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PRE-PRINT: MODULE UNDER SCIENTIFIC COMMITTEE REVEW

Plastic Footprint Network

Plastic Footprint Guidelines

Module on macroplastic – fishing gears

December 2024

Convened by EA – Earth Action • www.plasticfootprint.earth

Introduction to the Plastic Footprint Network

Leading organizations have united within the Plastic Footprint Network to chart a new, more effective path toward plastic pollution mitigation.

The network's first priority was unifying the framework for measuring plastic leakage into a single, science-based methodology for organizations to accurately assess the environmental impact of their plastic use. Over 100 professionals from 35 organizations worked to establish the resulting methodology, which consists of 11 modules, all optimized for usability and delivery of actionable results.

Objectives

Unifying the methodologies and perspectives of leading scientists, experts, and global practitioners. PFN enables organizations to understand the full impact, or footprint, from the use of plastic in their companies, products, and services.

1. Update and unify plastic footprinting methodologies
2. Ensure the methodology is used consistently by practitioners
3. Disseminate and scale the use of plastic footprinting
4. Explore link with plastic credit schemes, and how to prevent greenwashing claims

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What are the objectives of this module?

Note : this module is currently under scientific review and may undergo changes through the review process

The objective of this module is to establish a standardized approach for assessing the impact of macroplastics originating from fishing gears within the broader context of a plastic footprint analysis. To achieve this, we will provide an overview of the necessary components, and a methodology constructed from a comprehensive analysis of existing approaches and real-world scenarios.

1

How significant is the role of macroplastics derived from fishing gears in the context of an overall plastic footprint? What specific factors define their contribution?

2

What is the most effective methodology for accurately estimating the presence and impact of fishing gears in a plastic footprint analysis, taking into account various sources and literature?

3

What specific secondary data is essential for conducting precise calculations, and how can this data be seamlessly integrated into the comprehensive assessment process to ensure accurate and reliable results?

- At the end of this module, the users should know how to include the impact of fishing gears in their plastic footprint assessment.

Where does this module fit in the PFN landscape?

Guidance

Strategic | Cross-cutting or specific issue

- Introduction to plastic footprinting
- Scopes and boundaries
  Alignment with environmental reporting standards
- Data governance
- Mitigation framework (new)

Technical

- Technical introduction to plastic leakage
- Glossary

Inventory: Macroplastics

- Packaging
- Textile
- Fishing gears (new) — Current module
- Leakage from export (TBD)
- Release rates (TBD)
- Automotive (TBD)
- Construction (TBD)

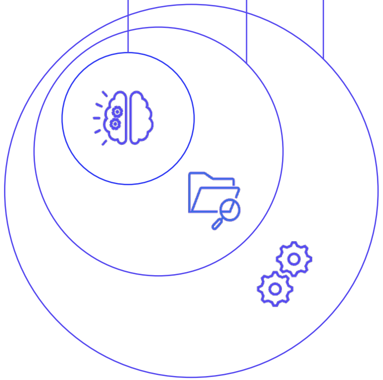
Inventory: Microplastics

- Micro tyre dust
- Micro textile fibres
- Micro agriculture (new)
- Micro paint (TBD)
- Micro pellets (TBD)

Impact

- Impact MariLCA (new)

Structure of each technical module



1 Methodological choice

High level overview and different methodologies available at the moment, which one(s) to use and when.

Target audience: busy reader, scientific journalist

2 System map and calculation routes

- The different elements to take into account during a plastic footprint.
- How these elements interact.
- The calculation routes to follow.

Target audience: scientist, experts

3 Key data & background assumptions

The secondary data needed to perform the assessment and the main assumptions for the modeling.

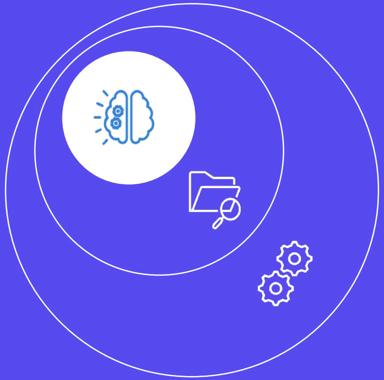
Target audience: scientist aiming at performing a plastic footprint.

Reading keys: Main take away | Supporting information | Key warning

Part. 1

Methodological choice

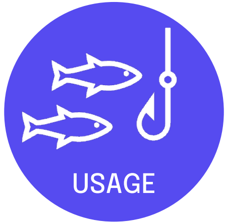
The different methodologies available at the moment, which one(s) to use and when.



