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*Note: Adapted from [Global Ghost Gear Initiative projects map](#)

Project Name	Project Description	Type of Fishery and Gear	Challenges	Outcomes	Additional Information

GGGI PROJECT: Alaska - Net Recovery and Recycling[1]
 	
2017 – present
	• Long history of being the most active fishing seaport in the United States – contributing to $200 million USD ($264.2 million CAD) to the U.S. economy in 2014[1].
	• Due to its immense volume of fishing activity and remoteness, fishing gear has been stored on the island with little means of end-of-life management[1].
	• The collection of accumulated fishing gear at Kodiak and Dutch Harbour is being coordinated by 'Net Your Problem' and then shipped to Plastix Global, a GGGI partner, for recycling at its facility in Denmark[1].
		• The GGGI page does not include the specifics of the data being collected on the fishery and gear type.
		• The Alaska Department of Fish and Game states that the Westward Region, which includes Kodiak and Dutch Harbour, encompasses fisheries such as shellfish, finfish, crab, Pacific cod, salmon, and herring[2].
		• 'Net Your Problem' reported that trawl gear was being collected from both Kodiak and Dutch Harbour[3].
			• Difficulty collaborating with the fishing industry for end-of-life management of fishing gear[1].
			• Additional costs may incur from developing a long-term commitment for sustainability[1].
				• Expected outcomes of pilot project:
				  o Sustainable model of end-of-life fishing gear management.
				  o Development of a transferrable logistical system for the management of high volumes of fishing gear[1].
				• Net Your Problem reported that, so far, 28.4 and 123.8 tonnes of trawl gear were recycled from Kodiak and Dutch Harbour, respectively[2].
					• Funding data was not made available on the GGGI webpage, but this document includes some possible funds for fishing gear management: http://www.zendergroup.org/docs/fish_nets.pdf.
					• For more information on previous management of marine debris: https://seagrant.uaf.edu/lib/aksg/0901/mdacoe-debris.pdf.
					• 1995 Fishing Gear Management: https://www.afsc.noaa.gov/Publications/ProcRpt/PR1995-02.pdf.

Northwest Straits Derelict Fishing Gear Program[4] 2002 – present	• A workshop was conducted in 1999 where interest was expressed to tackle derelict fishing gear and restore declining marine species in Puget Sound. • In 2002, legislation followed, and a pilot study was conducted which then materialized into an ongoing project of ghost gear retrieval	• The GGGI project includes derelict fishing nets, and crab and shrimp pots. • According to the Washington Department of Fish and Wildlife, some commercial fisheries at Puget Sound include: crab, salmon, herring, and smelt[5].	• Encouraging the reporting of ALD fishing gear. • Limited funding.	• Adoption of Derelict Fishing Gear Removal Guidelines – a framework for proper retrieval and disposal. • 2012 Launch of the Reporting, Response, and Retrieval Program – "no fault" provisions were made to encourage reporting. • 2016 "Catch More Crab" campaign targeted for sustainable practices for recreational fisheries.	• For more information on the project: https://www.nwstraits.org/our-work/derelict-gear/.

