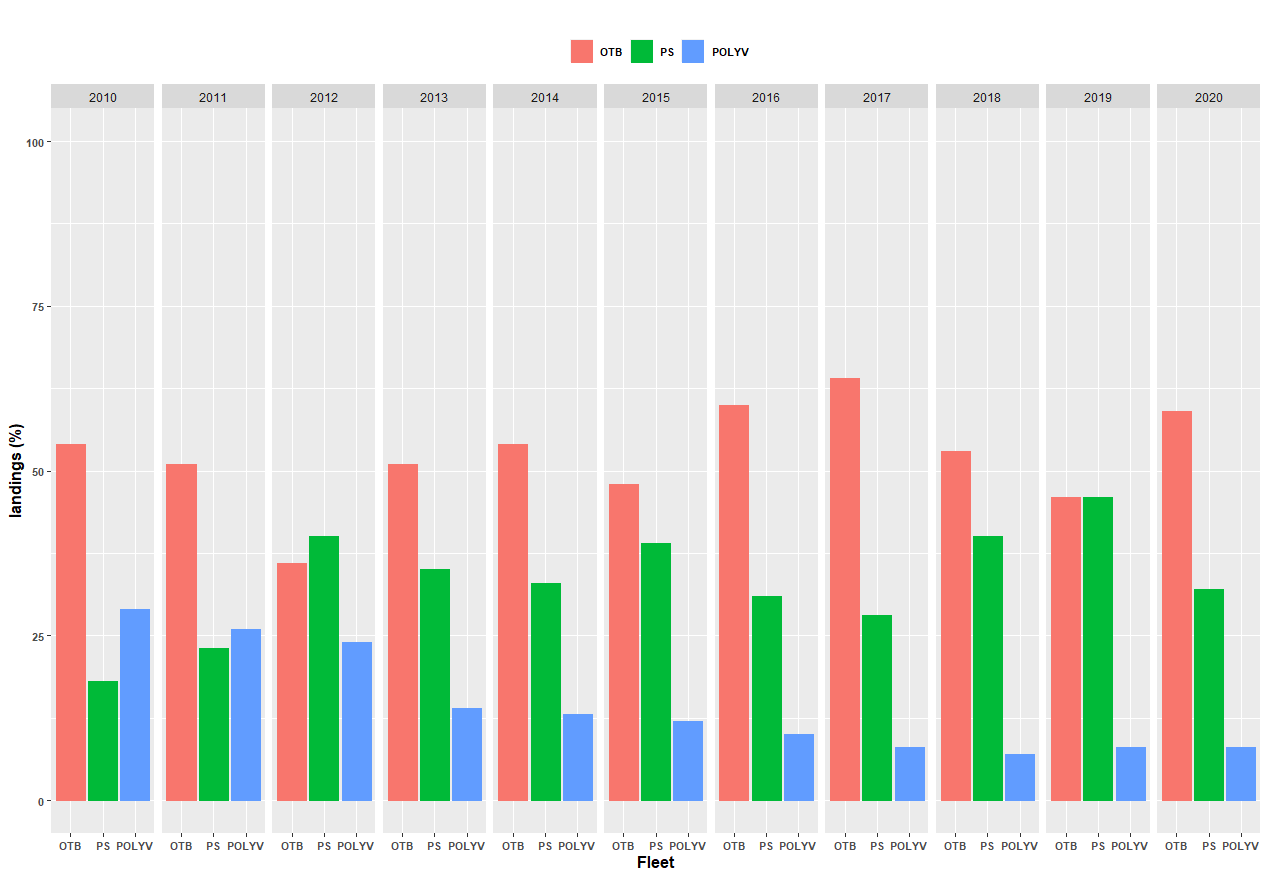
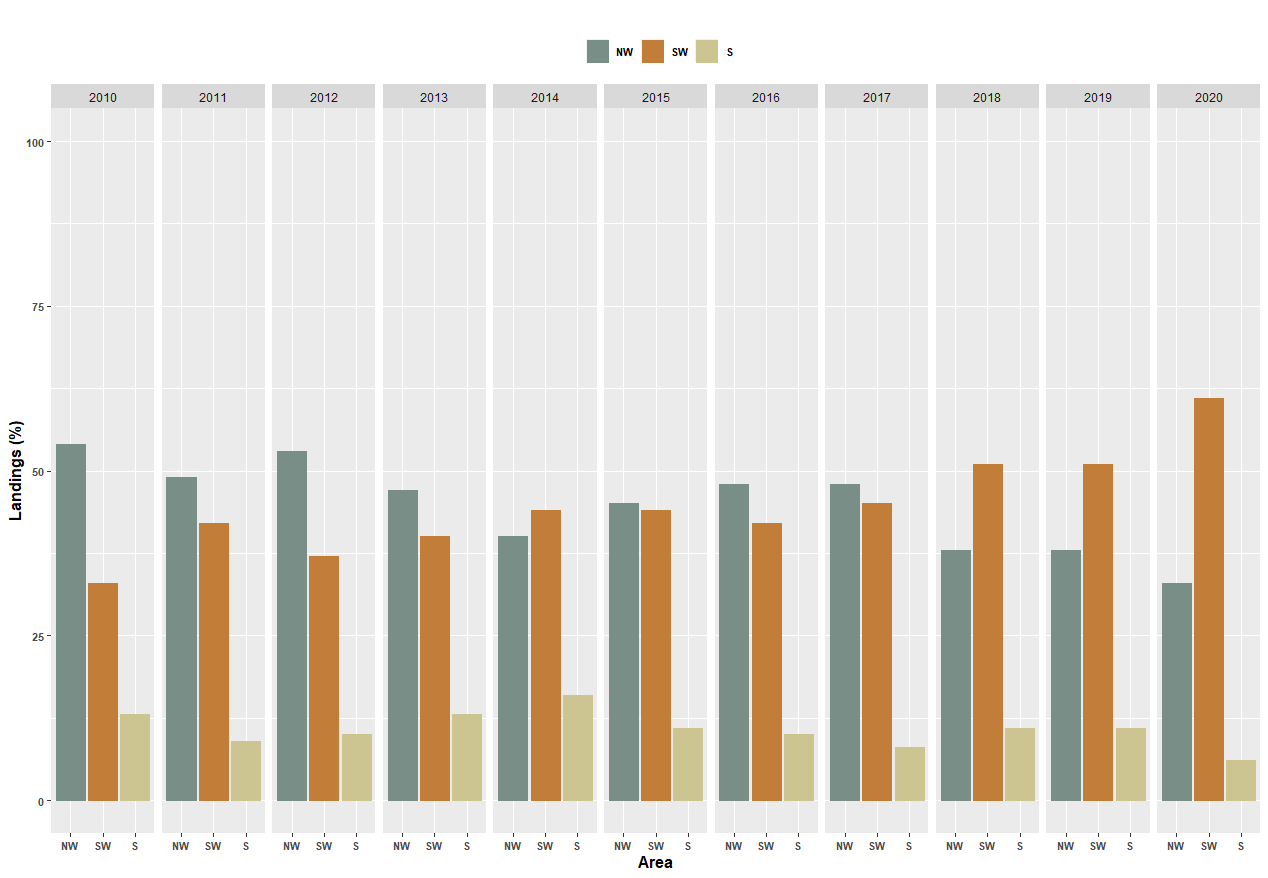
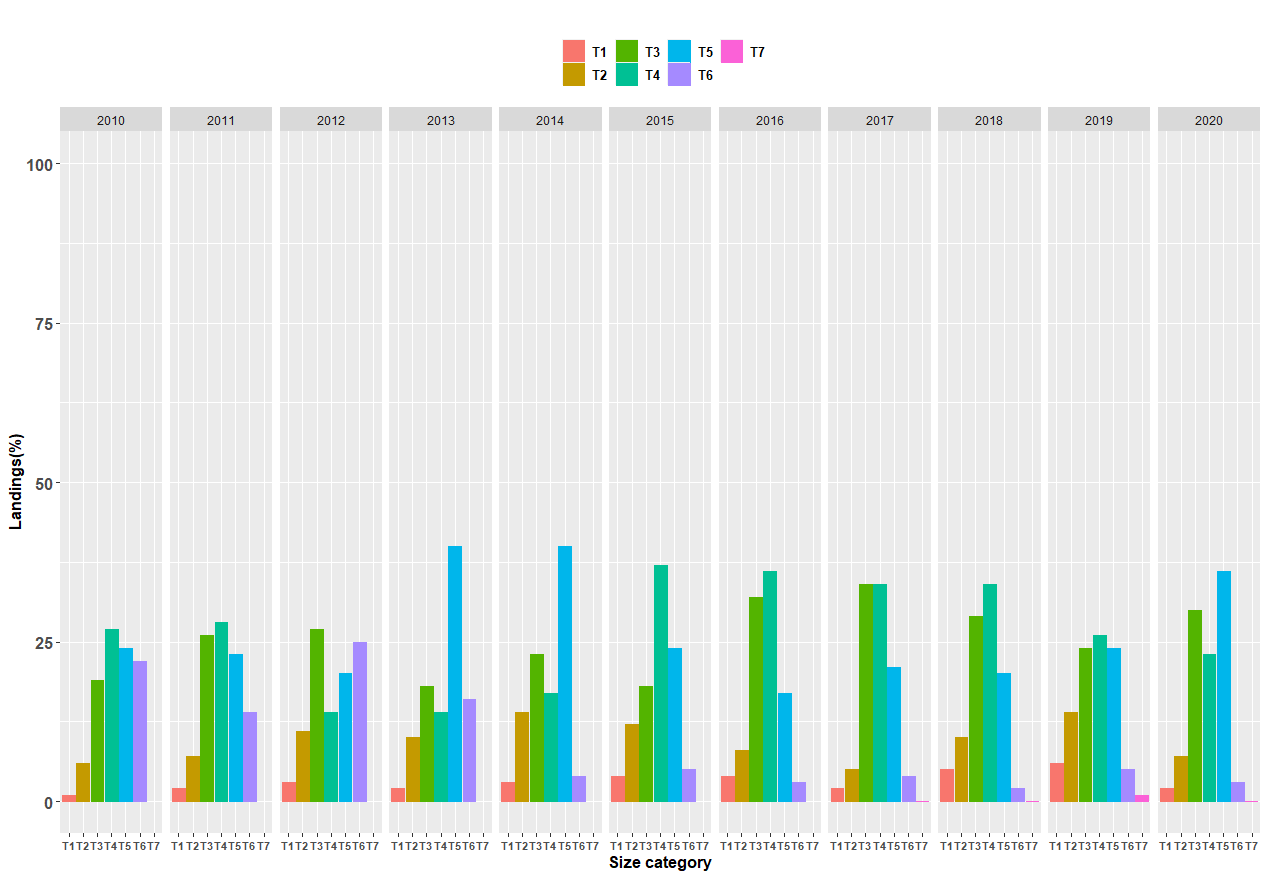
**Supplementary Materials - Data exploration**

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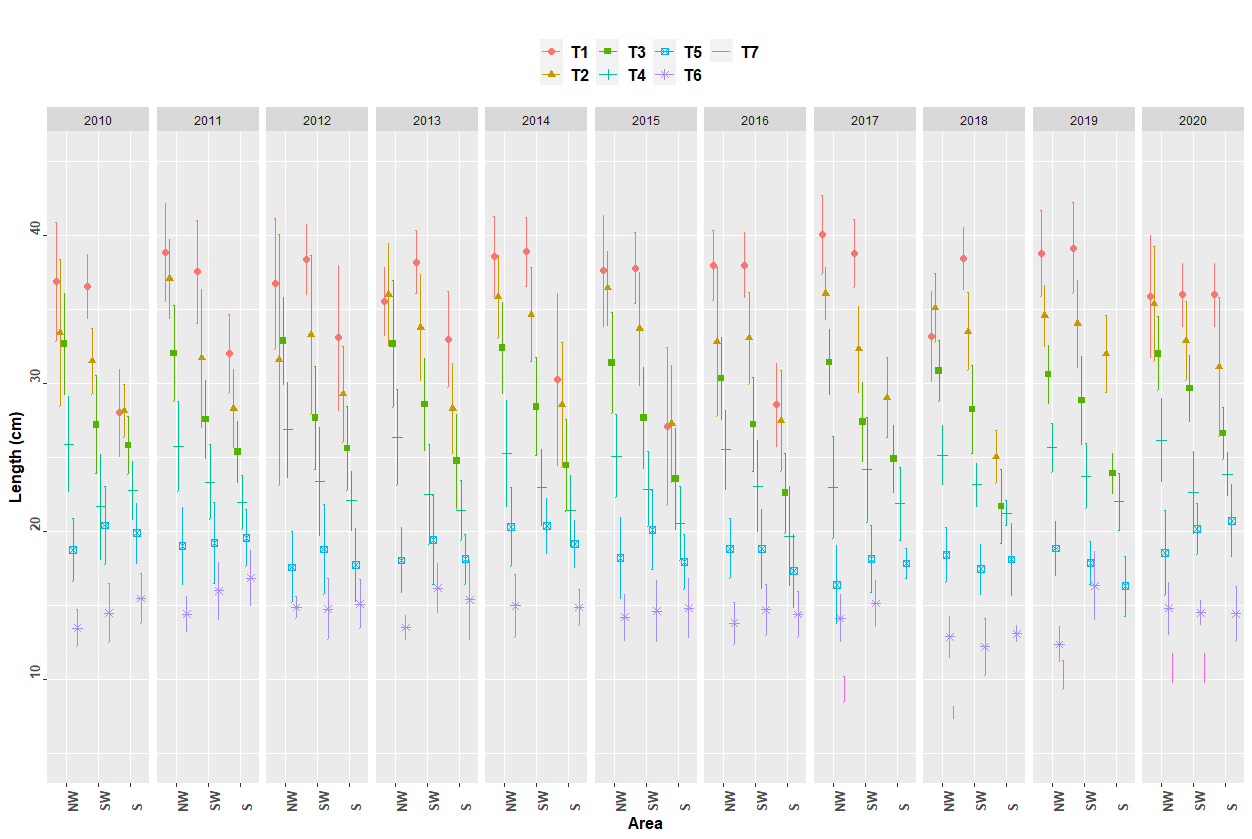
