

SURVEY REPORT - A07-2004

The survey was carried out with R/Vs Arni Fridriksson and Bjarni Saemundsson during 22/05-03/06 2004 and covered the western Norwegian Sea as well as the shelf area off NE-, E- and SE-Iceland and adjacent waters. As in previous years data from the Bjarni Saemundsson were collected during the annual spring survey of environmental conditions on the Icelandic shelf and adjacent waters. In the area NE, E and SE of Iceland there was practically no time difference between data collection by the two vessels.

Scientific Personnel

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Description

The survey started north of Iceland at 18°50'W, proceeded east and north, then southsouthward and ended off Hornafjordur on the eastern south coast (15°W). The northern limit was at 70°N, in the east at 04°W and at 62°30'N in the south. Survey tracks by Arni Fridriksson are shown in Figure 1. CTD, WP2 pelagic trawl stations worked by both vessels are shown in Figure 2.

Hydrography

Sea temperature at the surface (5 m) as well as at 20, 50, 100, 200 and 400 m depth is shown in Figures 4-8. Although conditions were not quite as warm as last year, conditions of the waters over the Icelandic shelf are best classified as those of a typical warm year. Temperatures were also somewhat lower in the western Norwegian Sea as well as in the oceanic area between Iceland and Jan Mayen, than in May 2003. Nevertheless, conditions were generally mild and the East Icelandic Current was weak.

Zooplankton

The distribution of zooplankton biomass as grams dryweight/1 m² for the depth intervals of 0-50 m and 0-200 m in Figures 9 and 10 respectively. In both cases, by far the highest zooplankton biomass was found within the domain of the East Icelandic Current (Arctic species) as well as NW of the Faroes. Zooplankton was generally much higher in the 0-200m layer, indicating that the winter generation had not but in part reached the near surface layer at the time of the survey. The abundance of zooplankton was low in the area north of Iceland, possibly because the spring survey was run somewhat earlier than usual.

Herring

Herring were recorded as S_A-values as shown in Figure 11. All of these were large fish, probably mostly of the 1991 and 1992 year classes, and as a rule had not begun feeding in earnest.

Like in 2003, herring were found, both in the easternmost part of the Icelandic EEZ as well as that of the Faroes, but apparently in apparently low numbers. These herring were in the form of small and medium size schools, generally at depths between about 100-300 m. Some catches were made by Icelandic fishing vessels, between about 150 and 200 nautical miles east of Iceland in late May-early June. This fishery came to an end soon thereafter, in part because at this time large schools of blue whiting entered this area which resulted in great difficulties in determining to what species the sonar and echosounder records belonged.

Blue whiting

Blue whiting were recorded as S_A -values as shown in Figure 12. At the time of the survey, huge quantities in very large schools were recorded within the Icelandic EEZ E and SE of Iceland as well as NE of the Faroes. In the northern part of the area the schools consisted of fish returning from spawning further south while the ratio of immature fish was higher in the southernmost area surveyed. The survey recorded approximately 2.4 million tonnes of blue whiting, 2.1 of these inside the Icelandic EEZ and the remainder in the Faroese EEZ and international waters.

Concluding remarks

The migration pattern of the Norwegian spring spawning herring appears to be quite similar to that of 2003, but different to the 2001 and 2002 migrations which hardly reached the western Norwegian Sea at all. Thus, the largest herring migrated quite far to the west and southwest this year. However, these herring did not appear to stay there for long and probably migrated back north and east in the latter half of June to. It is noted though, that because of the large amount of blue whiting east of Iceland at this time, much less is known of herring movements there than otherwise would have been the case. This is unfortunate since the temperature in the upper layers to the NE and N of Iceland would not have been a barrier for herring migrations into these areas in 2004.

Judging by the location of the Icelandic blue whiting fishery, the very large amounts of blue whiting, found off the central and southern east coast of Iceland in early June, continued their northward migration. Some blue whiting even reached the waters off the eastern north coast of Iceland, further emphasizing the mild climatic conditions in that area in 2004.

