

Intro to COBSEA

Ghost gear toolbox



START



Version 1, 2023

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Welcome to the COBSEA ghost gear toolbox

The aim of the toolbox is to provide tools and guidance on environmentally sound and inclusive ghost gear prevention, mitigation, and management for the East Asian Seas region and share good practices for replication. The toolbox also compiles existing resources developed by partners. Products include downloadable infographics, reports, and videos in languages from the COBSEA region. More tools, case studies, and resources will be added to expand the toolbox over time.

All tools and resources are available through the East Asian Seas Regional Node of the Global Partnership on Plastic Pollution and Marine Litter.



This Toolbox is for you if you represent:

1

Dive centres: managers, guides, and instructors

3

Organizations working on ghost gear prevention, recovery, and management

2

National and local governments

4

Women and men in fishing communities

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Introduction to ghost gear

While the discharge of fishing gear and ropes at sea is prohibited, the lack of proper waste disposal systems and lack of incentives to repair or recover damaged gear often leads to the abandonment of end-of-life fishing nets near the beach or in the ocean. Fishers may also lose their gear while at sea, making retrieval a difficult, expensive, and sometimes impossible task. Where no proper waste management systems exist in fishing communities or harbours, burning fishing nets often becomes a common practice. The release of toxic fumes is harmful to both the environment and the health of women, men and children.

Ghost gear, or abandoned, lost or discarded fishing gear (ALDFG) continues to catch marine life, contributes to marine pollution and harms marine ecosystems that fishing communities and economies in the region

depend on. Marine litter from ghost nets restrict the ability of marine ecosystems to perform crucial functions, such as regulating the climate, supplying food, providing livelihoods, and playing critical social, environmental, and economic roles for people and the planet, making ghost gear one of the most harmful types of marine litter.

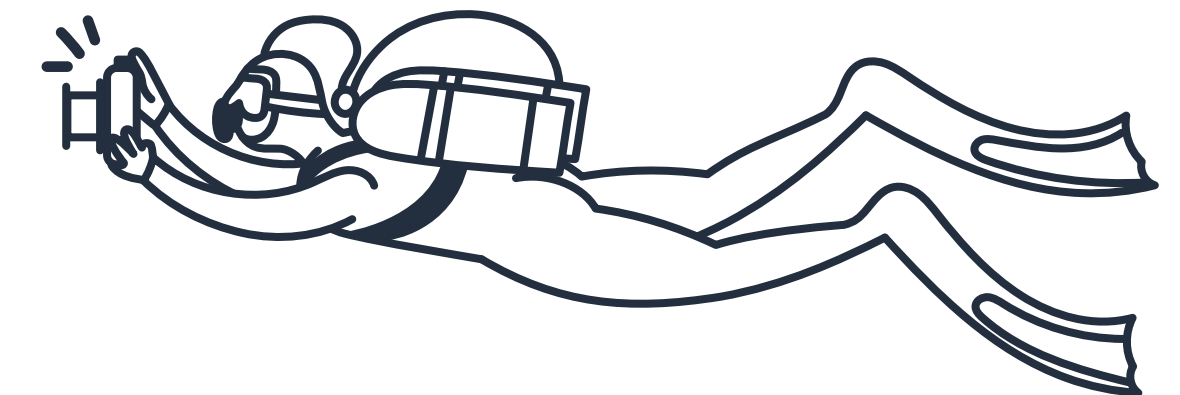
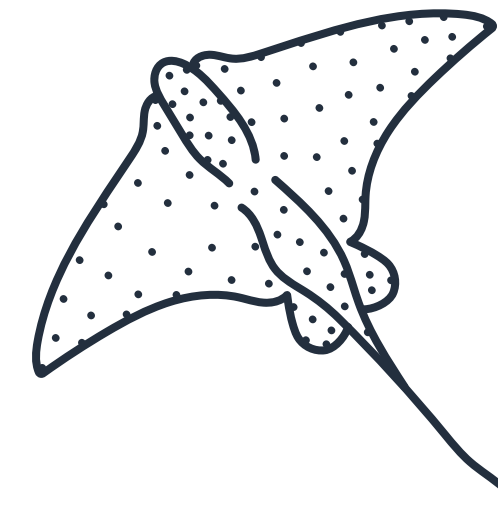


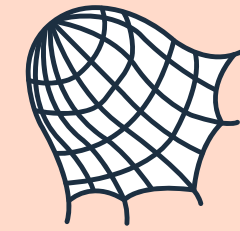
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Overview of the toolbox

This toolbox has four sections grouping [guidelines](#), [videos](#), and [case studies](#) to address ghost gear:

01.



Preventing ghost gear

[VIEW MORE →](#)

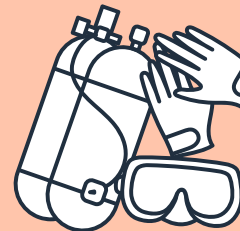
02.



Minimizing damage from ghost gear

[VIEW MORE →](#)

03.



Recovering and reporting ghost gear

[VIEW MORE →](#)

04.



