



GLOBAL
GHOST GEAR
INITIATIVE®

2020

ANNUAL REPORT

GENEROUS SUPPORT FOR THE GLOBAL GHOST GEAR INITIATIVE COMES FROM:

11TH HOUR RACING

THE ARTHUR VINING DAVIS FOUNDATIONS

ASIA PACIFIC ECONOMIC COOPERATION (APEC)

BUMBLE BEE SEAFOODS

LENTON PARKS

GOVERNMENT OF CANADA – DEPARTMENT OF FISHERIES,
OCEANS AND THE CANADIAN COAST GUARD (DFO)

GOVERNMENT OF NORWAY

GOVERNMENT OF THE UNITED KINGDOM –DEPARTMENT FOR ENVIRONMENT,
FOOD AND RURAL AFFAIRS (DEFRA)

GOVERNMENT OF THE UNITED STATES OF AMERICA –
DEPARTMENT OF STATE,
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UNITED NATIONS FOOD AND
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WORLD ANIMAL PROTECTION

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FOREWORD

OUR OCEANS, LAKES, AND RIVERS ARE CRITICAL THREADS IN THE SOCIAL, CULTURAL, AND ECONOMIC FABRIC OF OUR WORLD. But they are facing serious challenges—from climate change and its detrimental impacts on our ecosystems, to the increasing loss of biodiversity, and the surge of plastic marine waste. While we strive to understand just how pervasive marine pollution is, we know that a major contributor is lost, abandoned, and discarded fishing gear, also known as ghost gear. Ghost gear is one of the deadliest forms of plastic debris. It can have devastating impacts on our marine animals, aquatic environments, and fish stocks.

Our Government has recognized the threat that ghost gear poses in Canada and around the world, and we have rightly identified the issue as one of national importance. In addition to joining the Global Ghost Gear Initiative (GGGI), we took strong action at home. In 2018, we expanded mandatory gear loss reporting and launched the Sustainable Fisheries Solutions and Retrieval Support Contribution Program (Ghost Gear Fund). This program is a unique stewardship-based approach that enables environmental and industry stakeholders to tackle ghost gear. Between 2020 and 2022, the Ghost Gear Fund is funding 26 projects in Canadian waters and abroad. In its first year, we removed over 63 tonnes of gear from our coastal Atlantic waters alone.

We recognize that no fish harvester ever wants to lose their gear, which is why we must collaborate with industry and work with gear producers to understand the key causes of gear loss and identify more sustainable designs and fishing practices going forward. It was with this in mind that Canada hosted a Gear Innovation Summit in 2020. We brought together hundreds of fish harvesters, environmentalists, scientists, and innovators – from Canada and abroad – to share knowledge,

build partnerships, and work toward a common goal: to end ghost gear in our oceans.

The situation is urgent, but there is reason to be optimistic. Through collaborative organizations like the GGGI, we are seeing more sustainable fisheries, making huge strides in technology, and removing more and more ghost gear from our oceans. Canada is proud to be a member of the GGGI, and we will continue to work with our international partner to eliminate ghost gear at home and around the world.



The Honourable Ms. Bernadette Jordan,
Minister of Fisheries, Oceans and the Canadian Coast Guard

 Government of Canada  Gouvernement du Canada



GHOST GEAR AS A GLOBAL ISSUE

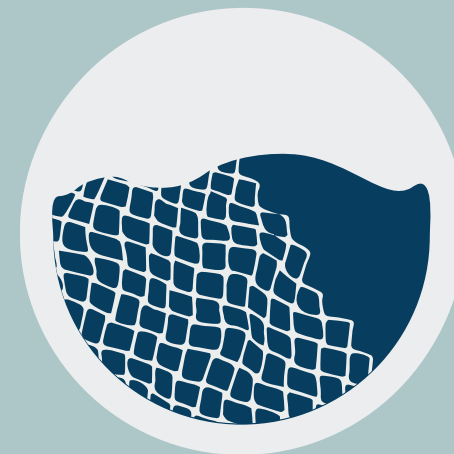
WATER IS THE SOURCE OF LIFE ON THIS PLANET.

Whether in our ocean, lakes, rivers, or glaciers, every living thing on the planet is dependent on this single element for survival. And all of these aquatic systems are under threat. Ocean acidification, climate change, melting polar ice, and the pervasive presence of marine debris are having catastrophic effects on the blue planet we call home.

In recent years, there has been increased attention on the threat of abandoned, lost, and discarded fishing gear (ALDFG or “ghost gear”). Purposely designed to catch aquatic species, fishing gear – when lost – can have devastating impacts on both target and non-target species alike and can persist in the environment for decades. It is estimated that as much as 70 percent of floating macroplastics in

the ocean may be attributed to ghost gear¹. Ghost gear has been discovered in some of the deepest and most remote areas of the ocean, as well as in many marine-protected areas around the world².

In the North Pacific Ocean, nearly 90 percent of marine debris items intercepted by longline fisheries were ghost gear³. This year, a GGGI-sponsored survey by the Myanmar Ocean Project in the Myeik Archipelago in Myanmar found ghost gear at 95 percent of surveyed locations, with almost a third of those locations identified as hotspots, showing evidence of multiple layers of lost fishing nets harming local marine life⁴. In June 2020, the United Nations Committee on Fisheries (COFI) published an interim report from the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) Working Group 43 on sea-based sources of marine litter, to be released at the 34th session of the Committee of Fisheries Meeting (COFI) in 2021.



70%

UP TO 70 PERCENT OF FLOATING MACROPLASTICS IN THE OCEAN MAY BE ATTRIBUTED TO GHOST GEAR⁵



90%

IN THE NORTH PACIFIC OCEAN NEARLY 90 PERCENT OF MARINE DEBRIS ITEMS INTERCEPTED BY LONGLINE FISHERIES WERE GHOST GEAR³



GHOST GEAR TAKES THE GLOBAL STAGE

INCREASED FOCUS ON GHOST GEAR HAS RESULTED IN ORGANIZATIONS AROUND THE WORLD DEDICATING RESOURCES TO STUDY THE EXTENT OF THE PROBLEM AND COMMITTING TO FIND SOLUTIONS AT EVERY LEVEL. The GGGI is routinely referenced as an authority on the issue and continues to be involved in policy discussions on ghost gear across industry fora, international sustainability conferences/events, technical working groups, and United Nations (UN) bodies. We've also seen increasing government support on ghost gear, with the United States and Mexico both joining the GGGI in 2020, and Canada's ghost gear fund supporting impactful projects across the world.

The United Nations Environment Programme (UNEP) and Open Universiteit (OU) revised their **Massive Open Online Course on Marine Litter** in October 2020, recognizing the significant contribution ghost gear makes to the broader marine debris issue and introducing a dedicated chapter to ghost gear. The United Nations Food and Agriculture Organization (UN FAO) also released its **2020 State of Fisheries and Aquaculture (SOFIA) report**, which mentions working with the GGGI in a new section titled "Abandoned, lost or otherwise discarded fishing gear and its pollution of the marine environment."

The GGGI has also become a strategic partner in the newly launched International Maritime Organization (IMO)-FAO GloLitter Partnerships Project, funded by the Government of Norway. The GGGI participated in a consultative process for a **report by the Government of British Columbia** on assessing marine debris challenges in the Canadian province, which included ghost gear as a major concern, and on a **policy intentions paper on Extended Producer Responsibility (EPR) programs**, including one for ghost gear. The recently launched High Level Panel (HLP) for a Sustainable Ocean Report, composed by the Ocean Panel – made up of leaders from 14 countries – also pledged action on a range of sustainability issues, including eliminating the discard of fishing gear. Combined, member countries of the Ocean Panel make up 40 percent of the world's coastlines, 30 percent of offshore exclusive economic zones, 20 percent of the world's fisheries, and 20 percent of the world's shipping fleet.

Photo by Shin Arunrugstichai

RESPONSIBLE GEAR SOLUTIONS

The GGGI continued to engage on consultative processes for industry standards involving seafood sustainability where ghost gear is related, including participating on the technical working group for the Global Seafood Assurances' (GSA) **Responsible Fishing Vessel Standard (RFVS)**. The RFVS is the only vessel-level certification program that is available on a global scale, and the latest revision – released in June 2020 – now includes ghost gear prevention measures in the environmental impact management section. We've also continued our conversation with the Marine Stewardship Council (MSC) to include ghost gear in their respective standard revisions to have preventive impact at scale.

The GGGI and its members are at the center of efforts advancing end-of-life solutions for fishing gear and building effective recycling programs

to allow fishers to responsibly dispose of their gear. In May 2020, the Centre for Sustainable Design at the University for the Creative Arts in the United Kingdom (UK) **released a report** on circular business opportunities for end-of-life fishing gear, and, in the same month, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) published its report on redesign recommendations for fishing gear in the European Union (EU), **which included calling for recyclability in gear design**. In an article about entrepreneurs making use of end-of-life fishing gear as a raw material, the World Economic Forum highlighted several GGGI members, including DSM Engineering Materials, Fourth Element, Ghost Diving Foundation, Healthy Seas, and the Olive Ridley Project. Seafish's magazine, Quay Issues, **featured an article** on the costs and benefits of recycling end-of-life fishing gear, and KIMO International also released a **new report** and a **set of guidelines** on best practices for use of net cuttings during at-sea net repairs on fishing vessels in the North Atlantic.

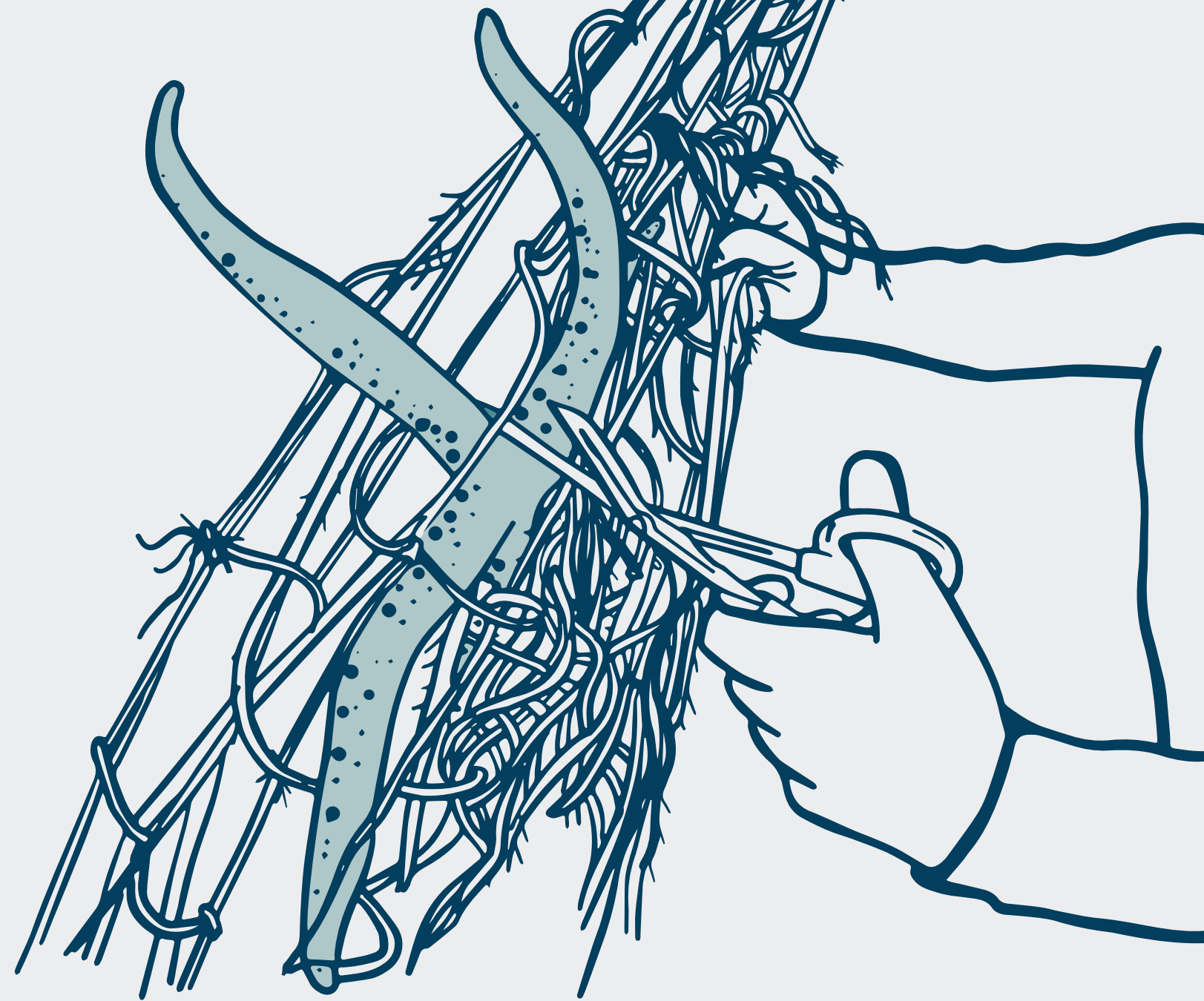


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As the only organization focused wholly on the problem of ghost gear and operating on an international scale, the GGGI's true strength is in the diversity of its members, who span all ocean sectors, from industry to governance to conservation.

KIRSTEN GILARDI, CALIFORNIA LOST FISHING GEAR RECOVERY PROJECT, UNIVERSITY OF CALIFORNIA, DAVIS

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A YEAR OF UNCERTAINTY

In many ways, 2020 has been one year-long global crisis – the likes of which few have seen in their lifetimes. Although the COVID-19 pandemic, civil unrest over racial inequity, an unprecedented storm season catalyzed by climate change, and countless other crises around the world have caused chaos on a global scale, we have continued our critical work for the sustainability of our ocean.

Our top priority continues to be the health and wellbeing of our staff and our GGGI members and their families. To reduce the risk of exposure to and transmission of COVID-19, we implemented a total travel ban for our team early in 2020 and

have moved to full-time working from home for the foreseeable future.

