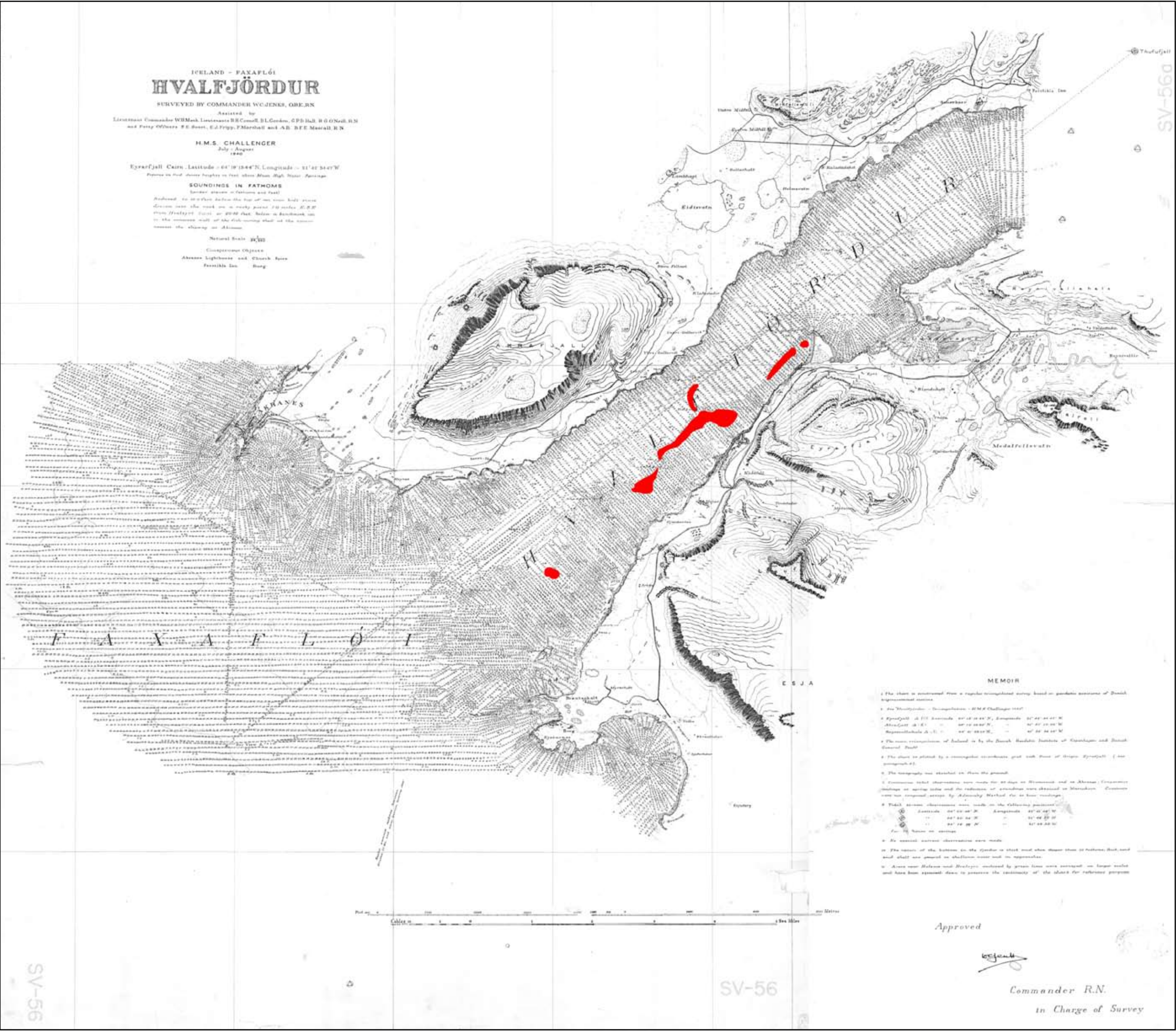


Changes in seabed topography

related to marine aggregate dredging, Hvalfjörður, Iceland, 1940–2010

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Between a survey of Hvalfjörður conducted by the UK Royal Navy in 1940 and a survey by the Icelandic Coast Guard – Hydrographic Department in 2010 changes can be seen in the dredging areas but are insubstantial in other parts of Hvalfjörður