Note

Attached are the data sheets for this survey. Note that an erroneous position of one of the Zooplankton stations has been corrected. Furthermore, some of the Bjarni Saemundsson data sheets are not correctly filled for the database, and temperature and salinities at 400 m depth are missing. These caveats can and will be repaired and the data provided in the correct format.

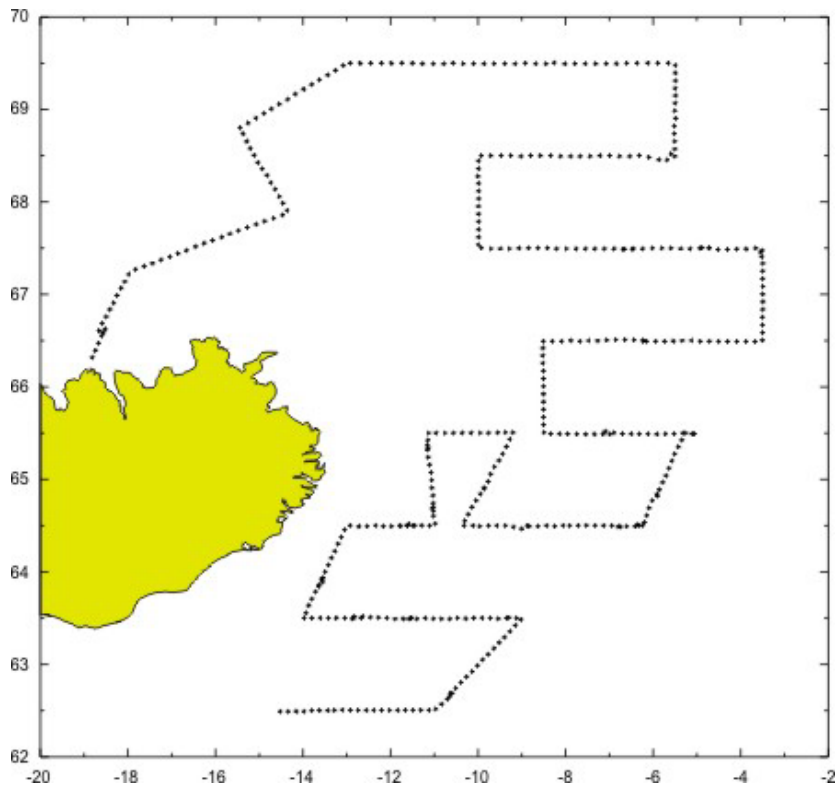


Figure 1. Cruise tracks A07-2004.

