

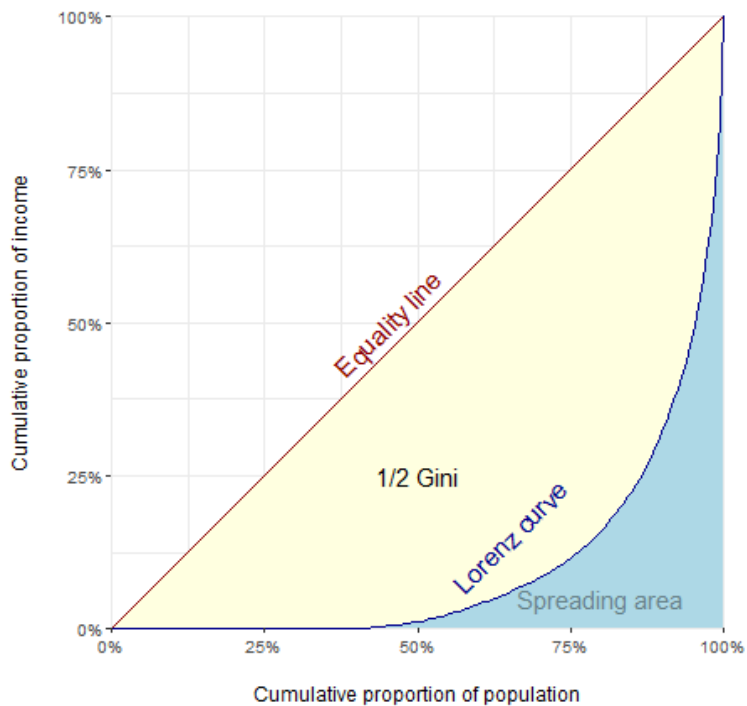
Supplementary material 1

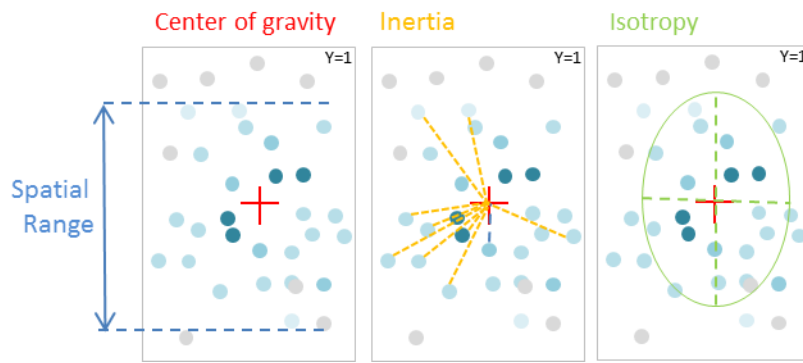
Demersal species sampled in the Bay of Biscay and Celtic Sea, used in the current work:

Argentina sp., *Arnoglossus* sp., *Callionymus lyra*, *Callionymus maculatus*, *Capros aper*, *Chelidonichthys cuculus*, *Conger conger*, *Eutrigla gurnardus*, *Gadiculus argenteus*, *Gadus morhua*, *Helicolenus dactylopterus*, *Lepidorhombus boscii*, *Lepidorhombus whiffiagonis*, *Leucoraja naevus*, *Lophius budegassa*, *Lophius piscatorius*, *Melanogrammus aeglefinus*, *Merluccius merluccius*, *Merlangius merlangus*, *Micromesistius poutassou*, *Microstomus kitt*, *Microchirus variegatus*, *Phycis blennoides*, *Scyliorhinus canicula*, *Solea solea*, *Trisopterus esmarkii*, *Trisopterus luscus*, *Trisopterus minutus* and *Zeus faber*

Supplementary material 2

Illustration of spatial indicators described in the article: Gini index, Lorenz curve and spreading area, center of gravity, inertia and isotropy.