Cross-cutting reports and guidelines

[VIEW MORE →](#)

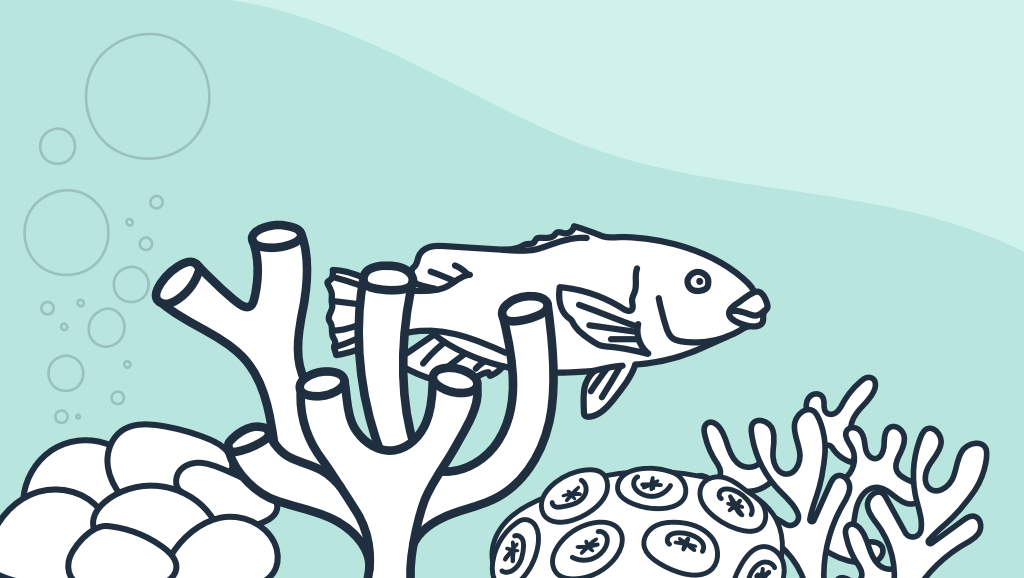


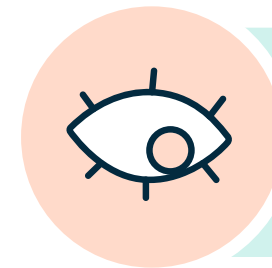
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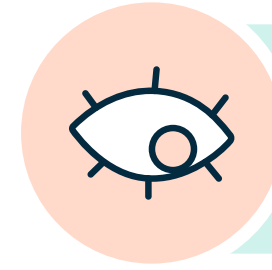
01. Preventing ghost gear

Preventing ghost gear includes measures that aim to avoid gear loss and disposal in the environment. These measures are considered the most effective means of addressing ALDFG at scale.

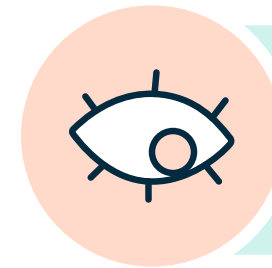
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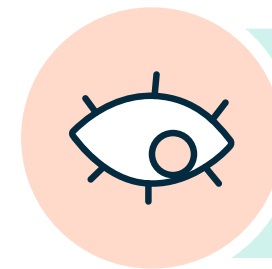
Regulations by relevant government agencies and fisheries management authorities, including gear marking



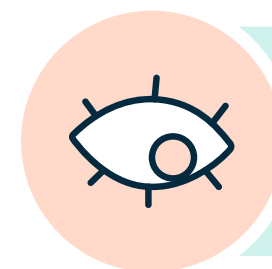
Adequate port reception and disposal facilities for end-of-life gear



Ghost gear end-of-life management



Capacity building, education, awareness, and information on ghost gear



Due diligence and good practices on behalf of fishers, including repairing nets

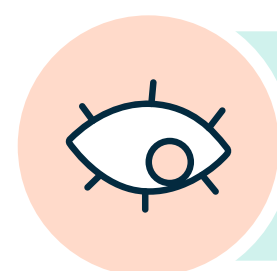
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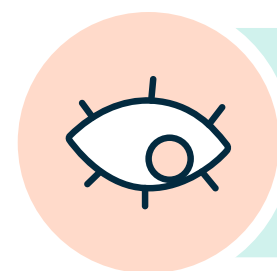
02. Minimizing damage from ghost gear

Minimizing damage from ghost gear includes measures to reduce the anticipated damage caused by fishing gear that may be lost or discarded at sea.

This includes:



Traps/pots with animal escape mechanisms in case of loss



Use of fully biodegradable materials (rot cords)