**Figure S1.** Distribution of horse mackerel landings in percentage from 2010-2020 by the primary fishing gears operating in the area: OTB – Bottom otter trawl, PS – Purse seine; Polyv – Polyvalent mixed fleet. **Bottom trawling is the dominant gear for harvesting this species.**



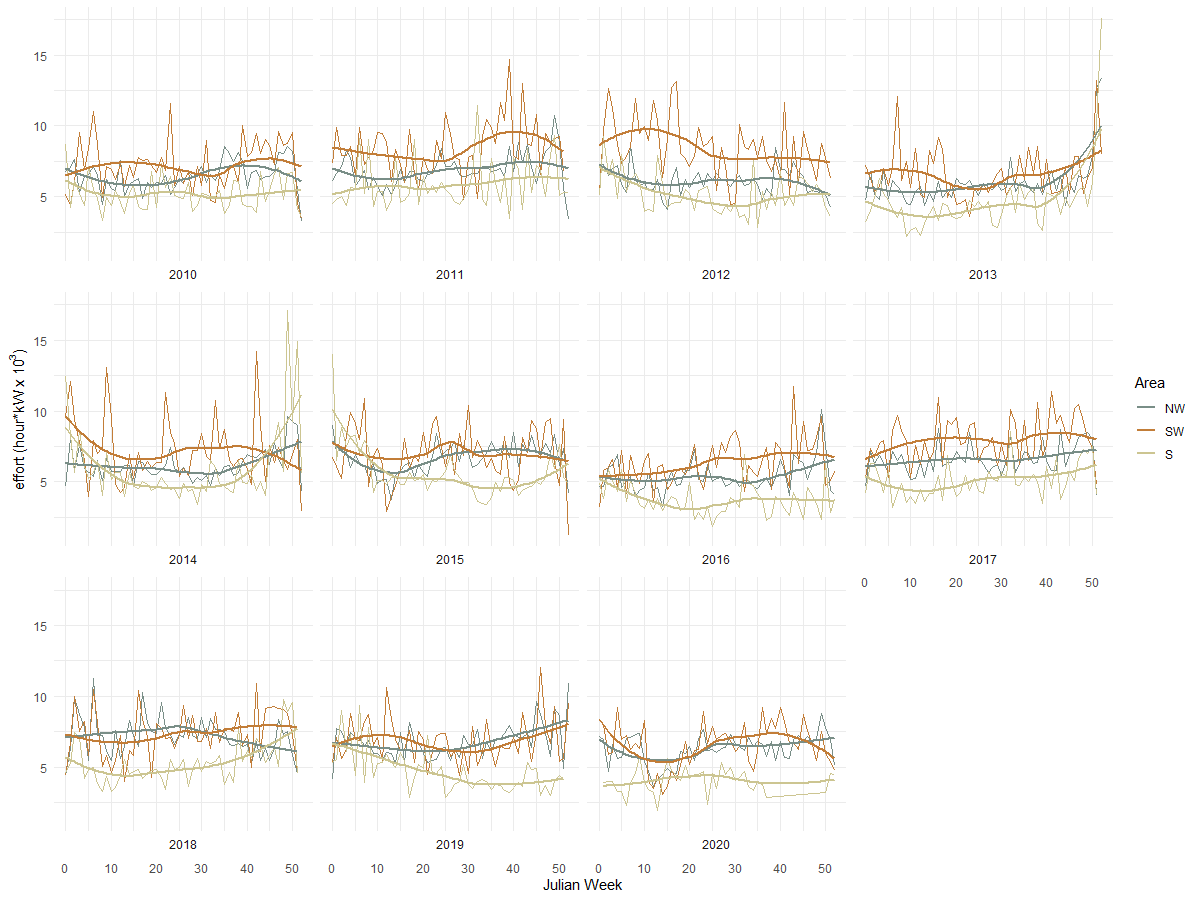
**Figure S2.** Distribution of horse mackerel landings in percentage from 2010-2020 in the three Portuguese oceanographic areas: NW – Northwest, SW- Southwest, S – South. **The bulk of horse mackerel landings are in the NW and SW areas**.



**Figure S3.** Distribution of horse mackerel landings in percentage from 2010-2020 by commercial size category from smaller size-category T7 to the larger T1. **The landings distribution is primarily from T3 to the T5. Some years with substantial landings of the smaller size-category T6 and the larger T2.**

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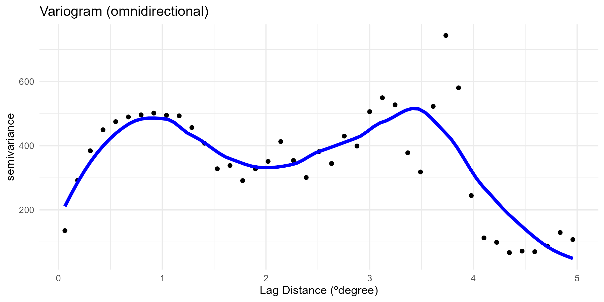
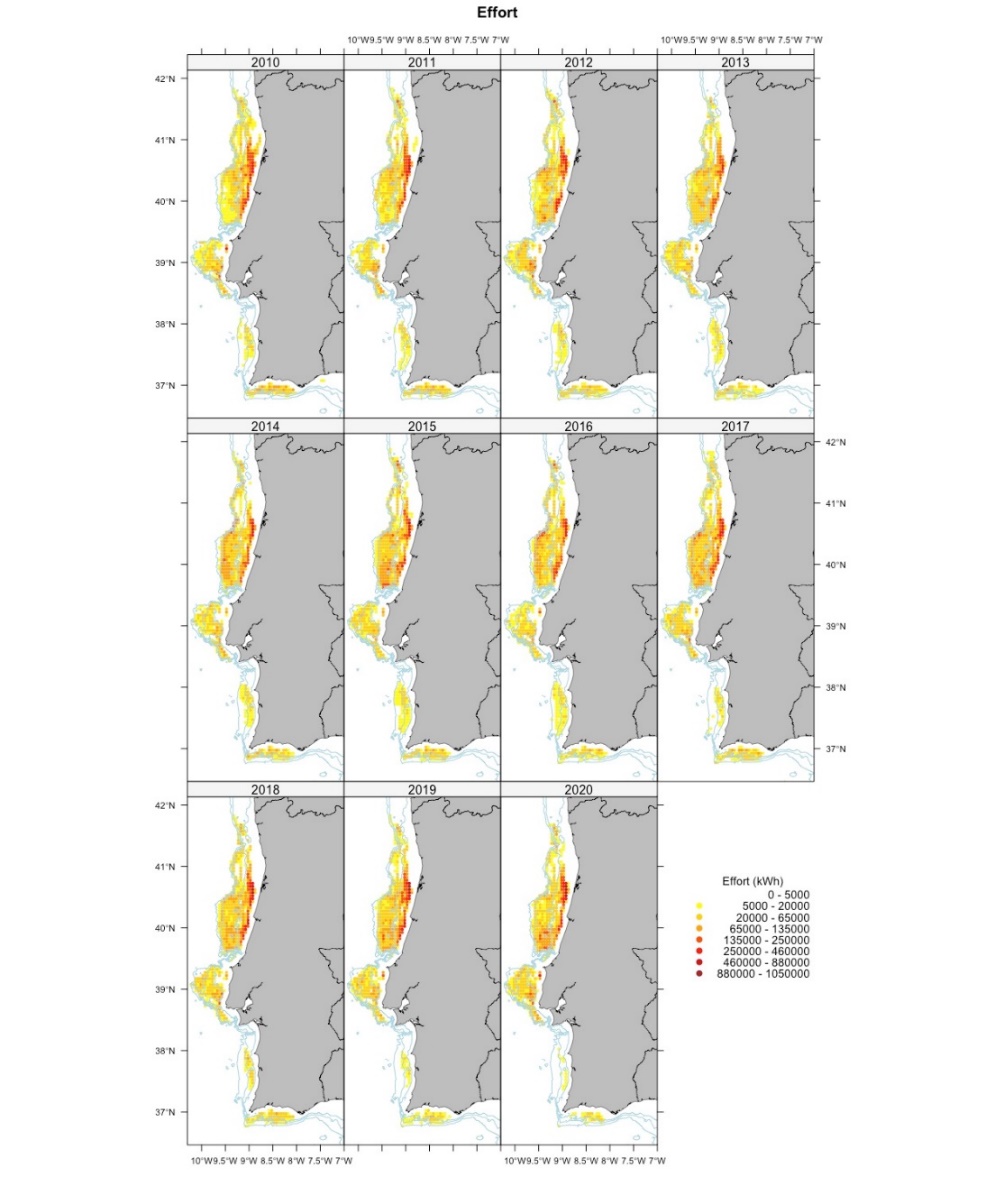
**Figure S4.** Mean length distribution by commercial size category from 2010-2020 in the NW, SW and S areas. **The mean length of horse mackerel across different size categories exhibits stability throughout the period and areas**.



