

Presentation of the mackerel-ecosystem survey (IESSNS) 2. July – 12. August 2014

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Working Document to

ICES Working Group on Widely distributed Stocks (WGWIDE), ICES
Headquarters, Copenhagen, Denmark, 26 August - 1 September 2014

**Cruise report from the coordinated ecosystem survey
(IESSNS) with M/V "Brennholm", M/V "Vendla", M/V "Finnur
Friði" and R/V "Árni Friðriksson" in the Norwegian Sea and
surrounding waters, 2 July - 12 August 2014**



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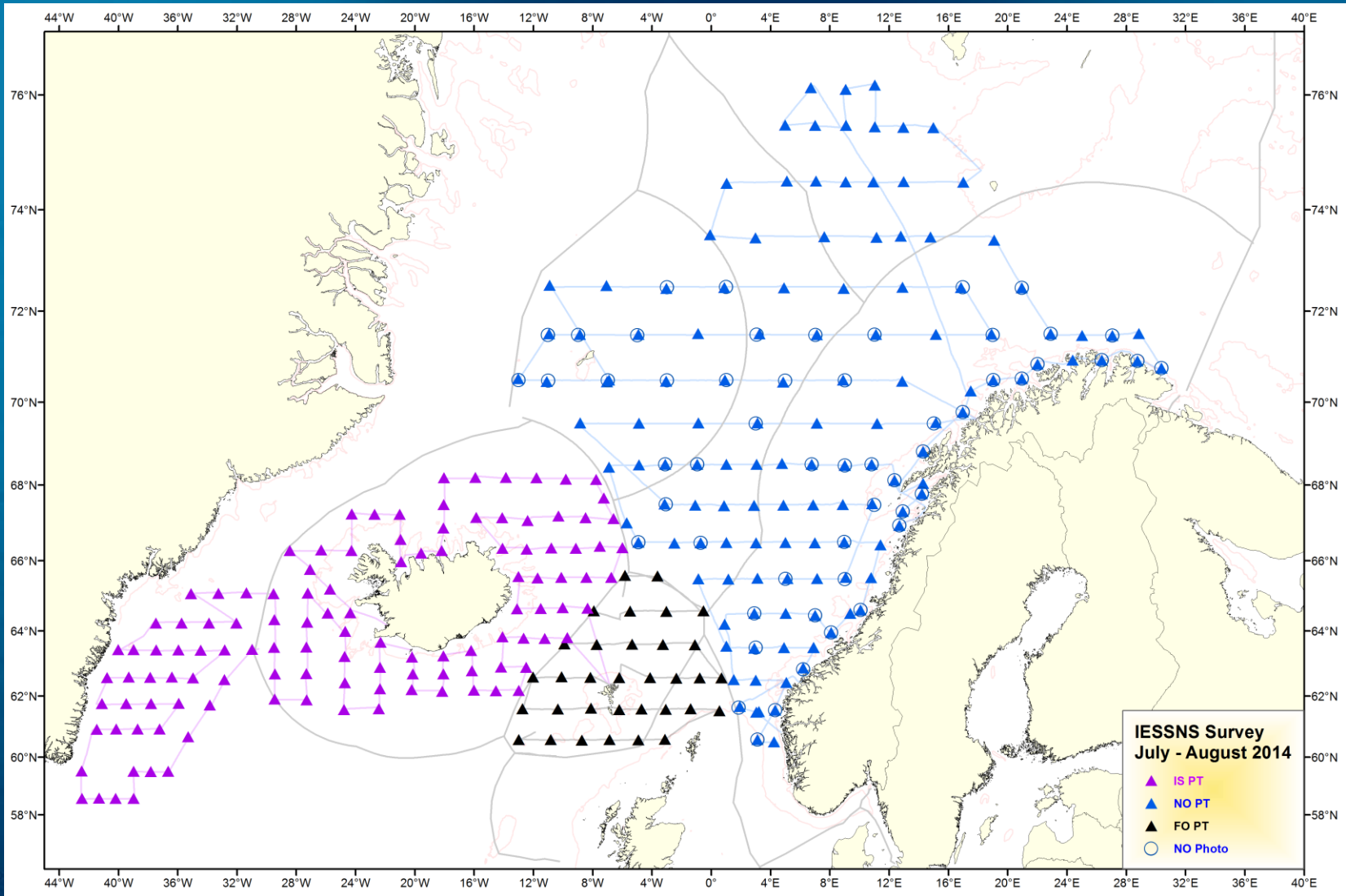


Materials and methods

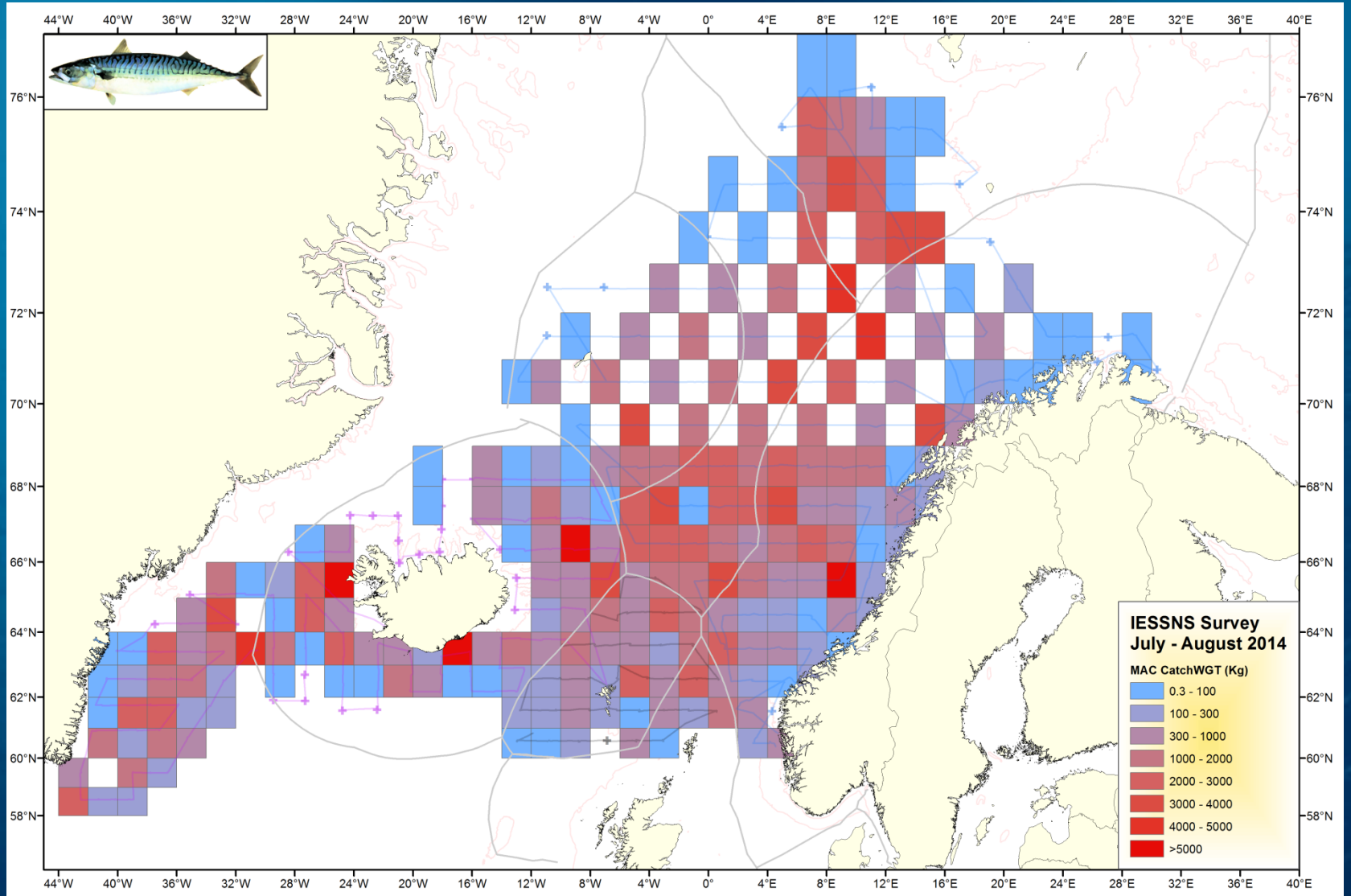
- Vessels: M/V "Brennholm" M/V "Vendla", M/V "Finnur Fridi" og R/V "Arni Fridriksson"
- Survey period: 2 July – 12 August 2014
- Area coverage: 2.45 millioner km²
- 58° N - 77° N og 26° E - 42° W
- Standardized 30 min pelagic trawling with Multpelt 832
- Multi-frequency echosounder and multibeam sonars
- Plankton sampling WP2 net 0-200 m depth
- CTD measurements 0-500 m depth
- Underwater video cameras inside the trawl
- ADCP, light measurements and weather observations
- Whale observations