Supporting information

An overview of leakage from fishing-related activities

Plastic leakage (into ocean) from fishing activities, excluding aquaculture.



Leakage of macroplastics during fishing activity

Leakage of macroplastics at the end-of-life stage

Requires primary data on waste disposal

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An overview on fishing gears

Image credit: banepetkovic - stock.adobe.com

Fishing gear is used in the fishing industry to capture fish and other marine organisms. Gear comes in many types and sizes, typically designed for the capture of a specific specie(s) and adapted to the vessel type. Besides metal, most fishing gear is made of plastic such as nylon, polyethylene (PE) and polypropylene (PP).

Unfortunately, loss, and discarding is common and contribute to significant environmental impact, and the magnitude of the pollution is significant : "Fishing gear accounts for roughly 10% of that debris: between 500'000 to 1 million tons of fishing gears are discarded or lost in the ocean every year. Discarded nets, lines and ropes now make up about 46% of the Great Pacific Garbage Patch".

Image credit: Indigo Life

Reasons for fishing gear loss and discarding:
Fishing nets become lost or discarded primarily due to three main reasons:

- Accidental entanglement: Nets can get entangled in underwater obstacles such as rocks, reefs, or shipwrecks, leading to their loss
- Adverse weather conditions: Extreme weather events, storms, or strong currents can cause nets to break free from their moorings or be swept away, resulting in their abandonment.
- Intentional discarding: In some cases, damaged or old nets are intentionally discarded by fishermen to replace them with new ones.

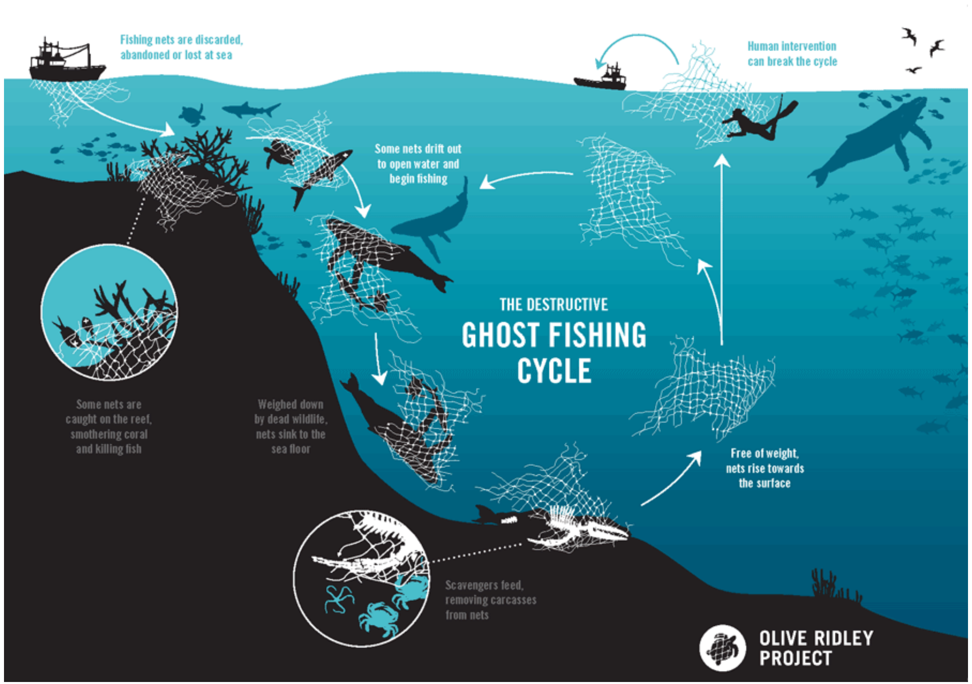
Source: WWF, https://www.worldwildlife.org/stories/ghost-fishing-gear

An overview on fishing gears: Environmental impact

Impact on Plastic Pollution and Marine Environment:
The discarding or loss of fishing gear significantly contributes to plastic pollution and poses a grave threat to the marine ecosystem.

- **Plastic debris**: Fishing gears – often made of non-biodegradable materials – that is lost or discarded to the ocean generates macroplastics pollution. Over time, the debris breaks down into smaller plastic fragments leading to additional microplastics leakage.

- **Ghost nets**: Abandoned, Lost or otherwise Discarded Fishing Gear (ALDFG), can create the phenomenon of “ghost nets”. These nets drift, trapping fish or sinking to the seabed, smothering coral reefs and killing other marine animals. Scavengers feed on trapped carcasses, releasing nets to drift again, perpetuating a dangerous cycle that disrupts the delicate balance of marine ecosystems.

