Dataset details

Title:

ABARES Fisheries Status Report map data: All Fisheries combined (ALLFSY): fishing intensity and maximum area fished, annual map data for 2010 to 2020

Alternate title:
ALLFSY 2010-2020
ABARES Fisheries Status Reports map data, 2010 to 2020

Date published:
2021-10-13 T10:00:00

Abstract:
This dataset presents maps of fishing intensity and maximum area fished of ocean waters of all Australian Government-managed fisheries combined (ALLFSY).

The data were prepared as part of the annual ABARES Fishery Status Report series, which provides an independent evaluation of the biological and economic status of fish stocks managed solely or jointly by the Australian Government. The data were produced by ABARES from data supplied by the Australian Fisheries Management Authority (AFMA).

The data are presented annually, by calendar year.

The data are polygon vector format, stored in an ESRI file geodatabase, prepared using ArcGIS Desktop ArcMap version 10.6.

Fishing intensity is defined as the total catch within a given year, divided by the total area fished in square kilometres. Fishing intensity is presented as classified data in low, medium and high intensity classes. The data attributes include the class, the range of values in the class and the unit of measure. The classification used may vary from year to year, depending on a range of environmental and economic factors.

Maximum area fished is defined as the maximum area within which fishing occurred during a given fishing season as polygon cells of one degree of longitude by one degree of latitude (approximately 111 kilometres x 111 kilometres). A cell is included if any fishing activity occurred anywhere within that one degree by one degree cell. Note that cells included in this dataset may also partially cover land.

The data supplied by AFMA were filtered to remove activity by fewer than five boats within the area of analysis in order to conform with AFMA's Information Disclosure Policy (https://www.afma.gov.au/about/fisheries-management-policies/information-disclosure-fisheries-management-paper).

The Australian Government-managed fisheries included in this dataset are:

- Bass Strait Central Zone Scallop Fishery (BSCZSF)
- Coral Sea Fishery (CSF)
- Eastern Tuna and Billfish Fishery (ETBF)
- Northern Prawn Fishery (NPF)
- North West Slope Trawl Fishery (NWSTF)
- Small Pelagic Fishery (SPF)
- Southern and Eastern Scalefish and Shark Fishery Sectors (SESSF):
  - SESSF Commonwealth Trawl Sector, Danish seine sub-sector (SCDS)
  - SESSF Commonwealth Trawl Sector, Squid Catch (SCSQ)
  - SESSF Commonwealth Trawl Sector, Trawl sub-sector (SCTR)
  - SESSF East Coast Deepwater Trawl Sector (SECD)
  - SESSF Scalefish Hook Sector (SSCK)
  - SESSF Great Australian Bight Trawl Sector (SGAB)
  - SESSF Gillnet Hook & Trap Sector, Shark Hook sub-sector (SSKK)
  - SESSF Gillnet Hook & Trap Sector, Shark Net sub-sector (SSKN)
- Southern Bluefin Tuna Fishery (SBTF)

- Southern Squid Jig Fishery (SSJF)
- Torres Strait Prawn Fishery (TSPF)
- Western Deepwater Trawl Fishery (WDWTF)
- Western Tuna and Billfish Fishery (WTBF)

