Changes in distribution of eggs of Mackerel, Horse mackerel and Sardine during the spawning peak in the Cantabrian Sea (2001–2010)

Gersom Costas, Paz Díaz, Ana Lago de Lanzós, Concepción Franco, Elena Tel, Ignacio Álvarez and Paloma Cubero.

INTRODUCTION
This work investigated variation in abundance and distribution of in Atlantic mackerel (Scomber scombrus), horse mackerel (Trachurus trachurus) and sardine (Sardina pilchardus) eggs in relation of changes in physical conditions along the last decade (2000’s).

Studies of ichthyoplankton have shown that fish Eggs abundance and distribution may have temporal and spatial patterns that are caused by physical factors such as salinity and temperature.

MATERIAL & METHODS
Eight ichthyoplankton surveys were conducted during spring period along 2000’s decade with the aim of estimate the spawning stock biomass of in the North East Atlantic by Annual Egg Production Method (ICES 2010). These Surveys are coordinated internationally every 3 years and the aim is to estimate the spawning stock biomass of the North-east Atlantic mackerel and horse mackerel stocks.

The southern area is surveyed by Instituto Español de Oceanografía on board the R/V Cornide de Saavedra cover the north-western Iberian Peninsula waters and the inner part of the Bay of Biscay (ICES Divisions VIIIc, VIIIb and Subdivision IXa North). Two surveys are carried out triennially during March (CAREVA) and another one in April (JUREVA).

RESULTS AND DISCUSSION

The distribution of SST tends to be zoned: warmer water was found in West Iberian coast in March (CAREVA), however in April (JUREVA) warmer waters appear in the Bay of Biscay respect west coast in the last years (2007 and 2010).

Bar plots allow us to distinguish that maximum abundances were found in mackerel comparing to horse mackerel and sardine ones. For mackerel similar egg abundances were observed along decade except for 2004. However an increasing and a decreasing egg abundances along 2000’s were noted for horse mackerel and sardine, respectively.

Box plots show no significant interannual variability for egg density (egg/m2). Dotted lines are isolines of equal water density (pycnocline). In the early 2000’s egg presence was observed in a wider pycnocline range than in the late decade in all species.

CONCLUSIONS

Higher temperatures during April are noted in in the late decade respect to the early decade in the 2000’s. By other hand narrower salinity range is observed in the late decade opposite to early decade.

No interannual variability for egg density (egg/m2) in the three species along the decade was observed.

At the beginning of the decade egg presence was observed in a wider pycnocline range than at the end decade in all species.

REFERENCES