While COVID-19 prevented a large amount of on-the-ground work from being completed as scheduled, there has still been tremendous progress made in the ghost gear research, technology, and policy spaces.

This report highlights some of the exciting progress and achievements that the GGGI and its member organizations had in 2020 despite the global pandemic and domestic turmoil in several countries around the world.

KEY ACHIEVEMENTS IN 2020



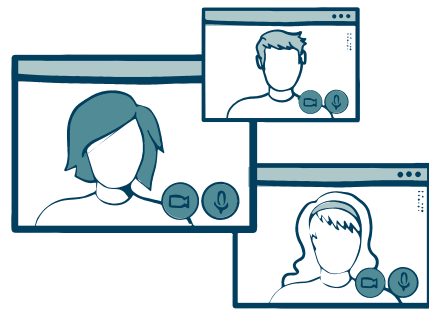
WELCOMED THE UNITED STATES OF AMERICA AND MEXICO AS OUR NEWEST MEMBER GOVERNMENTS

With the addition of the United States of America and Mexico in July and November respectively, the GGGI brought its number of official member governments to 17.



MOVED AHEAD WITH NEW AND EXISTING PROJECT WORK

Despite the COVID-19 pandemic and the myriad challenges around the world in 2020, the GGGI progressed work on existing projects and laid the groundwork for several new projects to occur in 2021.



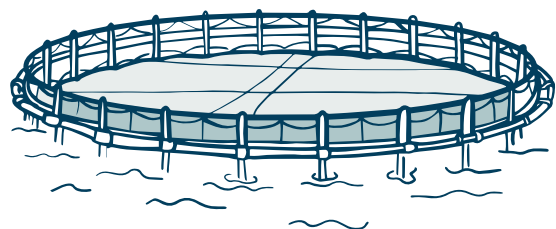
DEVELOPED CORPORATE ENGAGEMENT TOOLS AND WEBINAR SERIES

In collaboration with Chronos Sustainability, the GGGI has created a suite of virtual and interactive tools designed for GGGI members directly involved in the seafood supply chain on how to implement the GGGI Best Practice Framework for the Management of Fishing Gear (BPF) in their businesses.



UPDATED BEST PRACTICE FRAMEWORK FOR WILD CAPTURE FISHERIES

To ensure the BPF remains up-to-date, the GGGI began a “refresh” of the BPF, incorporating the latest research, technology, and case studies, and combining version 1.0’s three separate documents into one document to improve overall readability for launch in 2021.



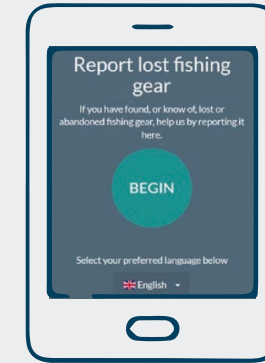
DEVELOPED BPF FOR AQUACULTURE OPERATIONS

To help the aquaculture industry prevent gear loss from aquaculture operations to the extent possible, the GGGI began developing a second BPF specifically for aquaculture for launch in 2021.



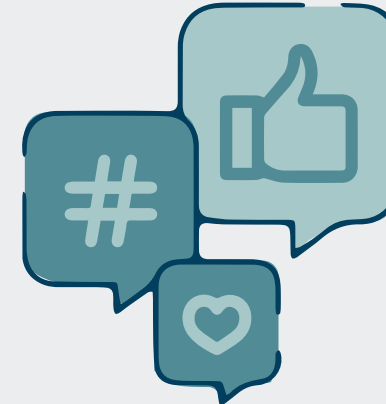
SECURED GGGI SMALL GRANTS FUNDING

Thanks to generous support from the Government of Norway, the GGGI will launch a small grants platform in 2021, which will be open to GGGI members as part of the Ocean Conservancy’s larger Small Grants Program.



UPDATED THE GLOBAL DATA PORTAL AND GHOST GEAR REPORTER APP TO VERSION 2.0

Building on the successful concept of data portal 1.0, and with the generous support of the Government of Canada, we have developed version 2.0 of the data portal, which will greatly increase its functionality.



INCREASED GGGI COMMUNICATIONS FOOTPRINT

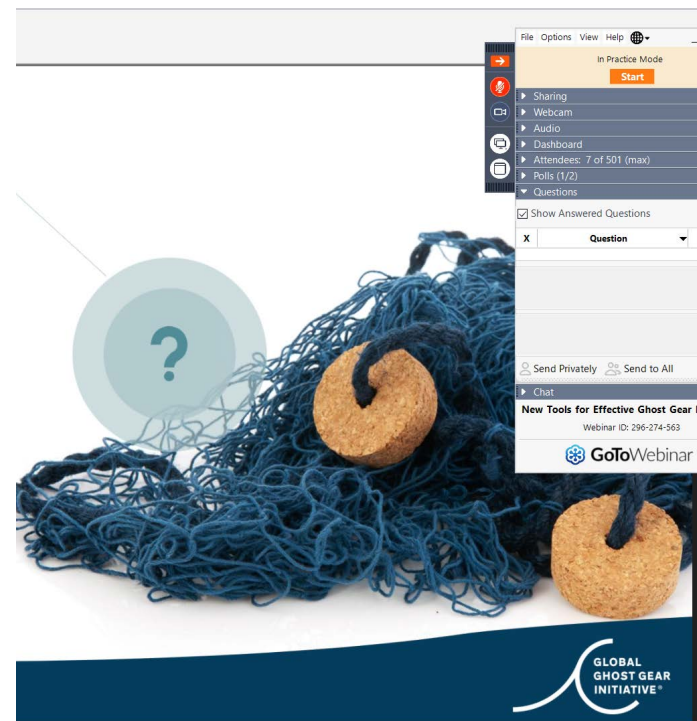
Media hits in Plastics News, BBC, Canadian Geographic, and Waste360 covered the breadth of the GGGI’s work, while a series of 10 blogs helped showcase ghost gear to Ocean Conservancy’s audience and members. The GGGI also produced a new “**Ghost Gear Victories**” video, highlighting some of the ways we’ve been working to address ghost gear over the last two years despite the challenges that 2020 posed.



PRODUCED GHOST GEAR SOLUTIONS REPORT

In November, 2020, the GGGI released a new report alongside World Wildlife Fund (WWF) titled “**Effective Ghost Gear Solutions: Learning From What Works.**” The report showcases the work of numerous GGGI members and illustrates how different organizations around the world are working to prevent, remove, and recycle lost gear.

CORPORATE ENGAGEMENT TOOLS AND WEBINARS



Over the summer of 2020, the GGGI introduced several new resources in a series of live webinars that focused on GGGI members in the seafood and retail sectors.

NEW TOOLS FOR EFFECTIVE MANAGEMENT OF GHOST GEAR WITH THE SEAFOOD BUSINESS FOR OCEAN STEWARDSHIP ALLIANCE (SEABOS)

(ft. Darian McBain, Thai Union)
Presented live on August 11, 2020

EFFECTIVE SOLUTIONS TO GEAR LOSS IN THE GULF OF MAINE

(ft. Erin Pelletier, Gulf of Maine Lobster Foundation)
Presented live on September 22, 2020

NEW TOOLS FOR EFFECTIVE MANAGEMENT OF GHOST GEAR IN YOUR BUSINESS

(ft. Matt Owens, Tri Marine) for seafood companies, retailers, the food service industry and certification schemes.
Presented live on October 6, 2020

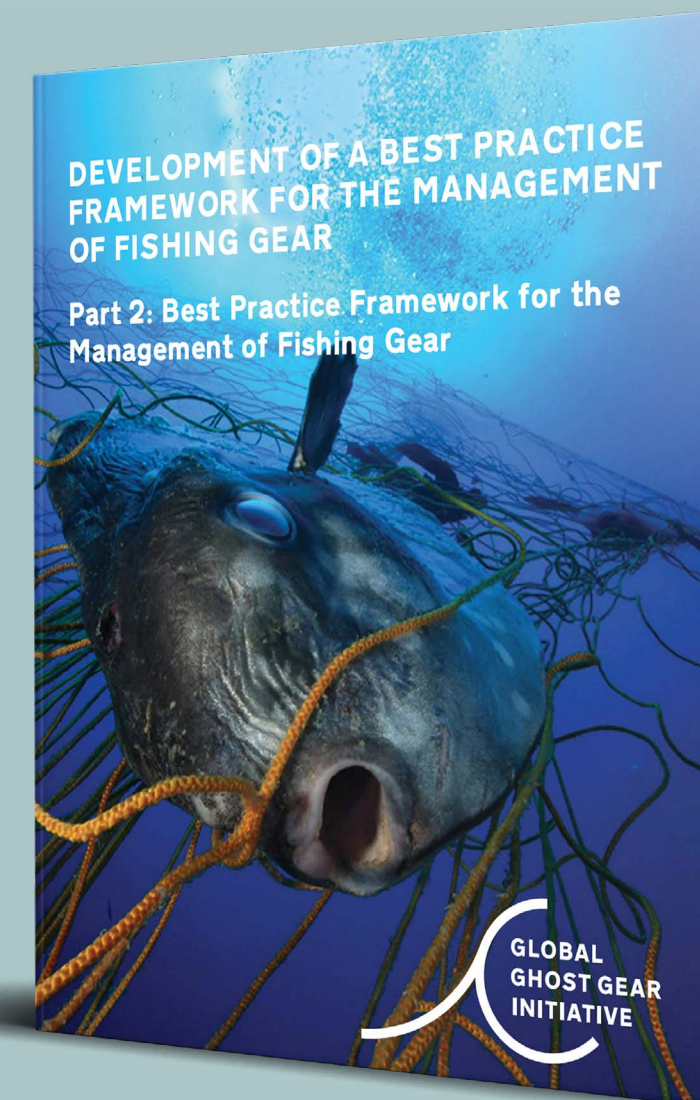
These new tools draw directly from our key ghost gear guidance document, with the goal of transforming key ideas from the BPF into engaging and visual training modules. We also developed a condensed version of the BPF, which serves as a quick and visual companion guide for implementing practices to address ghost gear in seafood supply chains. Produced in concert with Chronos Sustainability and supported by 11th Hour Racing, these new tools are available now to all GGGI members directly involved in the seafood supply chain.



BEST PRACTICE FRAMEWORK UPDATES

The GGGI BPF is the only comprehensive document outlining prevention, mitigation, and remediation strategies for ghost gear directed at all actors in the seafood supply chain. When launched at the SeaWeb Summit in Seattle in 2017, it contained the most up-to-date information, case studies, and research available at the time. Three years later, it has been used by the GGGI to outline project delivery, frame international ghost gear capacity building workshop agendas, and serve as the guiding “compass” of the GGGI’s overall body of work. It has also been used by GGGI member governments to inform their fisheries management plans and national action plans on marine debris and ghost gear; by GGGI member corporates in the seafood and retail sectors to prevent ghost gear in their supply chains; and by seafood certification bodies to reference how to best address ghost gear.

However, due in no small part to the actions of the GGGI and its member organizations, the last few years have seen an increased interest in ghost gear-related research, projects, and case studies around the world, resulting in the need to update the BPF to keep up with these new developments. Our sincere thanks to the organizations that provided expert feedback to these revisions, including **Archipelago Marine Research, International Pole and Line Foundation, International Seafood Sustainability Foundation, Natural Resources Consultants**, and the **University of California – Davis**. Version 2.0 of the BPF will be released in its final form in 2021.

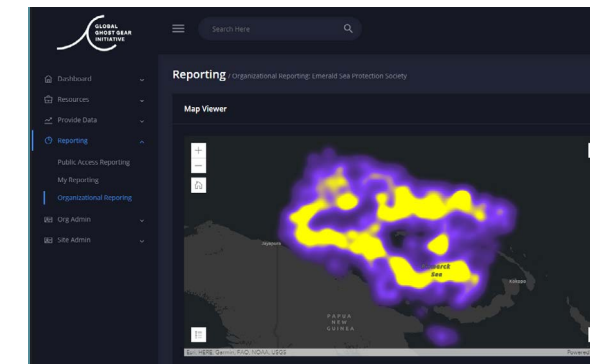
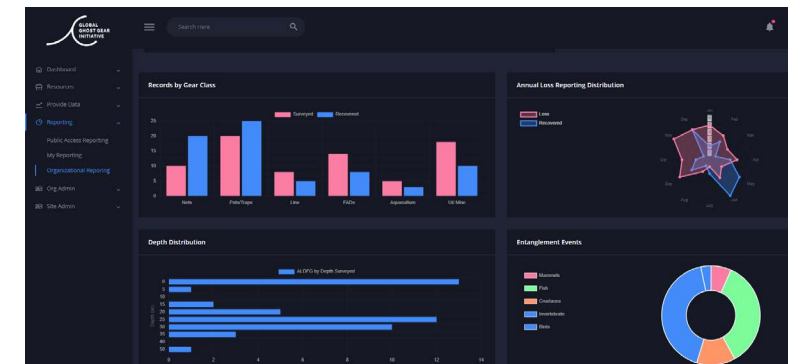
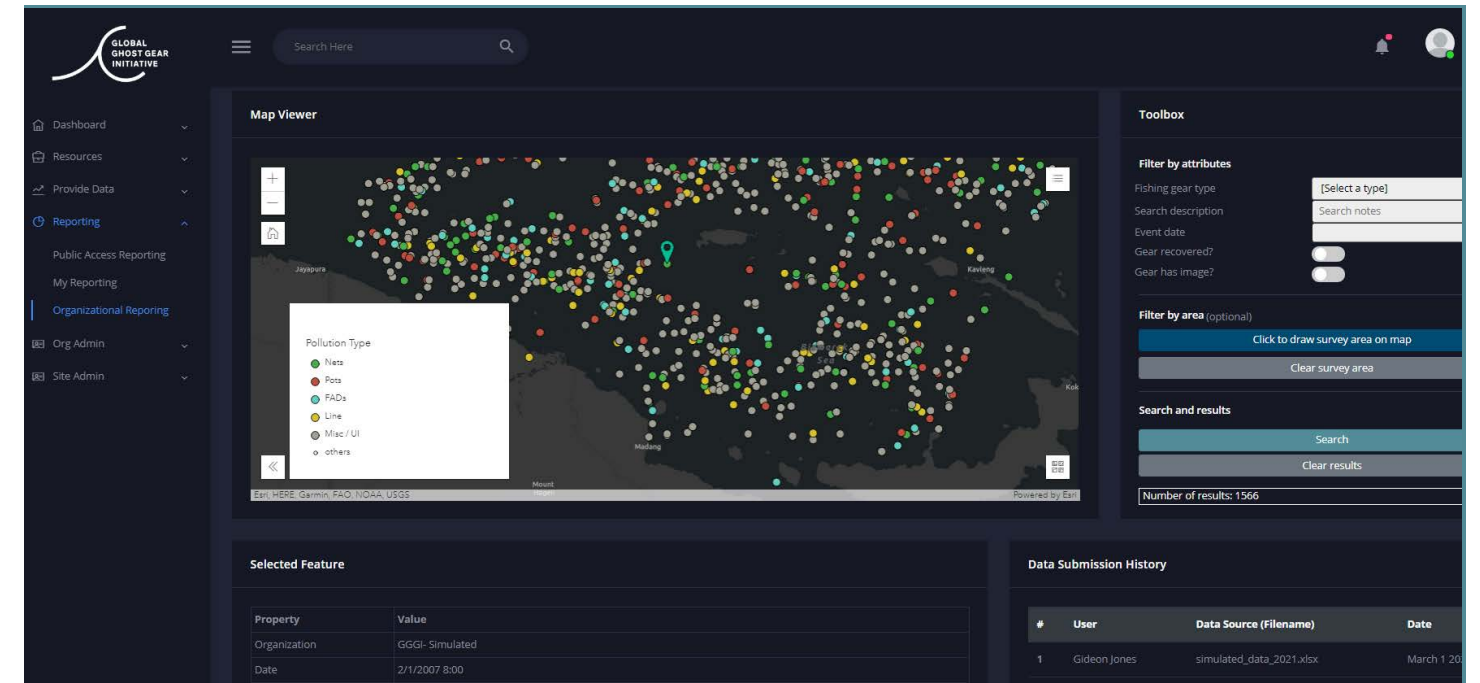