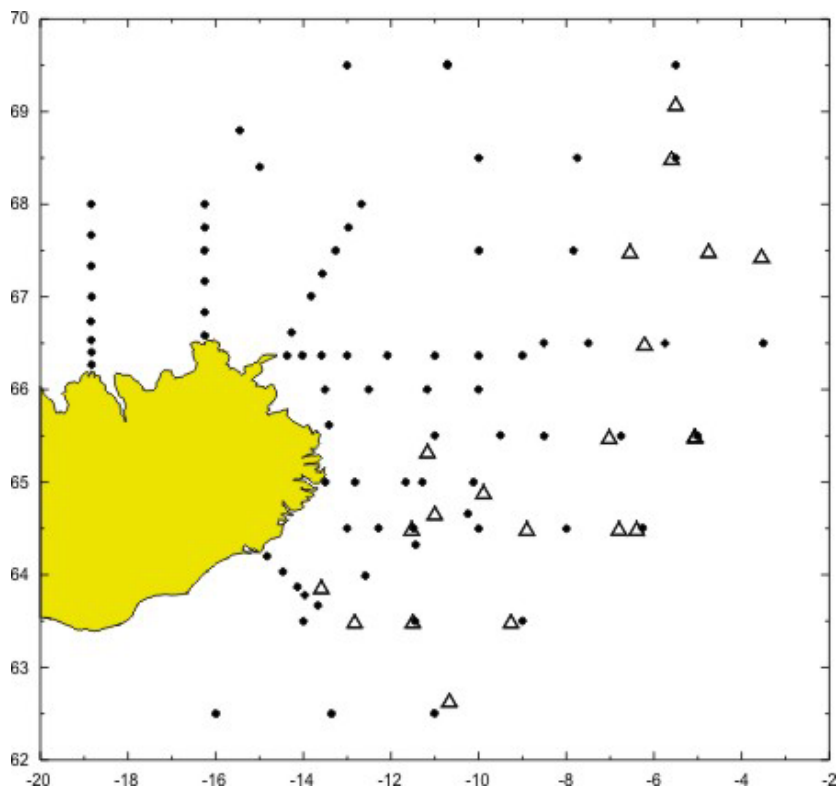


Figure 2. Positions of CTD and WP2 (circles) and pelagic trawl (triangles) stations. A07 2004,

