

Abundance and distribution of the blue shark in the Bay of Biscay

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Abstract: The SPEE program has been developed to monitor over time the abundance of many marine megafauna species of conservation interest, such as marine mammals (harbour porpoise, common dolphin, ...), seabirds (Northern gannet, Black-headed gull, ...) or elasmobranchs (sharks, rays, ...) in the newly implemented Marine Protected Area (MPA) of the Gironde estuary and Pertuis sea, France. SPEE consists in seasonal surveys over the MPA throughout a whole year and allows for the observation of many large fish, in particular Blue sharks (*Prionace glauca*), a species widely distributed in the world's ocean.

Using a distance sampling approach to estimate blue shark abundance and distribution within the MPA, this work provides the first abundance estimate in the area and shows a very strong seasonal pattern and highlights a strong spatial structuration of the blue shark population with few environmental explanation. The sharks population were more abundant and widespread in spring and tended to concentrate in summer.

Since only 96 sharks have been spotted in 2019, there is a large uncertainty in the abundance estimate and future surveys will be useful to obtain more precise estimate of the detection function and consequently produce more robust abundance estimation.

Key words: Distance sampling; Abundance survey; Blue sharks