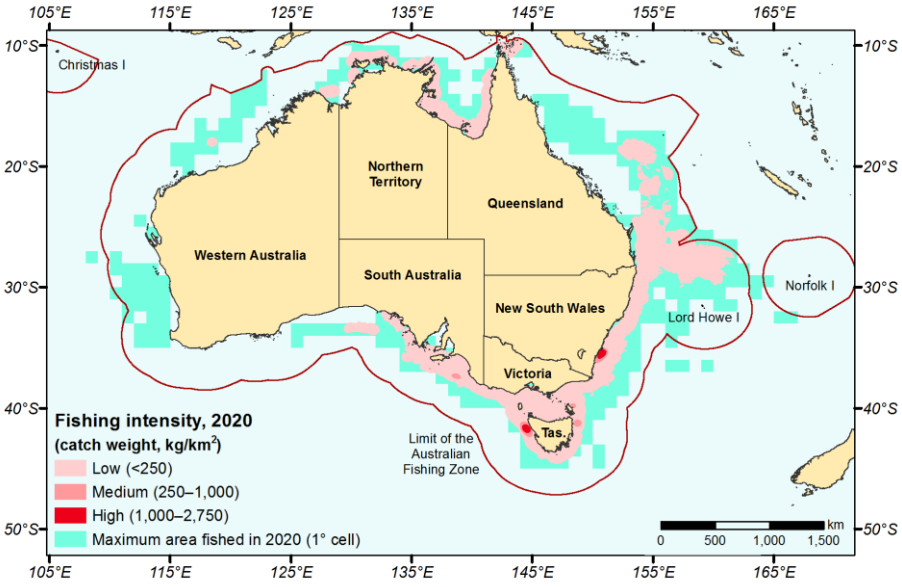
Data from the following fisheries are not included:
- Norfolk Island Fishery (inactive fishery)
- Heard Island and McDonald Islands Fishery (HIMI) (fishery assessed by the Australian Antarctic Division)
- Macquarie Island Toothfish Fishery (MITF) (fishery assessed by the Australian Antarctic Division)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) exploratory toothfish fisheries
- Torres Strait Finfish Fishery (no data collection)
- Torres Strait Tropical Rock Lobster Fishery (no data collection)
- Torres Strait Bêche-de-mer and Trochus Fisheries (no data collection)
- South Tasman Rise Trawl Fishery (inactive fishery)
- Skipjack Tuna Fishery (inactive fishery)

Cataloguing data
This publication (and any material sourced from it) should be attributed as: ABARES 2021, ABARES Fisheries Status Report map data: All Fisheries combined (ALLFSY): fishing intensity and maximum area fished, annual map data for 2010 to 2020. ABARES, Canberra, October. CC BY 4.0. https://doi.org/10.25814/42hd-fe35

This file geodatabase contains two sets of feature classes:

1. A feature class for relative fishing intensity for all Australian-Government managed fisheries combined for each calendar year from 2010 to 2020. These data are identified as ALLFSY_rfi_<year>.
2. A feature class for the maximum area of waters fished by all Australian-Government managed fisheries combined for each calendar year from 2010 to 2020. These data are identified as ALLFSY_fp_<year>.

Relative fishing intensity feature classes (“layers”) show the relative fishing intensity in three size classes: Low, Medium and High in terms of catch weight. These layers have been filtered to preserve confidentiality and only show areas where five or more fishing boats operated.
Maximum area of waters fished layers show the maximum extent of fishing at a resolution of one degree (111 km x 111 km).



Example map of All Fisheries combined showing relative fishing intensity and maximum area of waters fished.

Descriptive information

Attribute data
1. Relative fishing intensity layers (ALLFSY_rfi_<year>)
Gridcode: 1, 2, 3. Output from the reclassification process (see below). Translated into text in RelativeIntensity (see below)
Feature: Catch. Total catch in kg across all fisheries combined per calendar year.
RelativeIntensity: Low, Medium or High
Range: The range of fishing intensity in each relative intensity class. For example, “Low” = combined catch of <500 kg per km^2 .
Units: kg/km^2
Season: Calendar year.

2. Maximum area fished (ALLFSY_fp_<year>)
TotalAreaFished: Calendar year

Author(s) and/or Stakeholder(s):
Acknowledgements: These data were produced by Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) within the Australian Government Department of Agriculture, Water and the Environment from fishing logbook data compiled and provided by the Australian Fisheries Management Authority (AFMA).

Constraints

LEGAL CONSTRAINTS ASSOCIATED WITH THE MATERIAL

Limitation on the use of the material:
The Australian Government acting through ABARES has exercised due care and skill in the preparation and compilation of the information and data set out in this publication. Notwithstanding, ABARES, its employees and advisers disclaim all liability, including liability for negligence, for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon any of the information or data set out in this publication to the maximum extent permitted by law.

Constraints on using the material:
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Additional information about this material

Purpose for which the material was obtained:
The primary purpose for which these data were collected was for fisheries management by the Australian Fisheries Management Authority of behalf of the Australian Government. It is widely recognised that these data have many other uses, including mapping patterns of activity by Australian fishers. The oil and gas industry find these data useful for planning their operations.

The data are usable across a range of scales from 1:1 000 000 to 1:20 000 000.

