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Applications of Enhanced Data Transparency in SPRFMO: Vessel tracking, interoperability, and other transparency tools

Global Fishing Watch



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Introduction

The South Pacific Regional Fisheries Management Organisation (SPRFMO), and its Scientific Committee (SC), play a vital role in the long-term conservation and sustainable use of fishery resources in the South Pacific Ocean. Additionally, the establishment and recent revitalization of SPRFMO's Data Working Group (DWG) presents a unique opportunity to design and implement a forward-looking data governance and transparency framework, particularly when coupled with ongoing implementation of the Second Performance Review.

While historically the SC and DWG have primarily focused on data collection and analysis related to target species catch, the DWG is in a unique position to consider incorporating additional data related to transparency and interoperability to support sustainable fisheries, given its position under both the Scientific and Compliance Committees. Further, implementation of the 2024 Second Performance Review offers opportunities to consider additional data sources, given its recommendations for the SC and other subsidiary bodies.

Global Fishing Watch¹ includes several items related to transparency for SC13 to consider, particularly alongside the work of the DWG and implementation of the Second Performance Review:

- 1) **Incorporation of several transparency-related tools and datasets** in support of the [2025 SC workplan \(COMM 13 – Doc 06 rev2\)](#) item on “Use of new tools;”
- 2) **Reclassification of squid jigger gear types;**
- 3) **Consideration of new interoperability tools**, per the SC 2025's workplan item for the “Data Working Group.”

1) Data Governance and Transparency: Examples of recent applications in the scientific literature

Vessel tracking technologies towards sustainable fisheries management

VMS: SPRFMO has one of the most robust Vessel Monitoring Systems (VMS) across the RFMOs per [CMM 06-23](#), including a 100 nautical mile buffer zone outside the Convention Area. Though improving, gaps remain in SPRFMO VMS as noted in the Secretariat's 2025 “[Implementation and Operation Report: Commission VMS](#),” as well as its accessibility to the public.

¹ Global Fishing Watch is an international non-profit organization dedicated to advancing ocean governance through increased transparency. By harnessing satellite technology and machine learning, Global Fishing Watch provides publicly available tools and data that allow governments, researchers, and civil society to monitor fishing activity across the globe. At Global Fishing Watch, we believe that transparency—making information available and accessible to everyone it affects—is crucial to good ocean governance.



The scientific value of VMS data in fisheries management is well known to the SC. In the scientific literature, some examples include VMS analyses improving fishing efficiency when coupled with catch statistics ([Watson et al., 2018](#)); informing MPA management and fisheries interactions, particularly for smaller vessels ([Birchenough et al., 2021](#)); and in mapping vulnerable marine ecosystem (VME) biomass, including in an RFMO context in the North Atlantic Fisheries Organization Convention Area ([Kenny et al., 2025](#)). However, all of these studies required VMS data to be privately shared with the authors, rather than these data being publicly available. **Global Fishing Watch recommends that enhanced sharing of VMS be considered as part of the wider Data Working Group and review of data practices, as noted in CMM 02-2025 (paragraph 6).**

AIS: As a complementary tool to VMS, Global Fishing Watch wishes to highlight some of the benefits of AIS and encourages the DWG to consider it as an open-source tool to support its work. In the past year, **recent publications on some of the complementary benefits in using public-facing Automatic Identification Systems (AIS), in addition to VMS and other tools**, provide insight into its benefits and applications. Several of these recent studies use AIS data presented on [Global Fishing Watch's map](#), which in addition to AIS and some VMS data, now includes additional data, such as Sentinel-2 optical imagery at 10-meter resolution (which could also be considered as a “New Tool” under the Workplan). We share these studies that incorporate AIS data as timely examples of applications of AIS in fisheries:

- 1) [Shedding light on trawl fishing activity in the Mediterranean Sea with remote sensing data \(Marsaglia et al., 2025\)](#): This study, led by Global Fishing Watch, combined SAR and AIS data to detect and map trawling operations in the Mediterranean where AIS and VMS records were incomplete or not publicly available. Remote sensing data improved monitoring gaps when coupled with AIS data, underscoring the value of combining satellite-based detection with existing tracking systems to promote sustainable fisheries management.
- 2) [Improving monitoring, control and surveillance efforts through vessel tracking and fishery dependent data \(Sales Henriques et al., 2025\)](#): The authors discuss several case studies of AIS, used in combination with VMS, that detect illegal fishing in closed areas, cross-checking landings with fishing efforts, and other examples of how vessel tracking integration supports enforcement and transparency.
- 3) [Opportunities and challenges for improving fisheries management through greater transparency in vessel tracking \(Orofino et al., 2025\)](#): This qualitative study provides a high-level overview of applications of how AIS can improve fisheries management, monitoring, and enforcement. At the same time, it also lays out challenges with AIS, such as privacy concerns and incomplete coverage. It serves as a comprehensive overview of some of the challenges and opportunities in using AIS.

Additionally, the SPRFMO [Ecosystems Working Group Terms of Reference](#) mentions AIS/VMS, stating it will do the following for pelagic species, “Prepare inventories of technologies currently available on each fishing vessel, including the information on the presence of VMS or AIS on board, on-board observers, existence of biometric data by fishing haul etc.” In this vein, we also highlight a recent manuscript that illuminates applications of AIS to ecosystems:

- 1) [Unseen overlap between fishing vessels and top predators in the northeast Pacific \(Welch et al., 2024\)](#): This paper investigates spatial and temporal overlap between industrial fisheries and 14 top predator species using AIS and tagged animals. It revealed hotspots and previously unseen areas of overlap, particularly in Areas Beyond National Jurisdiction, as well as indicating the importance of additional monitoring tools in light of any AIS gaps.

