

Revision and adaptation of IOTC Data Collection Forms Related to FADs and abandoned, lost or discarded fishing gears (ADLFG)

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Context

Following Resolution 24/11 adopted by the IOTC Commission, the Secretariat developed a standardized form and protocols for reporting the recovery of abandoned, lost, or discarded fishing gear ([3LG form](#)). This form was presented to the FADs Working Group (IOTC-2025-WGFAD07-10) and reviewed considering the guidelines on data collection for assessing impacts of gear stranding in corals (IOTC-2025-WGFAD07-11), and later by the Ecosystem and Bycatch Working Group.

Separately, the IOTC currently uses the 3DA form to report interaction with drifting floating objects, which replaced the 3FA form after a revision by the WPTT in 2023. Since then, FAD mitigation and management measures have evolved under Resolution 24/02, requiring updates to the [3DA form](#).

This work aims to contribute to the refinement of the 3LG form, which is still under development. In addition, it identifies further revision needs for the 3DA form to ensure alignment with Resolution 24/02.

1. Data on the recovery of abandoned, lost or discarded fishing gear (3LG form)

1.1. Gear related data collection

The form contains a dedicated section for reporting data related to the recovery of fishing gear and its environmental impact if stranded. The required information includes:

- **General details of the recovery:** date, geographic coordinates (latitude and longitude), habitat type, and depth.
- **Gear-specific data:** unique identifier, gear type, gear components, material, and estimated weight.

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- **Assessment of impacted areas:** substrate type, nature of the damage, affected area size, reef zone, coral type, and coral species.
- **Entanglement records:** species affected.
- **Gear fate:** whether the gear was reused, or disposed of, and the location of disposal.

This gear-specific data collection sheet should be intended for use with fishing gears other than FADs.

While the form provides predefined categories for some fields, several data gaps remain. To address these, we propose the following standardized categories for the relevant data fields (Table 1).

- **Habitat type:** Considering the data collection initiatives implemented at RFMOs (Mourot et al., 2025), as well as the Marine Ecological Classification Standard (CMECS), the following habitat types are proposed: mangrove, salt marshes, sea grass, coral reef, sand, mudflats, gravel, rocky, beach, estuary, lagoon, open ocean, unknown, other.
- **Gear component:** The gear component list is currently unavailable. It is advisable to source this information from the group, segmented by gear type.
- **Material:** Given the potential complexity of listing materials used in fishing gear, we propose a simplified classification system consisting of four categories: metal, plastic, biodegradable, and other. Recognizing that fishing gear often comprises a combination of materials, we recommend including a dedicated column to report the presence of each material type. This approach aligns with the structure currently used in the 3DA form.
- **Damage type:** The type of impacts that fishing gears and FADs can cause on corals can be classified into three categories (definitions derived and adapted from Burns et al. 2018):
 - Scraping / Abrasion: scarring to the live coral tissue caused by the collision of gear with the reef.
 - Breakage: pieces of broken coral that appear scattered on the benthos caused by the collision of gear with the reef.
 - Tissue mortality: any pieces or area of coral tissue that exhibited complete tissue mortality because of a collision, contact, or suffocation caused by the gear.
- **Reef zone:** Three categories are proposed (Figure 1) based in categories derived and adapted from Banks & Zaharia (2020):
 - Reef crest is the highest point of the reef that breaks waves and receives the full impact of wave energy. It can be exposed the atmosphere at low tide, with harsh living conditions for the coral (KSLOF, 2014).
 - Fore reef is the part of the reef that extends from the reef crest into the ocean. It slopes downward and can reach great depths (KSLOF, 2014). It can be interrupted by terraces or sediment flats. It is exposed to high wave energy in the shallow zone and low in the intermediate zone (5-20 m).
 - Back reef is the area that slopes into a lagoon. Often shallow, it can be exposed at low tide (KSLOF, 2014). It is exposed to low wave energy.
 - Lagoonal reefs: a pool of seawater highly or partially enclosed within a reef formation (atolls) or between a reef and shorelines (barrier reefs) (KSLOF, 2014). Area exposed to low wave energy, tidal fluctuations, shallow currents, and can have complex bottom structures (coral pillars, pinnacles and boomies) (Barott et al., 2010)