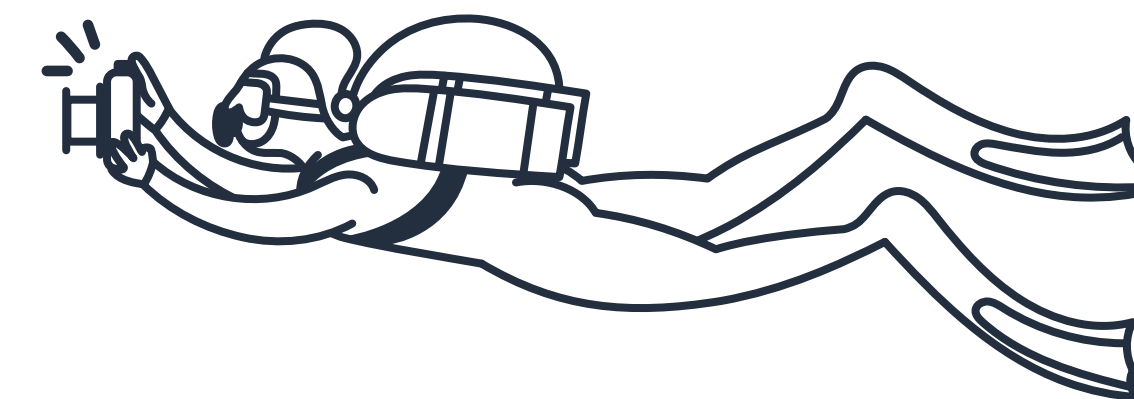


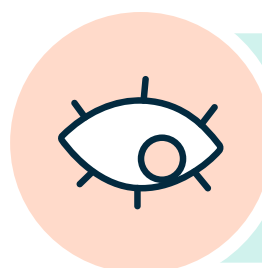
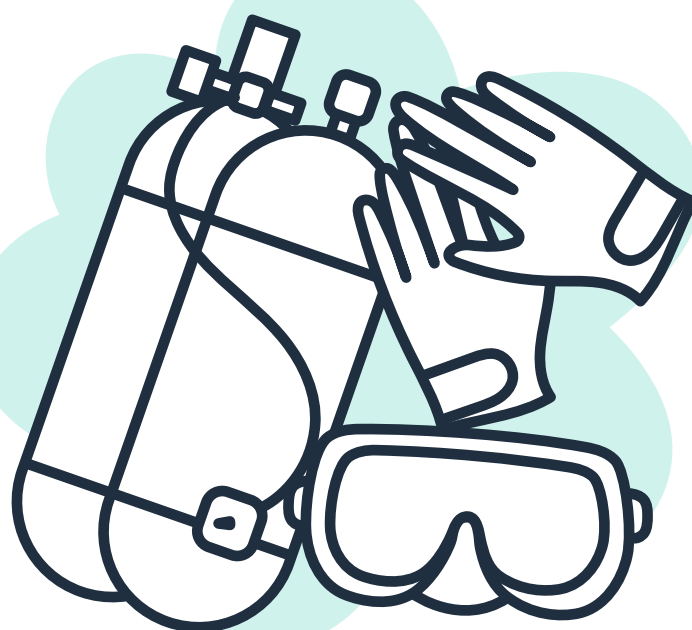
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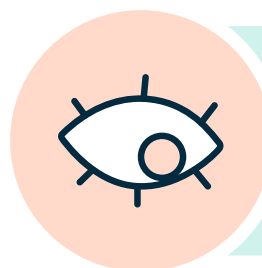
03. Recovering and reporting ghost gear

This includes measures taken to identify and retrieve ALDFG in the environment. Gear recovery can be an expensive exercise that may be required where gear is already in the environment and threatens critically sensitive habitats or endangered species.

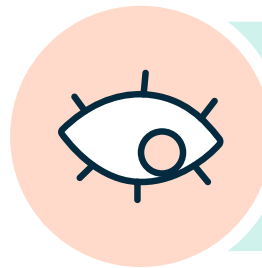
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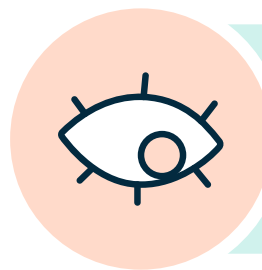
Reporting lost and abandoned gear found at sea, including location and type



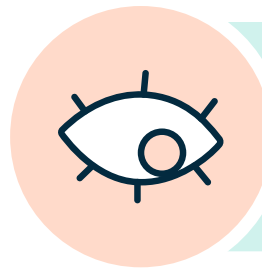
Establishing appropriate reporting regimes



Technology to locate ghost gear



ALDFG recovery at sea



Recycling of recovered gear

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04. Cross-cutting reports and guidelines

Resources that cover cross-cutting issues of ALDFG, including overall causes and solutions.

This includes:



-  [Sea-based sources of marine litter reports](#)
-  [Best practice frameworks](#)
-  [Ghost gear annual reports](#)
-  [Action plans](#)

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- ▶ **Acknowledgments**
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Acknowledgements:

The toolbox is created and managed by the COBSEA Secretariat, in partnership with the Environmental Justice Foundation (EJF), Reef Check Malaysia, and the Reef-World Foundation, with contributions from TierraMar and Coast4C and others.

Contributing authors: Martina de Marcos and Natalie Harms

Graphic design: Sol Bronenberg

▶ The Coordinating Body on the Seas of East Asia (COBSEA)

COBSEA is a regional intergovernmental mechanism bringing together nine countries (Cambodia, People's Republic of China, Indonesia, Republic of Korea, Malaysia, the Philippines, Thailand, Singapore and Viet Nam) in development and protection of the marine environment and coastal areas of the East Asian Seas. COBSEA is one of 18 Regional Seas programmes. The Secretariat is administered by the United Nations Environment Programme (UNEP) and hosted by Thailand. www.cobsea.org

▶ The Reef-World Foundation

The Reef-World Foundation is a UK registered charity with its roots founded on bringing basic marine ecology to fishing villages and local communities in Thailand since 1999. Today it is operating internationally to support governments and communities in sustainable consumption and production of coastal resources and marine life. Its main project is Green Fins, implemented in partnership with UN Environment Programme, which focuses on driving environmentally friendly SCUBA diving and snorkelling practices across the industry globally. <https://reef-world.org>

▶ Reef Check Malaysia

Reef Check Malaysia is working towards sustainable management of coral reefs in Malaysia. It brings together stakeholders to collaborate on coral reef monitoring, management, research, conservation, and advocacy. Reef Check Malaysia monitors the health of coral reefs at over 200 sites every year. The organization is based on three islands in Malaysia working on community projects to conserve our marine resources. www.reefcheck.org.my

▶ The Environmental Justice Foundation (EJF)

EJF is an international non-governmental organization working globally to protect natural environments and the human rights of people who depend on them. EJF is a charity with offices around the world including in Belgium, France, Germany, Ghana, Indonesia, Liberia, Sierra Leone, Republic of Korea, Thailand, and the UK. www.ejfoundation.org

The toolbox is supported by the Government of Canada through the Canadian Ghost Gear Fund.