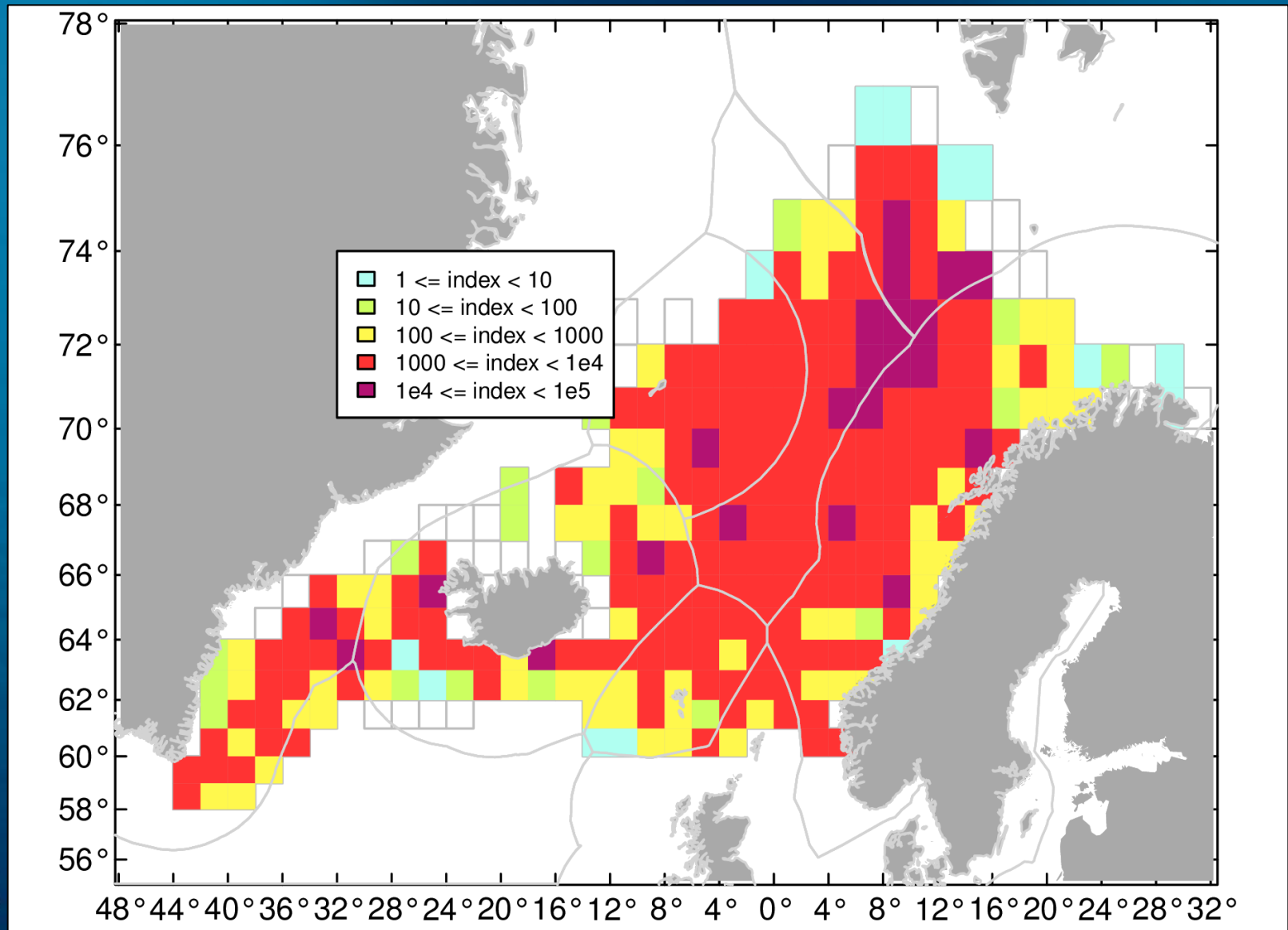
Trawl stations during the IESSNS survey 2014



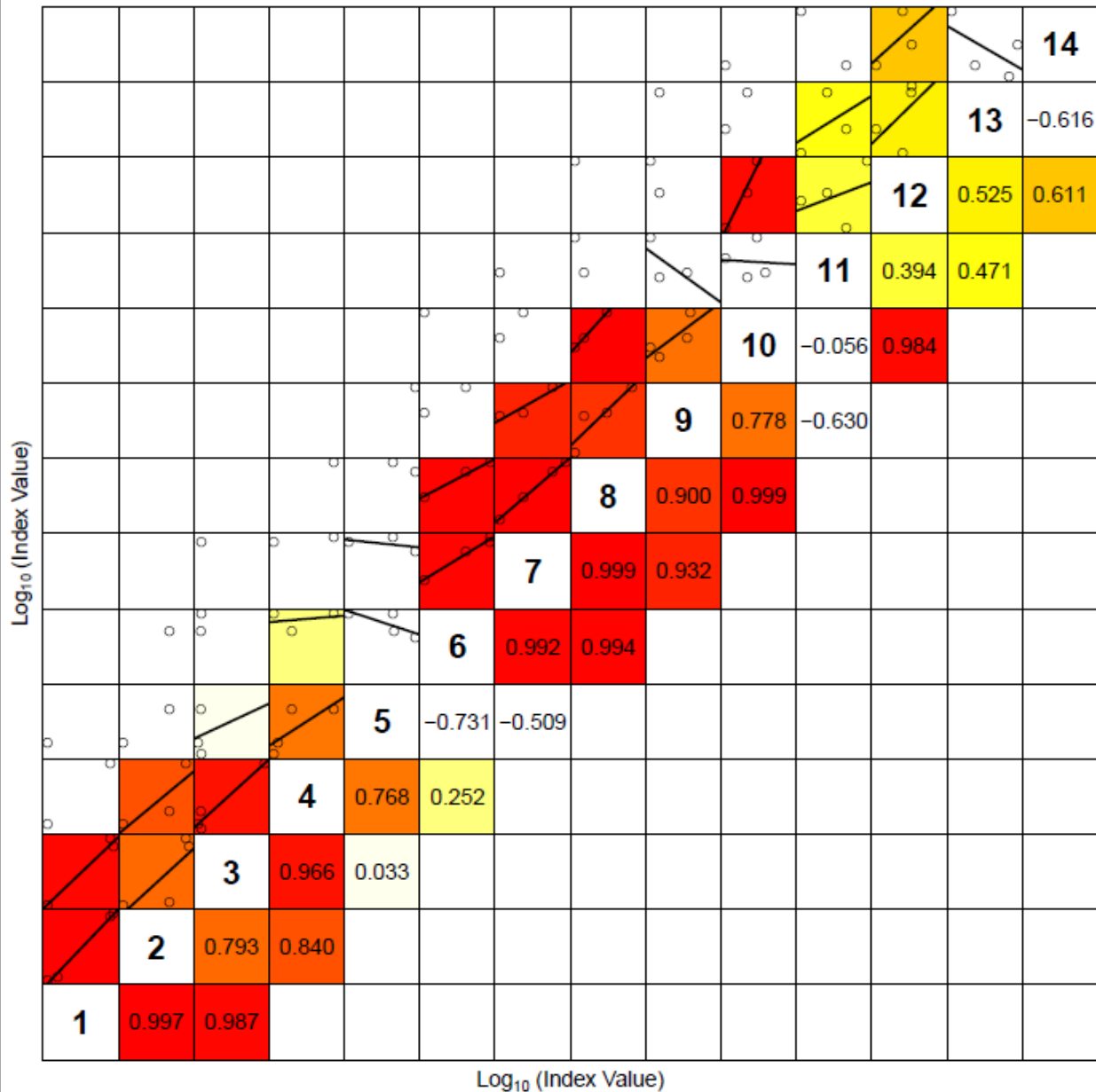
Makcerel catch rates (kg)



Mackerel distribution (kg/km²)