In addition to revising the original BPF, which focuses exclusively on wild capture fisheries, the GGGI recognized a need to address the aquaculture industry with regard to ghost gear. As with wild capture fisheries, wherever aquaculture occurs, there will be a degree of gear loss associated with it, due primarily to extreme weather conditions and, occasionally, due to poor siting, poor maintenance routines, farm decommissioning, and, in some cases, deliberate discharge. Similar to the wild capture BPF, the BPF for aquaculture will address prevention, mitigation, and remediation strategies for actors across the aquaculture supply chain. The final aquaculture BPF is set for release in 2021 after an extensive stakeholder feedback process.

GLOBAL DATA PORTAL AND GHOST GEAR REPORTER APP UPDATES

The **GGGI data portal** is the largest global collection of ghost gear records thanks to the contributions from multiple data partners around the world. Version 1.0 of the data portal, while ground-breaking at the time of its launch, was primarily a proof of concept and could not provide the level of interaction with the data that was originally envisioned. Version 2.0 truly brings the data portal to life and fulfills the original vision. Some major updates include:

- 01 INTEGRATES NEW DATA SHARING AGREEMENT DIRECTLY INTO THE ONLINE PORTAL;
- 02 ALLOWS DATA CONTRIBUTORS TO DEFINE LEVEL OF SHAREABILITY FOR EACH DATA SET AT TIME OF UPLOAD;
- 03 SUPPORTS ORGANIZATION/INDIVIDUAL LOGINS TO ALLOW INTERACTION WITH USER-SPECIFIC DATA;
- 04 INCLUDES A SUITE OF NEW INTERACTIVE AND CUSTOM REPORTING TOOLS;
- 05 INTEGRATES WITH ARCGIS TO ALLOW HIGH RESOLUTION DATA ON MAP VIEW;
- 06 ALLOWS USERS TO RETRIEVE DATA INSTANTLY WITHIN A USER-DRAWN SHAPE ON MAP VIEW;
- 07 INCLUDES SEVERAL NEW APPLICATION PROGRAMMING INTERFACES (APIS), EXPANDING POSSIBLE INTEGRATION AND DATA TRANSFER WITH OTHER PLATFORMS IN THE FUTURE.



The GGGI Ghost Gear Reporter App will be updated concurrently and will include the ability to log in using the same credentials as with the data portal if desired, in order to track individual projects and contributions on a per-user basis. The Ghost Gear Reporter app – already available in Chinese (courtesy of **WWF Hong Kong**), English, French (courtesy of the government of **Canada**), Spanish (courtesy of the **Manta Caribbean Project**) and Portuguese (courtesy of **World Animal Protection**

Brazil)– was translated into seven more languages courtesy of **Nomad Foods** – Danish, Dutch, Finnish, German, Italian, Norwegian, and Swedish – bringing the total number of languages for the app to 12. As a result, the app is now linguistically accessible to some 3.5 billion people around the world – just under half the world’s population.

Both the app and the data portal version 2.0 updates will be rolled out in 2021.



Photo by Stand out for Environment Restoration



Photo by Stand out for Environment Restoration



Photo by International Pole and Line Foundation



Photo by International Pole and Line Foundation

JOANNA TOOLE LEGACY

Recipients of the first Joanna Toole Annual Ghost Gear Solutions Award – created to honour GGGI co-founder, United Nations worker, and former World Animal Protection campaigner Joanna (Jo) Toole, 36, whose life was tragically taken in the Ethiopian Airlines crash in March 2019 – were announced in 2020. After an impressive round of submissions and an extensive round of review by the Joanna Toole Foundation, World Animal Protection, and the GGGI, the first recipients were the International Pole and Line Foundation (IPNLF) and the Stand Out for Environment Restoration (SOFER) Initiative.

IPNLF is working in collaboration with the Olive Ridley Project to implement a pilot project in the Maldives, with the aim of incentivising the removal of all ghost fishing gear encountered by small-scale tuna fishers. This project also has the primary ambition of removing significantly more ghost

gear from the ocean by weight than the modest amounts lost from their own fishing operations.

Based in Nigeria, SOFER raises environmental awareness by working with young people, providing practical ways to change behaviours for the better. SOFER received a grant to contribute to their “Fishing Net Gains Nigeria” Project. The project works to engage local fishing communities on best practices for reducing ghost gear through management, mitigation, and removal. This project will work directly with fishers in Nigeria, Cameroon, and Ghana.

Photo by World Animal Protection



SECOND ANNUAL JOANNA TOOLE SOLUTIONS AWARD

Following the official launch of the Joanna Toole Foundation on World Oceans Day, entries also opened for the 2nd Annual Joanna Toole Ghost Gear Solutions Award, which is presented to projects that show excellence in tackling the problem of ghost gear. Two projects will be selected for a combined award of \$60,000 USD to help develop and expand their work. Applications will again be reviewed and chosen by experts from the GGGI, World Animal Protection, and the Joanna Toole Foundation. Applications closed on August 31, 2020, and the winners will be announced in early 2021.



“

Following the death of my daughter, Jo, friends and family decided to set up a charitable foundation to continue her work. We were very pleased when World Animal Protection and the GGGI announced the annual Joanna Toole Ghost Gear Solutions Award to be funded for three years by World Animal Protection. I was pleased to be on the panel of judges for the first round, and we were able to announce two winners at the end of January [2021].

Although COVID-19 lockdowns have restricted the ability of the winners to run their projects, I'm very pleased that the cash award is enabling them to implement measures to reduce ghost gear in their localities. Joanna's last project was tackling marine debris on behalf of the United Nations, and this yearly award will form an important component of the many initiatives that we plan to keep her legacy and mission alive. As we launch the second round of the award, The Joanna Toole Foundation urges anyone with ideas for ridding the oceans of this deadly scourge to come forward with a project.

Jo is our guide and inspiration in this work, and the Trustees thank both World Animal Protection and the GGGI for their involvement.

**ADRIAN TOOLE,
JOANNA'S FATHER AND A JUDGE AND
TRUSTEE OF THE JO TOOLE FOUNDATION**



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Photo by Shin Arunrugstichai

FIRST JOANNA TOOLE INTERN JENNA SCHWERZMANN

In May 2020, we welcomed the GGGI's first Annual Joanna Toole Intern, Jenna Schwerzmann. The internship was facilitated with support from GGGI member organisation, OceanCare and the GGGI's host organisation, Ocean Conservancy. Jenna worked with the GGGI team at Ocean Conservancy for three months to assist with some of our ongoing research and communications efforts. We're very grateful for Jenna's incredible patience as we worked to find a way to make this experience virtual, and for the amazing job she did when she was with us. After her three months with the GGGI team, Jenna continued the second phase of her internship working with our partners at the Center for Coastal Studies in Provincetown, MA.



“

I've been a long-time admirer of both Ocean Conservancy and Center for Coastal Studies, so it is incredible to have the opportunity to work with these organizations. While I didn't know Joanna Toole, I am inspired by her work and incredibly honored to be chosen for a position created in her memory. I'm grateful to take this opportunity to work on the passions that Joanna and I share. Thank you to everyone who made this internship possible, including Ocean Care, the Joanna Toole Foundation, the Center for Coastal Studies, and Ocean Conservancy.

| JENNA SCHWERZMANN

”

Photo by Jenna Schwerzmann

MEMBERSHIP AS OF DECEMBER 31, 2020



MEMBERS

Aldi
 Aquaculture Stewardship Council
 Archipelago Marine Research
 Austral Fisheries
 Axiom Cycling Gear
 Blue Cycle
 Blue Marine Foundation
 Blue Ocean Gear
 Blue Ventures
 Bracenet
 Bumble Bee Seafoods
 Bureo
 Calao Africa
 Cape Breton Environmental Association
 Centre for Sustainable Design
 Cet Law
 CIDCO
 Claire Potter Design
 CNR-ISMAR (project GHOST)
 Coastal Restoration Society
 Co-op UK
 Commercial Fisheries Research Foundation
 Commonwealth Scientific and Industrial Research Organisation
 Cornwall Seal Group Research Trust
 Darden Restaurants
 Dolphin Swim Club
 DSM
 Ecotrust Canada
 Emerald Sea Protection Society
 Enaleia
 Erub Arts

Fathoms Free
 Fish21
 Fisheries Institute of Sao Paulo State (Lost Fishing Gear Project)
 Fiskevegn AS
 Fourth Element
 Friend of the Sea
 Fundy North Fishermen's Association
 Ghost Diving Foundation
 GhostNets Australia
 Gorgan University of Agricultural Science and Natural Resources
 Gulf of Maine Lobster Foundation
 GWR Polymers
 Hawaii Pacific University
 Healthy Seas Initiative
 Humpback Whale Institute
 Innerspace Exploration Team
 Innovative Coating Solutions (i-Coats)
 International Pole & Line Foundation
 Italian National Institute for Environmental Protection and Research
 Jealsa Rianxeria Group
 KIMO International
 Lidl UK
 Local Independent Sea Anglers
 Manta Caribbean Project
 Mare Nostrum
 Marine Conservation Society
 Marks & Spencer
 Monterey Bay Diving
 MRAG
 Myanmar Ocean Project
 Natural Resources Consultants
 Neptune's Army of Rubbish Cleaners
 Nestle

Netgain Recycling
 Nomad Foods
 Northern Prawn Fishery
 Northwest Straits Foundation
 Ocean Brands
 Ocean Care
 Ocean Conservancy
 Ocean Legacy Foundation
 Ocean Outcomes
 Ocean Wise
 Odyssey Innovation Ltd.
 Olive Ridley Project
 ORCA
 Pacific Islands Development Forum
 PADI
 Parley for the Oceans

Patuakhali Science and Technology University
 Pelagic Data Systems
 Pesquera Azul
 Pew Charitable Trusts
 Plastix Global
 Project AWARE
 Red Lobster
 ResqUnit
 Sainsbury's
 Satlink
 Save the Med Foundation
 SeaBOS
 Seafood Matter
 Sealcentre Pieterburen
 Sea Pact

Secretariat of the Pacific Regional Environment Programme
 Stand Out For Environmental Restoration
 Steveston Harbour Authority
 Surfrider Foundation Hawai'i
 Tangaroa Blue Foundation
 T Buck Suzuki Environment Foundation
 The Marine Mammal Centre
 Teem Fish
 Tengah Island Conservation
 Tesco
 Thai Union Group
 TierraMar
 Tri Marine

TUNACONS
 University of California – Davis
 University of Victoria – School of Environmental Studies
 Waitrose
 Watamu Marine Association
 World Animal Protection
 World Wildlife Fund
 World Wise Foods

GOVERNMENTS
 Canada
 Dominican Republic
 Independent State of Samoa
 Kingdom of Belgium
 Kingdom of the Netherlands
 Kingdom of Norway

Kingdom of Sweden
 Kingdom of Tonga
 Mexico
 Montserrat
 New Zealand
 Republic of Palau
 Republic of Panama
 Republic of Vanuatu
 Tuvalu
 United Kingdom of Great Britain and Northern Ireland
 United States of America

OSPAR Commission
 United Nations Environment Programme (UNEP)
 United Nations Food and Agriculture Organization (UN FAO)

KEY AFFILIATES
 European Commission Directorate General for Maritime Affairs and Fisheries (EC DG MARE)



THE UNITED STATES & MEXICO JOIN THE GGGI

UNITED STATES

In July, the United States officially joined the GGGI, marking a major milestone moment for the Initiative. The U.S. is the world’s largest economy and is one of the top seven capture fishery producers globally, making up six percent of the world’s total catch production and accounting for 19 percent of the world’s total seafood consumption. Fisheries across the country are impacted by ghost gear: in New England, fishers report losing 10-30 percent of their lobster traps, lines, and buoys annually; while in the Gulf of Mexico, an estimated 250,000 derelict crab traps are lost each year.