The Ghost Gear Fund encourages Canadians to take actions to reduce plastic in the marine environment.

CONTACT US:

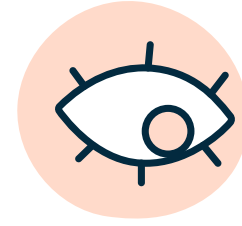
COBSEA Secretariat:
cobsea-unep@un.org



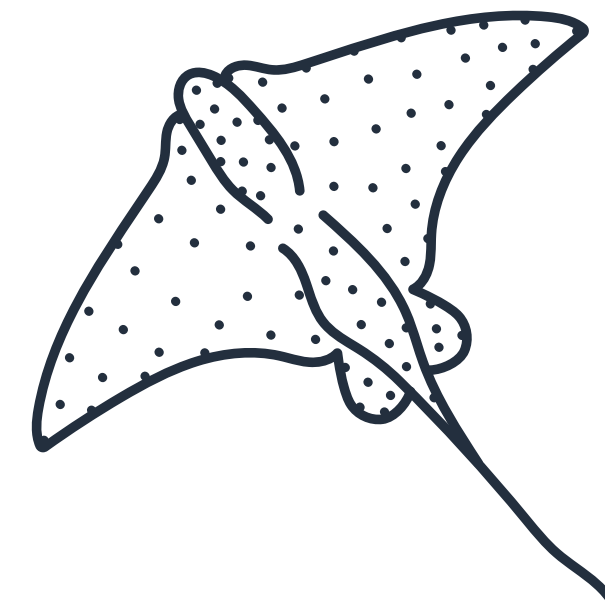
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Glossary



- ▶ **ALDFG:**
Abandoned, lost or otherwise discarded fishing gear
- ▶ **COBSEA:**
Coordinating Body on the Seas of East Asia
- ▶ **DFG:**
Derelict fishing gear
- ▶ **EJF:**
Environmental Justice Foundation
- ▶ **GGGI:**
Global Ghost Gears Initiative
- ▶ **Ghost gear:**
Refers to any fishing gear that has been abandoned, lost or otherwise discarded (for example: nets, line, rope, traps, pots, and floats)
- ▶ **IUCN:**
International Union for Conservation of Nature
- ▶ **UNEP:**
United Nations Environment Programme



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04. Cross-cutting reports and guidelines

RELATED RESOURCES:

- ▶ **Regulations by relevant government agencies and fisheries management authorities, including gear marking**
- Adequate port reception and disposal facilities for end-of-life gear:
- Ghost gear end-of-life management
- Capacity building, education, awareness and information on ghost gear
- Due diligence and good practices on behalf of fishers

Regulations by relevant government agencies and fisheries management authorities, including gear marking:

- ▶ [Ghost Gear Legislation Analysis](#) *(World Wildlife Fund [WWF] et al. 2020)*
- ▶ Gear marking:
 - ▷ [Voluntary Guidelines on the Marking of Fishing Gear](#) *(Food and Agriculture Organization [FAO] 2019)*
 - ▷ [Gear marking in Indonesian small scale fisheries](#) *(Global Ghost Gear Initiative [GGGI] 2018)*
 - ▷ [Technologies for the marking of fishing gear to identify gear components entangled on marine animals and to reduce abandoned, lost or otherwise discarded fishing gear](#) *(He and Suuronen 2018)*
- ▶ [Methods of Marking Fishing Gear](#) *(FAO)*
- ▶ [MARPOL Annex V Prevention of Pollution by Garbage from Ships](#)