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	and marine habitat restoration.			• Building partnerships and successfully retrieving over 10,000 ALD fishing gear and restoring marine habitat and species[4].	
Steveston Harbour Net Recycling Initiative[6] 2015-present	• In 2015, Steveston Harbour launched an 18-month pilot project to expand the operations of Net-Works Program. • The accumulated fishing gear were sent from the harbour to Aquafil's ECONYL facility in Slovenia to be recycled – with potential to generate additional income for fishing communities.	• Nylon 6 from purse seine nets were being collected for recycling. • Some commercial fisheries for Steveston Harbour include: salmon, crab, rockfish, shrimp, and halibut[7].	• Labour work required to separate the net from its attachments. • Managing the net containers effectively to ensure high recycling rates. • Technical limitations for the recycling of only nylon 6 nets.	• 18 tonnes of fishing nets were recycled during the pilot project. • Possibilities for expansion into other harbours in British Columbia and recyclability of polyethylene nets. • A new recycling program was initiated in 2019.	• For more information on the project: https://www.ghostgear.org/projects/2018/10/10/steveston-harbour-net-recycling-initiative. • For more information on Net-Works: http://net-works.com/. • For more information on the 2019 recycling program: https://www.richmond-news.com/business/steveston-harbour-authorities-gives-new-life-to-fishing-nets-1.23801622.
Fundy North Fishermen's Association[8] 2008-present	• Since 2008, Fundy North Fishermen's association have been retrieving ALD fishing gear in Southwestern New Brunswick to minimize gear conflicts, damage to vessels, and harm to marine life. • Fishing gear is being recycled at Fundy Plastics, repurposed, and the project is expanding to the Gulf Region and hotspots are being mapped.	• Fishing rope, lobster traps, cable, buoys, and fishing chains are being retrieved. • Commercial fisheries include: lobster, scallops, groundfish, shad, gaspereau, and eels.	• Conflicts with marine shipping industry and salmon aquaculture. • Ghost gear retrieval programs are expensive to implement and labour-intensive.	• Preserve the livelihoods of fishermen, increase education to prevent gear loss, and reduce marine life entanglement. • More than 1000 lobster traps, 23,726 feet (7231 metres) of rope, 692 metres of cable, 76 buoys, and 25 metres of chain retrieved thus far. • Increase partnerships and engage marine industries (such as shipping) for long-term sustainable practices.	• For more information on the project: https://www.ghostgear.org/projects/2018/10/10/fundy-north-fishermens-association. • For more information on the association: https://www.fundynorth.org/.

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GGGI PROJECT: Lobster Pot Recovery and Recycling in Gulf of Maine[9] 2015-present	• This is the latest ghost gear retrieval project in the Gulf of Maine with funding from NOAA Marine Debris Program. • Retrieved gear is processed at a wharf in Portland and then sent to EcoMaine – a waste-to-energy facility. • Data from the Gear Grab Program, by the Gulf of Maine Lobster Foundation, has helped facilitate the location and retrieval of ALD fishing gear.	• Fishing rope, nets, and lobster pots have been retrieved. • The primarily involved commercial fishery is the lobster fishery, which contributed to $484.5 million USD ($644.7 million CAD) to the US economy in 2018[10].	• The process of separating the gear and cutting the debris is labour-intensive. • The mixed materials in lobster pots reduces its recyclability and is instead sent to be burnt (further down the waste hierarchy).	• Increase partnerships and collaborate with fishermen and divers for ghost gear retrieval. • Maintain data collection and increase awareness on the negative impacts of ghost gear. • 7.2 tonnes of rope and nets were retrieved in May 2019 (E. Pelletier, a representative from the Gear Grab Program, personal communication, August 22, 2019).	• For more information on the project: https://www.ghostgear.org/projects/2018/10/10/lobster-pot-recovery-and-recycling-in-gulf-of-maine. • For more information on the Gear Grab Program: http://www.gomlf.org/gear-grab/. • For more information on the Fishing for Energy program: http://www.nfwf.org/fishingforenergy/Pages/home.aspx#.VUeeX_IVhBc.
GGGI PROJECT: Vaquita Habitat Gear Removal - Gulf of California[11] 2017 - present	• The project aims at removing ALD fishing gear which is endangering marine species, specifically the vaquita – there are less than 30 individuals remaining. • Sonar technology and drones are being used to locate ALD fishing nets and monitor illegal fishing activities, such as totoaba fishery, which are contributing to the decline of vulnerable marine species such as the vaquita.	• Gillnets are the primary fishing gear being retrieved. • Fisheries include: shrimp, finfish, and the illegal fishing for totoaba which is sold for its swim bladder for "traditional medicinal properties"[12].	• The demand for totoaba swim bladders can generate $2500 USD ($3293 CAD) a piece, which would sell for $20,000 USD ($26,344 CAD) in Asian black markets – straining both totoaba and vaquita species[12]. • Conservationists are at risk from illegal poachers – drones shut down and shots fired at crew[12].	• Continuing operations to preserve the world's most endangered marine species – the vaquita. • More than 800 illegal fishing gear have been retrieved – almost 5,702 m^2 of gillnets[11, 12]. • More than 3000 marine animals were saved: 1 humpback whale, 88 critically endangered totoaba fish species, 1 critically endangered pacific leatherback turtle, and 21 sharks[12].	• For more information on the project: https://www.ghostgear.org/projects/2018/10/10/vaquita-habitat-gear-removal-gulf-of-california. • For more information on the organization: https://www.vaquitadefenders.org/learn-more. • For more information on the Marine Mammal Centre: http://www.marinemammalcenter.org/science/Working-with-Endangered-Species/vaquita.html.