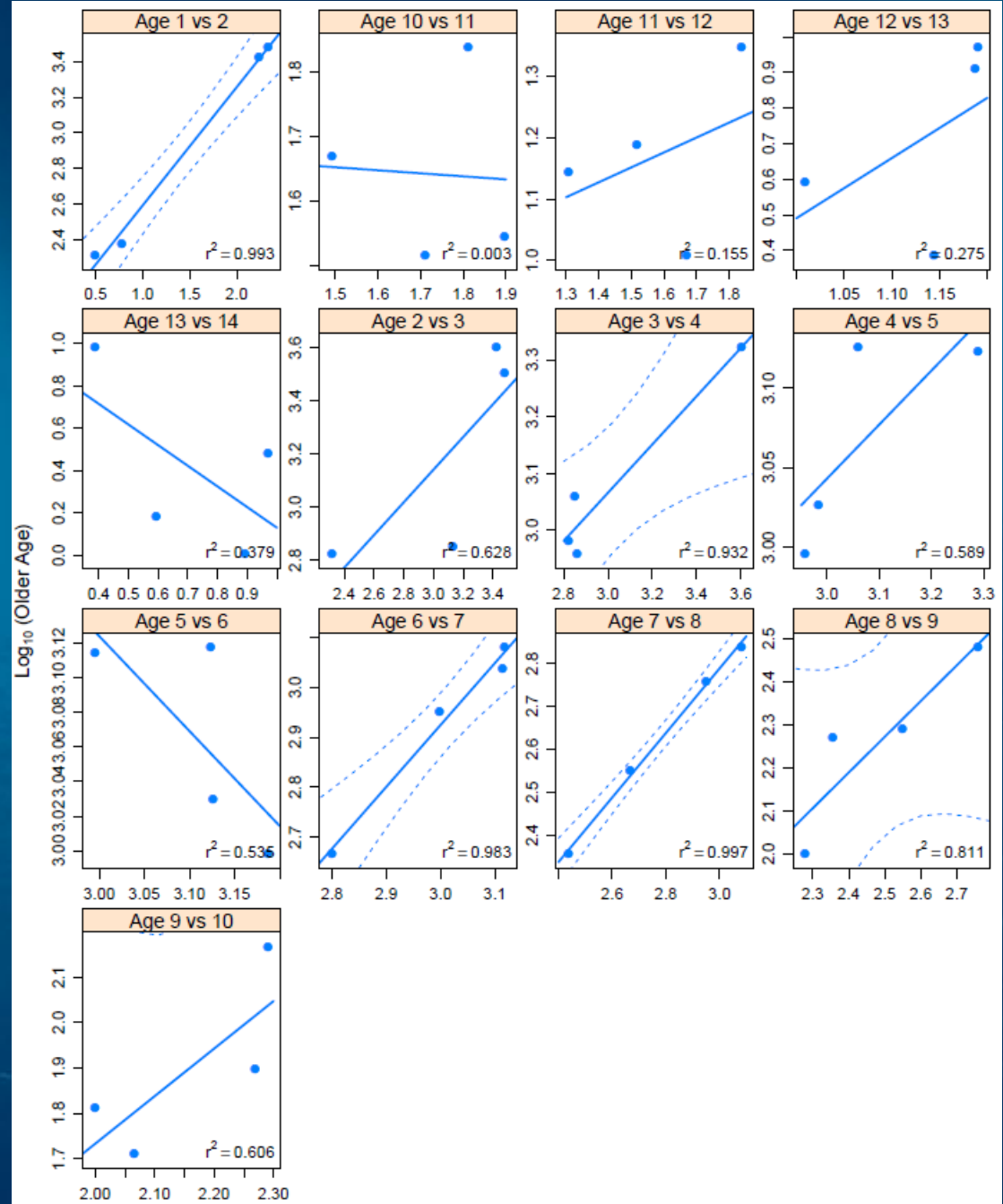
Age-disaggregated internal consistency plot



Lower right panels show the Coefficient of Correlation (r)



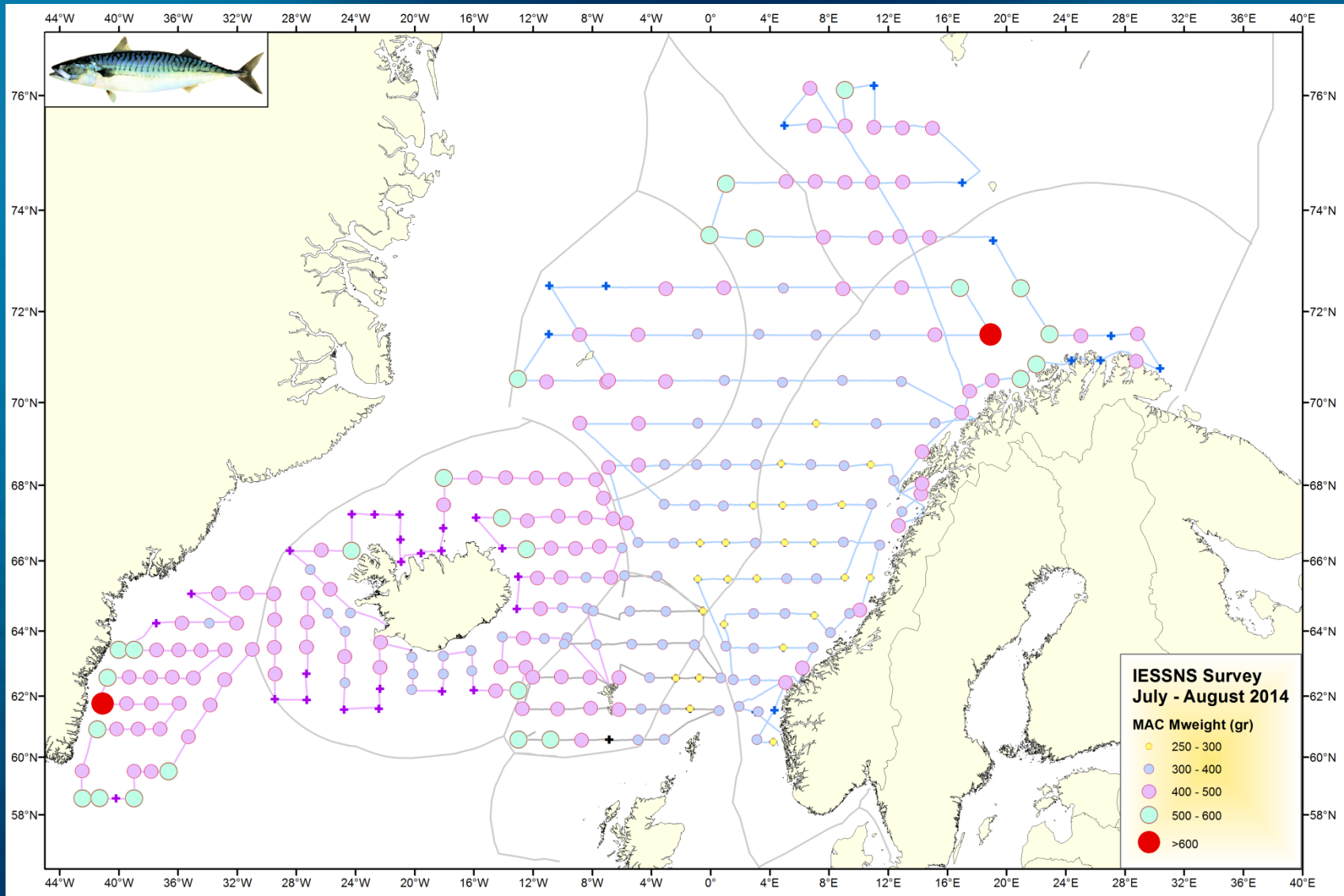
Consistency plot for each year class



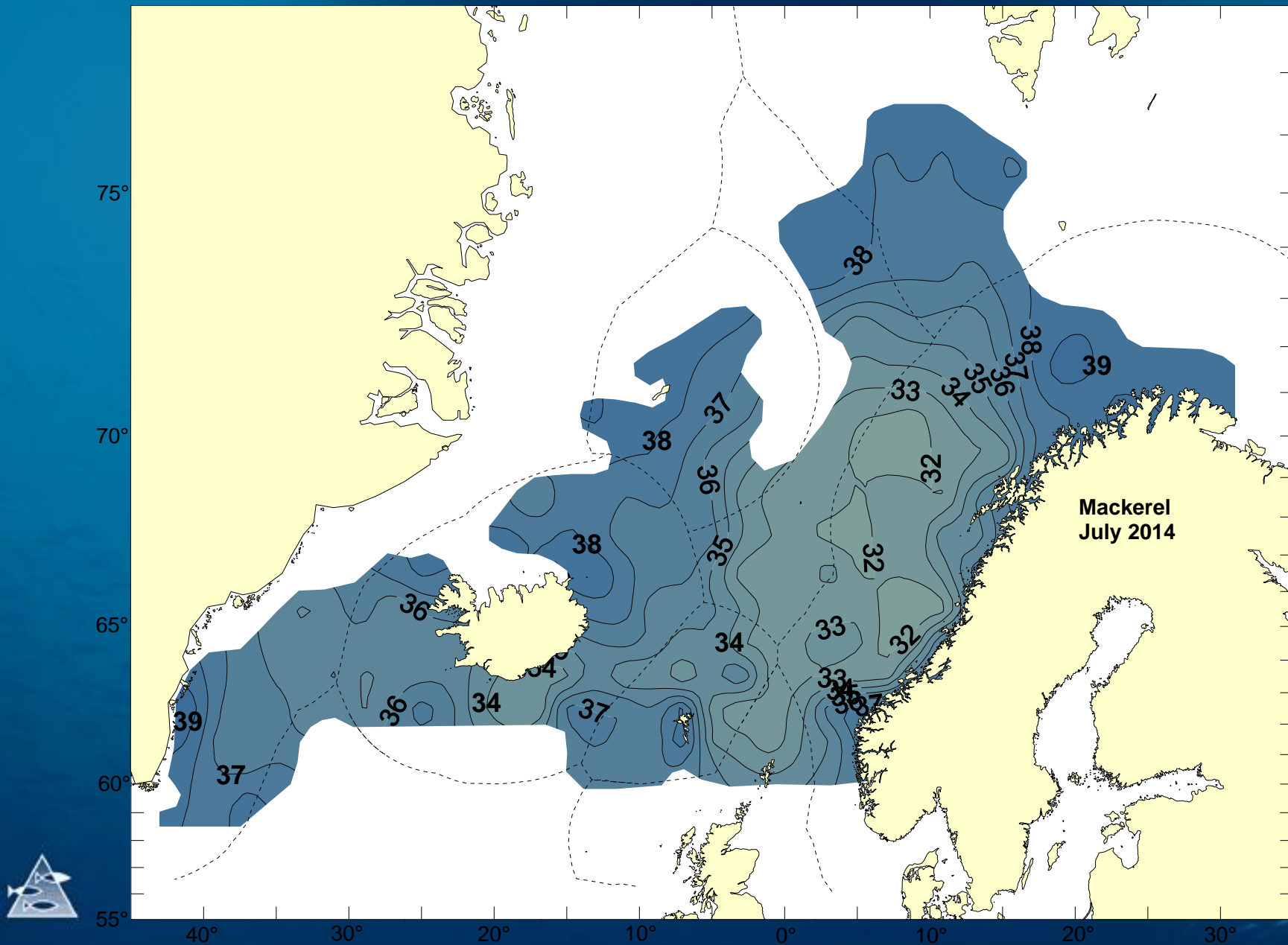
$\text{Log}_{10}(\text{Younger Age})$
Dotted lines are 95% confidence interval for the mean.



