



SIOFA | APSOI

Southern Indian Ocean Fisheries Agreement  
Accord relatif aux Pêches dans le Sud de l'Océan Indien

SC-08-INFO-11

## 8<sup>th</sup> Meeting of the Scientific Committee (SC8)

Tenerife, Spain, 22-31 March 2023

### SC-08-INFO-11

#### Summary of catch and effort (main target species and effort by gear type) in IMMA areas and the IMMA management that might be recommended for SIOFA

The SIOFA Secretariat

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<b>Abstract</b>	
<p>At its 7<sup>th</sup> meeting in 2022, the SIOFA SC recommended “the MoP, if it agrees to engage with the IMMA designation process, to REQUEST the Secretariat to obtain shape files for the IMMA regions and to summarise catch and effort (main target species and effort by gear type) and the IMMA management that might be recommended for SIOFA. The shape files should be distributed to CCPs for their consideration as well.” (para 175 of the <a href="#">SC7 Report</a>).</p> <p>At its 9<sup>th</sup> meeting in 2022, the Meeting of the Parties noted that the shape files had been acquired and were available on demand, and requested the Secretariat to seek further information about the required steps for participation in the IMMA designation process and present the information to the SC8 meeting and the 10th Meeting of the Parties (para 84 of the <a href="#">MoP9 Report</a>).</p> <p>Catch within IMMA areas was mostly taken in SIOFA subarea 3b, with only a minor contribution of subarea 7 and no catch from subarea 6. Catch within IMMA areas was dominated by toothfish and other species associated with the toothfish fishery. Fishing effort within the IMMA areas was dominated by longline activities, while trawl effort was either negligible or absent.</p> <p>SIOFA can engage in the designation process, particularly through participation in the workshops described in Stage 2, through relevant national experts. Participation requires following relevant public calls for information announcements made 4-6 months in advance of regional expert IMMA workshops, which are focusing on the Indian Ocean region. These are advertised on the main page of the Marine Mammals Protected Areas Task Force: <a href="https://www.marinemammalhabitat.org/">https://www.marinemammalhabitat.org/</a></p>	

<sup>1</sup> Restricted documents may contain confidential information. Please do not distribute restricted documents in any form without the explicit permission of the SIOFA Secretariat and the data owner(s)/provider(s).

<sup>2</sup> Confidential documents contain confidential information and will only be accessible to HoDs.

## Background

Important Marine Mammal Areas (IMMAs) are defined as discrete portions of habitat, important to marine mammal species, that have the potential to be delineated and managed for conservation.

At its 7<sup>th</sup> meeting in 2022, the SIOFA SC recommended “the MoP, if it agrees to engage with the IMMA designation process, to REQUEST the Secretariat to obtain shape files for the IMMA regions and to summarise catch and effort (main target species and effort by gear type) and the IMMA management that might be recommended for SIOFA. The shape files should be distributed to CCPs for their consideration as well.” (para 175 of the [SC7 Report](#)).

At its 9<sup>th</sup> meeting in 2022, the Meeting of the Parties noted that the shape files had been acquired and were available on demand, and requested the Secretariat to seek further information about the required steps for participation in the IMMA designation process and present the information to the SC8 meeting and the 10th Meeting of the Parties (para 84 of the [MoP9 Report](#)).

## Aims

This paper aims to summarize the catch and effort (main target species and effort by gear type) in current IMMA areas and outline the steps for participation in their designation process.

## Summary of catch and effort (main target species and effort by gear type) in existing IMMA areas

Existing IMMA areas boundaries were requested from the Marine Mammals Protected Areas Task Force (<https://www.marinemammalhabitat.org/>).

Only IMMA areas that fall under the SIOFA jurisdiction (i.e. overlap, even in part, with the SIOFA area) were included in the assessment (Figure 1). Areas of Interest or cIMMAs were not included in this assessment, as these have not undergone the same level of scientific peer review as the fully IMMAs. To gain full IMMA status, cIMMA would still need to undergo a peer-reviewed/published scientific process that provides the evidence that they fully satisfy at least one of the IMMA Selection Criteria (<https://www.marinemammalhabitat.org/immas/imma-criteria/>).