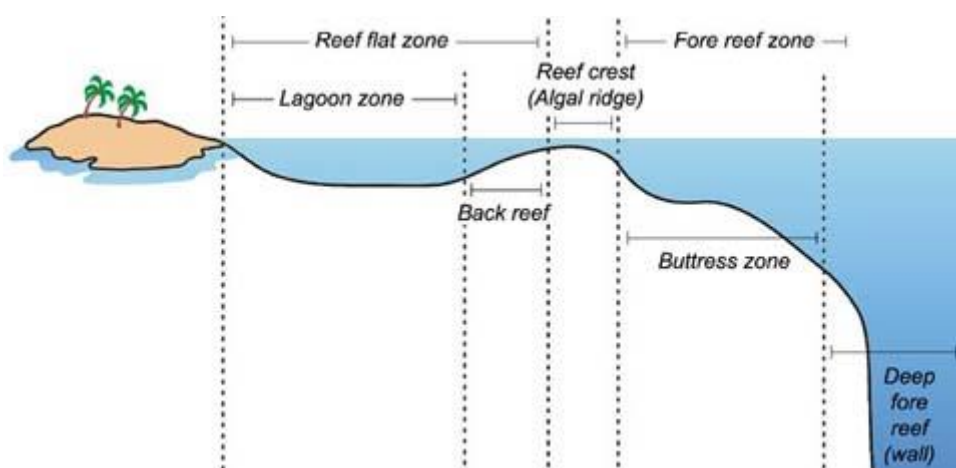


Figure 1. Coral reefs zones

(from: https://oceanservice.noaa.gov/education/tutorial_corals/media/supp_coral04b.html)

- **Coral Type:** In cases involving corals, distinguishing between coral types—such as hard and soft corals—can provide further insight into the nature and severity of impacts.

Table 1. Summary of the proposed changes to the gear data collection sheet. The current guidelines can be found at the following link: [Form 3LG – IOTC Data Collection Guidelines](#).

Sheet	Section	Field	Comments
GEAR	Recovery data	Month	No changes proposed
		Day of month	No changes proposed
		Latitude	No changes proposed
		Longitude	No changes proposed
		Habitat type	Habitat types are proposed based in Mourot et al., 2025 and CMECS: mangrove, salt marshes, sea grass, coral reef, sand, mudflats, gravel, rocky, beach, estuary, lagoon, open ocean, unknown, other.
		Depth	No changes proposed
	Gear data	Identifier	No changes proposed
		Gear	No changes proposed
		Gear component	The gear component list is currently unavailable. It is advisable to source this information from the group, segmented by gear type.
		Material	A simplify classification with four categories—metal, plastic, biodegradable, and other—is proposed. Since gear often contains multiple materials, it is recommended to include a dedicated column for identifying the presence of each material
		Weight	No changes proposed
	Impact area evaluation	Substrate	We propose to remove the field as it is already captured in recovery data (habitat type).
		Damage type	Definitions derived and adapted from Burns et al. (2018): Abrasion, Breakage, Tissue mortality.
		Area	To be provided in m2

		Reef zone	Reef zones derive from Banks & Zaharia (2020): reef crest, fore reef, back reef, lagoonal reef.
		Coral type	In cases involving corals, distinguishing between coral types—such as hard and soft corals—can provide further insight into the nature and severity of impacts.
		Coral species	No changes proposed
	Entanglements	<u>Species</u>	No changes proposed
	Recovered data	Reused	No changes proposed
		Place of disposal	No changes proposed

1.2. FAD related data collection

The 3LG form includes a dedicated section for reporting data on Fish Aggregating Device (FAD) recovery and strandings. This section captures:

- **General information of the recovery:** date, geographic coordinates (latitude and longitude), habitat type, and depth.
- **General FAD data:** FAD type, FAD identifier, and buoy identifier.
- **Floating element details:** material type, quantity, and rope length.
- **Surface structure (raft) details:** structural material, surface coverage, dimensions, shape, and mesh size.
- **Submerged structure data:** structure type, materials used, mesh size, attractor types, total length, and length in contact with the seabed.
- **Weight:** total estimated weight of the FAD.
- **Impacted area assessment:** damage type, affected area size, reef zone, coral types, and coral species.
- **Entanglements:** species involved.
- **FAD fate:** whether the FAD was reused, recycled, or disposed of, and the location of disposal.

Currently, the form lacks standardized category lists for several data fields. Additionally, given the evolving nature of FAD designs, existing classifications may require updates. In addition, due to the potential complexity of certain fields—particularly those related to materials used in FAD components—we propose a simplified classification system (Table 2). The following recommendations are based on field experience, commonly used FAD types and materials.

