No evidence from long-term analysis of yellowfin tuna condition that Drifting Fish Aggregating Devices act as ecological traps

Supplement 4

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The number of DFADs used in the Indian Ocean has increased during the study period (1987-2019) but no exact trend of floating objects (FOBs) number exist covering the whole period. The total number of FOBs for 2013-2019 was estimated in Baidai (2020), using the number of buoys used by the french purse seine fleets and raising factors from Katara et al. (2018) and Dupaix et al. (2021).

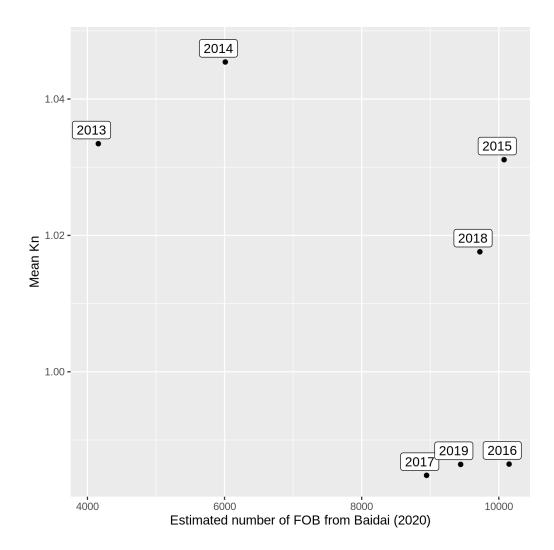


Figure S10: Relationship between the mean relative condition factor (K_n) and the mean number of floating objects (FOBs) in 2013-2019.

Using Baidai's (2020) estimation, we tested if a correlation could be observed between the mean relative condition factor (K_n) and the mean total number of FOBs in the Indian Ocean in 2013-2019

(Figure S10), using a Spearman's rank correlation test. No correlation was observed: ρ = -0.357; p.value = 0.44.

References

Baidai Y (2020) Derivation of direct abundance index for tropical tunas based on their associative behavior with floating objects. PhD, Université de Montpellier, Montpellier, France

Dupaix A, Capello M, Lett C, Andrello M, Barrier N, Viennois G, Dagorn L (2021) Surface habitat modification through industrial tuna fishery practices. ICES Journal of Marine Science 78:3075–3088.

Katara I, Gaertner D, Marsac F, Grande M, Kaplan D, Guéry L, Depetris M, Duparc A, Floch L, Lopez J, Abascal F (2018) Standardisation of yellowfin tuna CPUE for the EU purse seine fleet operating in the Indian Ocean. IOTC-2018-WPTT20-36:23.