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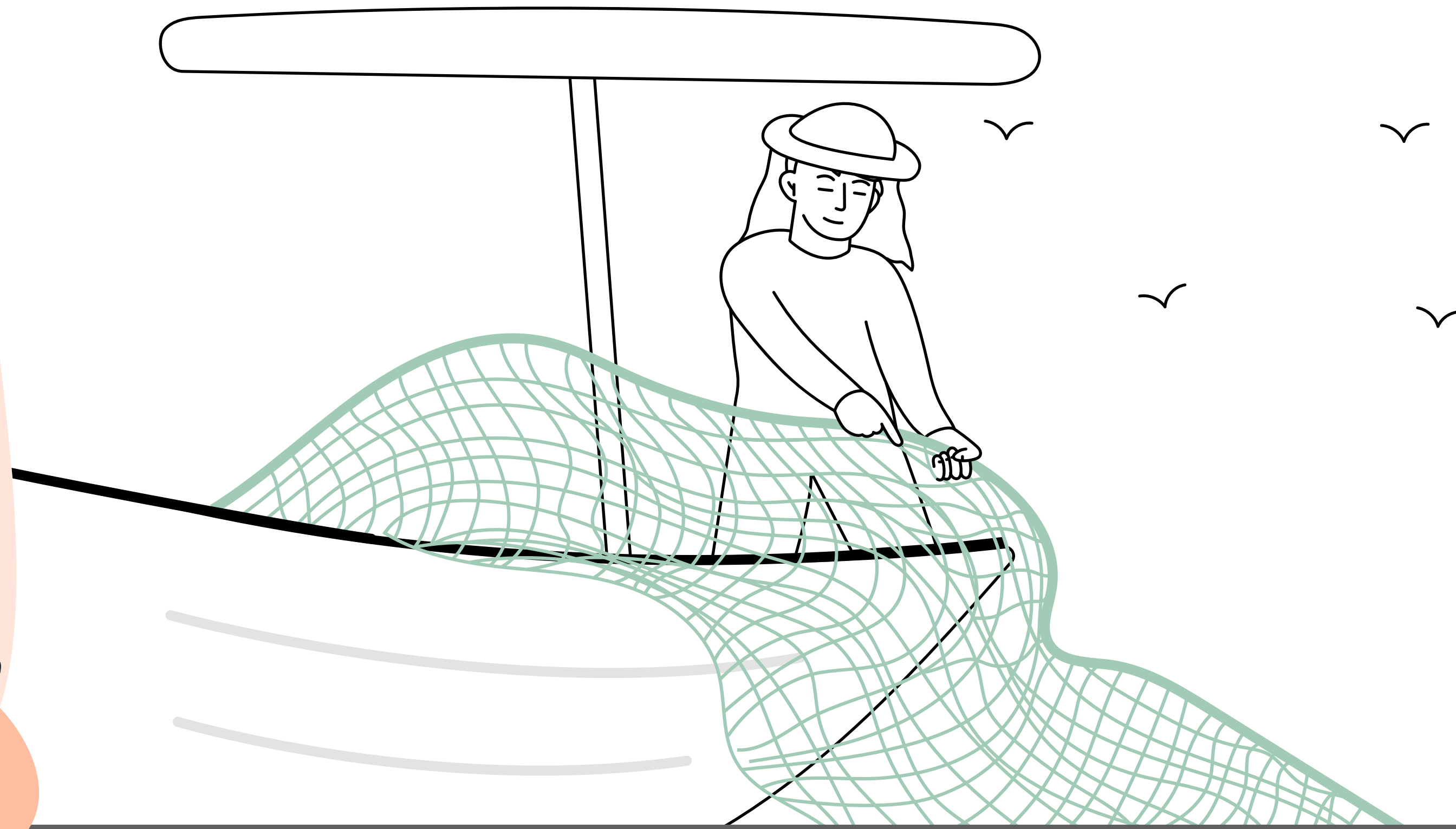
04. Cross-cutting reports and guidelines

RELATED RESOURCES:

- Regulations by relevant government agencies and fisheries management authorities, including gear marking
- ▶ Adequate port reception and disposal facilities for end-of-life gear:
 - Ghost gear end-of-life management
 - Capacity building, education, awareness and information on ghost gear
 - Due diligence and good practices on behalf of fishers

Adequate port reception and disposal facilities for end-of-life gear:

- ▶ What would it take to establish a take-back scheme for fishing gear
Insights from a comparative analysis of fishing gear and beverage containers (Nogueira et al. 2022)



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RELATED RESOURCES:

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- ▶ **Ghost gear end-of-life management**
- Capacity building, education, awareness and information on ghost gear
- Due diligence and good practices on behalf of fishers

Ghost gear end-of-life management:

▶ **Combatting ghost gear in the East Asian Seas - case study series by COBSEA:**



Net Free Seas, Thailand
(UNEP and COBSEA 2023a)
[VIEW CASE STUDY](#)

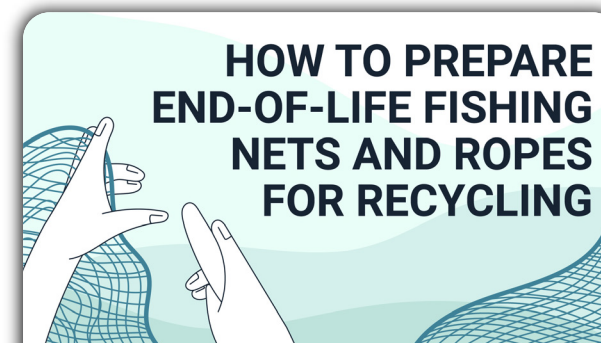


SeaNet, Indonesia
(UNEP and COBSEA 2023b)
[VIEW CASE STUDY](#)

▶ **Combatting ghost gear in the East Asian Seas - guidelines by COBSEA:**



How to prevent lost or abandoned fishing gear from harming the marine environment
(COBSEA 2023a)
[WATCH VIDEO](#)



How to prepare end-of-life fishing nets and ropes for recycling
(COBSEA 2023b)
[WATCH VIDEO](#)



How to sort old fishing gear for recycling
(COBSEA 2023c)
[WATCH VIDEO](#)

VIDEOS IN OTHER LANGUAGES



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RELATED RESOURCES:

- Regulations by relevant government agencies and fisheries management authorities, including gear marking
- Adequate port reception and disposal facilities for end-of-life gear:
- ▶ **Ghost gear end-of-life management**
- Capacity building, education, awareness and information on ghost gear
- Due diligence and good practices on behalf of fishers

Ghost gear end-of-life management:

▶ **Combatting ghost gear in the East Asian Seas - *guidelines by COBSEA:***



Village Saving and Loan Associations

[VIEW GUIDELINE](#)



Scoping Survey

[VIEW SURVEY](#)

▶ **Other resources**



EJF NET FREE SEAS handbook

For artisanal fishing communities (EJF 2021)