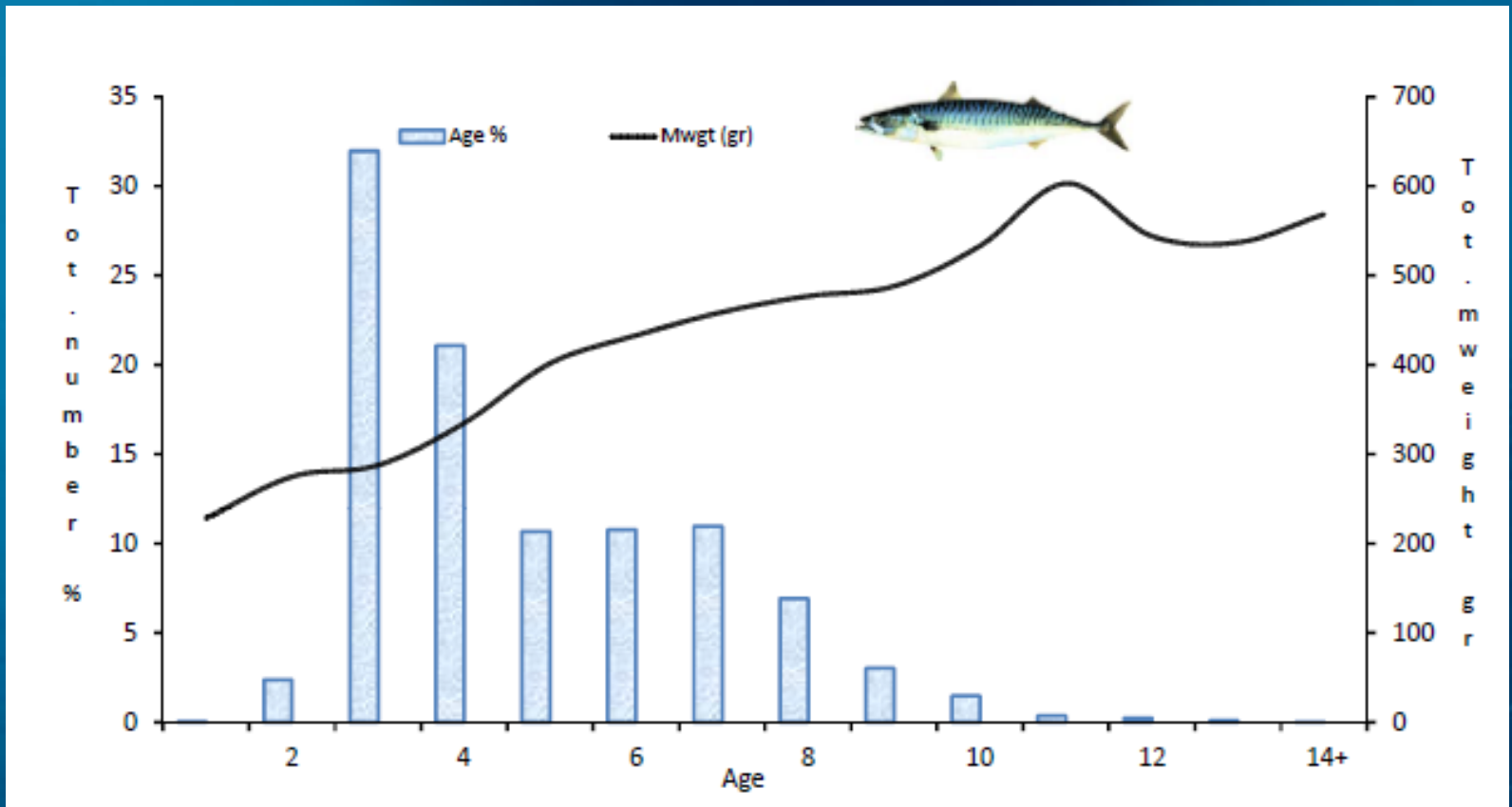
Mackerel average weight (g)