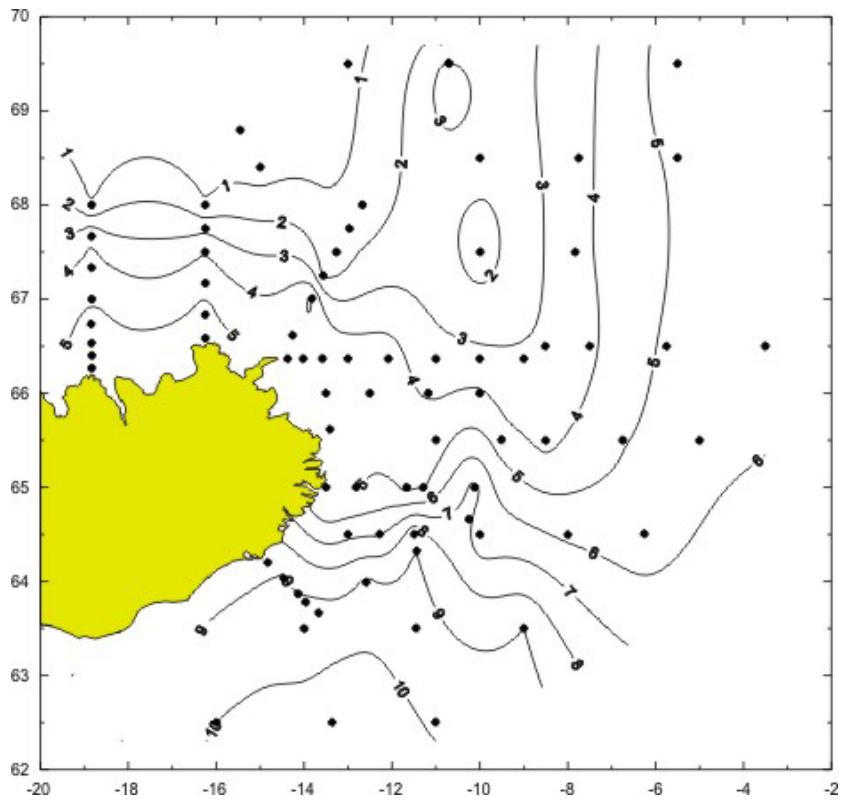


Figure 3. Surface (5 m) temperature A07-2004

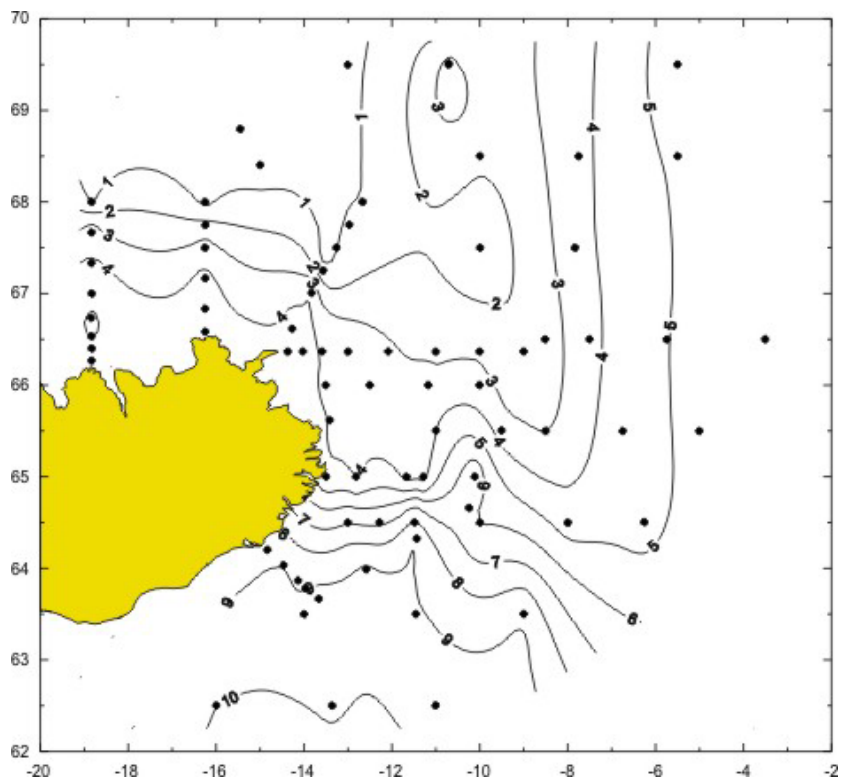


Figure 4. Temperature at 20 m. A07-2004

