SEA BASS AND SEA BREAM FARMING

Application: This indicator allows seabass and seabream farmers to identify or confirm areas suitable for species growth and site operations. This index can help with the selection of potential areas to settle new farms or assist licencing applications. It can also be used as projection for climate change impact for optimal site locations.
Users: Operators and decision makers in the aquaculture sector.
Availability: One map is produced at 1km spatial resolution and is updated yearly.

FIGURE 1: OPTIMAL SITE LOCATION FOR SEABASS/SEABREAM FARMING ALONG THE MEDITERRANEAN COASTLINE

FIGURE 2: SEABASS FARMING IN THE MEDITERRANEAN SEA

Source data: Sea surface temperature from GHRSST (http://ghrsst.org) or ODYSSEA (Piolle *et al.* 2010) projects, water transparency (Secchi disk depth from Globcolour project (GlobColour, 2014)), significant wave heights from CERSAT/IFREMER (Ardhuin *et al*. 2010).

Methodology: Percentiles of the above mentioned data are computed over the previous six years. This takes into account the inter-annual variability of these parameters. Data combinations are then done to exclude the areas which do not correspond to the thresholds adapted to the species. Depth and distance to the coast can also be applied to improve the definition of optimal site locations.

Limitation: This indicator is based solely on environmental parameters (e.g. no consideration of local usages constraints at sea). Also, specific threats like diseases occurrences or jellyfishes presence cannot be considered in this optimal site location.

The algorithm developed through SAFI for optimal site location for seabass and seabream farming has proven to be well in line with already known farming sites - e.g. on the Canary Islands (Perez et al. 2005) and in the Mediterranean (Mangin et al. 2016).

References: Ardhuin F., Rogers E., et al. (2010). Semiempirical Dissipation Source Functions for Ocean Waves. Part I: Definition, Calibration, and Validation. Journal Of Physical Oceanography, 40(9), 1917-1941. / GlobColour Product User Guide (2014). http://www.globcolour.info/CDR_Docs/GlobCOLOUR_PUG.pdf
Mangin A. *et al.,* 2016 : Earth Observation as a support to marine aquaculture (sites optimization and monitoring) – the DUE-SMART project. Poster ESA LPS Prague.
Perez O.M., Telfer T.C and Ross L.G. (2005). Geographical information systems-based models for offshore floating marine fish cage aquaculture site selection in Tenerife, Canary Islands. Aquaculture Research, 2005, 36, 946-961 / Piolle J. F., Autret E., Arino O., Robinson I.S, Le Borgne P., (2010), Medspiration, toward the sustained delivery of satellite SST products and services over regional seas, ESA LPS Bergen.

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