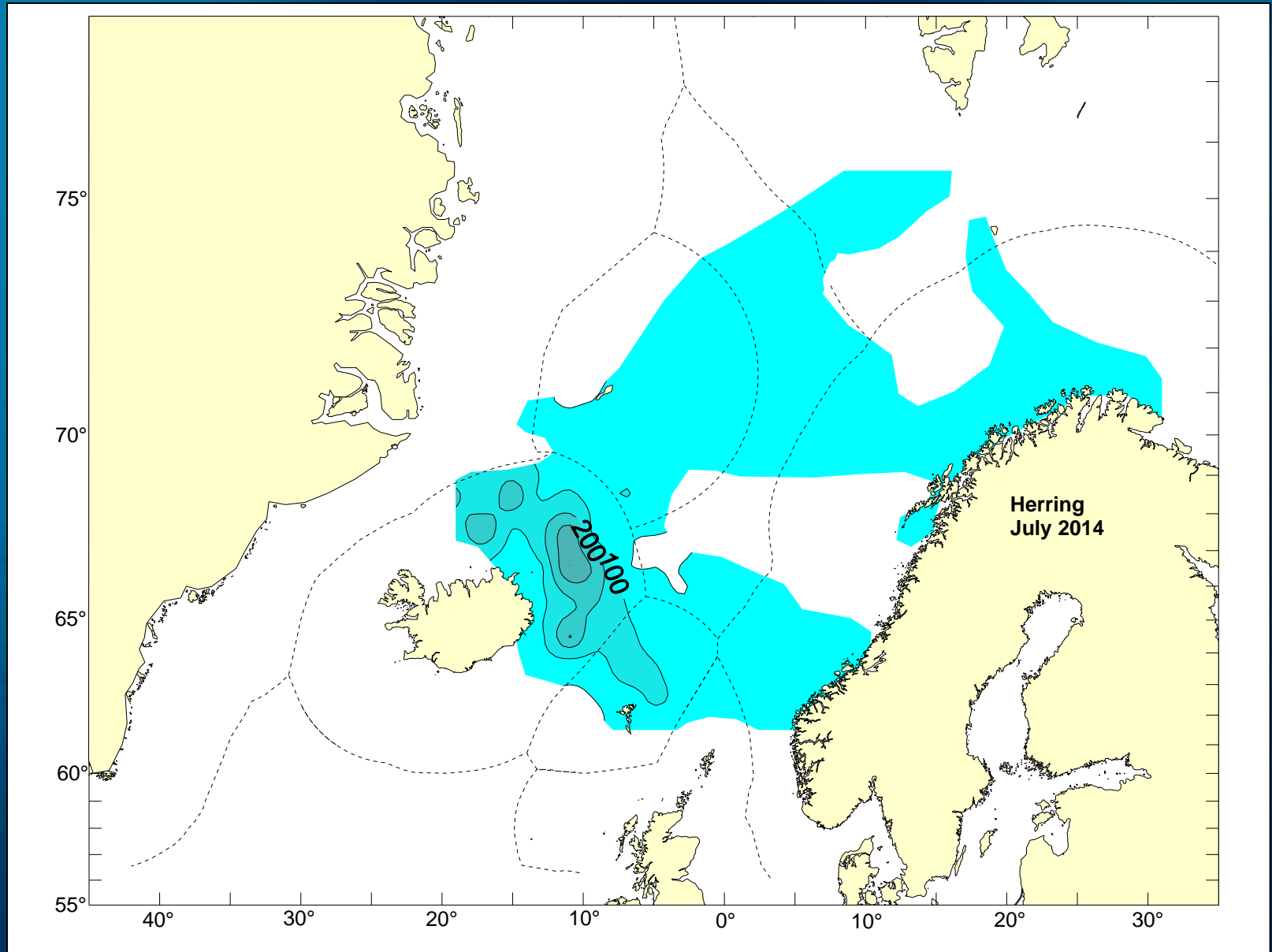
Average length (cm) for NEA mackerel



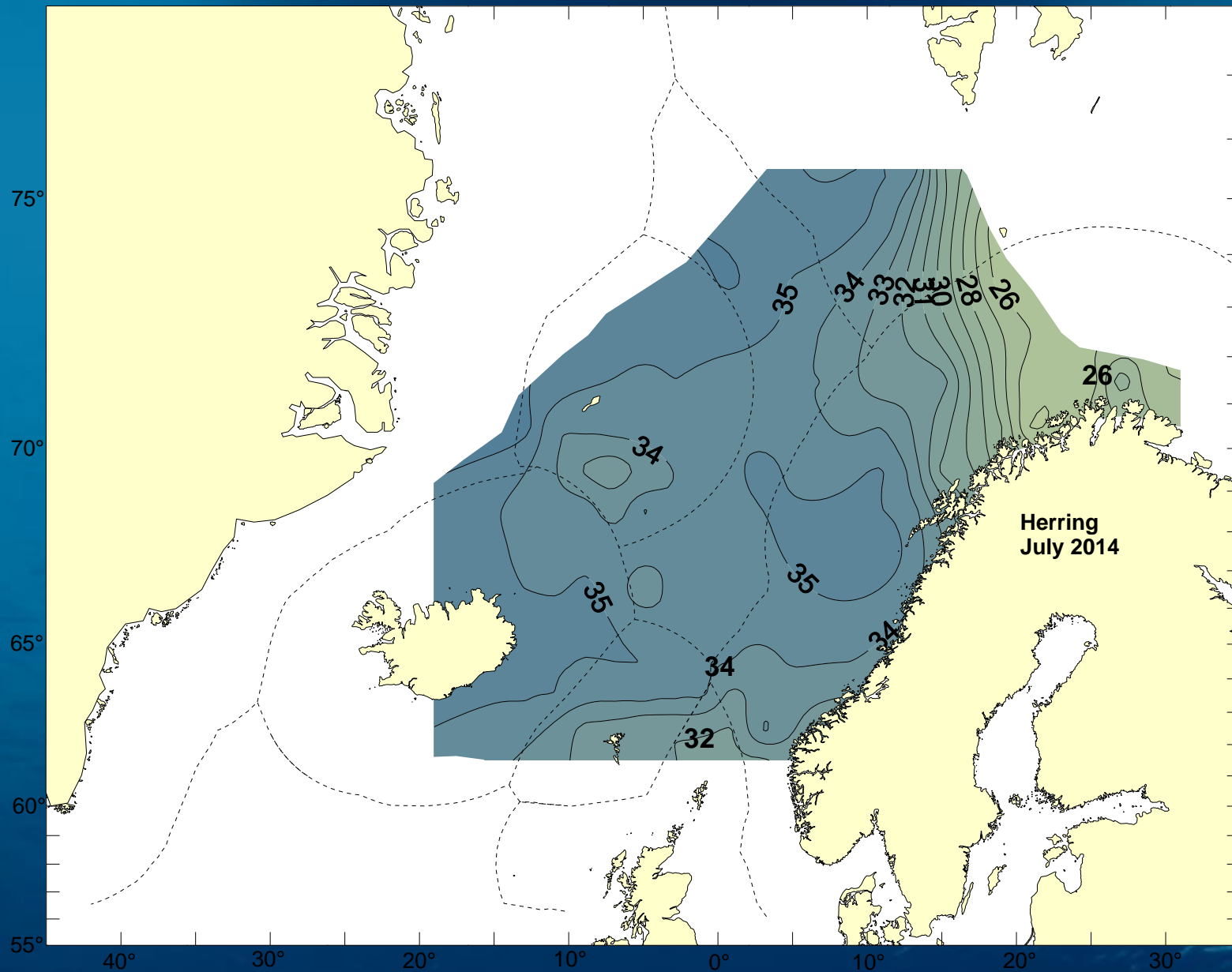
Age and length distribution of mackerel



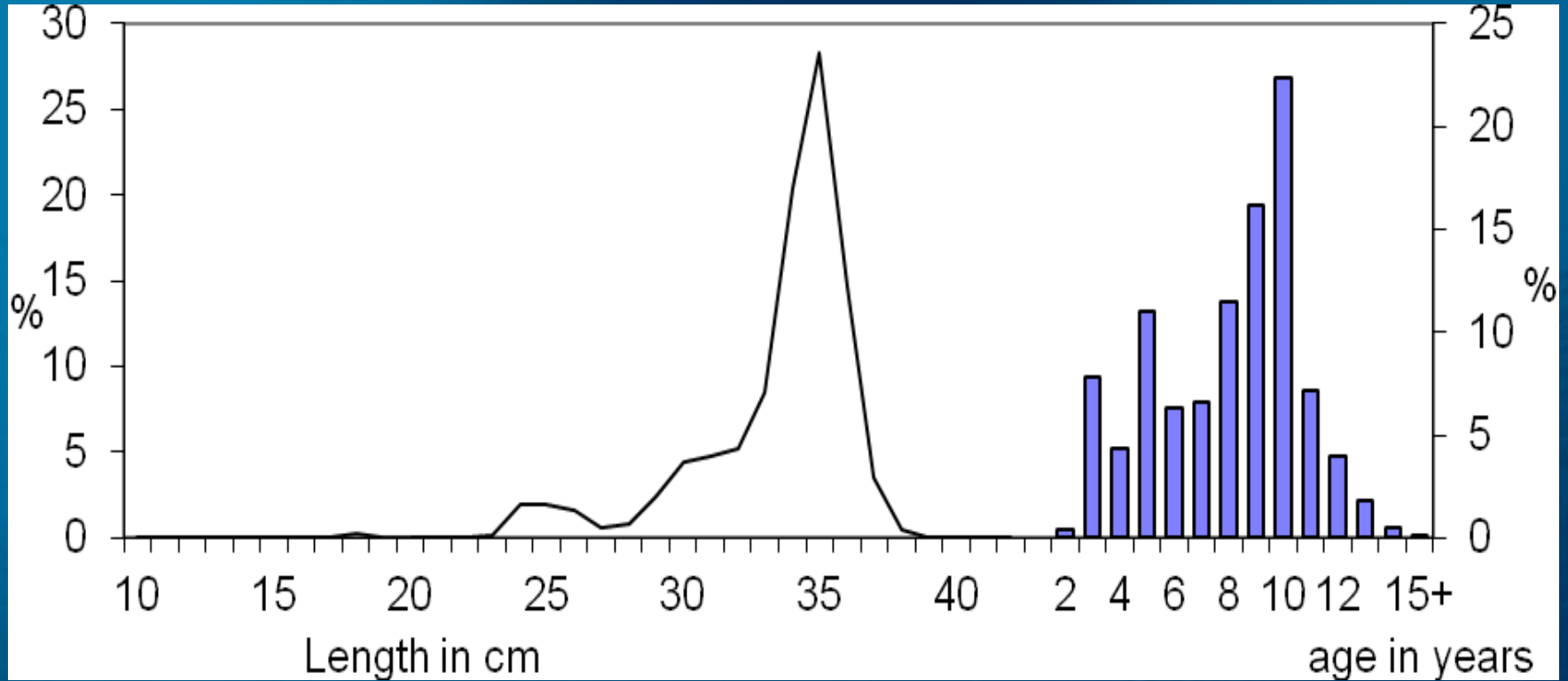
Acoustic density for NSS herring within the area covered