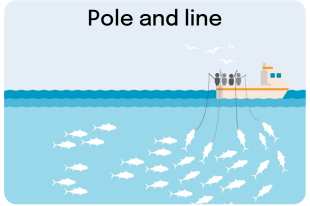


Source: Olive Ridley Project: https://oliveridleyproject.org/what-are-ghost-nets/ghost-fishing-cycle-of-devastation

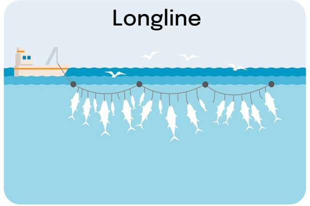
An overview on fishing gears: Gear types

Usage and Types of Fishing Gear

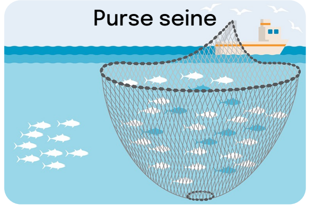
Fishing gear includes multiple components, such as main lines, hooks, floats, twines, or netting, which can contain plastic materials (mainly nylon, but also PE, PP, PS, or PVC). Fishing gears come in 3 main types, depending on the depth range of the fishing activity: surface fishing, pelagic or midwater fishing, and demersal or bottom fishing. Different techniques and gear are used for each type, and fishing gear can be one-dimensional (lines) or two-dimensional (nets). Bycatch and gear loss risks are strongly influenced by the technique and gear used.



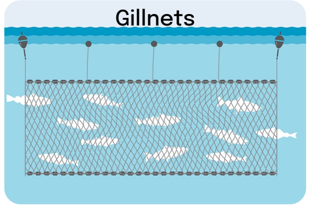
Used to catch tuna and other large pelagic fish one at a time



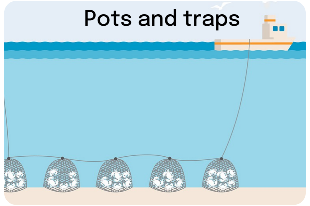
Used for pelagic (midwater) or demersal (bottom) fishing



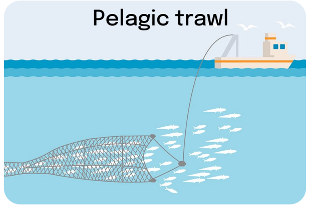
Used for dense schools of single-species fish. Bycatch tends to be low.



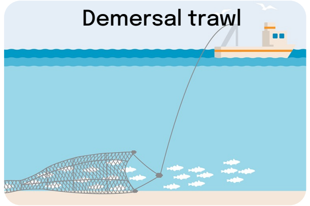
A wall curtain. Size of fish caught depends on the size of the net meshing. Bycatch can be high.



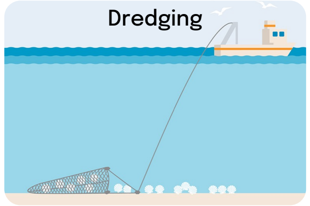
Used to catch crustaceans such as lobsters and crabs. Deployed on the seabed for around 24 hours.



Pulled through midwaters, not on seabed.



Pulled just above or on seabed. Very efficient in capturing large numbers of fish.



Rigid structures towed along the seabed. Dislodges shellfish as it drags over sediment; used to catch scallops, oysters and clams.

Image source: Marine Stewardship Council, https://www.msc.org/what-we-are-doing/our-approach/fishing-methods-and-gear-types

An overview on fishing gears: Waste disposal

Fishing gear reaching its end of life, in general, is not collected by the standard waste management system. In-depth case studies conducted in Wales, and in the UK in general, revealed two possible solutions exist for disposing end-of-life fishing gear:

- Harbours, upon a fee, provide a disposal system
- Fishers and fisheries take care, either themselves or via external contractors, of their waste disposal.

Disposal methods of end-of-life fishing gear, include:

Repair&Reuse: Fishers place significant value on their fishing gear and often prioritize repairing damaged components instead of discarding them.
Upcycling and Repurpose: Some fishing gear components are employed for different uses on vessels, or sold and donated for
Recycling: Recycling fishing gear can be a highly labour-intensive process, often requiring fishers to manually separate the gear into its individual components to isolate recyclable materials.
Landfilling and Incineration: Operated by the harbours or via external contractors.

