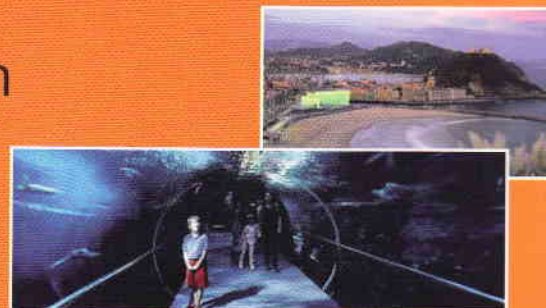


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# Temporal pattern of surface ichthyoplankton in southern bay of Biscay (W. Atlantic)

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Our study aims at collecting data on the whole surface ichthyoplankton assemblage in the Bay of Biscay on a long-term basis (> 10 years). Sampling strategy is based on monthly collection and designed to strengthen the temporal dimension of long-term pattern. It is part of a larger programme research on the zooplanktonic, seabirds and sea mammals communities of the Southern Bay of Biscay (d'Elbée & Prouzet, 2001; Castège et al., 2004; Hémerly et al., 2007).

From September 2000 to December 2006, we collected on a monthly basis 57 surface plankton samples from a unique station located in the south Bay of Biscay (43°37'N; 1°43'W - France) near the deep canyon of Capbreton (Figure 1). In this paper, we present results from the ichthyoplanktonic assemblage only.

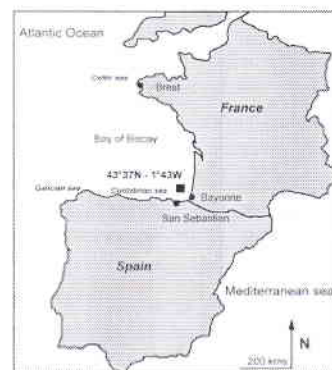


Figure 1. Location of the sampling station (dark square) in the south Bay of Biscay.

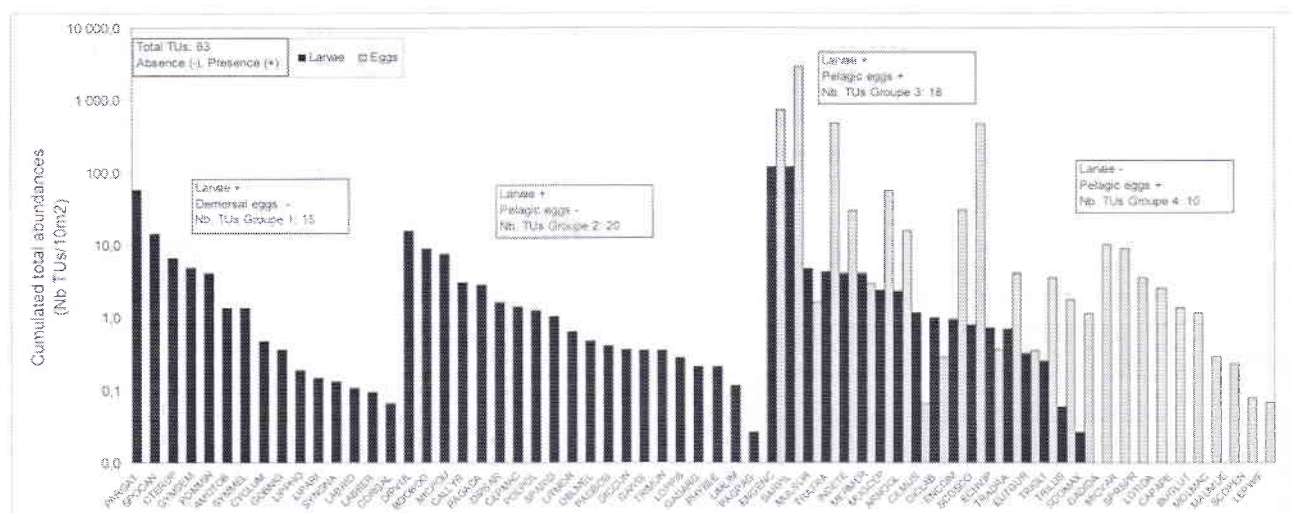


Figure 2. Cumulated abundances of the 63 TUs sorted by decreasing order in the 4 functional groups and according to the presence (quoted +) or absence (quoted -) of at least one or two developmental stages : egg (grey bar) or larval (black bar).