- **Habitat type:** Considering the data collection initiatives implemented at RFMOs (Mourot et al., 2025), as well as the Marine Ecological Classification Standard (CMECS), the following habitat types are proposed: mangrove, salt marshes, sea grass, coral reef, sand, mudflats, gravel, rocky, beach, estuary, lagoon, open ocean, unknown, other.
- **Type of material in the FAD components** (floating elements, Surface-raft submerged structure and type of attractors): Given the potential complexity of the material list, we propose a simplified classification: plastic, metal, biodegradable and other. We recommend including dedicated columns to report the presence of each material type, to align with the 3DA form.
- **Shape of the raft:** Based on the raft types used in the region we propose to provide three categories referring to circular, square, and octagonal.
- **Dimension:** could be provided as area (m²)
- **Submerged structure type:** This could refer to the Designs of the FADs tails classes provided by the IOTC ([IOTC Reference Data Catalogue v1 – Fisheries and Fishing Technologies Domains](#)) which requires and update to include the cage shape and Jelly FAD type (Moreno et al., 2023; Grande et al. 2025).
- **Submerged structure laying of the surface:** This element could be removed, as the information is already captured in the "Impact Area Evaluation" section.
- Data collected for impact area evaluation (i.e. **Damage type, reef zone and coral type** should follow guidelines described in the previous section).

Table 2. Summary of the proposed changes to the FAD related data collection sheet. The current guidelines can be found at the following link: [Form 3LG – IOTC Data Collection Guidelines](#).

FAD	Recovery data	Month	No changes proposed
		Day of month	No changes proposed
		Latitude	No changes proposed
		Longitude	No changes proposed
		Habitat type	Habitat types are proposed based in Mourot et al., 2025 and CMECS: mangrove, salt marshes, sea grass, coral reef, sand, mudflats, gravel, rocky, beach, estuary, lagoon, open ocean, unknown, other
		Depth	No changes proposed
	FAD data	<u>FAD type</u>	No changes proposed
		FAD ID	No changes proposed
		Buoy ID	No changes proposed
	Floating elements	Material	A simplify classification three categories—plastic, biodegradable, and other—is proposed
		Number	No changes proposed
		Rope length	No changes proposed
	Surface (raft)	Structure material	A simplify classification with four categories—metal, plastic, biodegradable, and other—is proposed. Since gear often contains multiple materials, it is recommended to include a column for identifying the presence of each material.
		Coverage material	A simplify classification three categories—plastic, biodegradable, and other—is proposed
		Dimension	could be provided as area (m2)
		Shape	circular, square, octagonal.
		Mesh size	In cm
	Submerged structure	Structure type	This could refer to the Designs of the Fish Aggregating Device Tails classes provided by the IOTC (IOTC Reference Data Catalogue v1 – Fisheries and Fishing Technologies Domains) which requires and update to include the cage shape or Jelly FAD.
		Materials	A simplified classification system with four categories—metal, plastic, biodegradable, and other—is proposed. Given that FAD submerged structures often comprises multiple materials, it is recommended to include a dedicated column for each material type to indicate its presence.
		Mesh size	In cm
		Type of atractors	A simplify classification three categories—plastic, biodegradable, and other—is proposed
		Length	No changes proposed
		Length laying	We propose to remove this field. Included in “impact area evaluation”.
	Weigth		No changes proposed
	Impact area evaluation	Substrate	We propose to remove the field as it is already captured in recovery data (habitat type).
		Damage type	Definitions derived and adapted from Burns et al. 2018): Abrasion, Breakage, Tissue mortality.
		Area	Provided in m ²
		Reef zone	Reef zones derive from Banks & Zaharia (2020): reef crest, fore reef, back reef, and lagoon reef

		Coral type	In cases involving corals, distinguishing between coral types—such as hard and soft corals—can provide further insight into the nature and severity of impacts.
		Coral species	No changes proposed
	Entanglements	<u>Species</u>	No changes proposed
	Recovered data	Reused	No changes proposed
		Place of disposal	No changes proposed

2. Data on interactions related to drifting floating objects ([3DA form](#)).

Form 3DA was developed based on a revision of Form 3FA, which originally followed data collection guidelines outlined in Resolutions 19/02 and 15/02. Since then, reporting requirements have evolved, particularly with the adoption of Resolution 24/02, which emphasizes monitoring the implementation of biodegradable FADs. Specifically, paragraph 25 and Annex I of Res. 24/02 introduce the need to report on FAD biodegradability categories. However, the current version of Form 3DA does not include dedicated fields for this type of reporting. Therefore, we encourage a revision of the form to incorporate data fields aligned with the biodegradable FAD categories defined in Annex III of Resolution 24/02.

References

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