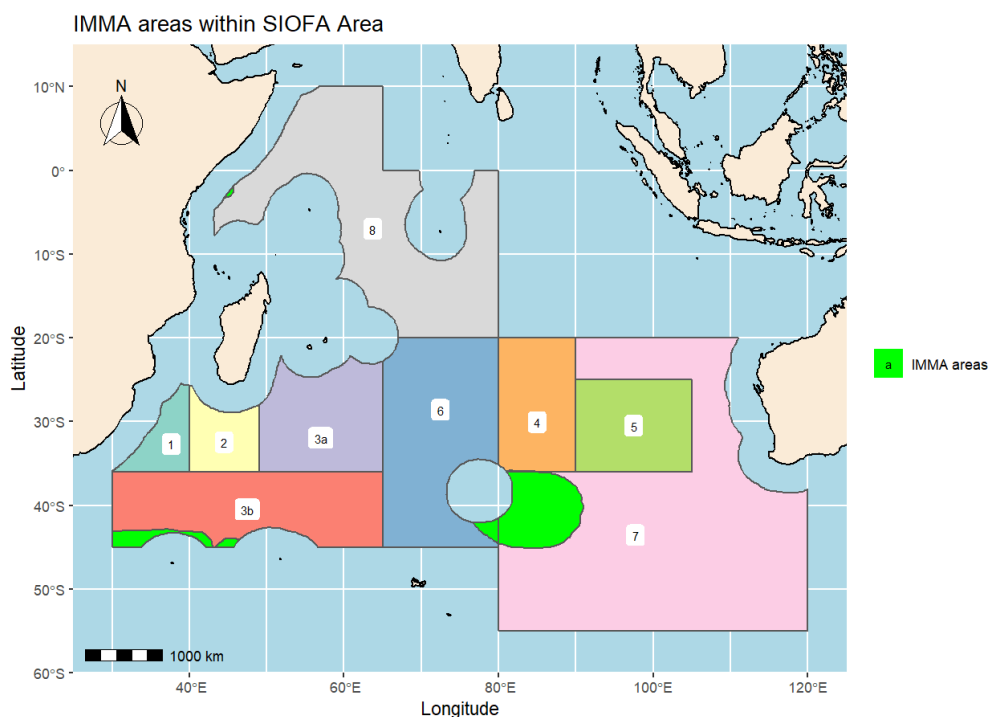


Figure 1 – Important Marine Mammal Areas (IMMAs, in green) overlapping with the SIOFA convention area (source: SIOFA and Marine Mammals Protected Areas Task Force spatial layers)

Fishing activities data were taken from the SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2020. Fishing activities were selected based on their position, i.e. only those activities that overlapped IMMA areas were retained in the analysis.

All analyses were performed using R statistical software (R Core Team, 2021).

### Catch

Catch within IMMA areas was mostly taken in SIOFA subarea 3b, with only a minor contribution of subarea 7 and no catch from subarea 6 (Figure 2).

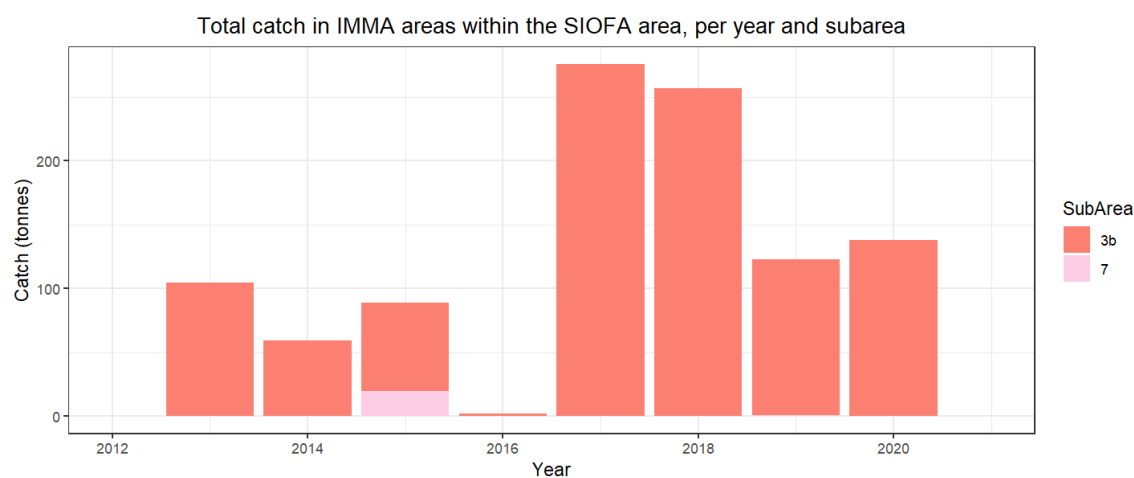


Figure 2 – Total catch (in tonnes) within IMMA areas, by SIOFA subarea and year (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2020)

Catch within IMMA areas was dominated by toothfish and other species associated with the toothfish fishery (Figure 3).