Among the 63 species censused, 35 were present at larval stage only whilst 10 were represented by their eggs only. Those taxa (N= 18) being represented by both stages (egg + larvae) have the highest abundance (Figure 2). This presence in the surface plankton assemblage of species at either or both stage is interpreted in the context of the bathymetric distribution of species and the chosen sampling strategy.

Maximum in ichthyoplanktonic abundance and diversity occur in February-March for eggs and May-June for larvae. This 3-month time lag between those two stages is to be related to the egg hatching and larvae recruitment to the pelagic environment (Figure 3). Mean egg abundance ( $82.4 \pm 29.8$  eggs/10 m<sup>2</sup>) was 10-fold higher than larvae abundance ( $7.1 \pm 1.8$  larvae /10 m<sup>2</sup>).

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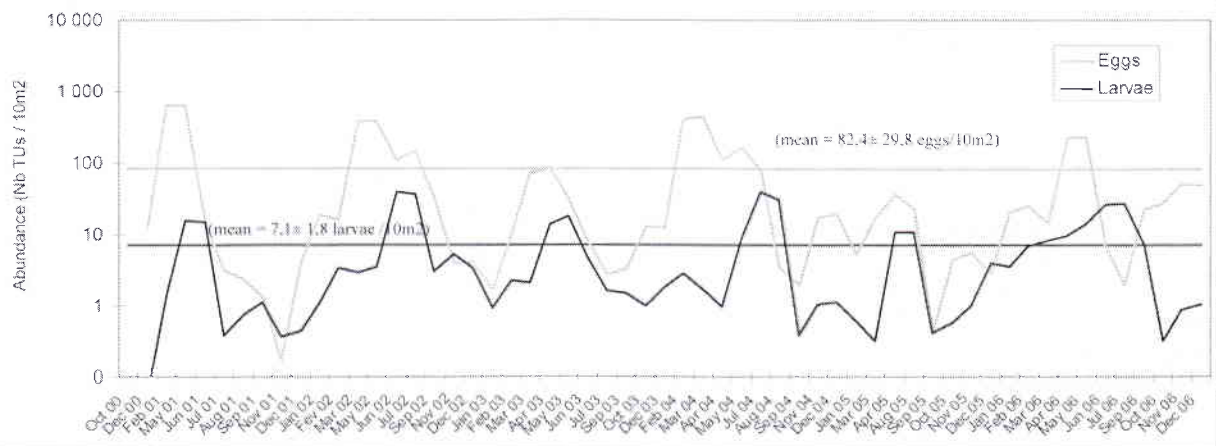
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Despite pronounced monthly variations, no statistical significant decrease in either egg or larvae abundance was noticed during this 6-years study period. Compared to previous published studies, our work shows that the peak in ichthyoplanktonic diversity occurs two months before; furthermore laying period spread over the whole year being sustained even during autumn and winter. Using ordination we aim at describing annual sequence of taxa appearance at the study site : Gadiforms, Ammodytidae and Pleuronectiforms are present during winter whilst many Sparidae, Blennidae, Labridae and Gobiidae form the summer group. Only three species occurred all across the year : European anchovy *Engraulis encrasicolus*, European pilchard *Sardina pilchardus* and Atlantic horse mackerel *Trachurus trachurus*.



**Figure 3 :** Variation of moving averages (width of windows = 2) of monthly total ichthyoplanktonic abundance as revealed by egg stage (grey bars) and larval stage (black bars) during the course of the study (2000-2006). (NB: logarithmic scale)

**Key words :** Ichthyoplankton, bay of Biscay, temporal monitoring, biological diversity.

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