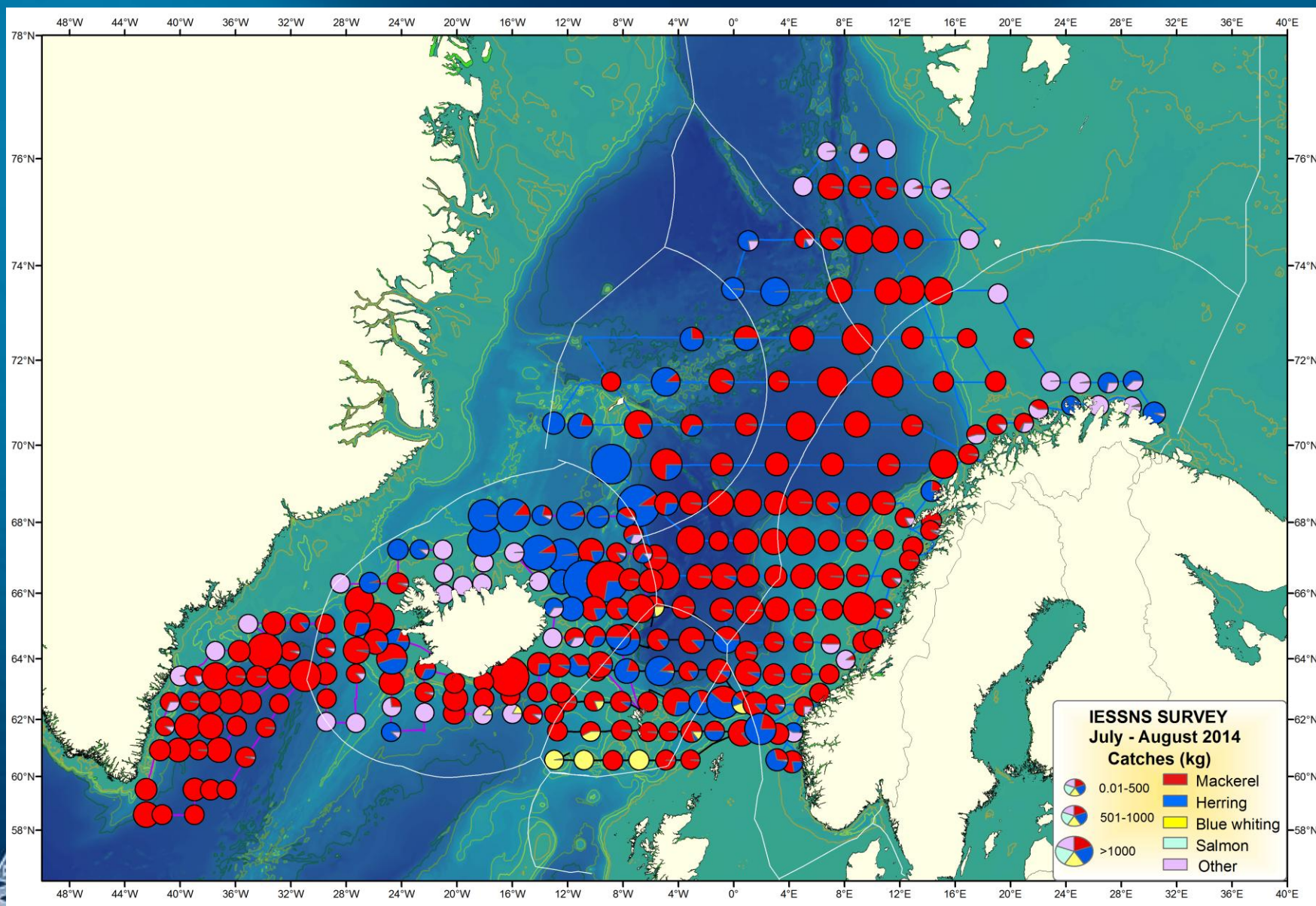
Average length distribution NSS herring



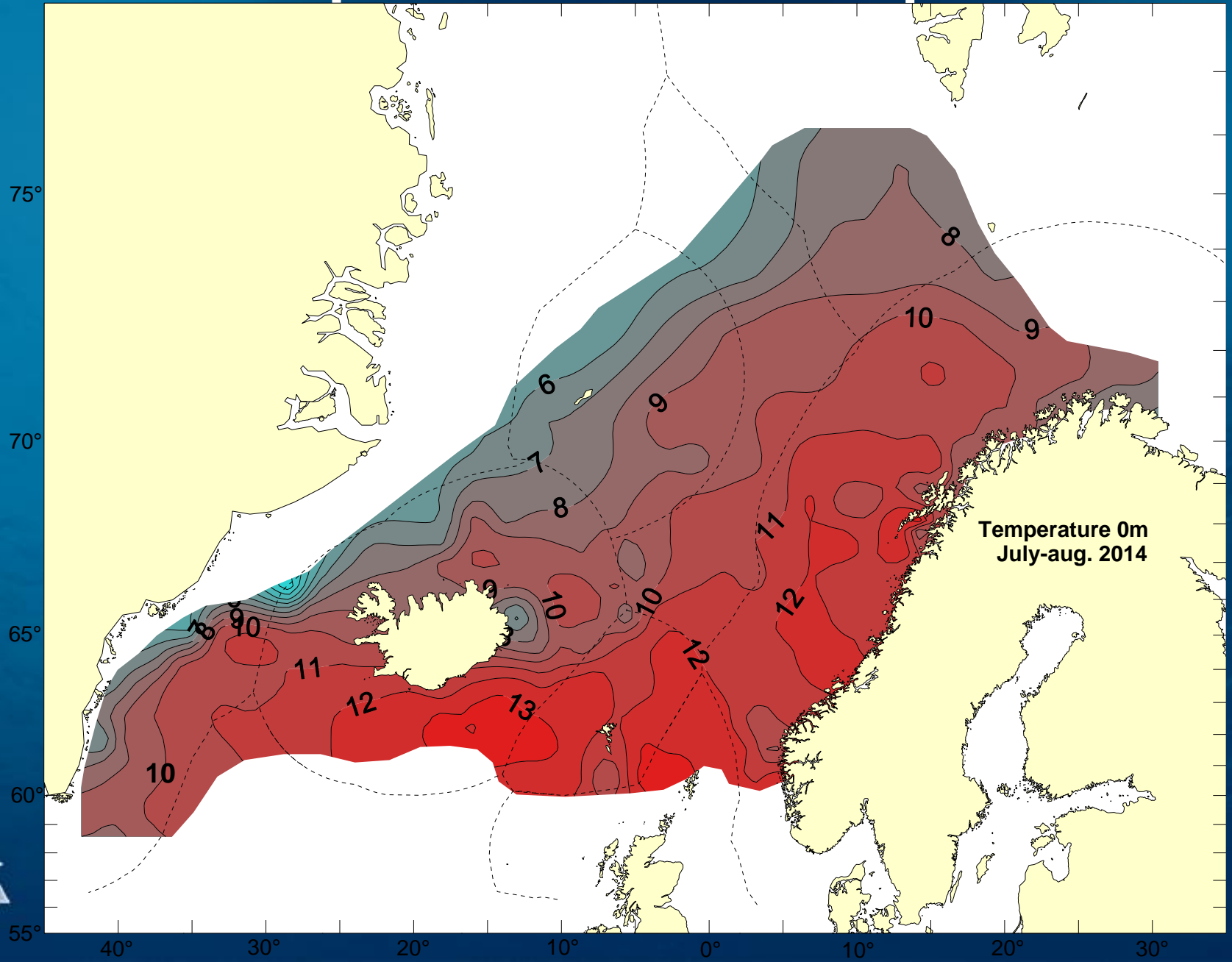
Length and age distribution NSS herring



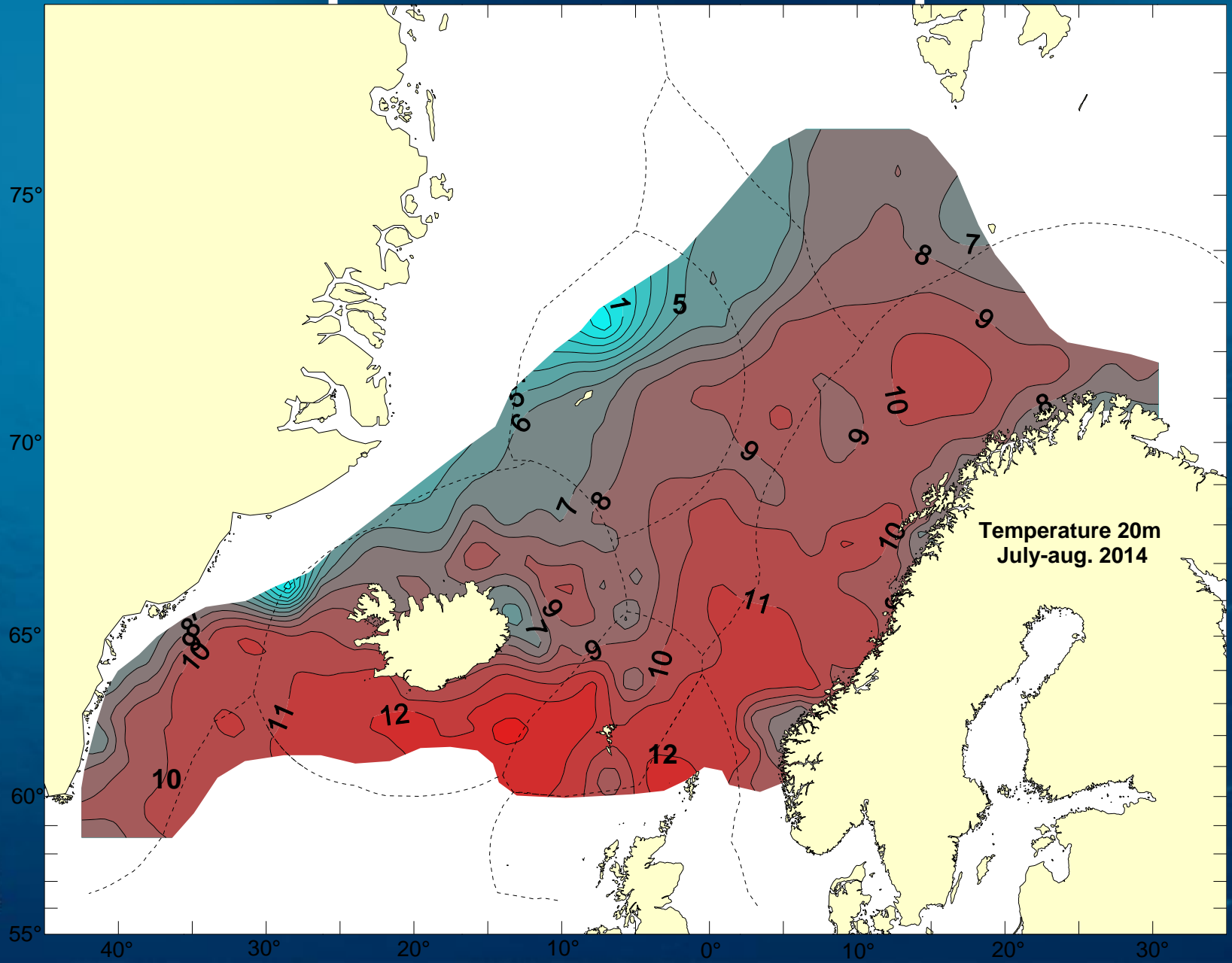
Distribution and overlap of mackerel and herring