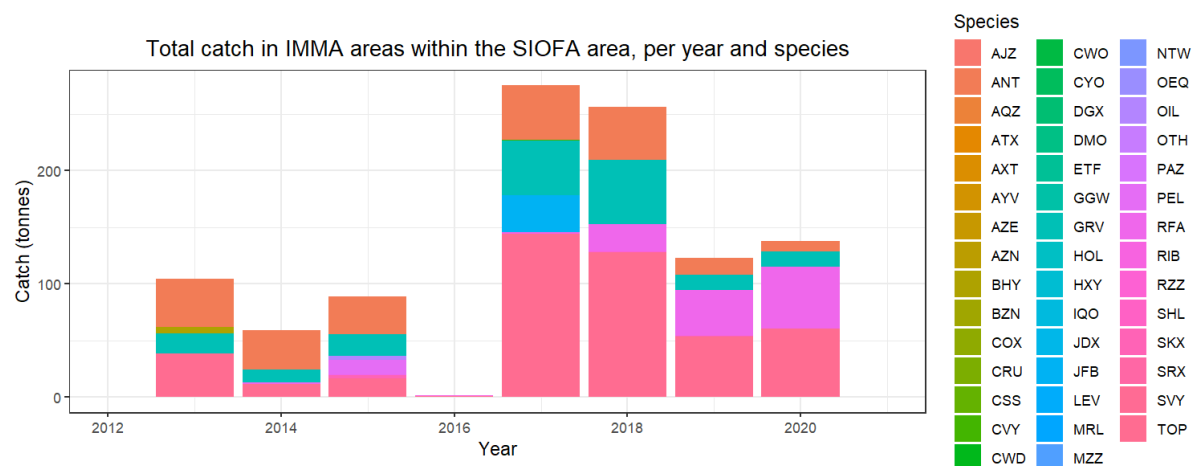


Figure 3 – Total catch (in tonnes) within IMMA areas, by species and year (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2020)

## Effort

Fishing effort within the IMMA areas was dominated by longline activities, while trawl effort was either negligible or absent (Figure 4).

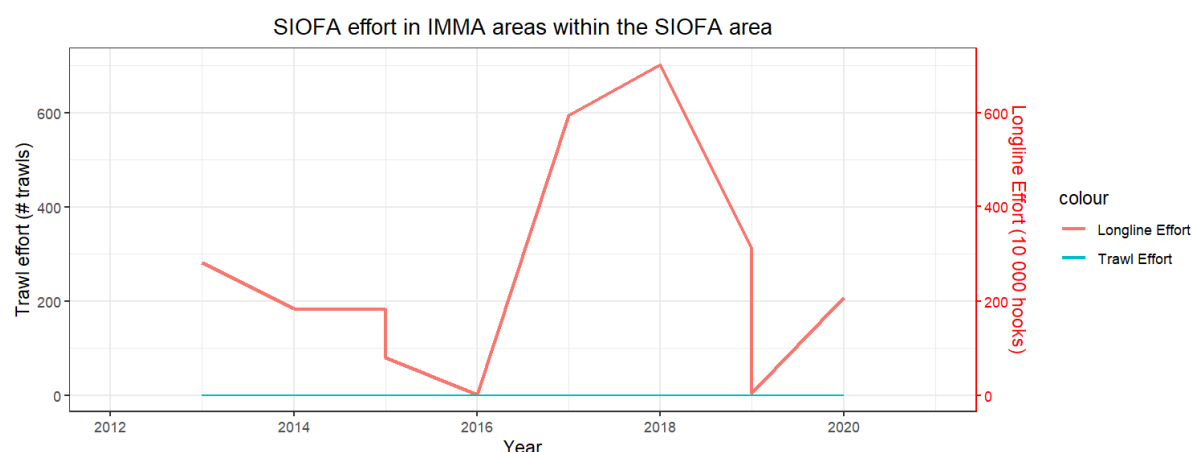


Figure 4 – Longline effort (right vertical axis, in red) and trawl effort (left vertical axis, in blue) within IMMA areas inside the SIOFA area, by year (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2020)

Longline effort within IMMA areas, was mostly directed in subarea 3b, with occasional and intermitted effort being directed in subarea 7 (Figure 5).