Image source: SETFIA, https://setfia.org.au/recycling-fishing-gear/

Historically, the fishing gear industry has been dominated by a **"weight-and-dump" mentality**, where unwanted gear was discarded into the ocean. While this practice has recently decreased in favour of more sustainable disposal methods, the issue persists for several reasons. These include a lack of clear disposal processes, limited prioritization of environmental concerns by fishers, and the complexity and cost associated with recycling or alternative disposal options. This problem is likely to be even more pronounced in countries lacking a sufficient infrastructure to dispose end-of-life fishing gear.

Sources: "Understanding commercial fishing gear use and disposal needs in Wales", APEM (2020); "Policy Options for Fishing and Aquaculture Gear in the UK Phase 1: Gear Inventory", Resource Futures (2021).

Useful definitions

Activity/Mass

We identify the quantity of plastic of interest through an activity or a mass. « Mass » refers here to the total weight (tonnage) of either fishing net leaked, or of the fish produced. « Activity » refers to the activity of catching fish and bringing it back to shore for processing.

Gear Type

This is the class of the fishing gear used in the activity. The gear type will usually vary depending on three factors; i) species fished, ii) vessel type and iii) country in which the fishing activity is carried out.

Loss

The loss is the quantity of plastics that leaves a properly managed product or waste management system. The loss refers to the mass of fishing gears that is mismanaged i.e. uncollected, littered or lost during use.

Plastic leakage to the environment

Plastic leakage is defined as the plastic leaving the technosphere and accumulating in the natural environment. The natural environment in focus here is the ocean.

Loss rate

The ratio (%) between the lost amount and the total amount of plastic involved. This is the fraction (%) of fishing gears that are lost in the environment during the use phase.

Release rate

The ratio (%) between the amount of fishing gear waste that is mismanaged and the total amount of fishing gear waste. It represents the fraction of fishing gear that, when it reaches its end-of-life stage, is not properly disposed and is released into the environment.

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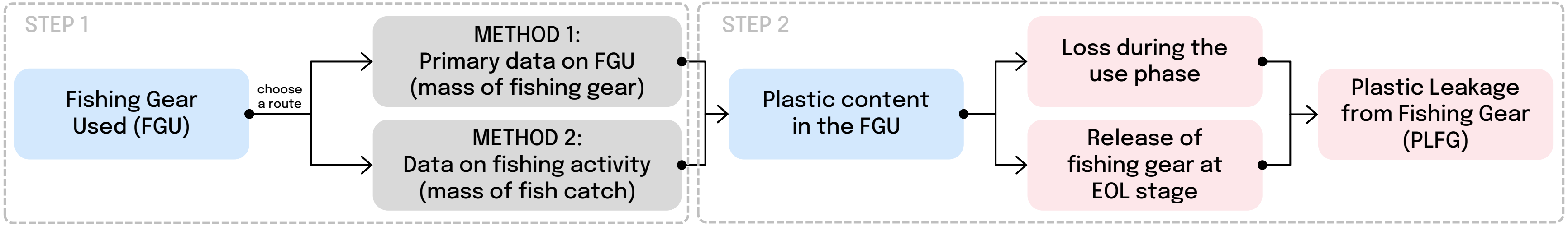
Recommended methodological approach: Summary

This module presents **two methodologies** for assessing the plastic footprint of fishing gear. The choice between these two approaches depends on the **availability of primary data**. The goal is to measure the **Plastic Leakage from Fishing Gear (PLFG)**.

The main steps to follow in the proposed approach are:

1. Estimate **the mass of fishing gears used (FGU).**
2. Determine the **probability of loss of plastic** from fishing gear used.

Both methodologies share the same approach for estimating lost gear share, **while differ in estimating the mass of fishing gear used**. When primary data on fishing gear usage are available, estimation is straightforward (METHOD 1); otherwise, it is inferred indirectly based on fishing activity (METHOD 2).



Method 1: FISHING GEAR MASS approach

WHEN: When primary data on FGU are available.

HOW: Direct use of primary data on mass of FGU.

WHO (could use it): Fishing vessel operators, sustainable fisheries, gear manufacturers and suppliers.

Method 2: FISHING ACTIVITY approach

WHEN: Data on fishing activity (fish catch) are available.

HOW: Indirect estimation of FGU based on fishing activity.

WHO (could use it): Fish markets and landing sites, seafood companies, fishing cooperatives.