The U.S. has worked with the GGGI in the past, providing support for the development of the UN FAO Voluntary Guidelines for the Marking of Fishing Gear (VGMFG), which is, alongside the GGGI’s BPF, a key governing document for the prevention of ghost gear. The U.S. Department of State has also worked with the GGGI since 2018, providing grant funding for an ongoing project in the Caribbean. In this project, the GGGI has incentivized good

fisheries management by helping to incorporate best management practices to prevent gear loss into fisher insurance for hurricanes; trialed innovative fishing gear tracking technologies; conducted “hotspot” mapping to locate areas with high levels of gear loss and gear accumulation; and facilitated gear recovery where possible. NOAA has been involved with the GGGI since 2016 and has worked to help shape the initiative’s trajectory by serving on its Steering Group for two consecutive years and providing support for an ongoing project in the Gulf of Maine working together with the Gulf of Maine Lobster Foundation.

On Thursday, October 1, 2020, the GGGI organized its first virtual event to celebrate the United States joining the initiative, with representatives from the U.S. Department of State, NOAA, Tri Marine Group, the University of California – Davis, and Ocean Conservancy outlining how the U.S. is tackling ghost gear in its waters and beyond, and how these efforts can be scaled up. The U.S. Department of State leadership represented by Jonathan Moore, Acting Assistant Secretary of the U.S. Department of State’s Bureau of Oceans and International Environment and Scientific Affairs, committed to supporting on-the-ground solution projects and leading international policy efforts to address the ghost gear problem in concert with the GGGI. The event was attended by 115 participants from nine countries.

The event also featured a panel discussion between key stakeholders on the ghost gear issue, featuring Nancy Wallace, Chief of the NOAA Marine Debris Division; Dr. Kirsten Gilardi, Professor of Health Science at University of California Davis School of Veterinary Medicine and the chair of Working Group 43 on Sea-based Sources of Marine Litter of the United Nations Joint Group of Experts in Scientific Aspects of Marine Environmental Protection (GESAMP); Matthew Owens, Director of Sustainability Tri Marine Group; and Ms. Janis Searles Jones, CEO of Ocean Conservancy. The panelists discussed ways that all actors involved in seafood capture, production, and management can address ghost gear. In pre-recorded remarks, Senator Tom Udall (D-NM) praised the initiative and highlighted the need to stop plastic pollution while addressing environmental justice.



The United States recognizes that ghost gear has a significant impact on marine ecosystems, human health, and livelihoods, and we take a whole-of-government approach to being responsible stewards of marine resources. We encourage all other fishing nations to join us in supporting the GGGI’s efforts and to implement the FAO’s Voluntary Guidelines on Marking of Fishing Gear.

JONATHAN MOORE ACTING ASSISTANT SECRETARY OF THE U.S. DEPARTMENT OF STATE'S BUREAU OF OCEANS AND INTERNATIONAL ENVIRONMENT AND SCIENTIFIC AFFAIRS



Photo by Shin Arunrugstichai

MEXICO

In November 2020, the government of Mexico officially joined the GGGI, joining Canada, the United States, and 14 other national governments as a member of the initiative.

This commitment to address ghost gear holistically across the country comes from all levels of the Mexican government – including the Secretariat of Economy, the Secretariat of the Armed Navy of Mexico, the Secretariat of Agriculture and Rural Development, the Secretariat of Communications and Transportation, and the Secretariat of Environment and Natural Resources, as well as agencies such as Comisión Nacional de Acuacultura y Pesca (CONAPESCA), Instituto Nacional de Pesca (INAPESCA), Procuraduría Federal de Protección al Ambiente (PROFEPA) and Comisión Nacional de Áreas Naturales Protegidas (CONANP). Mexico is also a member of the High-Level Panel for a Sustainable Ocean Economy, which examines the problems derived from ghost gear. Since 2016, the Mexican government has worked with the GGGI and WWF Mexico to remove more than 62 tons of ghost nets from the Sea of Cortez, home to the critically endangered vaquita.

As a GGGI member, Mexico will work closely with the initiative to develop a national ghost gear action plan, including taking steps to better understand the scope of the problem in Mexican waters by mapping hotspot areas for gear loss and exploring opportunities to develop solutions across North American, Caribbean, and Latin American countries.



“As one of the world’s most populous countries with over 9,000 kilometers (5,800 miles) of coastline, Mexico’s commitment to stopping ghost gear through the GGGI is a tremendous win for the ocean and for the communities that depend on it. We are excited to have them onboard as a member, and we look forward to opportunities for additional collaboration on this pressing issue across North America.

INGRID GISKES, DIRECTOR GGGI

“Ghost gear not only harms ocean life – it also impacts the well-being of all people who depend on the ocean. By joining the GGGI, Mexico reinforces its international commitments to the protection of biodiversity, preservation of ecosystems and marine landscapes, and fight against pollution by marine litter and plastics, promoting the sustainable management of seas and coasts for the benefit of fishing communities.

MARTHA DELGADO,
UNDERSECRETARY OF
MULTILATERAL AFFAIRS AND
HUMAN RIGHTS OF MEXICO’S
FOREIGN AFFAIRS MINISTRY



“Partnerships, like those that form the bedrock of the GGGI, are core to Ocean Conservancy’s DNA. Collaboration allows us to leverage local expertise and drive a collective, global strategy. We are excited to welcome the United States Government to this global partnership and look forward to continuing to drive policy change, improve fishing industry practices, and scale up tested and proven solutions to the ghost gear problem.

JANIS SEARLES JONES,
CEO, OCEAN CONSERVANCY



GGGI PROJECTS - ACHIEVEMENTS AND FUTURE WORK

Although most field work was necessarily delayed due to COVID-19, the GGGI did make progress on several projects and set the foundation for more work to be carried out in 2021. Below are a few highlights from some of our projects around the world.

INDONESIA

Bumble Bee, alongside the Dutch Government, will be supporting the GGGI to continue our ghost gear prevention work in Indonesia together with the Indonesian Ministry of Marine Affairs and Fisheries (KKP). The project focuses on implementing marking of fishing gear at the manufacturer level; exploring fishing gear recycling opportunities in Indonesia; and removing lost or discarded fishing gear from marine ecosystems.

The project will also develop a recycling blueprint model and support the development of local regulations in Pekalongan and Sadeng, two provinces of Java, Indonesia. These provinces were chosen for their diverse fishing conditions, which will allow the project to be more easily replicated in other locations. Based on these programs, the GGGI is developing economic and policy blueprints that can be adopted by other provinces, helping to ensure policy support for net recycling and providing a viable end-of-life gear solution for artisanal fishers. As part of this body of work, the GGGI is also collaborating with manufacturers of gillnets and pot/trap fisheries to institute gear marking in these provinces. The project will also feature targeted gear removal activities in sensitive habits and important fishing grounds.

VANUATU

With funding from the Government of Canada's Sustainable Fisheries Solutions and Retrieval Support Contribution Program (Ghost Gear Fund), the GGGI will continue its work in Vanuatu, building on our previous work supported by the Belgian and UK Governments. The project involves tracking of

anchored Fish Aggregating Devices (aFADs) using innovative technology; providing capacity building and training opportunities for local authorities to incorporate this new technology in fisheries management activities; building out a predictive ALDFG model through analysis, on-the-water surveys, and ground truthing across 10-15 sites to better understand where and why gear is lost; conducting in-water gear removal from a coral reef system; and developing an accompanying gear removal protocol.

Data gathered from these activities will also be added to the GGGI data portal and be used to train local stakeholders to monitor aFADs. Project activities will be carried out in partnership with Natural Resources Consultants, the Vanuatu Environmental Science Society (VESS), and the Vanuatu Fisheries Department.

“As a global leader in the seafood industry, we are committed to addressing the ghost gear challenge head-on through our partnership with the GGGI. With our Anova business' presence and strong track record of environmental and social work in Indonesia, this project is a great fit for us, and we look forward to the positive impact it will make.”

LESLIE HUSHKA,
SENIOR VICE PRESIDENT,
GLOBAL CORPORATE
RESPONSIBILITY,
BUMBLE BEE



CARIBBEAN

Courtesy of funding from the U.S. Department of State and the Government of Canada, and in partnership with the Gulf and Caribbean Fisheries Institute (GCFI), the GGGI continues its work in the Caribbean – specifically Jamaica, Grenada and Belize – conducting fisher surveys with local partners on the ground to gather information on gear loss causes and rates in the region, and assessing local recycling and re-use options for end-of-life gear. In 2021, we will also host two regional workshops in Jamaica and Belize to bring together local stakeholders to learn about key regional drivers for gear loss and to learn how to build local capacity to deal with ghost gear. The outputs of these workshops will inform the development of a regional action plan on prevention, mitigation, and remediation of ghost gear for fisheries in the greater Caribbean region. Gear tracking technology trials for lobster traps with ResqUnit and Blue Ocean Gear were also set to happen in 2020 in the margins of the workshop in Jamaica; however, restrictions due to COVID-19 have pushed this work into 2021.

“The fight for a cleaner ocean has major health, economic, and environmental justice implications. Plastic is a big part of this. As I often say, environmental justice must be our north star. This country is in the midst of an important reckoning about racial justice, and we see that plastic pollution is hurting communities of color more than others. We must change our approach and work to bring these communities into the conversation, and we must reduce our plastic footprint.”

| SENATOR TOM UDALL (D-NM)





LAKE ERIE

Ghost gear is not only a threat to marine life and ecosystems but is also a significant challenge to freshwater systems such as lakes and rivers – as evidenced by a new study by the National Geographic Society’s “**Sea to Source Expedition**” released in November 2020 on plastic pollution from fisheries in the Ganges River. Anecdotally, we’ve also had reports from other freshwater systems such as the Fraser River in British Columbia, Lake Victoria in Uganda and Kenya, Lake Volta in Ghana, and the North American Great Lakes. To address this, the GGGI is partnering with Natural Resources Consultants with support from Environment and Climate Change Canada (ECCC) to do a literature review and conduct the world’s first dedicated predictive modelling analysis on lost fishing gear in Lake Erie. Preliminary work on this project began in late 2020 and will continue into 2021.

MYANMAR

Following on from the successful first phase of the GGGI project in Myanmar, the next phase of work in this critical area will continue in 2021. During the first phase phase, 95 percent of the sites surveyed by the Myanmar Ocean Project contained ghost gear, with nearly a third of surveyed sites being labelled as hotspots. Building on the information gathered from the first phase of the project, the Myanmar Ocean Project will work with local fishers on the ground in one of the key hotspot locations from the first phase to conduct outreach and education with local fishing communities on the dangers of lost gear, explore options for end-of-life gear disposal in the region, and perform gear removal operations in some previously identified hotspot areas.

Photo by Shin Arunrugstichai

NIGERIA

Building on their work in Nigeria from the first Joanna Toole Solutions Award, the SOFER Initiative will continue their project into 2021 to implement several new objectives. This next phase of the project involves engaging the local dive community and building an awareness campaign called “Dive-For-Data” (DFD) to educate local divers on ghost gear and encourage them to report it when they encounter it, which they do quite often according to data gathered in the first phase of the project. SOFER will also create a dedicated offshore recovery campaign aimed at recovering ghost gear from the ocean, which will build on the DFD campaign and ensure that only skilled and trained divers perform gear removal. The team will also host a craft training workshop for women and youths in the community on how to convert/repurpose recovered nets into useful crafts, which will help provide an alternate source of income and potentially increase their standard of living. Finally, one of the original HubNet net collection installations was damaged by severe weather and high tides, so they will rebuild this HubNet in 2021, restoring its function to the community.

GULF OF MAINE

The GGGI has done work in the Gulf of Maine since 2017, and we continue to build on previous work in the region. With support from NOAA and 11th Hour Racing, we will continue our at-sea removals with the Gulf of Maine Lobster Foundation and local fishers, where in 2019 we removed a ball of lost gear weighing over 20,000 pounds – the biggest removal in a single effort conducted through a GGGI project to date. Local fishers have identified two more locations for similar gear balls and were scheduled to remove them in 2020, but due to COVID-19-related restrictions, this work will occur in 2021. To provide fishers with options to dispose of their end-of-life gear, we will also host two voluntary mobile gear collection drives, where fishers can bring their gear to a central location to be collected and disposed of. Finally, we will host a workshop for fishers in the region in conjunction with the gear drive, to inform fishers on other best practices to reduce gear loss.

UNMANNED AERIAL VEHICLE (UAV) IMAGERY MACHINE LEARNING TRIALS

As part of the first phase of the Myanmar Project, we partnered with the University of Aberdeen to test UAVs for detecting ghost gear in near-shore coastal environments. Over the course of the surveys, we gathered approximately 10,000 images of the various islands surveyed in the Myeik Archipelago, which were analyzed to detect instances of ghost gear either at or just under the surface (down to 11 metres). An initial report was produced in 2020, and although the process proved highly successful and we were able to detect gear with a high degree of accuracy, it required a significant amount of time to manually analyze each image to find lost gear. With support from Schmidt Marine Technology, we will be developing a machine learning algorithm to detect gear in these images, which can be used for future survey work for ghost gear in similar locations. This will increase the area that can be effectively scanned and greatly reduce the cost to analyze the imagery. Initial results of this work are expected in 2021.



WHERE WE WERE IN 2020

CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME) WORKSHOP
JANUARY 16, 2020



UN OCEAN PREPARATORY CONFERENCE, NEW YORK, US
FEBRUARY 4-5, 2020

GGGI Director Ingrid Giskes attended the UN Ocean Conference Preparatory Meeting in New York. The UN Ocean Conference will propel much-needed and science-based innovative solutions aimed at a new chapter of global action. These actions include necessary commitments by governments and corporations around plastic pollution, sustainable fisheries, and climate. While the UN Ocean Conference was postponed due to COVID-19, the GGGI will continue to engage in the planning for this important ocean event.

