



OPTIMAL SITE LOCATION FOR SALMON FARMING



FIGURE 1: OPTIMAL SITE SELECTION (IN GREEN)
FOR SALMON FARMS



FIGURE 2: SALMON FARMS OFF THE IRISH SOUTH WEST COAST

Application: This indicator allows salmon farmers to identify or confirm areas suitable for salmon growth. This index can help the selection of potential areas to settle new farms or assist licencing applications. It can also be used as projection for climate change impact on optimal site locations.

Users: Operators and decision makers in the aquaculture sector.

Availability: maps are produced at 1km spatial resolution with a yearly update.

Source data: Sea surface temperature from GHRSSST (<http://ghrsst.org>) or ODYSSEA (Piolle *et al.* 2010) projects, chlorophyll-a concentration from Globcolour project (GlobColour, 2014), significant wave heights from CERSAT/IFREMER (Arduin *et al.* 2010).

Methodology: The mean climatology and 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 salmon farming has proven to be well in line with location of already known farming sites.

References: Arduin 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.

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 Living Planet Symposium, Bergen. / GlobColour Product User Guide (2014). http://www.globcolour.info/CDR_Docs/GlobCOLOUR_PUG.pdf