

Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our [Editorial Policies](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a Confirmed

- The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement
- A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
- The statistical test(s) used AND whether they are one- or two-sided
Only common tests should be described solely by name; describe more complex techniques in the Methods section.
- A description of all covariates tested
- A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
- A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
- For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
Give P values as exact values whenever suitable.
- For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
- For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
- Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection PostgreSQL relational database (version 10.14-1) with the PostGIS extension for geospatial data (version 2.4.8).

Data analysis R (R Core Team, 2021) with functionalities provided by the sf (Pebesma, 2018) and tmap (Tennekes, 2018) packages.

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our [policy](#)

EU purse-seine fishing effort data were obtained from public catch-effort datasets available from the Indian Ocean Tuna Commission (<https://iotc.org/data/datasets/latest/CESurface>) and the International Commission for the Conservation of Atlantic Tunas (https://iccat.int/Data/t2ce_PS91-18_bySchool.7z). Data on port locations, sizes and characteristics used in this paper were obtained from the World Port Index (WPI) database provided by the National Geospatial-Intelligence Agency (<https://msi.nga.mil/Publications/WPI>). Given the confidential nature of the dFAD trajectory data used in this paper, requests for data access should be addressed directly to the Ob7 (<https://www.ob7.ird.fr/en>) pelagic ecosystem observatory using the following email address: adm-dblp@ird.fr.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

Life sciences Behavioural & social sciences Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf](https://www.nature.com/documents/nr-reporting-summary-flat.pdf)

Ecological, evolutionary & environmental sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	We analyzed dFAD trajectories in the Indian and Atlantic Oceans from 2012–2018 to assess loss of dFADs from core fishing grounds.
Research sample	>80,000 dFAD trajectories (56,263 tracking buoys) in the Indian and Atlantic Oceans from 2012–2018 for the French tropical tuna purse seine fleet.
Sampling strategy	All available data over the study period was used.
Data collection	dFAD trajectory data were made available to the IRD/MARBEC from 2007 onward through a collaborative agreement between the French National Research Institute for Sustainable Development (IRD) and the French frozen tuna producers' organization ORTHONGEL
Timing and spatial scale	2012-2018; tropical Atlantic and Indian Oceans
Data exclusions	Data were classified using a random forest classification algorithm to remove onboard positions and the resulting in water trajectories were limited to those >2 days in length to remove small trajectories created by classification errors at the beginning and end of much larger in water trajectories.
Reproducibility	All code for analyses is contained in a single Rmarkdown document.
Randomization	All trajectory data were used and there was no need for randomization.
Blinding	Not relevant for the type of trajectory and fishing effort data being analyzed.
Did the study involve field work?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involvement in the study
<input checked="" type="checkbox"/>	<input type="checkbox"/> Antibodies
<input checked="" type="checkbox"/>	<input type="checkbox"/> Eukaryotic cell lines
<input checked="" type="checkbox"/>	<input type="checkbox"/> Palaeontology and archaeology
<input checked="" type="checkbox"/>	<input type="checkbox"/> Animals and other organisms
<input checked="" type="checkbox"/>	<input type="checkbox"/> Human research participants
<input checked="" type="checkbox"/>	<input type="checkbox"/> Clinical data
<input checked="" type="checkbox"/>	<input type="checkbox"/> Dual use research of concern

Methods

n/a	Involvement in the study
<input checked="" type="checkbox"/>	<input type="checkbox"/> ChIP-seq
<input checked="" type="checkbox"/>	<input type="checkbox"/> Flow cytometry
<input checked="" type="checkbox"/>	<input type="checkbox"/> MRI-based neuroimaging