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Recommended methodological approach: Method 1

FISHING GEAR MASS APPROACH – *If primary data on fishing gear usage are available*

Methodology to apply to estimate the Plastic Leakage from Fishing Gear (PLFG) – i.e., the annual macroplastics leakage deriving from fishing gears. To use when primary data on fishing gear usage are available.

$$PLFG[kg] = \sum_{type} FGU_{type}[kg] * \underbrace{PC_{type}[\%] * \left(GLR_{type}[\%] + (1 - GLR_{type}[\%]) * GRR_{type}[\%]\right)}_{\text{Plastic leakage rate}}$$

$$GRR_{type} = \frac{1 - DR_{type}}{Lifespan_{type}}$$

Primary data needed:

- Mass of fishing gear used, annually
- Waste disposal rate for used fishing gear

Primary data good-to-have:

- Lifespan of fishing gear used (in years)

Secondary data good-to-have:

- Plastic content of the fishing gear used

STEPS:

1. Collect data: on weight of Fishing Gear Used (FGU) and on the Disposal Rate (DR), for each type of fishing gear.
   If possible, collect data on Lifespan and Plastic Content in the fishing gear used.
2. Calculate the Gear Release Rate (GRR) for each gear type, defined as the ratio between non-disposal rate (one minus DR) and the gear's lifespan. This quantity represents the probability for fishing gear reaching its end-of-life to be lost into the environment due to lack of disposal.
3. Extract mass of plastic: multiply the FGU by its Plastic Content (PC). Use primary data when available, otherwise average values of plastic content in fishing gear are provided in the "Data" section.
4. Compute leakage: for each gear type, multiply the FGU by its plastic content and by the Gear Loss Rate (GLR) and the GRR, where GLR represents the probability of losing the gear during the fishing activity. Sum over all gear types to obtain the Plastic Leakage from Fishing Gear (PLFG).

Details and reference data about the involved quantities are reported in the following sections.

Recommended methodological approach: Method 2

FISHING ACTIVITY APPROACH – *If primary data on fishing gear usage are NOT available*

Methodology to apply to estimate the Plastic Leakage from Fishing Gear (PLFG) – i.e., the annual macroplastics leakage deriving from fishing gears. To use when primary data on fishing gear usage are NOT available.

$$PLFG[kg] = \sum_{type} Fish_{type}[tonnes] * CG_{type} * \underbrace{PC_{type}[\%] * \left(GLR_{type}[\%] + \left(1 - GLR_{type}[\%]\right) * GRR_{type}[\%]\right)}_{\text{Plastic leakage rate}}$$

$$GRR_{type} = \frac{1 - DR_{type}}{Lifespan_{type}}$$

Primary data needed:

- Annual fish catch (tonnes) per gear type
- Waste disposal rate for used fishing gear

Primary data good-to-have:

- Lifespan of fishing gear used (in years)

Secondary data good-to-have:

- Plastic content of the fishing gear used
- Fish Catch-to-Gear factor, per fish/gear type

STEPS:

1. Collect data: on weight of fish catch and on the Disposal Rate (DR), for each type of fishing gear.
   If possible, collect data on Lifespan and Plastic Content in the fishing gear used, and Catch-to-Gear (CG) factor (weight of gear used per tonne of fish catch).
2. Estimate fishing gear used: for each type of fish caught or gear used, multiply the fish catch by the correspondent Catch-to-Gear (CG) factor. In case the information is not directly available, the “Data” section provides guidelines for associating gear types to different fish species, and reference data for the CG factor.
3. Calculate the Gear Release Rate (GRR) for each gear type, defined as the ratio between non-disposal rate (one minus DR) and the gear’s lifespan. This quantity represents the probability for fishing gear reaching its end-of-life to be lost into the environment due to lack of disposal.
4. Extract mass of plastic: multiply the FGU by its Plastic Content (PC). Use primary data when available, otherwise average values of plastic content in fishing gear are provided in the “Data” section.
5. Compute leakage: for each gear type, multiply the FGU by its plastic content and by the Gear Loss Rate (GLR) and the GRR, where GLR represents the probability of losing the gear during the fishing activity. Sum over all gear types to obtain the Plastic Leakage from Fishing Gear (PLFG).

Details and reference data about the involved quantities are reported in the following sections.

Part. 2

System map & calculation routes

The different elements to take into account during a plastic footprint. How these elements interact? Which calculation routes to follow?