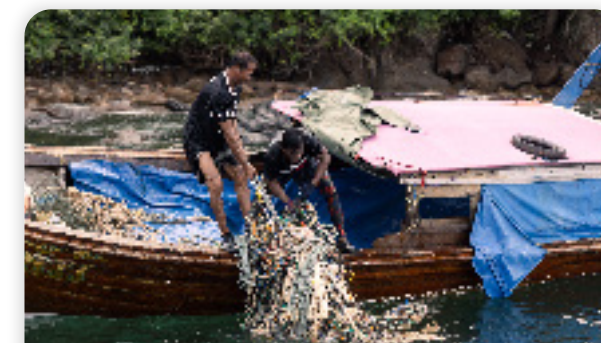
[VIEW IN ENGLISH](#)

[VIEW IN THAI](#)



List of known end-of-life net recyclers in COBSEA region

[VIEW LIST](#)



Net Free Seas, Thailand

(EJF 2022)

[WATCH IN ENGLISH](#)

[WATCH IN THAI](#)



Net-Works, The Philippines

(Interface et al. 2013)

[WATCH VIDEO](#)



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RELATED RESOURCES:

- Regulations by relevant government agencies and fisheries management authorities, including gear marking
- Adequate port reception and disposal facilities for end-of-life gear:
- Ghost gear end-of-life management
- ▶ **Capacity building, education, awareness and information on ghost gear**
- Due diligence and good practices on behalf of fishers

Capacity building, education, awareness and information on ghost gear:

▶ [The Young Man and The Ghost Net, Moa Island Torres Strait \(GhostNets Australia 2012\)](#)

Puppet show for kids – skip to min 1:48



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RELATED RESOURCES:

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- Capacity building, education, awareness and information on ghost gear
- ▶ **Due diligence and good practices on behalf of fishers**

Due diligence and good practices on behalf of fishers

- ▶ Technology to locate ghost gear
 - *Can be attached to fishing gear to prevent it getting lost*
 - ▷ [Blue Ocean Gear](#)
 - ▷ [Vanuatu pilot](#)
 - ▷ [Methods to locate Derelict Fishing Gear in Marine Waters – A guidance document of the Global Ghost Gear Initiative Catalyze and Replicate Solutions Working Group](#) (GGGI 2017)
- ▶ Repair instructions - Many options available on YouTube
 - ▷ [Example video: DIY repairing fishing net](#)



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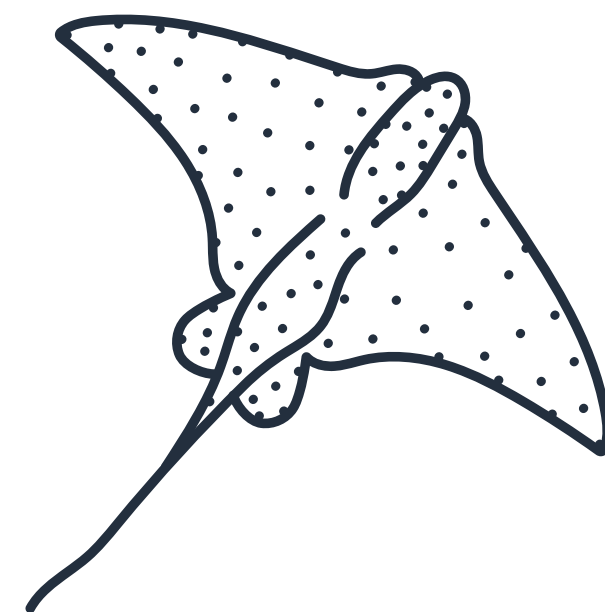
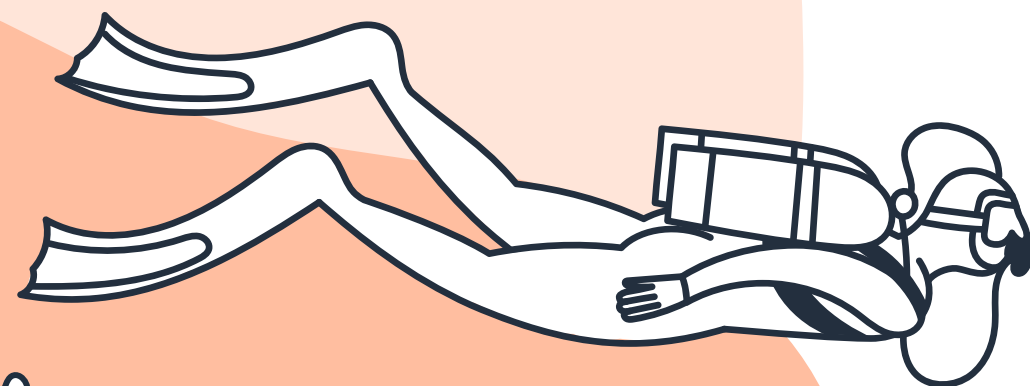
04. Cross-cutting reports and guidelines

Traps/pots with animal escape mechanisms in case of loss

- ▶ [Resqunit, trap recovery system](#)

Use of fully biodegradable materials (rot cords)

- ▶ [Combatting Ghost Fishing and Marine Pollution: Introducing a Sustainability Certificate](#) *(International Institute for Sustainable Development [IISD] 2022)*



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RELATED RESOURCES:

- ▶ Reporting lost and abandoned gear found at sea, including location & type in the environment
- ▶ Establishing appropriate reporting regimes
 - Technology to locate ghost gear
 - ALDFG recovery at sea
 - Recycling of recovered gear

Reporting lost and abandoned gear found at sea, including location and type in the environment

- ▶ [List by country of where to report ALDFG](#)

Establishing appropriate reporting regimes

- ▶ [Data Collection Protocol on Ecological Impacts of Derelict Fishing Gear - Booklet](#)
(MarSci 2022)
- ▶ [Data Collection Protocol on Ecological Impacts of Derelict Fishing Gear - Poster](#)
(MarSci 2022)



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RELATED RESOURCES:

- Reporting lost and abandoned gear found at sea, including location & type in the environment
- Establishing appropriate reporting regimes
- ▶ **Technology to locate ghost gear**
- ALDFG recovery at sea
- Recycling of recovered gear

Technology to locate ghost gear

Technology can be used by fisheries authorities to locate, map and possibly retrieve lost gear, and by fishers to set and retrieve their gear.