Together, AIS and VMS provide complimentary tools towards transparency and sustainable fisheries, already acknowledged in different forms under SPRFMO subsidiary bodies. **Global Fishing Watch suggests**



that SC13 continues to consider vessel tracking in its discussions, particularly via timely opportunities for SC activities related to the Second Performance Review implementation and DWG reconfiguration.

Emerging uses of transparent ownership data

Additionally, there is a growing body of literature on the importance of beneficial ownership transparency and how by tracking and identifying beneficial ownership can identify a high consolidation of owners. Tracking beneficial ownership offers another data point towards addressing illegal fishing and contributing to more sustainable fisheries. While beneficial ownership is less germane to the SC, **SC13 could consider asking the Commission and Compliance Committee to consider additional data fields or desk-based research to better understand how transparent beneficial ownership information may support more sustainable fisheries in SPRFMO.** Two recent studies – the first of which incorporates some SPRFMO data – are:

- 1) [Who owns reefer vessels? Uncovering the ecosystem of transshipment in fisheries](#) (Bengtsson et al 2024): This study presents an analysis of publicly accessible owner, operator, and flag data of reefer vessels. Of the 569 identified individual reefers active between 2017 and 2022, nearly half were controlled by owners in two countries.
- 2) [Unveiling the hidden hands: Analysis of corporate ownership of industrial tuna fishing vessels in the Eastern Pacific Ocean](#) (Kinds et al., 2025): This paper evaluated the corporate ownership of industrial and semi-industrial fishing vessels in the Eastern Pacific Ocean. Six percent of the sample vessels were ultimately owned by a company registered outside the flag state of the vessel. The results show that evaluating fishing capacity by vessel ownership, not just flag state, can significantly change the distribution of control by country.

2) Improving Accuracy in Vessel and Gear Type Classification in the SPRFMO Record of Vessels

Accurate classification of vessel and gear types is essential for effective monitoring of fishing effort, assessing capacity, and supporting data interoperability across RFMOs. Currently, SPRFMO records are classified according to the [1984 International Standard Statistical Classification of Fishery Vessels \(ISSCFV\)](#) and the [International Standard Statistical Classification of Fishing Gears \(ISSCFG\)](#).

We recommend that the SC propose to the SPRFMO Commission that they adopt the [2019 revision of the ISSCFV](#). This updated standard addresses outdated categories, provides clearer definitions, and better reflects current fishing technologies.

For example, squid jiggers are currently listed as:

- Vessel type 0.7.3.0: Liners, pole and line type
- With gear type 0.9.1.0: Hooks and lines, handlines and pole-lines (hand-operated).

These categories do not adequately reflect the mechanised jiggering systems with automated lines and lights used by modern squid jiggers. The 2019 ISSCFV revision introduces a dedicated category for squid jigger vessels (9.1 – Jigger vessels), enabling more precise classification than the options currently available.

If adoption of the 2019 ISSCFV revision is not feasible in the short term, Global Fishing Watch recommends reclassifying squid jigger vessels under the current system as:

- Vessel type 0.7.9.0 – Liners, not elsewhere identified (NEI)



- With gear type 0.9.2.0 – Mechanised lines and pole-and-lines

These classifications better capture the operational characteristics of squid jiggers while remaining consistent with the data standards presently used by SPRFMO ([CMM 02-25, Annex 10](#)). Adopting the revised classification standard would improve cross-regional consistency, strengthen compliance and monitoring frameworks, and improve the utility of vessel data for scientific and policy purposes.

3) Interoperability tools of vessel databases to strengthen transparency

To support advanced transparency and fisheries reporting data, having efficient and interoperable tools is paramount. The SPRFMO DWG is uniquely positioned to drive forward data transparency and global compatibility and could consider broadening the scope of data inputs beyond biological statistics to include vessel, ownership, activity, and compliance-related data.

Improving data collection and interoperability could include sharing data with the Global Record (GR) and the Global Information Exchange System (GIES), or developing new tools to improve data sharing within SPRFMO. The FAO is actively seeking to develop connections with regional systems, as a way of improving data contained in the GR and reducing duplication of effort by States. As indicated during the [Eighth meeting of the Global Record Informal Open-Ended Technical and Advisory Working Group](#), preliminary discussions have been held with the SPRFMO Secretariat to establish a direct connection with the Global Record through the implementation of APIs. However, no formal plan for connection had been established to that point.

Additionally, Global Fishing Watch is currently developing an external-facing interoperability tool to facilitate data exchange and monitoring both at national and RFMO levels. Global Fishing Watch hopes to provide a comprehensive update on the development of this tool at SC14 and welcomes the opportunity to discuss and learn from any SPRFMO Members in advance.

Conclusion

This paper highlights recent applications of vessel tracking and transparency data towards sustainable fisheries. Effective vessel tracking, as well as updated gear type coding, supports transparency and accountability, enabling SPRFMO to safeguard marine ecosystems and maintain the long-term viability of valuable fisheries such as jack mackerel and squid in the South Pacific region.

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