Progress status of this material:
Completed
Maintenance and Update Frequency:
Annual

KEYWORD(S)

ANZLIC Search Words:
FISHERIES
FISHERIES Management
FISHERIES Marine
FISHERIES Maps
FISHERIES Reports
FISHERIES Research
INDUSTRY Primary
MARINE
MARINE Human Impacts

General Keywords:
ABARES Fishery Status Reports

TOPICS

ABARES Topic categories:
Fisheries and Aquaculture
Environment and Natural Resource Management
Spatial Data and Datasets

ISO topic categories:
Fisheries
Oceans
Environment

SPATIAL EXTENT(S)

Extent

Description of spatial extent:
Australian Exclusive Economic Zone and adjacent areas of the high seas.

Spatial bounding box included in:
North: -9.0 degrees; South: -49.0 degrees; East: 99.0 degrees; West: 167.0 degrees.

Spatial area included in:
Australian Exclusive Economic Zone (EEZ), including EEZs around Lord Howe Island, Norfolk Island, Cocos (Keeling) Islands, Christmas Island and adjacent areas of the high seas.

Projection:
EPSG/WKID:: 4283
Coordinate reference details: Well-Known Text:

```
GEOGCS["GDA94",
    DATUM["Geocentric_Datum_of_Australia_1994",
        SPHEROID["GRS 1980",6378137,298.257222101,
            AUTHORITY["EPSG","7019"]],
        TOWGS84[0,0,0,0,0,0,0],
        AUTHORITY["EPSG","6283"]],
    PRIMEM["Greenwich",0,
        AUTHORITY["EPSG","8901"]],
    UNIT["degree",0.0174532925199433,
        AUTHORITY["EPSG","9122"]],
    AUTHORITY["EPSG","4283"]]
```

RESPONSIBILITY FOR THIS MATERIAL

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PROCESS USED TO GENERATE THIS MATERIAL

Lineage Statement

Lineage:
ABARES has produced these data from data supplied by the Australian Fisheries Management Authority (AFMA) which were compiled from entries in the daily fishing logs kept by Australian Government-licenced fishers.

The relative fishing intensity data were processed using algorithms in Esri ArcGIS 10.X Spatial Analyst. A kernel density algorithm was used to obtain the intensity of fishing, a point statistics algorithm to obtain the number of boats that fished within a radius of 50 km of each fishing operation and to remove areas where fewer than five boats operated over the course of the calendar year and a reclassification algorithm to classify the results into three size classes: “Low”, “Medium” and “High”. As far as possible the size classes have been kept the same from one year to the next to allow for comparisons between years, but this has not always been possible.

As little cleaning of the data has been carried out as possible. Operations on land and single operations recorded as being outside the management area and/or far removed from the main body of operations, especially where they are in water depths unlikely to have been fished, have been removed from the data. Such data points are automatically excluded from the relative fishing intensity data through the five-boat filtering process.

Positional Accuracy:
Most fishing operations take place over large areas of the ocean. There are many factors affecting the positional accuracy of these data. which include the point during the fishing operation the skipper noted the geographical position, the possibility of typographic error during data entry on board the fishing vessel and typographic or transcription error during transcription of the data from logbook into database at AFMA. The introduction of electronic logs has reduced the potential for typographic and transcription errors substantially.

In 2010 5.5% of records were submitted using e-logs; in 2019, nearly 85% of records were submitted using e-logs. It is therefore assumed each fishing operation was within 25 km within its reported location.

Attribute Accuracy:
1. Relative fishing intensity layers (ALLFSY_rfi_<year>)

The attributes represent the result of geoprocessing operations on data entered into fishery logbooks. They are therefore assumed to have been checked by AFMA and are therefore accurate, though it is acknowledged that errors in catch and effort reporting do also occur.

2. Maximum area fished (ALLFSY_fp_<year>)

The attributes combine a single field on fishing season.

Logical Consistency:
All polygon datasets have been checked for topological consistency.

Completeness:
Complete.

Information about the product description

Parties responsible for description

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Additional Metadata

References

ABARES Fishery Status Reports are published annually on the ABARES website:
https://doi.org/10.25814/qvv9-da24

Users of these data are strongly recommended to consult the Fishery Status Report for the year or years of interest.