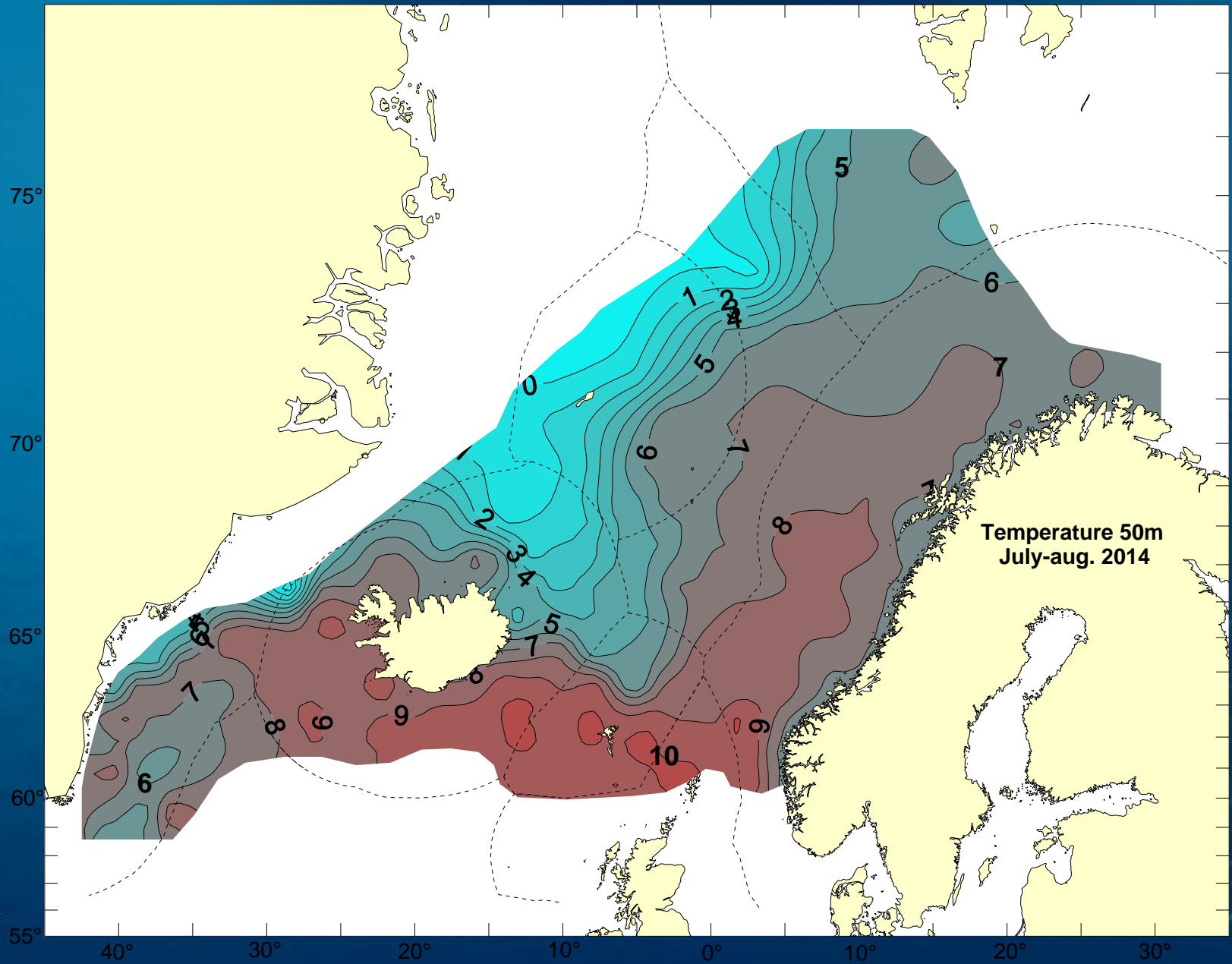
Temperature at 10 m depth



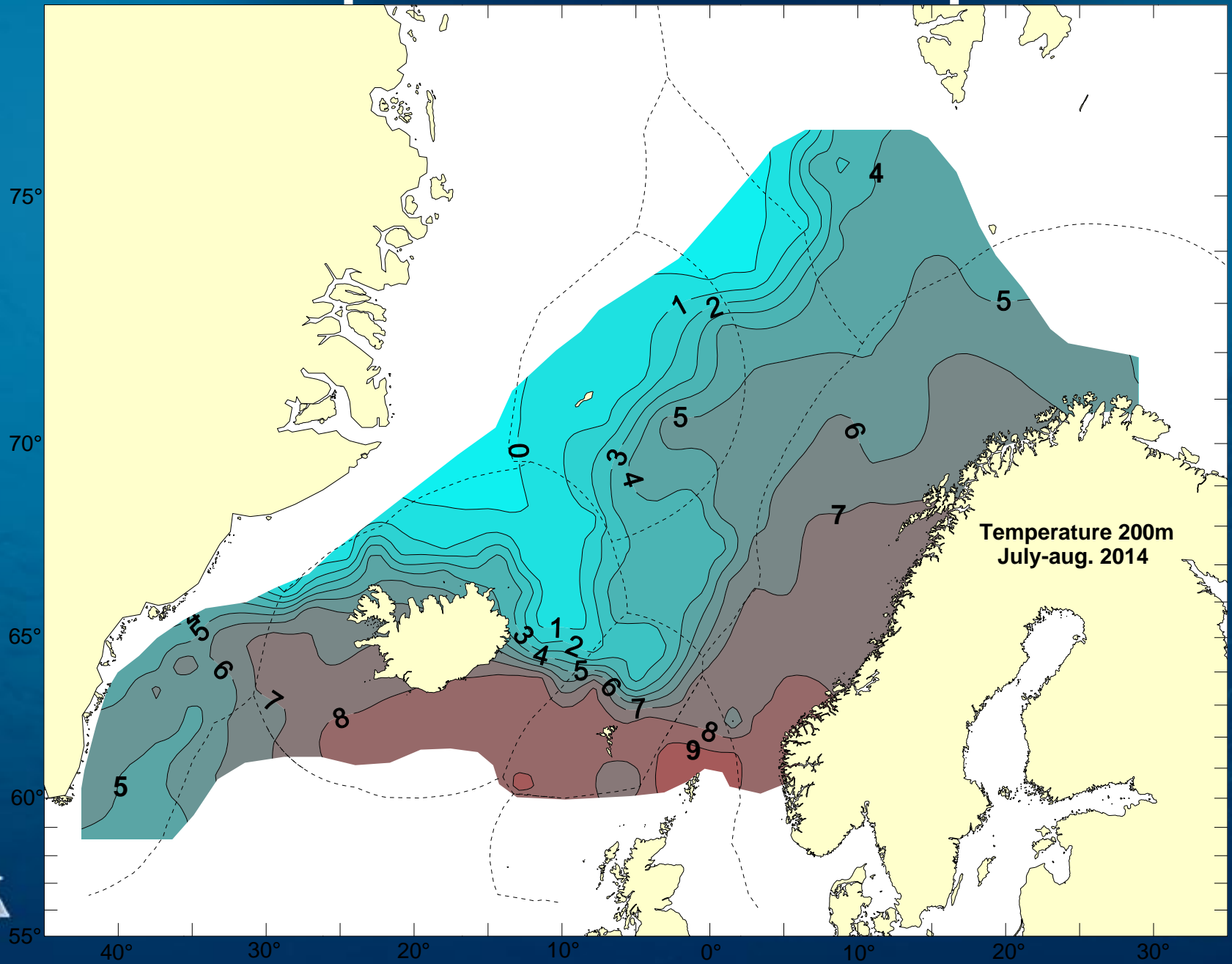
Temperature at 20 m depth



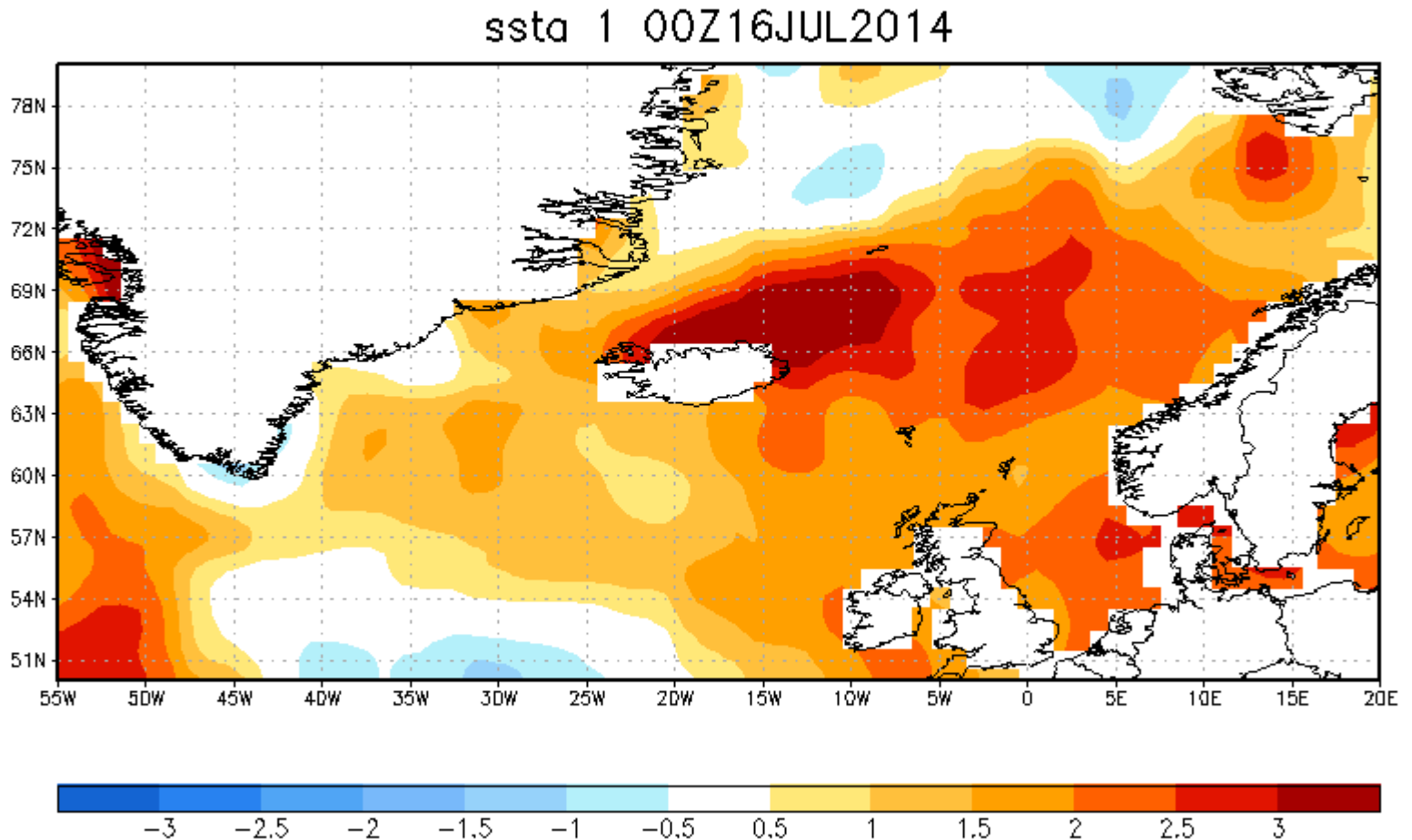
Temperature at 50 m depth



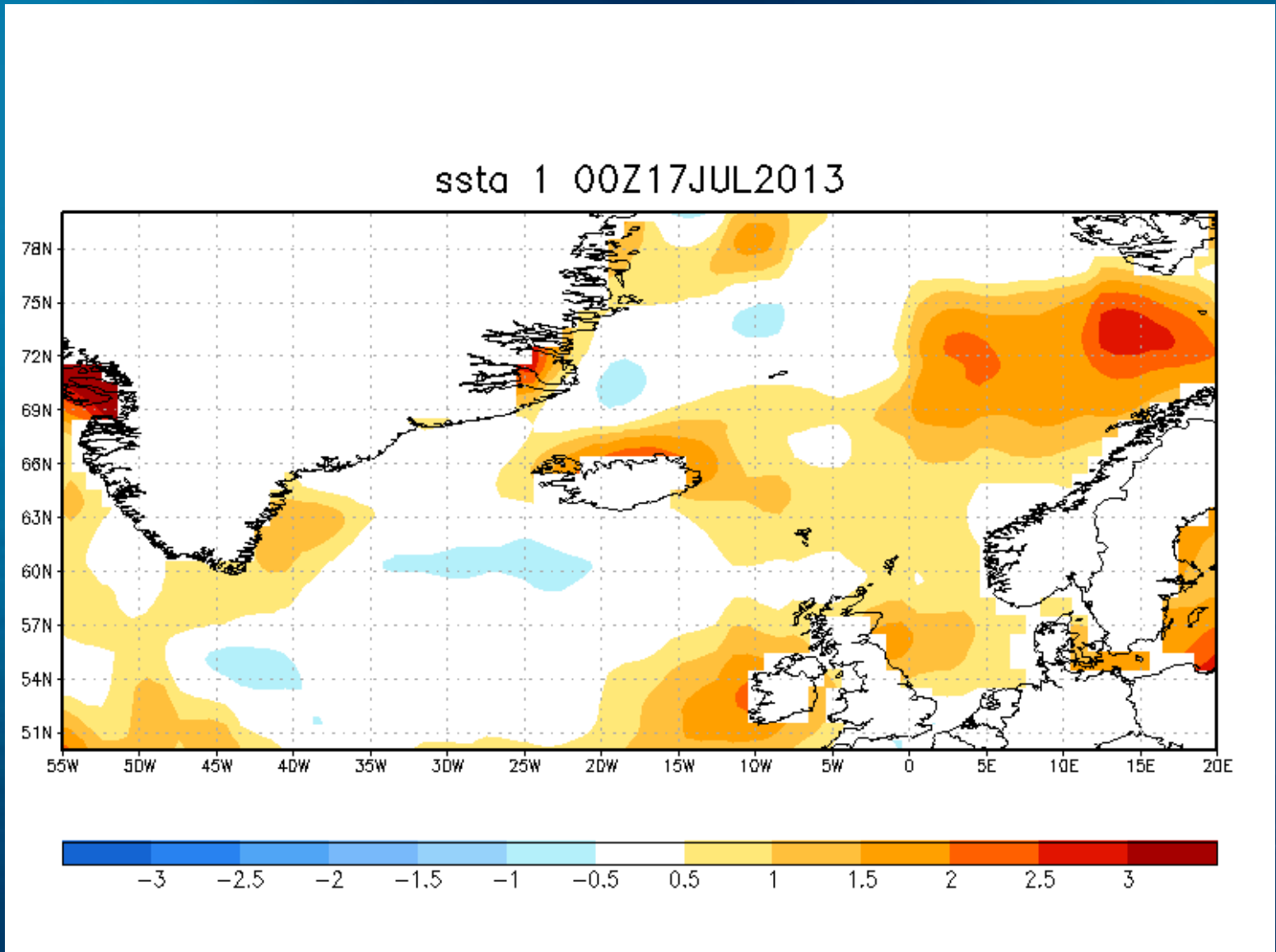