GEAR INNOVATION SUMMIT, HALIFAX, CANADA
FEBRUARY 11-12, 2020



Canada's Department of Fisheries and Oceans hosted a summit on innovations in fishing gear technology in early February. This summit brought together harvesters, technical experts, indigenous partners, academia, and government and non-governmental agencies. GGGI Deputy Director Joel Baziuk and GGGI Manager Jackie McGarry represented the GGGI leadership team and gave a presentation on the GGGI's approach to building global partnerships, as well as serving as both moderator and speaker on multiple panels. We were pleased to see a number of our Canadian and international members in attendance and playing important roles in the conference program. While attending the summit, we were able to speak briefly with Ms. Bernadette Jordan, Minister of Fisheries, Oceans and the Canadian Coast Guard (See Foreword) about our work, and we were grateful for the opportunity to thank her for prioritizing abandoned, lost, and discarded fishing gear through the Sustainable Fisheries Solutions & Retrieval Support Contribution Program (Ghost Gear Fund).

SINGLE USE PLASTIC IN EUROPEAN PORTS DIRECTIVE WORKSHOP, BRUSSELS, BELGIUM
FEBRUARY 19-20, 2020

G20 ONLINE WORKSHOP, MEASURES TO ADDRESS MARINE PLASTIC LEAKAGE THROUGH A CIRCULAR ECONOMY APPROACH
SEPTEMBER 8, 2020



VIRTUAL OCEAN DIALOGUES, VIRTUAL
JUNE 2, 2020

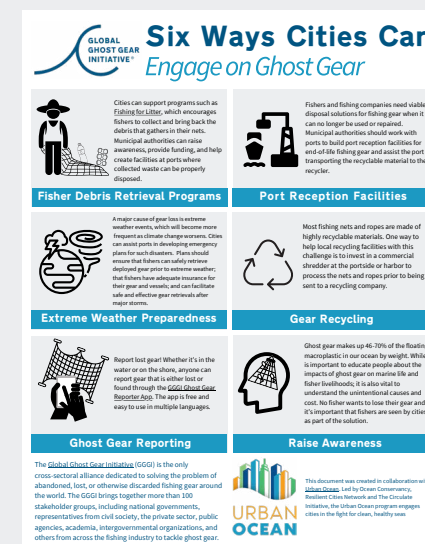
The GGGI hosted a “Deep Dive” panel discussion for the Virtual Ocean Dialogues organized by the World Economic Forum (WEF), the World Resources Institute (WRI), and the Friends of Ocean Action. The event was titled, “What Lies Beneath—A Holistic Approach to Ghost Gear.” The panel featured several GGGI partners, including Martin Exel from SeaBOS, Ben Kneppers from Bureo, Amado Blanco from Net-works, and Thanda Ko Gyi from Myanmar Ocean Project. It was moderated by GGGI Director Ingrid Giskes. Together, they highlighted our collaborative model of addressing ghost gear at scale around the world. The audience was engaged in the discussion through a question and answer session and answered poll questions throughout the event. The audience was asked, “What do you think will be the key element of success for addressing ALDFG?”, and answers were displayed in a word cloud where the most popular words were collaboration, awareness, engagement, and partnership.

BLUE CIRCULAR ECONOMY CONFERENCE, VIRTUAL
OCTOBER 5, 2020

CORDAGE INSTITUTE TECHNICAL COMMITTEE MEETING, VIRTUAL
OCTOBER 15, 2020

URBAN OCEAN ALDFG WEBINAR, VIRTUAL
OCTOBER 28, 2020

Urban Ocean is one of Ocean Conservancy's Trash Free Seas® program's signature initiatives. Urban Ocean is a programmatic partner for the Resilient Cities Network, alongside the Circulate Initiative. This summer, Urban Ocean, Global Resilient Cities Network, and the Circulate Initiative launched a cohort of partner cities in Southeast Asia and Latin America to develop circular economies; reduce plastic waste; and build cleaner, healthier, and more resilient communities. This webinar was aimed at “mentor cities” and “learning cities” that take part in a global community of learning, and it was focused on ghost gear and how municipalities around the world can effectively engage on the issue. The webinar featured presentations from GGGI Director Ingrid Giskes, GGGI Deputy Director Joel Baziuk, and Chronos Sustainability Manager for Corporate Engagement and Research Elisa Tjärnström.





TAIWAN INTERNATIONAL OCEAN FORUM, VIRTUAL; AND THE GLOBAL COOPERATION AND TRAINING FRAMEWORK (GCTF) VIRTUAL EVENT ON SUSTAINABLE MATERIALS MANAGEMENT SOLUTIONS TO MARINE DEBRIS

NOVEMBER 5, 2020

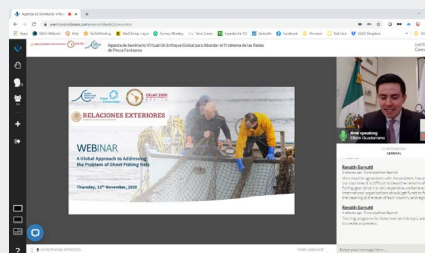
The month of November included several high-level government presentations by the GGGI, including to the 2020 Taiwan International Ocean Forum reaching an audience of more than 300 delegates. The GGGI also participated in the Global Cooperation and Training Framework (GCTF) virtual event on Sustainable Materials Management Solutions to Marine Debris, hosted by the USA, Taiwan, Japan, and the Netherlands, which brought together hundreds of government officials and industry leaders from more than 23 countries. Participants shared learnings from a variety of programs and technologies that can be applied to advance sustainable materials management and the circular economy and reduce marine debris.



MARE NOSTRUM / BLACK SEA ADVISORY COUNCIL ALDFG CONFERENCE, CONSTANTA, ROMANIA, VIRTUAL NOVEMBER 5, 2020

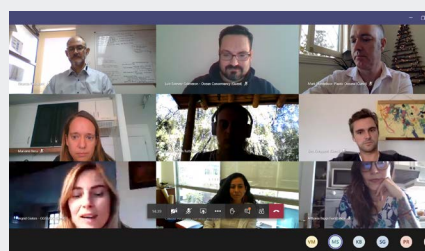


EUROCORD TECHNICAL COMMITTEE MEETING, VIRTUAL NOVEMBER 24, 2020



COMMUNITY OF LATIN AMERICAN AND CARIBBEAN STATES (CELAC) WEBINAR, A GLOBAL APPROACH TO ADDRESS GHOST GEAR NOVEMBER 12, 2020

In November, 2020, the GGGI hosted a webinar in conjunction with the government of Mexico and CELAC consisting of several presentations from GGGI members Bureo and WWF, and showcasing projects and success stories achieved by various stakeholders including private sector, NGOs and governments – including Panama and Mexico – within CELAC’s 32 member states. The webinar also featured a live question and answer session, during which the representatives of the attending member countries were able to interact with the speakers and the GGGI. As a first for the GGGI, the event was hosted on the platform Voiceboxer to allow for simultaneous translation of the event in both English and Spanish.



INORGANIC MARINE RESIDUES WORKSHOP, VIRTUAL DECEMBER 17, 2020

On December 17th, GGGI Director Ingrid Giskes gave a presentation on the GGGI and our engagement with the Asia-Pacific Economic Cooperation (APEC) at the Inorganic Marine Residues Workshop hosted by the Chilean government. The workshop saw attendance from government representatives from multiple countries, many of whom have expressed interest in engaging on ghost gear.

WORKING GROUP UPDATES BUILD EVIDENCE

GHOST GEAR RESEARCH PRIORITIES

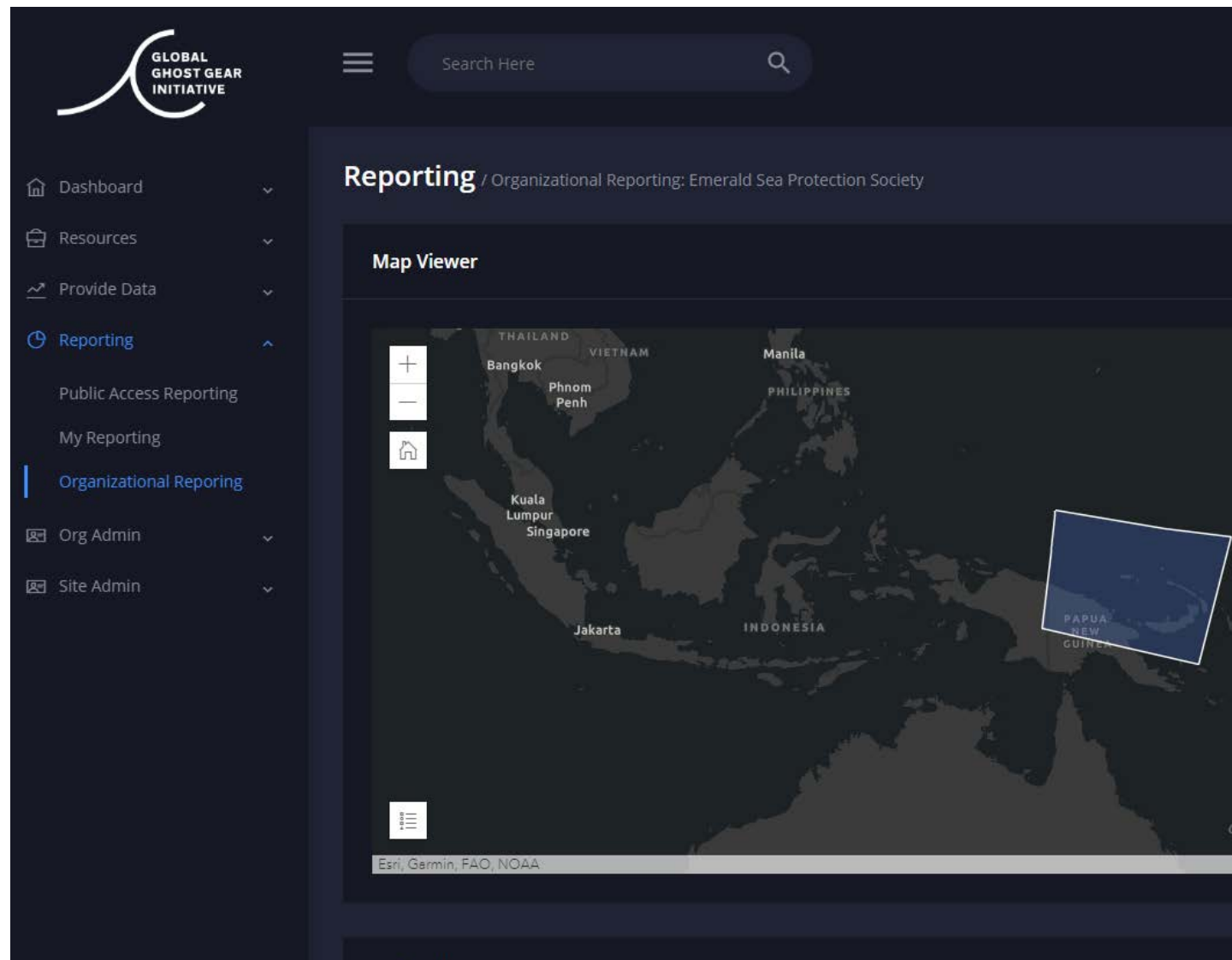
The Working Group solicited feedback from all GGGI members into ghost gear research priorities from different stakeholder groups (Non-governmental organizations (NGOs), seafood industry, fishers, government) and external published experts in the field – to be summarised in a paper. The Working Group plans to submit this paper for publication to inform ghost gear research priorities for the wider public in 2021.

MASS EFFORT

The Working Group continued development on a live reference document detailing typical masses (weights) associated with a variety of major fishing gear types and materials. The resource draws upon data that are publicly available regarding the material, size, and weight of fishing gear typically deployed in the seafood sector, and gear type categories that have been defined in line with the updated version of the GGGI BPF. When complete, this research can be used as a starting point to estimate the weight of gear associated with loss rates, to estimate approximate weight-to-volume ratios of particular gear types, and as a reference point for others interested in repurposing ALDFG and end-of-life fishing gear materials.



Photo by Shin Arunrugstichai



DATA COLLECTION, SHARING, AND INFORMATION PARTNERSHIPS

The GGGI performed significant updates and increased functionality to the data portal, including support for organizational reporting and a much-improved framework to support data sharing with new data sharing agreements. The Build Evidence Working Group supported this work by consulting on data sharing requirements for existing and future data partners, and supporting the wider effort to update data collection specifications, including aquaculture gear and a broader variety of gear types used in capture fisheries. Additionally, working group members helped translate the Gear Reporter App into new languages. After work in 2020 to update the data portal, multiple new data sets will be incorporated into an updated data sharing framework and toolset in 2021, a process that will be supported by the Working Group.

INCREASING GLOBAL ACCESS TO DATA

One of our identified goals for 2020 was to proactively increase our connections to organizations outside the GGGI to establish potential data-sharing relationships. We began this work with a focus in regions where we currently have low access to data. After initially reaching out to 10 organizations in low-data regions, productive conversations are now ongoing with organizations in Nigeria and Senegal. This effort will continue through 2021.

DEFINE BEST PRACTICE AND INFORM POLICY

REFINE WILD-CAPTURE FISHERIES IN THE BPF

Refining and updating the BPF was a priority in 2020. With support from the International Pole and Line Foundation, definitions of gear types in the BPF were amended to better distinguish various hook and line fisheries with alternative text to: 1) split purse seine from ring nets, 2) better illustrate the use of FADs by nearly all purse seine fisheries, and 3) help separate various mechanisms associated with anchored versus drifting FADs. The Working Group also provided detailed comments in the process of refreshing the BPF for wild capture.

APPLYING THE BPF ALONGSIDE THE UN GLOBAL COMPACT

Support was provided from the working group to integrate elements of the GGGI BPF and GGGI-related case studies into the Practical Guidance for the UN Global Compact's Sustainable Ocean Principles for capture fisheries. Working Group members who provided their expertise to this guidance document, alongside GGGI and Ocean Conservancy leaders, included Bracenet GMBH, World Animal Protection, Chair of GESAMP WG 43 - Kirsten Gilardi, Archipelago Marine Research and the International Pole and Line Foundation.