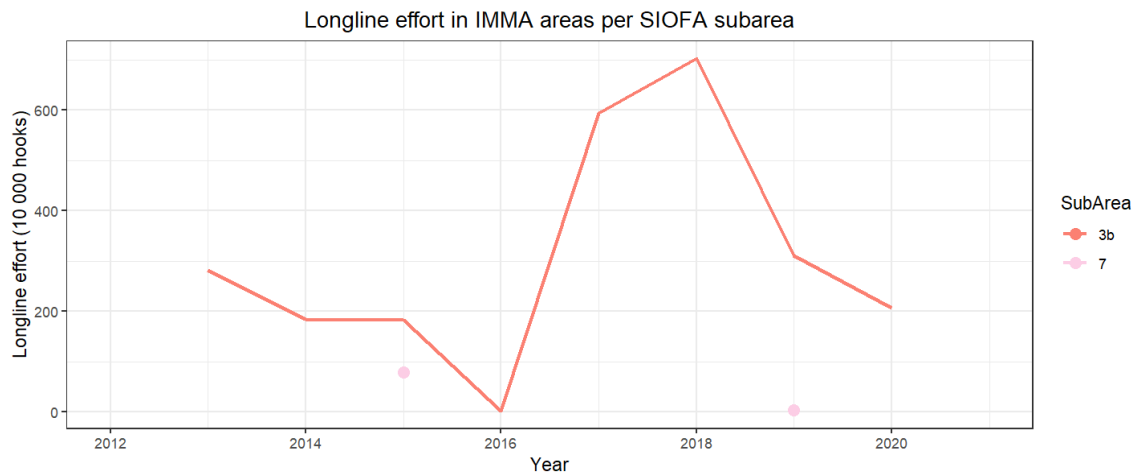


Figure 5 – Longline effort in IMMA areas by year, separated by SIOFA subareas (source: SIOFA AggregatedCatchEffort and HBHCatchEffort databases 2013–2020)

## IMMAs criteria and decision-making process

### IMMA criteria

From <https://www.marinemammalhabitat.org/immas/imma-criteria/>

The IMMA concept, developed by the IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force ('MMPA Task Force' or 'Task Force'), is modelled on the successful example of the BirdLife International process for determining 'Important Bird and Biodiversity Areas' (IBAs). After extensive scientific and public consultation between 2013-2015, eight criteria or sub-criteria, divided into four main categories were developed. These criteria and sub-criteria are meant to capture critical aspects of marine mammal biology, ecology and population structure and they encompass vulnerability, distribution, abundance, special attributes and key life cycle activities. These criteria are not hierarchical in design, but it is advised that prospective IMMAs are assessed against each criterion sequentially in the given order. Therefore, any candidate need only satisfy one of the listed criteria and/or sub-criteria to successfully qualify for IMMA status. Though they cover a range of important attributes, and redundancies between them have been removed, there are some overlaps in the differing criteria that remain to assist assembled experts to identify IMMAs efficiently from that evidence best available.

A brief outline of the IMMA selection criteria are as follows below, and the full guidance document on the use of selection criteria for the identification of Important Marine Mammal Areas (IMMAs) is [here](#).

#### Criterion A – Species or Population Vulnerability

Areas containing habitat important for the survival and recovery of threatened and declining species.

#### Criterion B – Distribution and Abundance

##### Sub-criterion B1 – Small and Resident Populations

Areas supporting at least one resident population, containing an important proportion of that species or population, that are occupied consistently.

Sub-criterion B2 – Aggregations

Areas with underlying qualities that support important concentrations of a species or population.

Criterion C – Key Life Cycle Activities

Sub-criterion C1 – Reproductive Areas

Areas that are important for a species or population to mate, give birth, and/or care for young until weaning.

Sub-criterion C2 – Feeding Areas

Areas and conditions that provide an important nutritional base on which a species or population depends.

Sub-criterion C3 – Migration Routes

Areas used for important migration or other movements, often connecting distinct life-cycle areas or the different parts of the year-round range of a non-migratory population.

Criterion D – Special Attributes

Sub-criterion D1 – Distinctiveness

Areas which sustain populations with important genetic, behavioural or ecologically distinctive characteristics.

Sub-criterion D2 – Diversity

Areas containing habitat that supports an important diversity of marine mammal species.

Decision-making process

From <https://www.marinemammalhabitat.org/immas/imma-selection/>

MMAs are identified through an expert-led process involving the collation and assessment of evidence against a set of selection criteria. This process, lasting approximately 12 months, aims to engage a wide range of representatives within the marine mammal science and conservation communities where much of the evidence necessary to assess IMMAs is held. Experts are selected based on their region-specific knowledge, experience and skills relevant to the task of weighing evidence and applying the IMMA selection criteria. Potential sources of information are actively sought in a process engaging with experts and other holders of evidence on a region-by-region basis.