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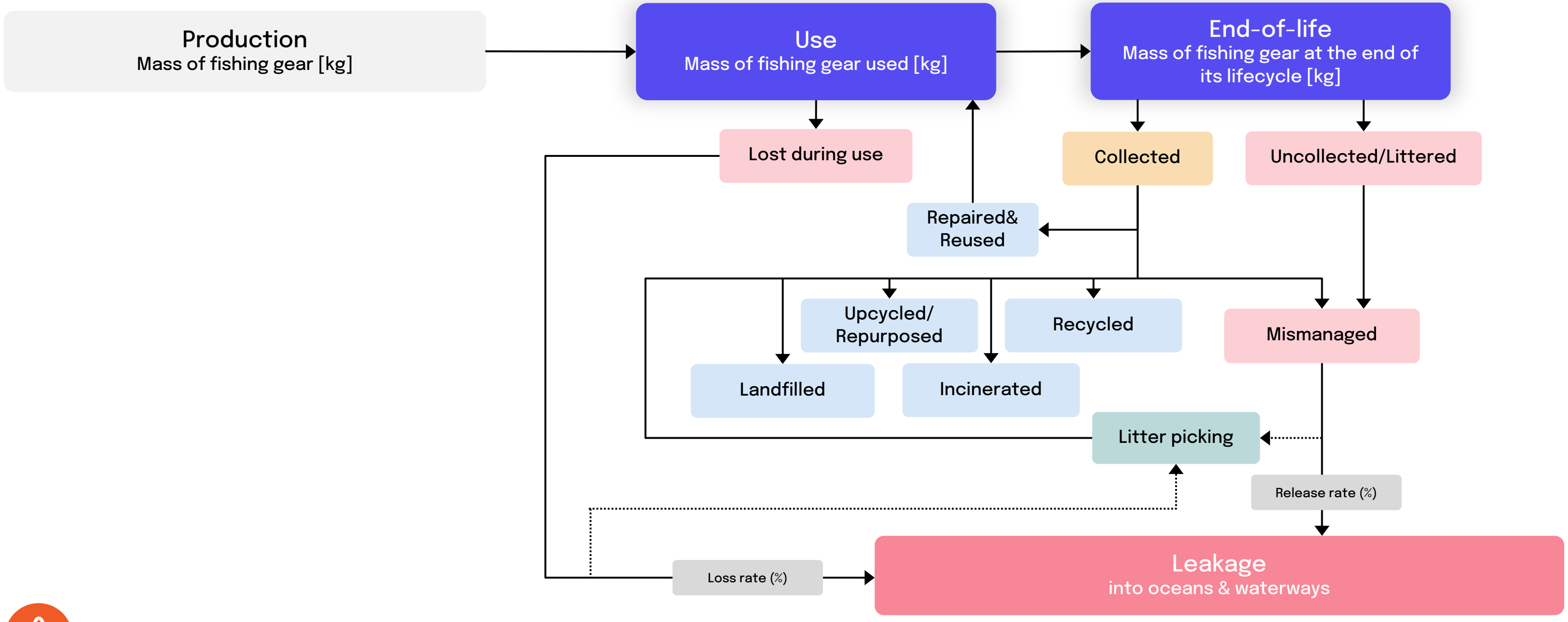
System map

The path of fishing-related macroplastic, from production to final release



Loss and release rates are gear-type specific

Calculation routes: Method 1

FISHING GEAR MASS APPROACH – *If primary data on fishing gear usage are available*

$$PLFG[kg] = \sum_{type} FGU_{type}[kg] * PC_{type}[\%] * \left(GLR_{type}[\%] + \left(1 - GLR_{type}[\%]\right) * GRR_{type}[\%]\right)$$

$$GRR_{type} = \frac{1 - DR_{type}}{Lifespan_{type}}$$

Symbol	Description	Unit	Value	Reference	Additional comments
$PLFG$	Total macroplastic leakage from fishing gears, as a consequence of the fishing activity and lack of disposal of fishing gear waste.	kg	Calculated		
FGU_{type}	Weight of fishing gear used per type of gear.	kg	From primary data		
PC_{type}	Length or surface of, respectively, one-dimensional and two-dimensional fishing gear, per type of gear.	%	From secondary data	Reported or from external literature	If the type of gear is not available, use the value of 45% as average plastic content across all fishing gears.
GLR_{type}	Gear Loss Rate. The rate at which fishing gear is lost at sea during fishing activities. Depends on the type of gear, an average is also given.	%	From secondary data	External literature	
GRR_{type}	Gear Release Rate. The rate at which fishing gear at its end-of-life stage is not collected and is into the environment. It is determined by the disposal rate and the lifetime of the fishing gear.	%	Calculated		
DR_{type}	Rate of disposal for the used fishing gear.	%	From primary or secondary data	Reported	The rate of disposal of fishing gear depends on the harbour and local policies. If data is unavailable, use the waste collection rate of the country where the ship docks. NB: this isn't accurate as the assumption of the disposal rate of fishing gear being equal to the waste collection rate of the country isn't generally true.
$Lifespan_{type}$	Average lifespan of the fishing gear.	years	From primary or secondary data	Reported or from external literature	Data taken from literature consider average or standard values coming from specific case studies. These values may not accurately represent the actual fishing gear used; hence, reported primary data should always be preferred.