CONTINUED EXPLORATION TO INTEGRATE THE BPF AT THE RFMO/RFB LEVEL

Working Group members explored and catalogued current and potential future opportunities to encourage and include recommendations of the BPF into Regional Fisheries Management Organizations (RFMOs) and Regional Fisheries Bodies (RFBs). A detailed look into existing ALDFG provisions by RFMOs/RFBs was summarized and priorities were identified. We acknowledge and appreciate the support from the Department of Fisheries, Oceans and the Canadian Coast Guard (DFO) for leading this exercise. We are looking forward to continuing this work through 2021, promoting further BPF implementation within existing regional fisheries management structures.

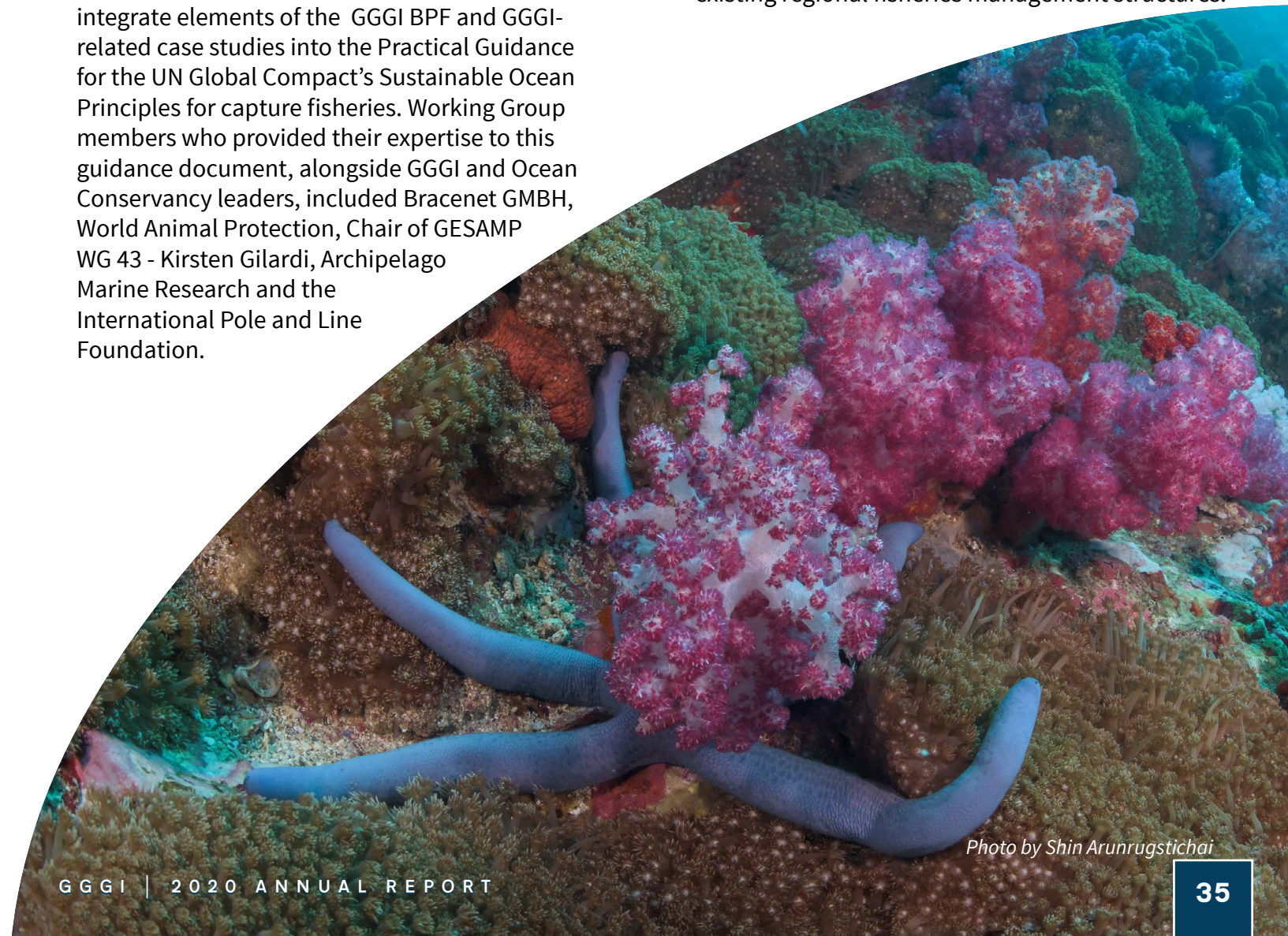


Photo by Shin Arunrugstichai

DEVELOP BPF IMPLEMENTATION INDICATORS AND TRACK ENGAGEMENT

To best define engagement and track implementation of BPF measures, Working Group members provided valuable feedback on the application of the BPF within their organizations. We thank our members for their inputs and are looking forward to continuing this approach of adaptive management alongside the other GGGI Working Groups. The Working Group aims to

facilitate increased incorporation of the BPF into projects and assessments around the world to continue defining and establishing measurable indicators on ghost gear prevention, mitigation and remediation. In addition, we created smaller focus groups, where members were better able to concentrate on select GGGI goals that align with their interests and expertise – a successful model upon which we will build moving into 2021.



Photo by Blue Ocean Gear

FIRST GGGI-ENDORSED PROJECTS CONFIRMED

The Working Group helped steward two such projects through the new process in 2020, both of which are now official GGGI-Endorsed Projects. One is a project of GGGI member Blue Ocean Gear, testing their Smart Buoys in three fixed-gear fisheries and two aquaculture farms in Cape Breton, Nova Scotia. The second project is by Journey Blue, focusing on setting up a gear recycling network in the central and northern coastline of the UK.

Blue Ocean Gear, in partnership with the Eastern Nova Scotia Marine Stewardship Society, will be working with local fishers to deploy their Smart Buoy technology on fishing gear in the lobster, snow crab, and whelk fisheries, as well as in scallop and mussel aquaculture farms. The buoys will actively track gear on the water, sending alerts if it has moved, as well as reporting relevant data for improving operational efficiency.

Journey Blue is working together with harbours and fisheries along the east coast of the UK to help prevent and eliminate ALDFG by collecting end-of-life gear. The collected material will be fed back into the chain to produce outdoor, adventure, and travel products that will be listed on their new Ocean Recovery Retail website.

CATALYZE AND REPLICATE SOLUTIONS

The Solutions Working Group took advantage of the unique opportunities 2020 provided to improve its processes and clarify the different ways the Working Group could best support the overarching GGGI goals and objectives while continuing to incubate and support projects addressing the issue of ghost gear across the globe.

GGGI PROJECT ENDORSEMENT PROCESS UPDATE

Working with Working Group members, GGGI leadership, and the Expert Advisory Council, the Solution Working Group (SWG) completed a comprehensive review and revision of the SWG Solutions Project application, review, and feedback processes. This review culminated in new streamlined guidelines and instructions to better support existing and prospective projects. These guidelines provide clear, more consistent, and more compelling information about how to apply to become a GGGI-Endorsed Project, along with the benefits of becoming one. These updated materials provide a solid foundation on which the GGGI can expand its impact by identifying and supporting potential projects that align with the GGGI's mission and aim to address the problem of ghost gear at scale around the world. The new process also better enables organizations developing solutions aimed at addressing ALDFG to seek the GGGI's expert review, mentoring, endorsement, and potential funding.

“Hearing we'd been endorsed was the perfect way to kickstart the year. We're looking forward to working with the GGGI and the SWG to help progress our programme and to support others in our common goal.

ALISTAIR LAWSON,
FOUNDER, JOURNEY BLUE



GGGI MEMBER HIGHLIGHTS

SAVE THE MED FOUNDATION

The Mediterranean **Ghost FADs** project is a multisectoral, concerted effort to mitigate ghost fishing in the Mediterranean Sea.

In 2020, the project began growing their network and fleet, made up of some 150 vessels, which retrieved over 300 ghost gear artefacts, many of which were rudimentary ghost FADs. The project includes fishers, sailors, patrol boats, research boats, and Save The Med vessels Toftevaag and Ondine. It also has the support of Spanish port authorities PORTS IB and Autoridad Portuaria de Balears.

Best practice protocols were developed on how to help entangled sea turtles, retrieve ghost gear, and contact local rescue centres – that are all integral to sea turtles' survival. Via the Ghost Gear Reporter

app, the fleet collects essential data used to build evidence and inform policy. Importantly, the fleet studies the movements, interactions, and aggregations of ghost gear, using backtrack modelling to identify source spots and to eventually deliver capacity-building workshops, with the aim of developing more sustainable models of FAD fishing.

Interactions between ghost FADs and marine life can be extremely hazardous. **The story of “Thunderbird”** – a turtle found entangled in a ghost FAD by the Save the Med team, who was rescued, rehabilitated, and released by the Plama Aquarium Rescue Center, is a good example of this. Fortunately, “Thunderbird’s” story had a happy ending, but not all marine animals entangled in ghost FADs are so fortunate.

CORNWALL SEAL GROUP RESEARCH TRUST

On July 11, 2016, while on a routine survey, members of the Cornwall Seal Group Research Trust (CSGRT) spotted a seal entangled in a fishing net on a difficult-to-reach area of beach on the coast of Cornwall. They quickly called the British Divers Marine Life Rescue hotline, and rescuers descended a rocky slope using ropes in order to reach the young seal and disentangle it from the net. Sue Sayer from CSGRT was able to cut the net loose, spray the wound with ointment, and release the seal back into the sea.

Often the fate of rescued wildlife remains unknown after release, but as CSGRT does individual seal photo identification every year, they discovered just how successful the rescue had been. Just 30 days later, the seal – called “Lucky Bunting” – was spotted nearly fully healed. In 2020, CSGRT set up a volunteer pup watch and learned that Lucky

Bunting had her first pup. Although not all seals are as fortunate as Lucky Bunting, CSGRT’s work is critical to identify, report, and track entangled seals in the hope of rescue. There is definite need for this work: In 2020, CSGRT made 777 observations of 94 different entangled seals with up to a maximum of 19 either current or past entanglements on a single survey.

Although 2020 was a challenging year for CSGRT as COVID took its toll, they managed to raise over £20K via a crowd funder and recruited several new volunteers to keep their work going. They also secured fibre broadband internet at CSGRT headquarters, allowing them to access the IT network remotely and share seal stories more quickly. This helped CSGRT deliver 53 free talks, 14 free events, and 53 free online training workshops for volunteers by directly engaging with 8,652+ beneficiaries from all age groups.



Photo by Save the Med Foundation



Photo by Andy Rogers

PLASTIX GLOBAL

PLASTIX, located on the west coast of Denmark, is a manufacturer of “green plastics,” mechanically recycling post-use maritime fibers, fishing nets, and ropes into high-quality raw plastics materials. With the vision of eradicating plastic pollution by enabling circular solutions for cleaner environment and oceans, PLASTIX has been a member of GGGI since 2016 and has a seat on the GGGI Expert Advisory Council. Throughout their membership, PLASTIX’s expertise in the recycling space has been extremely valuable to the GGGI in developing circular economy solutions for end-of-life gear and recovered ghost gear. PLASTIX aims to prevent ghost gear from ever occurring by providing solutions for an otherwise potentially devastating waste stream.

Assuming the position of a manufacturer, PLASTIX is intent on providing the industry with the highest possible quality upcycling material, in order to expand the applicability of recycled material and proving to the plastic industry that it can and must be done. The reflection of PLASTIX’s success in their technology and mission is in part shown by the multitude of products launched in 2020.

Having joined the Klimatorium, a center for climate change prevention and adaptation, PLASTIX now shows its active support for solving the complex challenges of climate change and the related circular economy. PLASTIX was further awarded ISO 9001:2015 and ISO 14001:2015 certification, thereby confirming their commitment to continually improving their products, processes, and overall performance for the benefit of their customers and the environment.



Photos by Emerald Sea Protection Society, Shayd Johnson

EMERALD SEA PROTECTION SOCIETY

Emerald Sea Protection Society (ESPS) was one of several GGGI members and Canadian organizations that received significant support from the Sustainable Fisheries Solutions & Retrieval Support Contribution Program run by the Government of Canada as part of their commitment to combat ghost gear.

With its project titled “Restoring the Emerald Sea: Collaboratively Tackling Lost Fishing Gear in the Canadian Salish Sea,” ESPS emphasized a collaborative approach to working with fishing and coastal communities to identify areas impacted by lost gear or with high likelihood of gear loss in the waters of British Columbia. One of the most significant challenges the organization faced was the costly nature of the recovery work and the need for expensive technical equipment to properly survey and recover gear in often challenging conditions. Given the significant investment required to purchase much of this gear, ESPS’s projects have previously relied on fundraising for gear rental or in-kind support from organizations that could supply the equipment.

The grant from DFO is having an enormous impact on ESPS’s material capabilities. They have been able to purchase the tools and equipment required for secure gear recovery operations using commercial diving standards for surface supply gear recoveries, drastically increasing their team’s safety while operating and the range of conditions, depths, and scenarios with which they can engage. On top of this, they have expanded their survey and recording capabilities with improved underwater filming and communication equipment, allowing for real time communication with dive teams from surface technicians.

Beyond their increased material capacity, ESPS has also been able to establish a budget to hire fishing vessels during seasonal downtime to assist in recovery work. Fishers have some of the best knowledge of local waters, insight into both regions known for high levels of gear loss, and the equipment and know-how to pull gear out of the water safely and effectively.



Photos by PLASTIX Global +Fapil

INDUSTRY LEADING THE WAY



THAI UNION GHOST GEAR WORK PLAN 2018-2020

When Thai Union joined the GGGI in 2018, they did so with a strong commitment to address ghost gear in their supply chain and operations. As the world's largest supplier of shelf-stable tuna products, Thai Union recognized the impact they could have as a key influencer in the fishing industry on ghost gear. Accordingly, Thai Union decided to address the issue with a dedicated ghost gear work plan – a first for the fishing industry – developed with input from the GGGI to address four key work streams:

- 01** PROMOTING AND RAISING GLOBAL AWARENESS OF GHOST GEAR
- 02** ENSURING PURSE SEINE TUNA FISHERIES IMPROVEMENT PROJECTS (FIPS) IN THE EASTERN ATLANTIC OCEAN AND INDIAN OCEAN ARE IN LINE WITH THE GGGI BPF
- 03** EXPANDING THE FAD WATCH PROGRAM IN THE INDIAN OCEAN
- 04** IMPROVING MANAGEMENT PRACTICES FOR GHOST GEAR IN THAILAND.