- ▶ [Transponder technology](#)

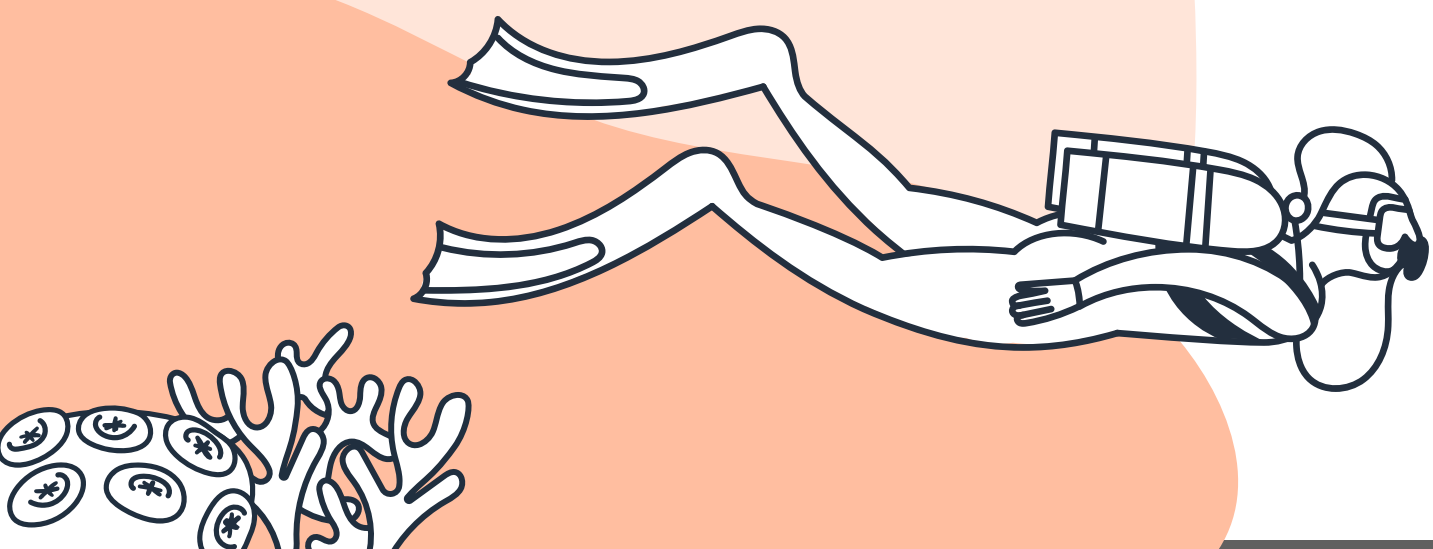
ALDFG recovery at sea

- ▶ [How to Retrieve Ghost Gear from the Ocean? Video](#) (COBSEA 2023d)
- ▶ [How to Retrieve Ghost Gear from the Ocean? The checklist](#)
- ▶ [Safety Rules for Improving Productivity Supporting Productivity Improvement in Coastal Fishing - Collection Process Video explaining the process of collecting ghost gear from the ocean](#) (Korea Fisheries Infrastructure Public Agency [FIPA] 2022)

IN OTHER LANGUAGES

Recycling of recovered gear

- ▶ [Ghost gear end-of-life management \(section 1\)](#)



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RELATED RESOURCES:

▶ **Sea-based sources of marine litter reports**

- Best practice framework
- Ghost gear annual reports
- Action plans

Sea-based sources of marine litter reports

- ▶ [Abandoned, lost or otherwise discarded fishing gear \(No. 523\). Food and Agriculture Organization of the United Nations \(FAO 2009\)](#)
- ▶ [Sea-based sources of marine litter \(Group of Experts on the Scientific Aspects of Marine Environmental Protection \[GESAMP\] 2021\)](#)
- ▶ [The impact of fishing gear as a source of marine plastic pollution: a Global Ghost Gear Initiative \(GGGI\) information paper to support negotiations in preparation for UNEA 5.2 \(GGGI 2022\)](#)
- ▶ [Effective Ghost Gear Solutions – Learning from what works \(Ocean Conservancy et al. 2020\)](#)
- ▶ [Regional workshops on best practices to prevent and reduce abandoned, lost or discarded fishing gear in collaboration with the Global Ghost Gear Initiative \(FAO 2020\)](#)



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RELATED RESOURCES:

- Sea-based sources of marine litter reports

▶ **Best practice framework**

- Ghost gear annual reports

- Action plans

Best practice framework

- ▶ [Best Practice Framework \(GGGI 2021\)](#)
- ▶ [Ghost Gear: The Abandoned Fishing Nets Haunting our Oceans \(Greenpeace 2019\)](#)

Ghost gear annual reports

- ▶ [Ghost Gear Annual report \(GGGI 2021\)](#)