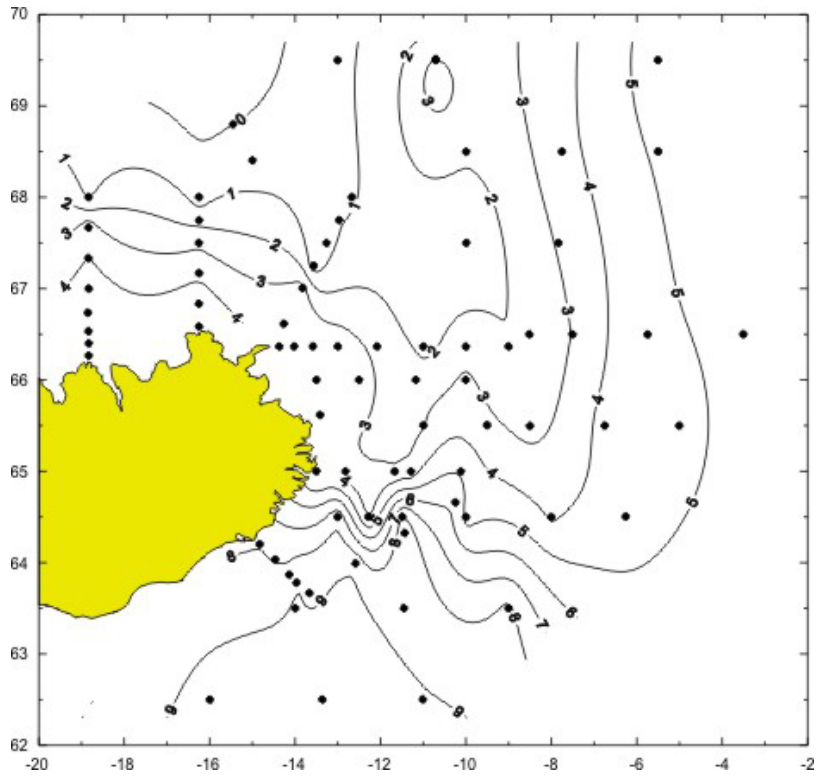


Figure 5. Temperature at 50 m. A07-2004

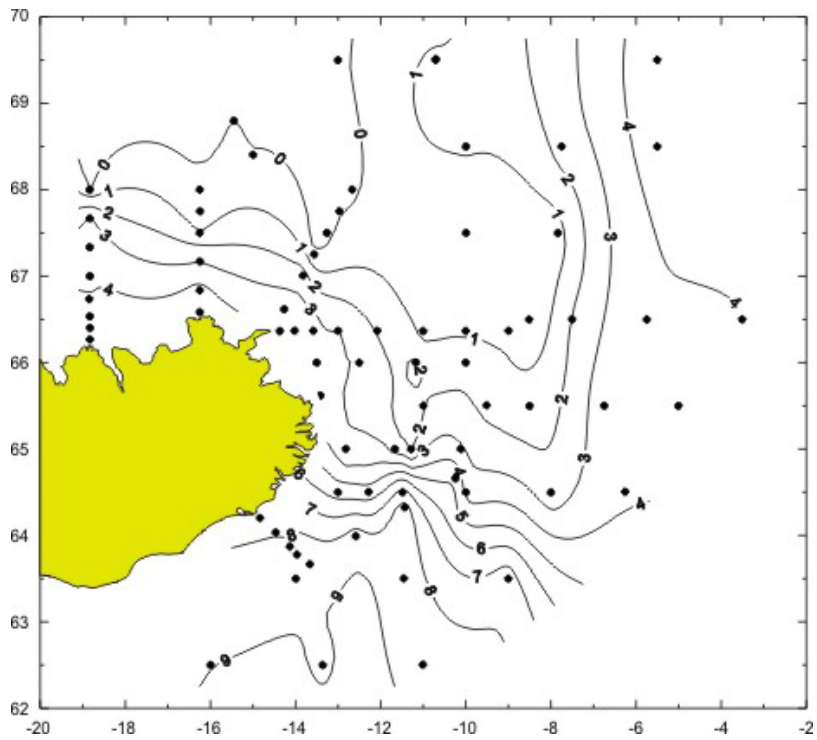


Figure 6. Temperature at 100 m. A07-2004

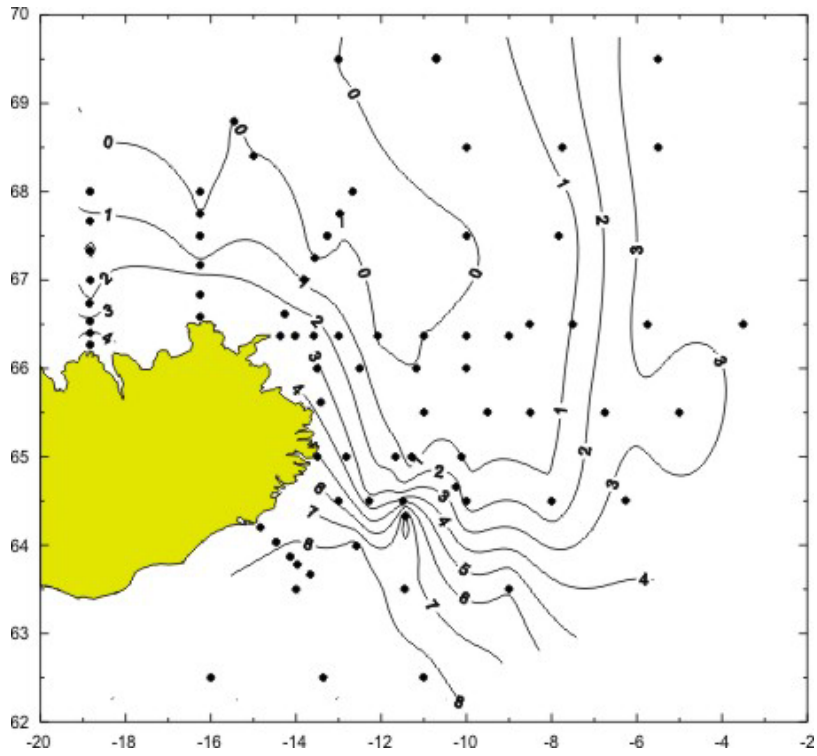