Supplementary material 3

Fig S1: Interpolated areas produced by ordinary kriging of the entire area sampled in the EVHOE survey and the area studied (red rectangle). Example of the first four demersal fish species considered. To avoid other confounding factors (e.g. shape of the area sampled) the indicators were studied only within a rectangular area.

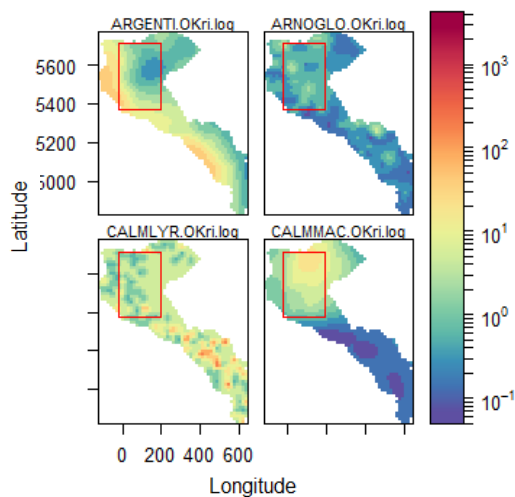


Fig. S2: Distribution of the 29 fish species considered (scientific names in Supplementary material 1), in the selected area (fig s1, red rectangle) that were estimated by ordinary kriging.

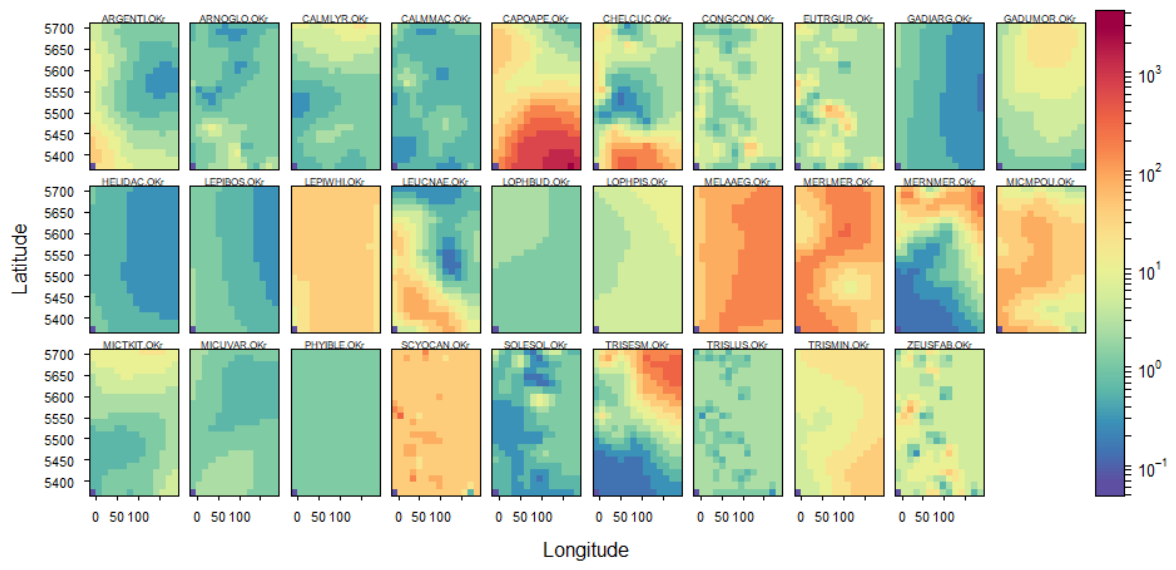


Fig. S3: Selected area showing the initial state of ordinary kriging (OKr) predictions of each species (scientific names in Supplementary material 1). Note differences in biomass in the target areas (middle of each rectangle). Log scale to improve visualization.