A five-stage process with the help and support of the Task Force is used to identify, review, and accept or reject IMMA nominations, as follows:

Stage 1 – Nomination of preliminary ‘Areas of Interest’

The starting point in the process is the nomination of preliminary Areas of Interest (pAoI). Any expert or interested party may propose a pAoI following a simple template, accompanied by supporting evidence. These are also be solicited publicly via ‘call for information’ announcements made 4-6 months in advance of regional expert IMMA workshops (see Stage 2). Each pAoI, along with existing marine mammal place-based conservation areas (e.g., MPAs, EBSAs, KBAs, etc.) is then presented

and evaluated at regional expert workshops. Participants invited to attend these workshops are encouraged to develop pAol in advance of the workshops, and to supply information for the creation of a joint regional Inventory of Knowledge (IoK) using a standardised Data Appraisal Form (DAF).

#### Stage 2 – Development of ‘candidate IMMAs’

The development of candidate IMMAs (cIMMAs) is a multi-step process guided by the Task Force. Regional workshops are publicly announced with ‘calls for information’ 4-6 months in advance. Each workshop reviews all pAol to determine if they meet one or more of the IMMA criteria. Participants use their regional knowledge to develop cIMMA, based on their review of pAol submitted in advance or generated during the workshop itself, whilst also consulting the shared IoK produced in partnership with other experts. Workshop-agreed cIMMAs are then submitted to the Task Force on an agreed IMMA Review Template to (a) identify proposed boundaries, (b) provide a thorough rationale based on one or more of the IMMA criteria, (c) summarise and provide access to the full supporting evidence and (d) identify any existing conservation measures within the areas proposed.

#### Stage 3 – Final review and IMMA Status Qualification

The Task Force, in consultation with the IUCN (e.g. through the Chairs of the relevant specialist groups), nominates an independent Review Panel, charged with assessing the scientific robustness of the proposals and satisfaction of the criteria.

The Review Panel is chaired by Randall R. Reeves. Members serving on the Panel during the review process in past regions include Robert L. Brownell Jr, Phil Hammond, Amanda Hodgson, Kit Kovacs, Lloyd Lowry, Helene Marsh, Howard Rosenbaum and Peter Shaughnessy.

#### Stages 4 and 5 – Reporting, communication, final review and IMMA Status Qualification

Confirmed IMMAs and their associated documentation are made publicly available by the Task Force on its website via a searchable and downloadable database, and a dedicated online IMMA e-Atlas. Individual IMMA portfolio pages are created on the website, together with summaries of key information on every individual IMMA, and information on how to obtain the GIS shapefiles. Finally, detailed fact sheets are completed for each IMMA, and posted on the website for download as PDF.

Areas that are not accepted as full IMMAs by the Task Force because they do not present convincing evidence that they satisfy the criteria remain as either cIMMAs or Areas of Interest (Aol). Both are included in the searchable database and displayed on the IMMA e-Atlas, with a different colouration, recognising that, although not IMMAs, both denominations have been deemed to be of interest and that they can potentially become IMMAs in the future. It is possible in the future when more information becomes available, that an Aol will become an IMMA, subject to undergoing a new workshop and review process. For a cIMMA to become an IMMA, it is sufficient for the point of contact to interact with the IMMA Secretariat to ensure that certain requirements have been satisfied, and the the Secretariat can then determine if the cIMMA can become a full IMMA.

#### Towards the implementation of management and conservation actions within IMMAs

By engaging regional experts and evidence holders, the process to identify IMMAs helps to establish common ideas, consistency and protocols for best practice across the marine mammal community. These ideas are reinforced by the independent Review Panel’s feedback on the cIMMAs assessed.

This approach mirrors the regional/national scale achievements by other similar processes (e.g. seabirds in IBAs). This helps to provide an initial regional focus helping to prioritise the use of IMMAs in informing the design of effective protection networks or national management schemes, and the creation of Regional IMMA Expert Groups, trained in common methods of best practice for the future identification of IMMAs.

See IUCN Marine Mammal Protected Areas Task Force reports from previous completed regional workshops for details and real-life examples of how the IMMA selection process works.

SIOFA can engage in the designation process, particularly through participation in the workshops described in Stage 2, through relevant national experts. Participation requires following relevant public calls for information announcements made 4-6 months in advance of regional expert IMMA workshops, which are focusing on the Indian Ocean region. These are advertised on the main page of the Marine Mammals Protected Areas Task Force: <https://www.marinemammalhabitat.org/>

## References

R Core Team. (2021). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <https://www.R-project.org/>