Figure 7. Temperature at 200 m. A07-2004

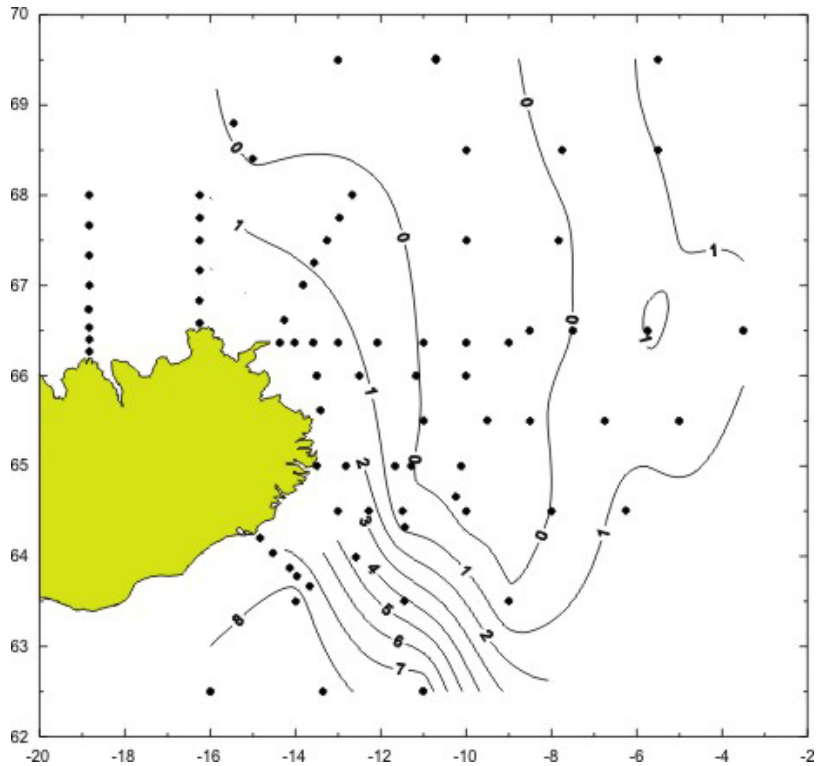


Figure 8. Temperature at 400 m. A07-2004

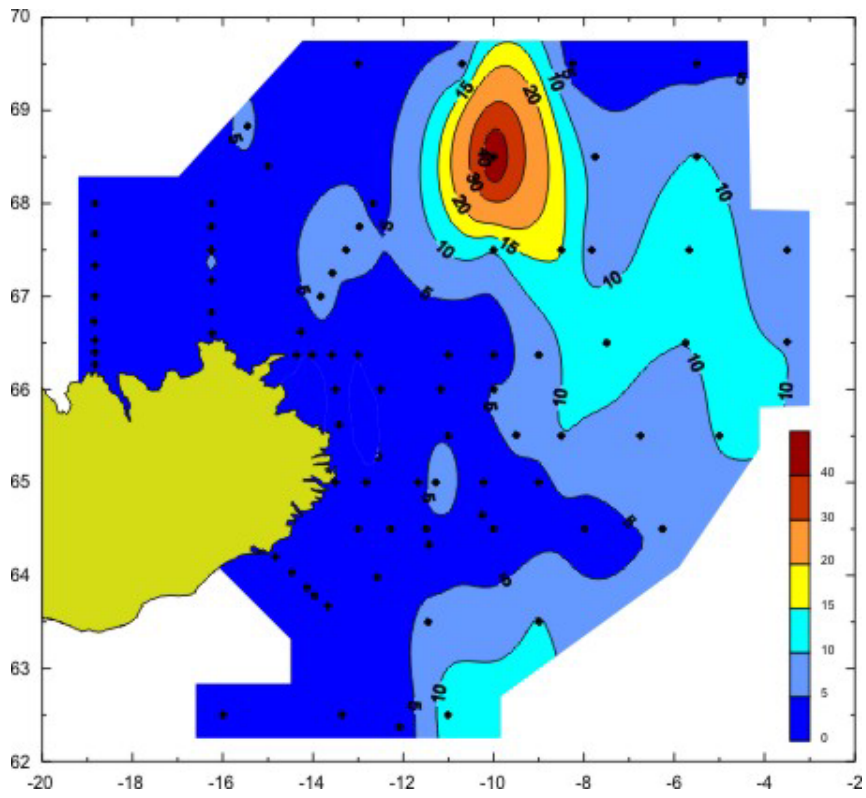