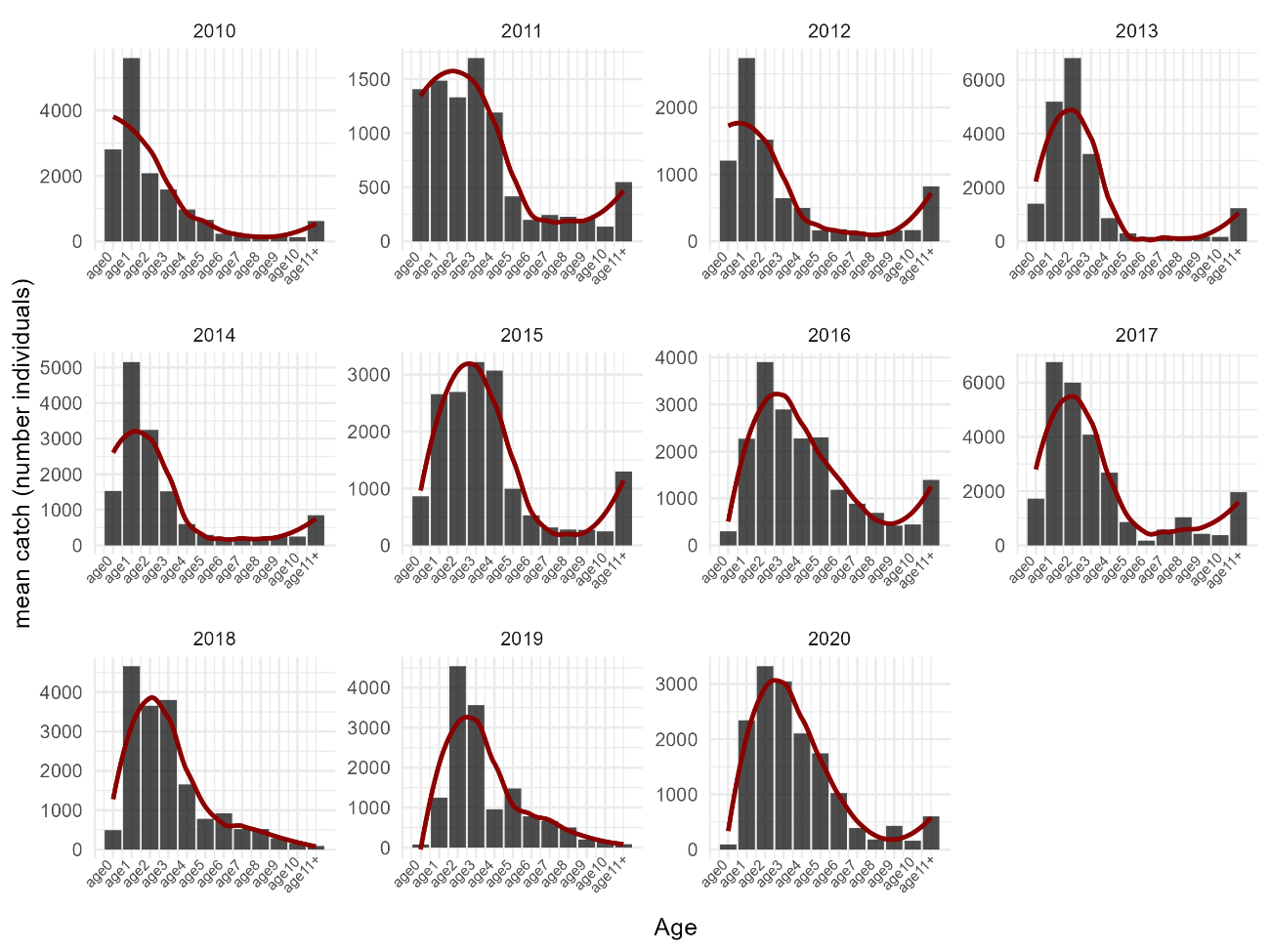
**Figure S5.** Fishing effort (hour\*kW\*103) in the Northwest (NW), Southwest (SW) and South (S) areas from 2010-2020. **Smooth curves are fitted to indicate a consistent and relatively stable effort level by Julian week and in each area.**

|  |  |
| --- | --- |
|  |  |
| (**a**) | (**b**) |

**Figure S6.**  Proportion of fishing effort (hour\*kW\*103) from 2010-2020 in (a) Northwest (NW), Southwest (SW) and South (S) areas and **(b)** depth levels, 0-100m, 101-200m and >201m. **The proportion of effort is relatively stable by depth and area from 2010-2020**



**Figure S7**. **(a)** Spatial distribution of fishing effort (hour\*kW) from 2010-2020. **(b)** Empirical variogram between all pairs of fishing effort locations, lag distance measured in degrees. **The majority of effort is localized in the NW and SW areas and effort spatial auto correlation shows evidence of a non-monotonic structure with a cyclic pattern**



**Figure S8.**  Mean catch in number of individuals by age-0 to age11+ from 2010-2020. Smoothed trends are represented by the red lines. T**he age "selectivity" shape of horse mackerel trawl fishery has demonstrated consistent trends from 2010 to 2020.**

Uma imagem com texto, diagrama, mapa

Descrição gerada automaticamente

**Figure S9.** 2010 cohort distribution from age-0 to age-10.