energy to conducting hydrographic surveys of damaged ports and revising nautical charts. However, the large postseismic uplift causes decrease of water depth, which degrades reliabilities of existing nautical charts and may pose risks to ship navigation.

We will overview the coseismic and postseismic movement observed by terrestrial and seafloor geodetic observation networks and present approaches taken by JHOD for safety navigation in response to postseismic crustal movement.