Figure 9. Distribution of zooplankton biomass (g dw/m² 50-0 m). A07-2004.

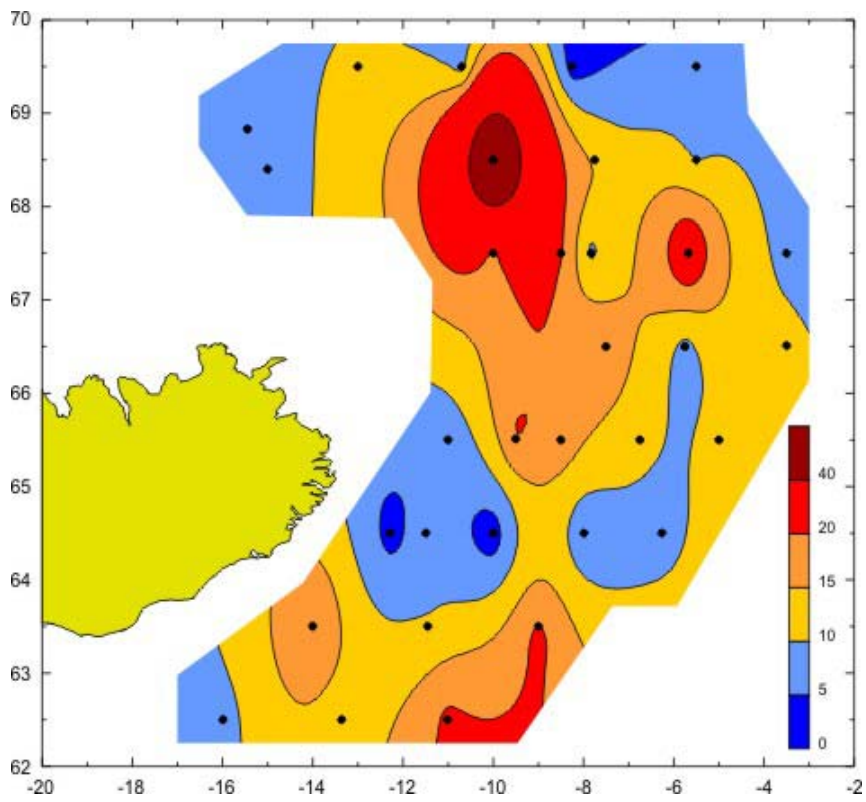


Figure 10. Distribution of zooplankton biomass (g dw/m² 200-0 m). A07-2004.