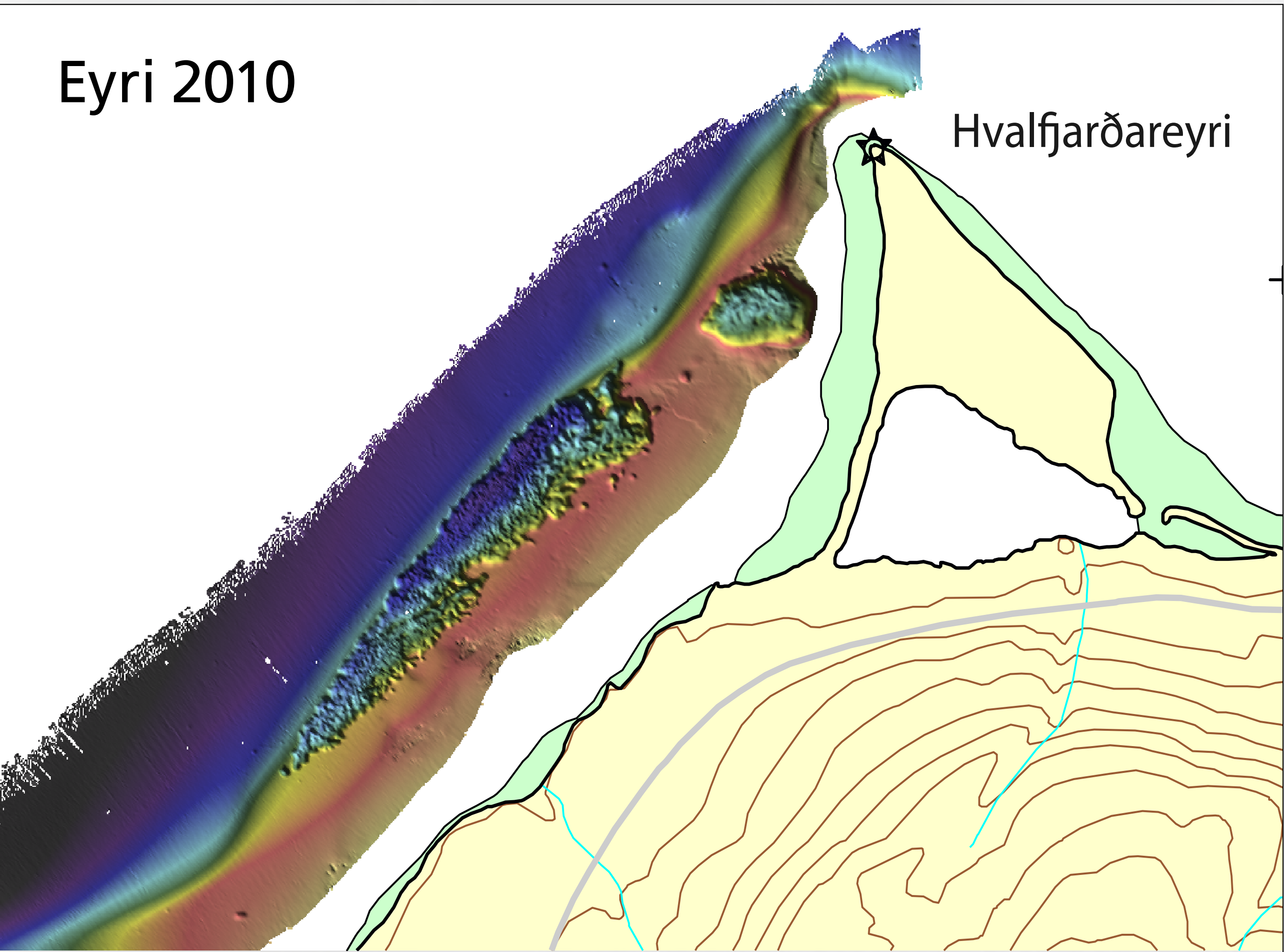
Hvalfjörður singlebeam survey by UK Royal Navy 1940. Dredging areas as surveyed in 2010 marked in red