Action plans

- ▶ [Strategic Plan of Action on ASEAN Cooperation in Fisheries 2021-2025 \(Association of Southeast Asian Nations \[ASEAN\] 2021\)](#)
- ▶ [ASEAN Framework of Action on Marine Debris \(ASEAN 2020\)](#)





With support from:



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Contact us:

www.cobsea.org | cobsea-unep@un.org



References:

- ▶ Association of Southeast Asian Nations (2020). ASEAN Framework of Action on Marine Debris. Available at: <https://asean.org/asean2020/wp-content/uploads/2021/01/3.-ASEAN-Framework-of-Action-on-Marine-Debris-FINAL.pdf> (Accessed: 7 August 2023)
- ▶ Association of Southeast Asian Nations (2021). The Strategic Plan of Action for ASEAN Cooperation on Fisheries. Available at: <https://asean.org/wp-content/uploads/2021/12/FAFD-16.-SPA-Fisheries-202528ASWGF.pdf> (Accessed: 7 August 2023)
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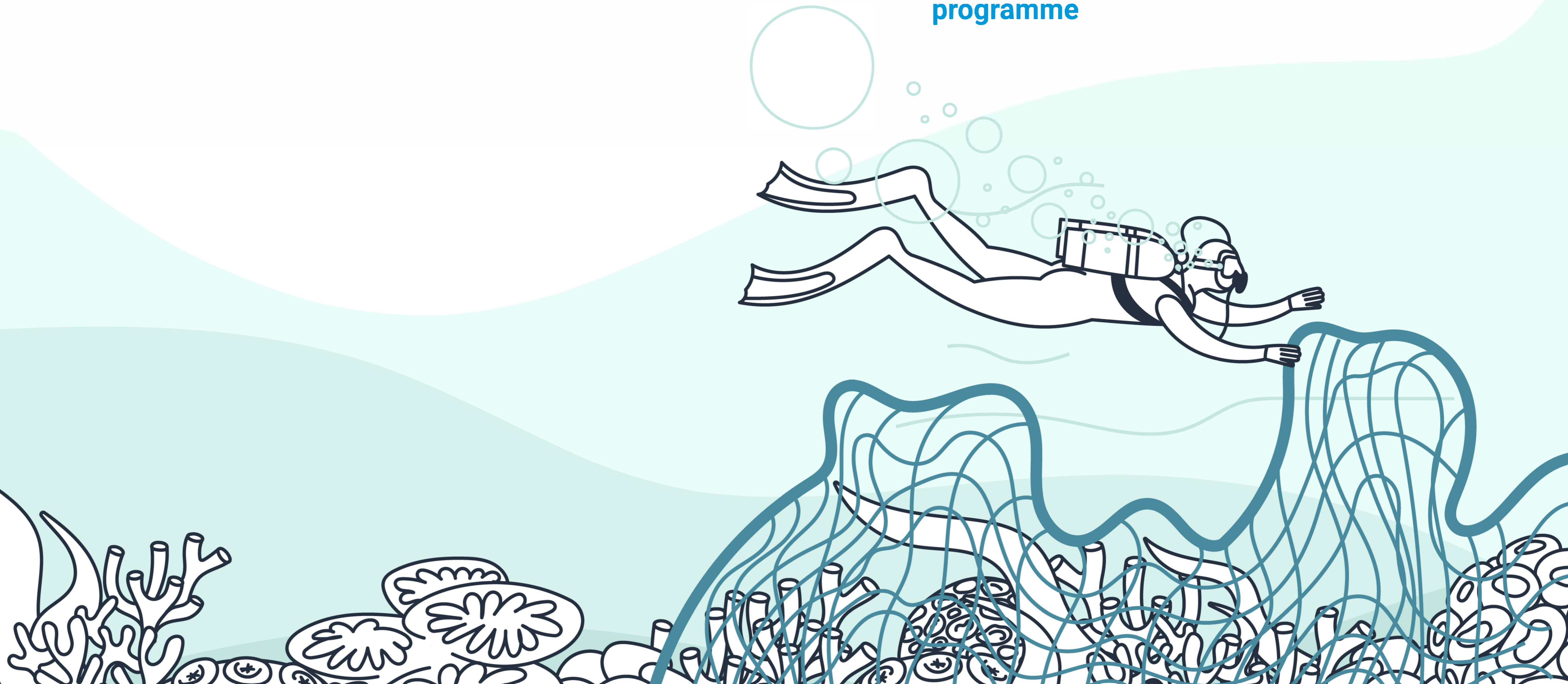
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APPENDIX



Videos:



HOW TO PREVENT LOST OR ABANDONED FISHING GEAR FROM HARMING THE MARINE ENVIRONMENT

How to prevent lost or abandoned fishing gear from harming the marine environment

(COBSEA 2023a)

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HOW TO PREPARE END-OF-LIFE FISHING NETS AND ROPES FOR RECYCLING

How to prepare old fishing nets and ropes for recycling

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HOW TO RETRIEVE GHOST GEAR FROM THE OCEAN

How to retrieve ghost gear from the ocean

(COBSEA 2023d)

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HOW TO SORT OLD FISHING GEAR FOR RECYCLING

How to sort old fishing gear for recycling

(COBSEA 2023c)

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Case studies:

Combatting ghost gear in the East Asian Seas - case study series by COBSEA:



Net Free Seas, Thailand

(UNEP and COBSEA 2023a)

[VIEW CASE STUDY](#)



SeaNet, Indonesia

(UNEP and COBSEA 2023b)

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Guidelines:



Village and Loan
Associations (VSLAs)

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Checklist for Ghost
Gear Retrieval

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