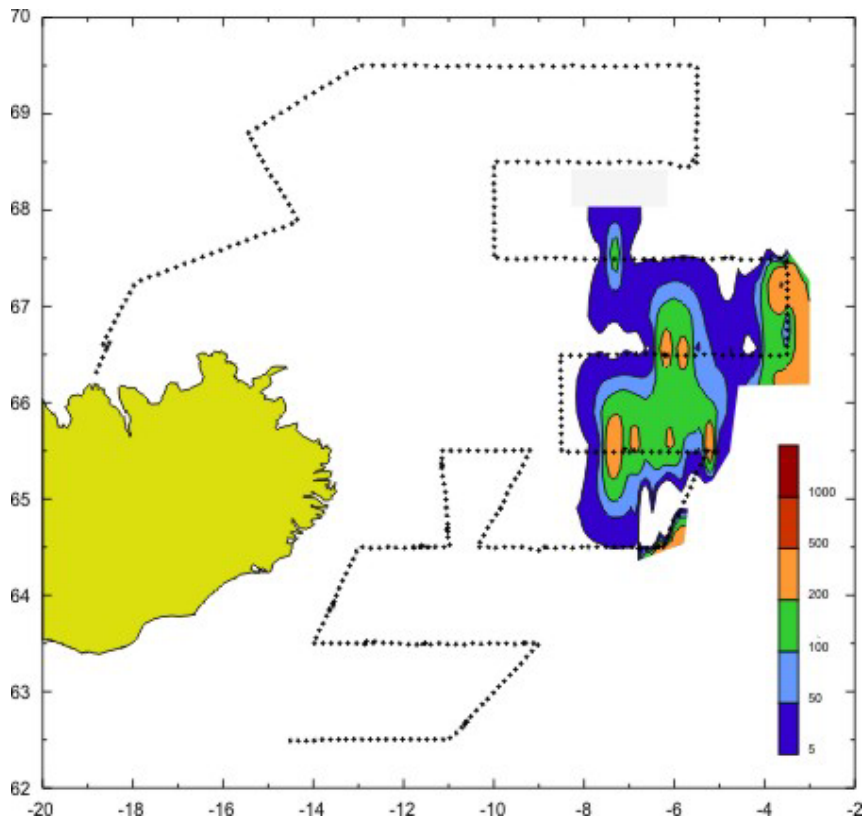


Figure 11. Distribution of herring (S_A -values). A07-2004.

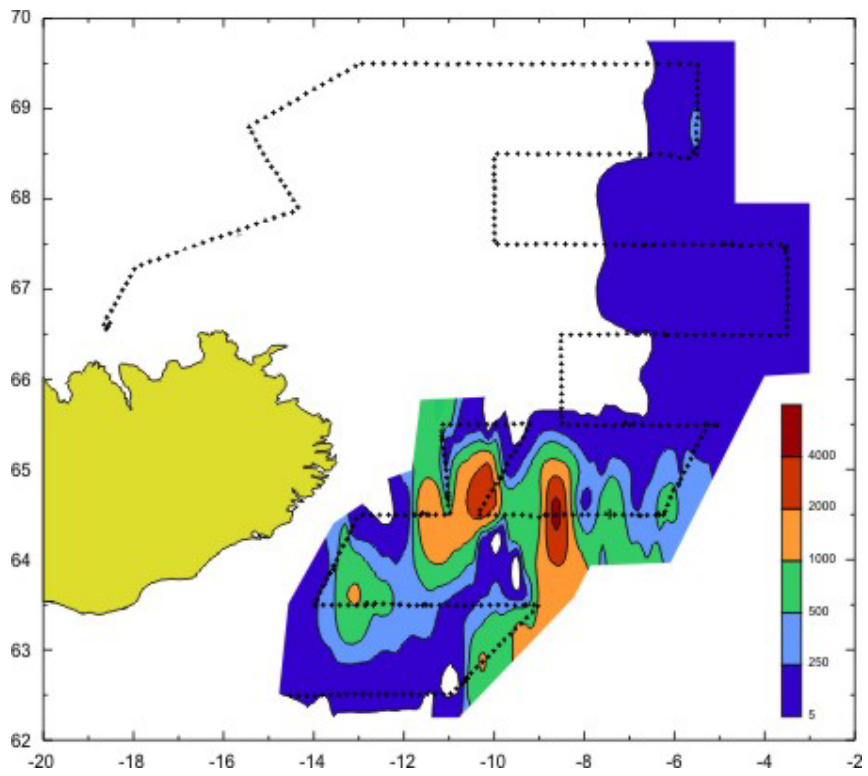


Figure 12. Distribution of Blue whiting (S_A -values). A07-2004.