Photos by Thai Union

GLOBAL AWARENESS OF GHOST GEAR

With its wide geographic footprint and extensive network in the seafood industry, Thai Union is well positioned to raise awareness about the problems surrounding ghost gear, as well as with other seafood businesses, NGOs, and the general public. To this end, Thai Union engaged in several events on ghost gear around the world, participating in media events, panels, and speaking to and engaging with diverse audiences at the UN Day for the Ocean, InfoFish, the Seafood Expo North America, SeaWeb Seafood Sustainability Summit, and at the Coordinating Body on the Seas of East Asia (COBSEA).

ALIGNING PURSE SEINE TUNA FIPS WITH THE GGGI BPF

As part of Thai Union's "Tuna Commitment," which outlines a program to invest in sustainably sourced tuna globally, FIPs have been established in two purse seine tuna fisheries in the Eastern Atlantic Ocean and the Indian Ocean to achieve Marine Stewardship Council (MSC) certification. These FIP action plans include the use of non-entangling FADs in addition to implementing several other recommendations outlined in the GGGI BPF for wild capture fisheries. An independent third-party examiner from Natural Resource Consultants, benchmarked the FIP action plans against both the GGGI BPF and FAO VGMFG to ensure they meet the recommended standards for prevention and mitigation of ghost gear as outlined in both documents. This included limiting FAD deployment; using only non-entangling FADs, implementing FAD marking, tracking and recovery; implementing bycatch mortality and mitigation measures; and researching potential use of biodegradable FADs.

EXPANDING THE FAD WATCH PROGRAM IN THE INDIAN OCEAN

The "Organización de Productores de Atún Congelado" (OPAGAC) and the Island Conservation Society (ICS) came together with the Seychelles Government to establish the FAD Watch program in the Indian Ocean to recover lost FADs and stop them from drifting into – and beaching in – sensitive coastal habitats. Thai Union has held conversations with the Sustainable Indian Ocean

Tuna Initiative (SIOTI) fleet and confirmed that all 28 purse seine vessels participating in the FIP will join forces with OPAGAC and ICS to participate in FAD Watch and expand the current initiative to five islands identified as the most exposed to FAD beaching. Based on this success, Thai Union is hoping to start similar projects with other FIPs in the future.

IMPROVING MANAGEMENT PRACTICES FOR GHOST GEAR IN THAILAND

Given that Thailand is one of the top 10 countries in terms of volumes of plastic entering the ocean, has a large fishing industry, and is the world's largest exporter of seafood, Thai Union saw the need to improve management practices for fishing gear and prevent plastic pollution. After an initial round of outreach to relevant organizations and partners in the region, it became apparent that the best way to collect data was to gather it directly from fishing vessels and ports. Thai Union worked with the GGGI and FAO to develop a fisher survey to gather relevant data on gear loss rates and causes as well as current solutions for end-of-life gear in Thai fisheries, with the aim of using this data to identify the key intervention points for future prevention and mitigation work in the region, and to explore developing a recycling solution for end-of-life fishing gear.



Photos by Thai Union

AUSTRAL FISHERIES AND ITS LOST GEAR RECOVERY EFFORTS: 2016-2020

Austral Fisheries Pty Ltd operates three longline vessels in the Patagonian toothfish fishery, managed by the Australian Government under the auspices of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The fishery has been independently certified as sustainable and is managed by the Marine Stewardship Council (MSC), and Austral is certified as carbon neutral, offsetting the emissions associated with its operations and movement of seafood product around the world.

With sustainability a major goal, Austral in 2016 made the decision to increase efforts to actively try

to recover fishing gear that had been reported as lost from previous trips, as well as any other gear that was encountered, such as illegal, unregulated and unreported (IUU) fishing gear from the 1990s and early 2000s that remain on the seafloor.

The Heard Island & McDonald Islands (HIMI) toothfish fishery is data rich, with each vessel required to have two government-approved observers on each voyage, along with stringent reporting requirements for the operators. Since Austral began longlining in 2008, the percentage of lost gear has been relatively stable, varying between 0.32 percent and 2.16 percent (Figure 1).

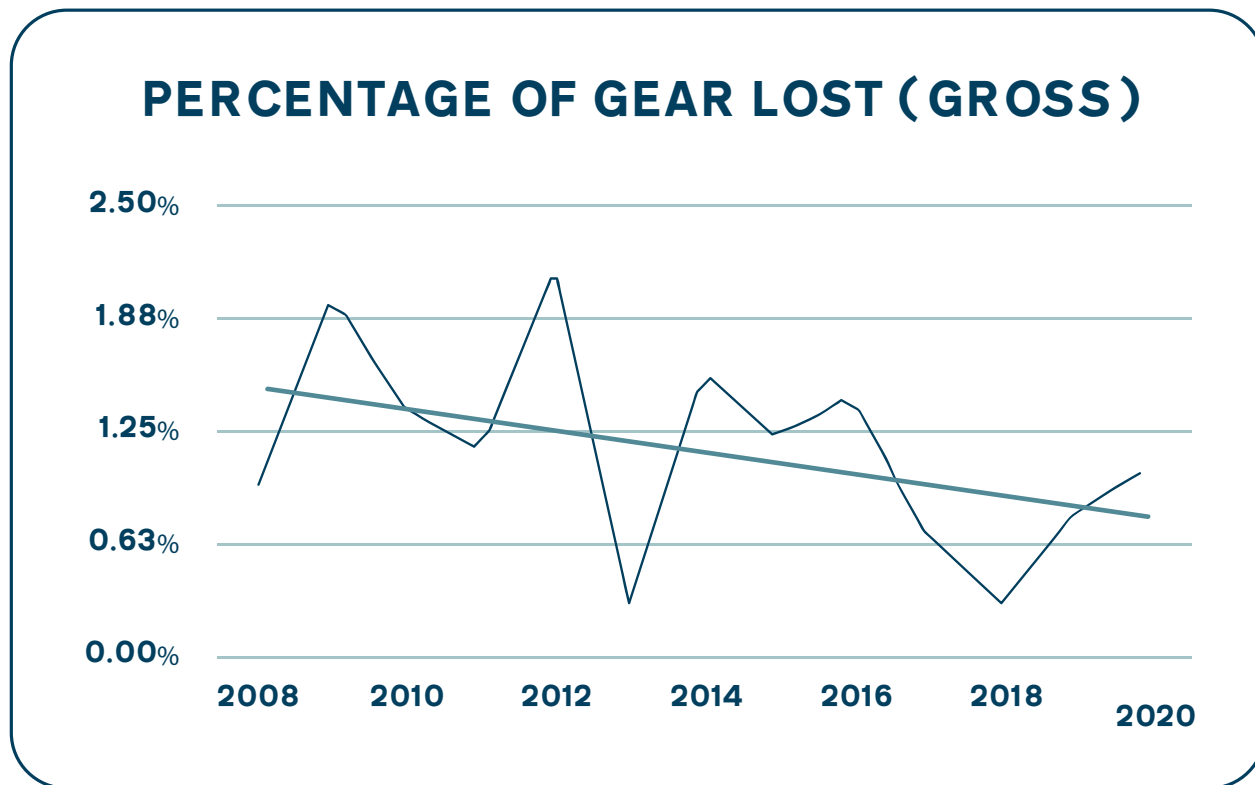


FIGURE 1: AUSTRAL PERCENTAGE OF LOST GEAR, 2008 TO 2020.

Demersal longline fishing gear (Austral uses integrated weighted line (IWL) to help avoid bycatch of seabirds) is susceptible to losses, generally by the mainline getting “stuck” on the seafloor and eventually breaking under the strain from trying to retrieve it. If a break occurs at both ends of a line, then there is no longer a vertical link to the surface, and the fishing gear becomes much harder to retrieve. Variables that will affect the probability of losing gear include: fishing depth, bottom type, crew experience, vessel design, vessel experience, technology/equipment failures, weather, bycatch/predation, condition of line, or whether the vessel is fishing on untried ground.

Attempts to reduce the amount of lost gear have resulted in Austral moving from 11.5mm to 12mm IWL in 2013 to increase the line’s breaking strain. The company also invested in new tension metres to give the skipper a reading of line tension, allowing him to slow or stop hauling when the line becomes tight. Skippers also designed their own set of dragging gear (Figure 2) for each vessel, and worked collaboratively to share their experiences and tactics on how best to recover lost sections of line, and notifying where lost gear was situated.

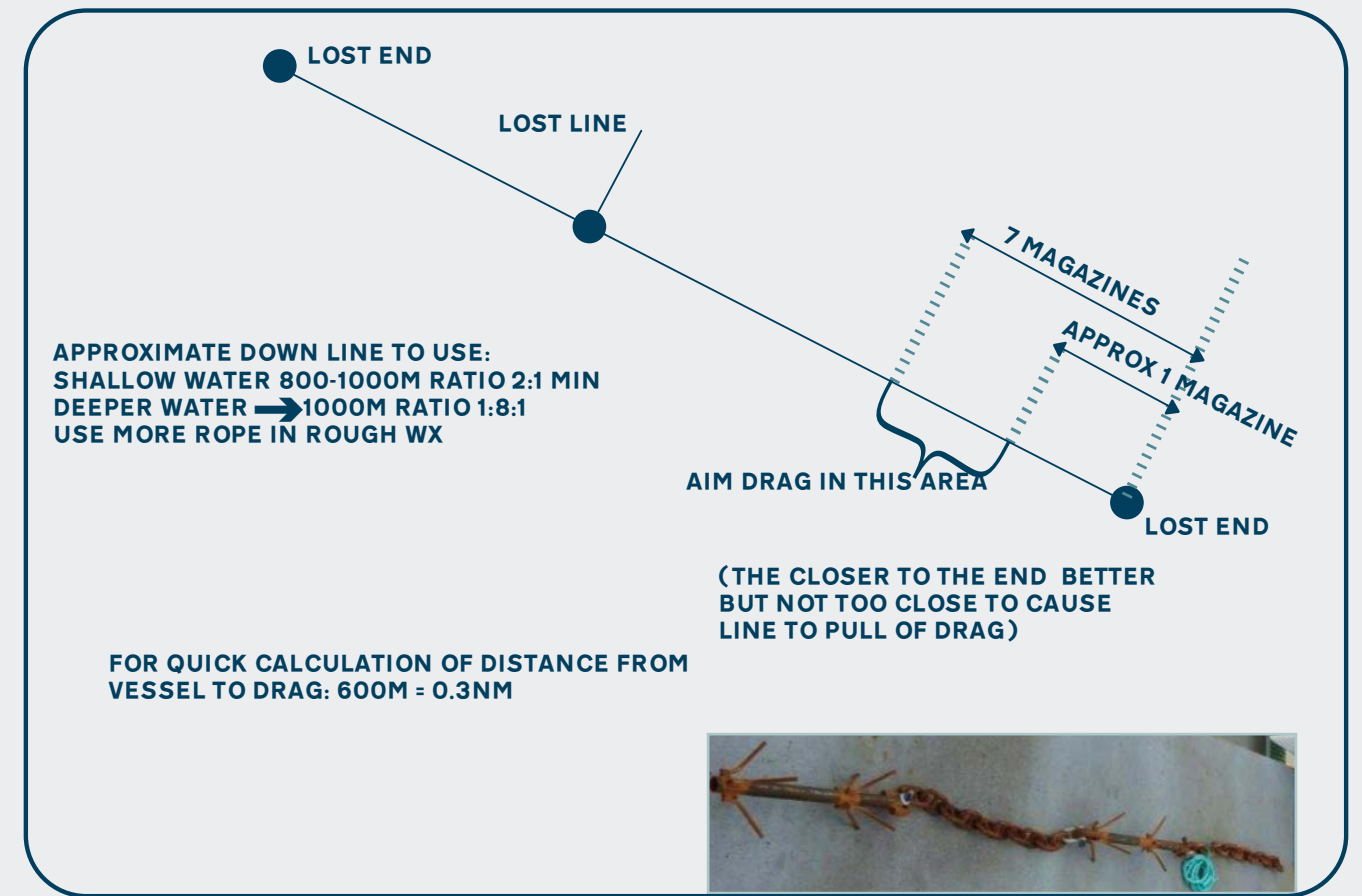


FIGURE 2: DRAG GEAR AND SKIPPER'S NOTES ON HOW TO LINE UP TARGET

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In 2016, Austral began actively trying to recover previously lost sections of line. In 2017, the Australian Government amended fishing conditions to enable recovery of gear outside of the longline season, which allowed Austral's vessels to get to the fishery prior to the season and to stay post-season for the purpose of recovering gear. Since 2016, Austral has recovered approximately 361km of IWL and the associated 259,000 hooks of its previously lost gear, plus an additional ~105km worth of old IUU fishing gear that had been caught up with its own lines.