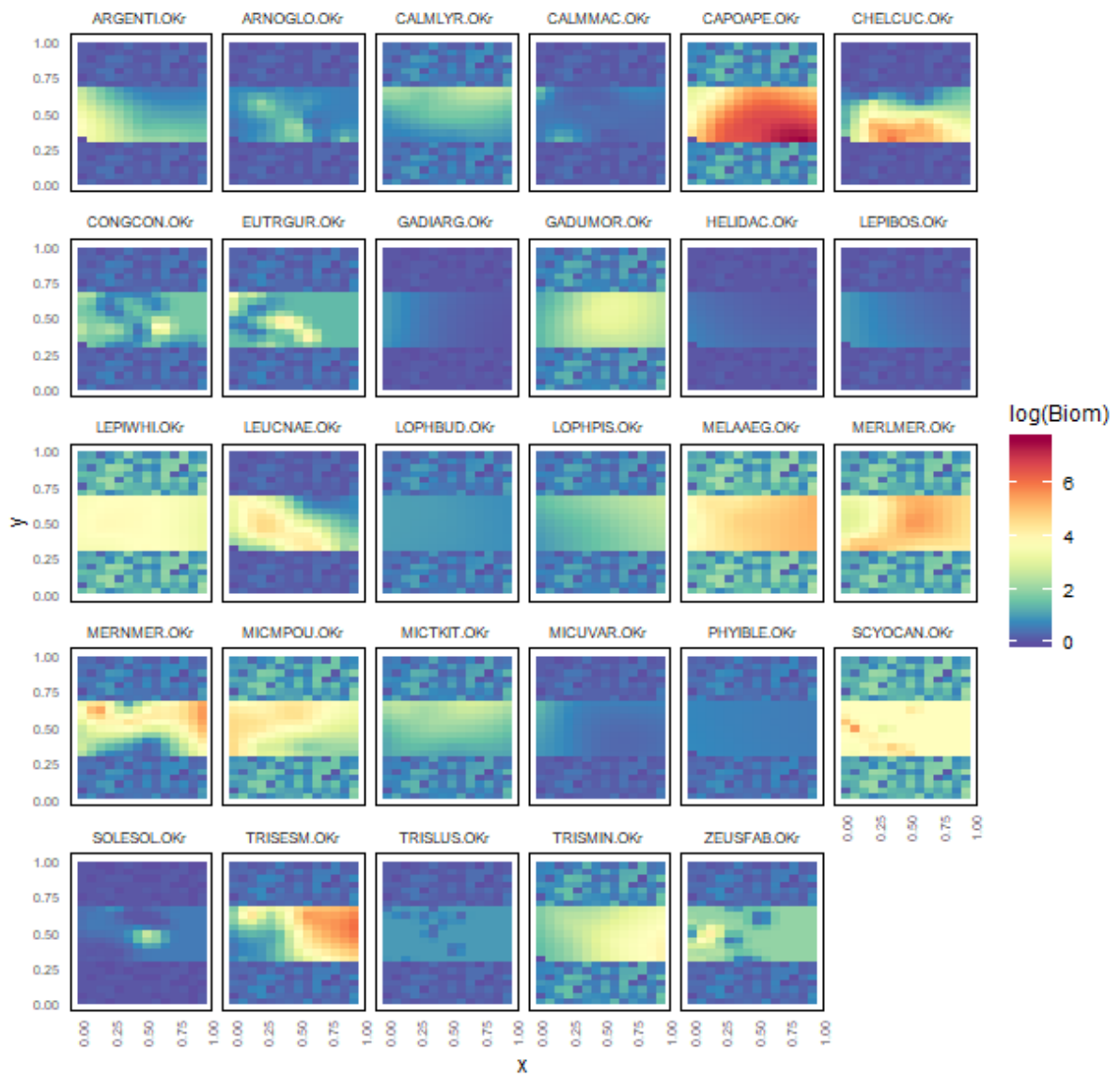


Fig. S4: Illustration of the three geographic processes considered, for *Capros aper*, using ordinary kriging. Triangle indicate the center of gravity of each figure, while circles show the center of gravity of the initial state (to which manipulations were compared). The numbers in the first figure correspond to the samples (i.e. indicators estimated after N random samples were drawn from observed data).