Temperature at 200 m depth



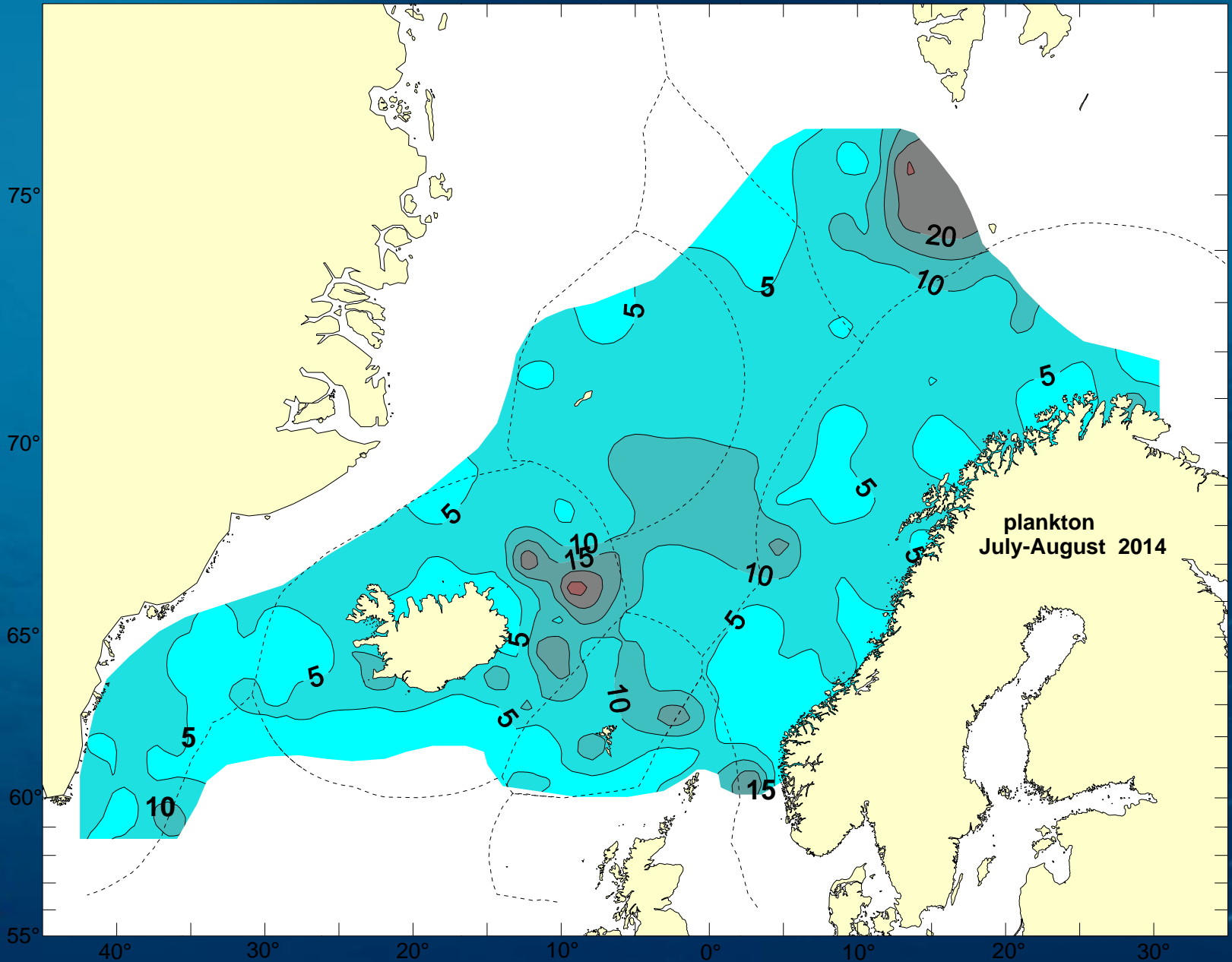
Surface temperature anomaly July 2014



Surface temperature anomaly July 2013



Plankton distribution and concentrations



Marine mammal observations