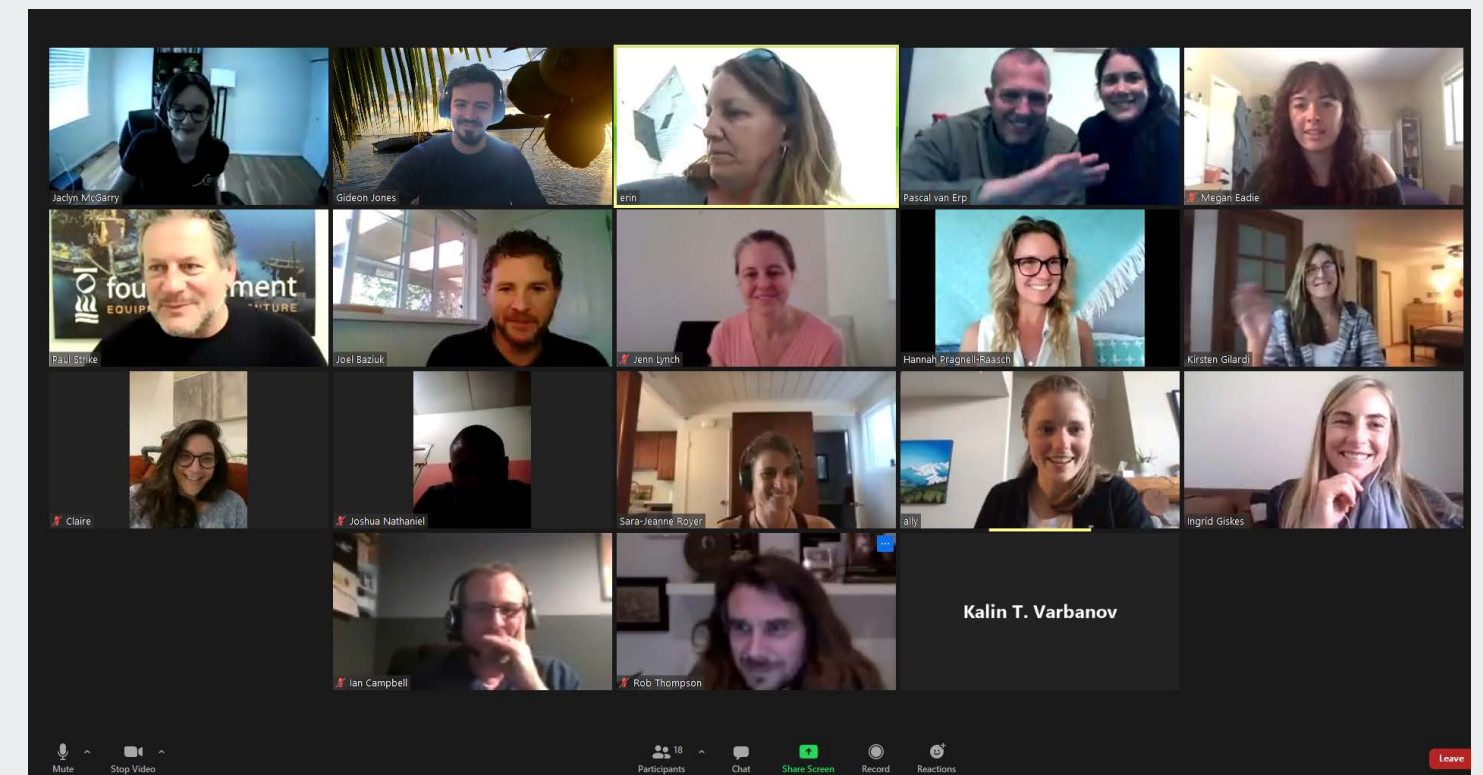
Austral Fisheries acknowledges that each year, they have contributed to the increased cumulative quantity of lost gear on the seabed. However, they have taken steps to reduce those losses by incorporating their own types of mitigation measures, and by actively attempting to recover previously lost gear. Austral aims to have trips where they come back to port with a net positive gear return, which has been achieved across several trips since their efforts began.



ANNUAL MEETING



To say 2020 has been challenging on all levels would be an understatement. The challenges presented this past year are unprecedented. Yet we continue to hold hope that unity, the good in people, and important actions to protect our precious blue planet will continue to take centre stage. We also continue to be humbled by the important work that each and all of our members do – even when times are hard – to help address the most pervasive form of marine pollution that. Being mindful of schedules and capacity, we have postponed the GGGI Virtual Annual Meeting until first quarter 2021 – including the Working Group meetings, the extended EAC meeting, and the Members meeting. We look forward to meeting with everyone in person for future Annual Meetings once travel becomes safe.



YEAR-END SURVEY SUMMARY

HOW OUR MEMBERS HAVE BENEFITED FROM GGGI:

“ Mentoring and exposure to other solutions and organisations from around the world. ”

“ Success by association: GGGI membership puts an internationally recognized stamp of approval on our project and helps our project be a part of a larger international effort – the context is valuable for us! ”

“ The GGGI really helped us learn from other organizations/ regions. This has helped us improve our work. ”

“ Best Practice Guidelines have been useful for broader industry discussions. ”

“ It has improved our standing with a particular customer who also joined. ”

“ Being a GGGI member helped us to be more visible and gave weight to our project and knowledge. The mentoring from the GGGI also helped us to successfully implement our pilot project. ”

“ The GGGI has immense expertise on ghost gear. The GGGI has been incredibly helpful by answering any technical questions my organization has, as well as a great POC for contacts I send their way. ”

“ The GGGI has helped us through increased networking and encouragement to submit proposals. ”

“ We’ve benefited from our membership immensely. It’s absolutely created a lifestyle for our organization with strong indications of involving the national government. ”

“ It’s great to be able to talk to suppliers about best practices and potential projects; our membership allows us to do this credibly. ”

“ Our membership has helped support the growth of our network, created more awareness of our work, strengthened our reputation, and created several funding opportunities to scale our programs. ”

“ Communication with the broader context of this work, legitimacy when seeking funding, coordinating projects with other local partners, and relationship with other organizations that magnify our reach. We would not know the T Buck Suzuki team, for example, without the GGGI, and they will be a big support to us in our work the next two years. ”

Photos by Shin Arunrugstichai

Members felt GGGI's most influential roles in reducing ghost gear were:



Guiding policy decisions on ghost gear



Facilitating communication & action between diverse stakeholder groups to tackle ghost gear at scale



Support on-the-ground organizations through mentoring & funding programs

Members consist predominantly of:



Non-Profit Organizations



Fishing Industry



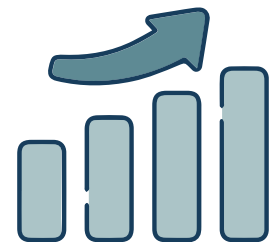
Academia



Private Sector



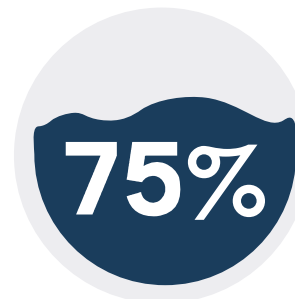
& Government



We increased our membership by **20%** despite COVID-19



71% of members participated in ghost-gear related conferences



of members are currently participating in a ghost gear related project

partnerships strong and effective policies community
 engagement partnership
 policy understanding **collaboration** will innovation
 regulation **awareness** recycling
 fishers



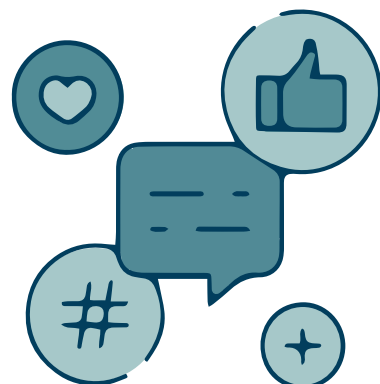
“ The GGGI is a critical organisation operating in the field of marine conservation, highlighting and providing evidence about this hugely important issue facing our marine life ”

SUE SAYER,
 CORNWALL SEAL
 GROUP RESEARCH
 TRUST



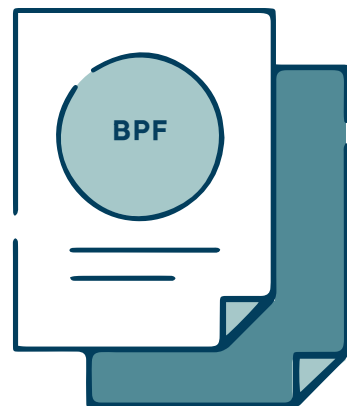
LOOKING AHEAD

As we put 2020 behind us and move into 2021, we are confident that there are better things ahead, and we are excited to share a touch of what's in store for the GGGI in the upcoming year.



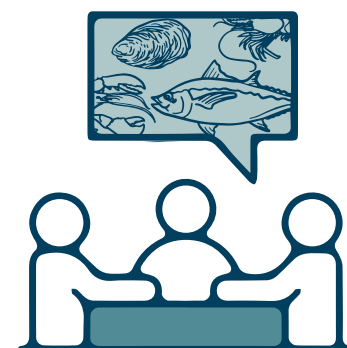
DIGITAL CAMPAIGN

For the first time, the GGGI will be launching a new educational digital campaign across Ocean Conservancy's social media channels, aimed at educating the public on ghost gear facts, realities, and myths, and highlighting some of the work being done by the GGGI and its members around the world.



LAUNCH OF UPDATED WILD CAPTURE BPF AND NEW AQUACULTURE BPF

Both the updated wild capture BPF and the new aquaculture BPF will be launched in 2021. The wild capture BPF refresh will consolidate the three documents that made up version 1.0 of the BPF into a single cohesive document, making it significantly easier to use and reference. Stakeholder consultations for the aquaculture BPF will commence in 2021 with an official launch later in the year.

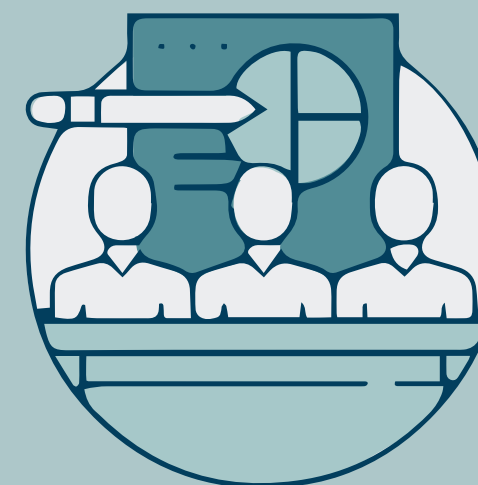


GOVERNMENT AND INDUSTRY ROUNDTABLES

The GGGI will convene several interactive roundtable events specifically for our member governments and seafood industry members. These events will be designed to encourage an active and robust discussion about ghost gear and how to find solutions in both the policy space and the seafood supply chain.

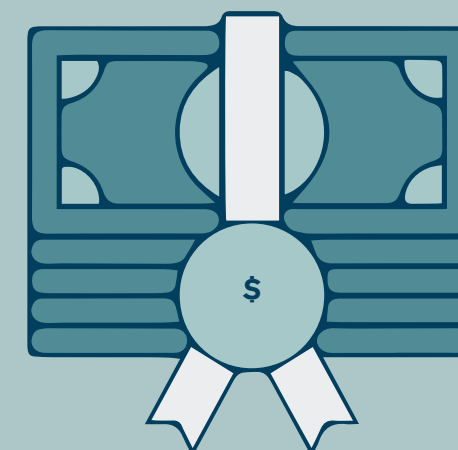
GUIDANCE AND CAPACITY BUILDING FOR THE APEC REGION

In cooperation with the Asia Pacific Economic Cooperation (APEC), the United States, Thailand and Malaysia, the GGGI will focus on capacity building in the region by conducting a regional ghost gear workshop; developing a regional ghost gear best practice guide; and developing a regional gear marking compendium.



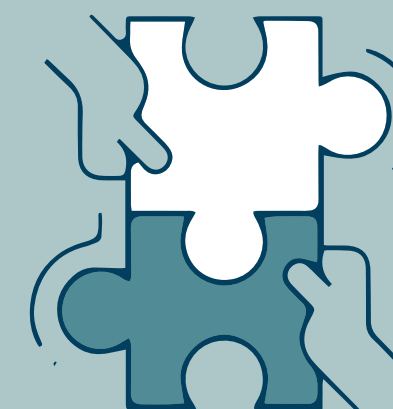
GGGI SMALL GRANTS PROGRAM

Many GGGI members rely on grant funding to complete their incredible work on the ground, and securing funding can be a challenge. However, in 2021, the Ocean Conservancy Small Grants Program will award three to four grants upwards of \$30,000 USD to GGGI members based on a competitive application process. We are excited to see this opportunity come to fruition, and we hope it leads to more opportunities in the future.



GLOLITTER PARTNERSHIPS PROJECT

The GGGI became a strategic partner to the GloLitter Partnerships Project alongside UNEP and UN Global Compact. GloLitter is an inter-agency project led by FAO and IMO and funded by Norad aimed at formulating solutions for sea-based sources of marine litter from the fishing and shipping industry. The GGGI is looking forward to contributing actively to this new partnership.



LOOKING AHEAD (CONT.)

If one has to find a silver lining to the pandemic and living in a society so heavily impacted by COVID-19 and other political turmoil, it may be best found in the feeling that we – humanity – are truly in it together. We’ve perhaps always theoretically known that we are all part of our global community, but seeing our daily lives and routine upended brought us all to a place of greater awareness, and crystallized the fact that we all have different, but equally meaningful roles to play.

At the GGGI, we’re committed to continuing the important and necessary work of safeguarding our ocean, to protect it for all of us today and preserve it for all who will follow in our footsteps, through ghost gear research, technology, and advocacy.

Each of us has been impacted by these myriad challenges in different ways, and as we finish the chapter that is 2020, it is more important than ever to remember that the GGGI Community is still here for you, for the important and necessary work that you do year-round, and for the ocean.

Together, we’re helping to raise awareness of the pervasive threat of ghost gear, to further evidence the issue, to implement holistic, lasting solutions, to inform policy decisions and to build capacity to address this challenge once and for all.

END NOTES

1. Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, et al. (2014) Plastic Pollution in the World’s Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. PLoS ONE 9(12): e111913. “<https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0111913&type=printable>” doi:10.1371/ journal.pone.0111913.
2. <https://www.frontiersin.org/articles/10.3389/fmars.2020.00369/full>
3. <https://www.nature.com/articles/s41598-020-64771-1>
4. http://www.myanmarocean.org/uploads/1/2/4/2/124244335/mop_aldfg_report_final.pdf
5. 1. Up to 70% of floating macroplastics when measured by weight.





THE GGGI IS THE WORLD'S ONLY CROSS-SECTORAL ALLIANCE COMMITTED TO DRIVING SOLUTIONS TO THE PROBLEM OF LOST, ABANDONED AND OTHERWISE DISCARDED FISHING GEAR WORLDWIDE.

FOR FURTHER INFORMATION:



INFO@GHOSTGEAR.ORG



GHOSTGEAR.ORG



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