ICELANDIC COAST GUARD

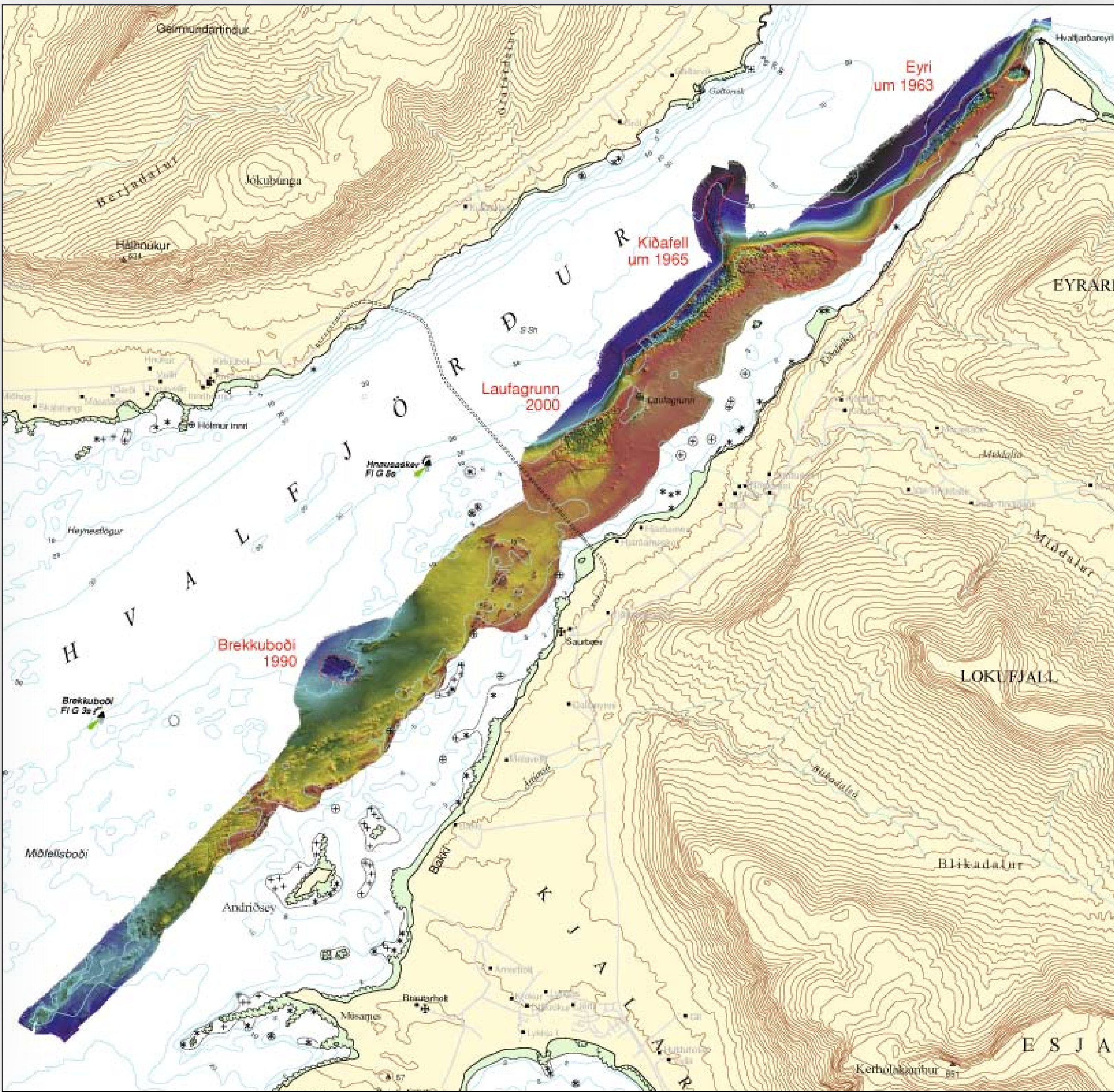
– Hydrographic Department

The Hydrographic Department of the Icelandic Coast Guard (ICG-HD) is responsible for hydrographic surveying and nautical charting in the waters around Iceland. In the year 1991, M/V Baldur, a new survey vessel was launched. It was the first vessel specially built for the Icelandic Coast Guard to carry out the task of hydrographic surveying. In 2002 it was fitted with RESON SeaBat 8101, 240 kHz multibeam echo sounder.

The department’s main responsibility is hydrographic surveying for navigational purposes but on occasions it takes on contract surveys. Licensed aggregate dredging areas and their surroundings in Hvalfjörður were surveyed for the National Energy Authority in 2010.



Marine aggregate area by Eyri in Hvalfjörður as surveyed in 2010. Extraction of gravel and sand from the seabed in Iceland started in 1963 in the west side of Hvalfjarðareyri, first in the round pit shown on the chart and then moved to the oblong mine further offshore



Hvalfjörður multibeam survey by Icelandic Coast Guard – Hydrographic Department 2010. Dredging areas are outlined by a pecked line in red, year indicates beginning of extraction



M/V Baldur was built as a custom survey vessel for the Icelandic Coast Guard – Hydrographic Department in 1991. The vessel is 21 meters long, 5 meters wide and is fitted with RESON multibeam echo sounder

SURVEYS IN HVALFJÖRDUR, ICELAND 1940 - 2010

The area was surveyed by the ICG-HD survey section in July. The hydrographic data processing system, CARIS HIPS, was used in processing the survey data and to create 3D images of the extraction areas.

The area surveyed in 2010 was previously surveyed by the UK Royal Navy in 1940. This survey from 1940 that covers the whole fjord and its entrance was conducted with a singlebeam echo sounder and is considered to be of good quality. The outer part of the fjord was surveyed with M/V Baldur in 2003.

The 2003 survey overlaps slightly with the 2010 survey. Parts of two aggregate dredging areas, Kiðafell and Brekkuboði, can be seen on the 2003 survey. The 2010 survey shows status of the four aggregate dredging areas: Eyri, Kiðafell, Laufagrúnn and Brekkuboði.

- Generally a comparison of depths between the 1940 survey and 2010 survey shows that changes are not apparent outside the four above mentioned aggregate dredging areas.