Calculation routes: Method 2

FISHING ACTIVITY APPROACH – *If primary data on fishing gear usage are NOT available*

$$PLFG[kg] = \sum_{type} Fish_{type}[tonnes] * CG_{type} * PC_{type}[\%] * \left(GLR_{type}[\%] + \left(1 - GLR_{type}[\%]\right) * GRR_{type}[\%]\right)$$

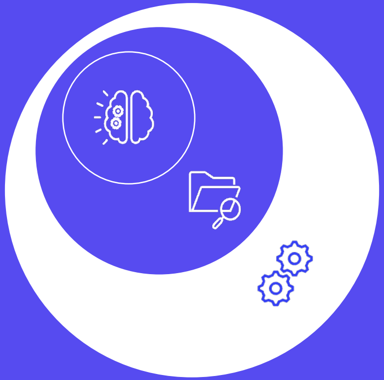
$$GRR_{type} = \frac{1 - DR_{type}}{Lifespan_{type}}$$

Symbol	Description	Unit	Value	Reference	Additional comments
$PLFG$	Total macroplastic leakage from fishing gears, as a consequence of the fishing activity and lack of disposal of fishing gear waste.	kg	Calculated		
$Fish_{type}$	Weight of annual fishing catch per gear type or fish type	tonnes	From primary data		If information about the type of gear used during the fishing activity is not available, use the reference table given in the "Data" section to associate a gear type to the species of fish caught.
CG_{type}	Fish Catch-to-Gear factor representing the mass of gear used per tonne of fish caught.		From secondary data	Reported or from external literature	
PC_{type}	Length or surface of, respectively, one-dimensional and two-dimensional fishing gear, per type of gear.	%	From secondary data	Reported or from external literature	If the type of gear is not available, use the value of 45% as average plastic content across all fishing gears.
GLR_{type}	Gear Loss Rate. The rate at which fishing gear is lost at sea during fishing activities. Depends on the type of gear, an average is also given.	%	From secondary data	External literature	
GRR_{type}	Gear Release Rate. The rate at which fishing gear at its end-of-life stage is not collected and is into the environment. It is determined by the disposal rate and the lifetime of the fishing gear.	%	Calculated		
DR_{type}	Rate of disposal for the used fishing gear.	%	From primary or secondary data	Reported	The rate of disposal of fishing gear depends on the harbour and local policies. If data is unavailable, use the waste collection rate of the country where the ship docks. NB: this isn't accurate as the assumption of the disposal rate of fishing gear being equal to the waste collection rate of the country isn't generally true.
$Lifespan_{type}$	Average lifespan of the fishing gear.	years	From primary or secondary data	Reported or from external literature	Data taken from literature consider average or standard values coming from specific case studies. These values may not accurately represent the actual fishing gear used; hence, reported primary data should always be preferred.

Part. 3

Data

The secondary data needed to perform the assessment.



Fish catch per gear type, Catch-to-Gear (CG) factors

Here we provide information on the fish species that are commonly caught using different fishing gears. This table should serve as a reference to associate fish catches with the proper gear, in case the information isn't readily available. For each gear type, reference data for the CG factors (kg of gear used per tonne of fish caught) are reported.

Fish type	Gear type	CG [kg/tonnes]
Pelagic fish: Mackerel, herring, squid, sardines, salmon **Demersal (bottom-dwelling) fish**: Cod, lumpfish, hake, halibut	Gillnets	472
Pelagic fish: anchovies, sardines, mackerel, squid and tunas	Purse seine nets	6.6
Demersal fish: Cod, haddock, hoki, hake **Flatfish**: Halibut, sole **Shellfish and crustaceans**: Prawns, shrimps, squid	Bottom trawl nets	8.5
Pelagic fish: herring, hoki and mackerel	Midwater/Pelagic trawl nets	3.4
Pelagic fish: tunas, swordfish **Demersal fish**: Halibut, cod, hake, and Patagonian toothfish (Chilean sea bass)	Longlines	1.0
Crustaceans and molluscs: Crabs, lobsters, whelk **Demersal fish**: scup, black sea bass, eels	Pots and traps	507
	All gears	95

Sources: Marine Stewardship Council; NOAA Fisheries; Our World In Data, "Fish and Overfishing"; "Policy Options for Fishing and Aquaculture Gear in the UK Phase 1: Gear Inventory", Resource Futures (2021).

DISCLAIMER:
The CG factors are obtained by accounting for the fishing gear used and fish catch in the UK and are therefore specific of the country. Reported values are a general reference and should be used in the absence of specific data on the used.

Gear Loss Rate (GLR) and gears’ Plastic Content (PC)

Gear type	Type	GLR [%]	PC [%]
Gillnets	2D	0.81%	48%
Purse seine nets	2D	1.51%	37%
Bottom trawl nets	2D	3.94%	43%
Midwater/Pelagic trawl nets	2D	0.76%	48%
Trawl nets: all	2D	3.57%	46%
Longlines (average of main lines’ and branch lines’ GLRs)	1D	3.46%	9%
Pots and traps: prawns	count	–	33%
Pots and traps: crabs	count	–	58%
Pots and traps: whelks	count	–	54%
Pots and traps: all	count	0.74%	54%
All gears	–	1.82%	53%

Sources: Richardson et al., Sci. Adv. 8, eabq0135 (2022)
“Policy Options for Fishing and Aquaculture Gear in the UK Phase 1: Gear Inventory”, Resource Futures (2021).

DISCLAIMER:
Data on plastic content of fishing gear reported here are taken from a case study conducted in the United Kingdom and depend on the type and usage specific of the country. Therefore, the reported values should be viewed as a general reference and used in the absence of more specific data on the gear in question.

Gear Average Lifetime Estimates from Industry

Gear type	Type	Average lifetime	Small vessels (<10 m)	Large vessels (>10 m)
Gillnets	2D	0.5	0.5	0.5
Purse seine nets	2D	3	–	3
Bottom trawl nets	2D	4	3	5
Midwater/Pelagic trawl nets	2D	8	–	8
Longlines	1D	0.75	0.75	0.75
Pots and traps	count	20	–	–
All gears	–	7	–	–

Source: “Policy Options for Fishing and Aquaculture Gear in the UK Phase 1: Gear Inventory”, Resource Futures (2021).

DISCLAIMER:
Data on the average lifetime of fishing gear reported here are taken from a case study conducted in the United Kingdom. The lifespan of a fishing gear can vary due to several factors, including the geographical location, type of fishing activity, local legislations regulating fishing activity, and other cultural and social factors. For instance, the lifetime of certain fishing nets in Norway (as noted in the DSolve project) may differ slightly from the data reported in the UK. Therefore, the reported values should be viewed as a general reference and used in the absence of more specific data on the gear in question.

Estimate of plastic use and leakage from fishing gear

The methodology was tested to estimate the annual plastic consumption and leakage resulting from the fishing gear activities.

The estimates were calculated using Method 2 and data on global fish catch by gear type (from year 2018) as reported by Our World In Data (Fish and Overfishing: https://ourworldindata.org/fish-and-overfishing). Total volumes of annual plastic consumption from fishing gears were calculated by multiplying by the catch-to-gear factors and plastic contents reported in this module. The annual amount of PLFG was determined by applying gear-specific loss rates (attached to this module).

Annual Plastic Use in Fishing Gears	**6.2 Mt**
Annual Plastic Leakage from Fishing Gears (PLFG)	**72 kt**

- The estimate of the **annual plastic consumption** is in fair agreement with a previous **estimate of 5.5 Mt** proposed in the report Plastic Treaty Futures by Systemiq.
- Regarding the **leakage of plastic into water** from fishing gear activities, there is a lack of reliable reference. The only figure of **640 kt that is consistently mentioned is actually unfounded**, as it's based on incorrect assumptions or misleading interpretations (Richardson et al., "Challenges and misperceptions around global fishing gear loss estimates"). It's also important to emphasise that the **current leakage estimate only accounts for the loss during fishing activities**. Because of the lack of data on fishing gear waste disposal, it was not possible to estimate the plastic release due to mismanaged fishing gear waste. Consequently, the proposed figure is likely to significantly underestimate the actual outcome.

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References

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Plastic Footprint Network

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Our commitment to continuous improvement

The Plastic Footprint Network's successful collaboration is built on pillars of:

- Open
- Non-competitive and productive dialog
- Leveraging science and supporting ongoing research
- Broadly empowering global stakeholders (product manufacturers, brand owners, treaty negotiators, regulators, consultants, NGOs, etc.) to effectively do their part to address the plastic pollution crisis.

Given corresponding commitments to transparency and continuous improvement, we welcome and encourage your feedback and input on this document so that the methodology can continue to be enhanced and refined.

Thank you for supporting the work of the Plastic Footprint Network.

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