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GGGI PROJECT: Latin American Ghost Gear Dive Workshop - Panama[13] Complete (November 2018)	• The workshop took place from November 21-23, 2018 at the Smithsonian Tropical Research Institute in Panama City. • The workshop was a networking opportunity to share knowledge on ALD fishing gear in the Caribbean and Latin America regions. • Various stakeholders, such as fisheries managers, aquariums, non-governmental organizations (NGOs), were represented and training was provided for ghost gear retrieval operations.	• Various fisheries were represented at the workshop and fishing activity in Panama includes: shrimp, herring, anchovy, tuna, as well as many others[14]. • Fishing gear such as longline and circular hooks are common in Latin America and Panama[14].	• Duration of workshop may be too short to effectively educate and train stakeholders for ghost gear retrieval. • Limited funding.	• Stakeholders and participants were introduced to the GGGI Best Practice Framework for the Management of Fishing Gear, reporter app, and global data portal. • Diving safety protocols were administered, and 2 gillnets were safely removed during training.	• For more information on workshop logistics: https://www.eventbrite.com/e/fao-gggi-ghost-gear-diver-retrieval-workshop-and-certification-registration-74629144781.
GGGI PROJECT: Bureo and WWF Expand Net+Positiva Program into Peru[15] In Planning	• The Project is an expansion of the Bureo model implemented in Chile and aims at capacity building for a circular economy from ALD fishing gear in Peru. • Bureo is consulting with organizations such as Patagonia to explore the upcycling of products made from recovered fishing nets. • The scoping of the project is currently underway, and implementation is expected for 2020.	• The primarily focus is on the anchoveta fishery, which is the largest single species fishery in the world. • Purse-seins are the primary gear type focus.	• Implementation of project in a timely manner. • Encouraging motivation for participation in the project.	• The quality of purse-seine nets is ideal for upcycling which offers opportunities for the creation of a wide range of new products. • The goal is to collect 1000 tonnes of nets annually. • The project is expected to generate $200,000 USD ($263,381 CAD) in revenue for local communities.	• For more information on the organizing partners: http://www.wwf.org.pe/en/?uNewsID=343290.

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Lost Fishing Gear Project – Brazil[16] 2009-present	• The project was established in 2009 and is managed by a partnership between the Forestry Foundation and the Fisheries Institute of the Department of Agriculture at São Paulo. • Surveys are being conducted by a sidescan sonar and remote operating vehicle (ROV) to map Marine Protected Area (MPA) habitats and retrieve ALD fishing gear.	• Commercial fisheries include (but not limited to): shrimp, haddock, tuna, and sardines[17]. • Fishing gear found at Arvoredo Marine Biological Reserve includes: ropes, nets, fishing line and lead, anchor, and hook-and-line[18].	• Possible difficulty in collaborating with fishing industry to help MPA managers understand the quality of the habitats.	• More than 2 tonnes of ALD fishing gear has been removed from Brazilian waters. • Hundreds of hectares of habitats within MPAs have been mapped, and a clean index was created to identify vulnerable areas.	• For more information on ALD fishing gear in Brazil: https://doi.org/10.1016/j.pecon.2018.12.003. • For more information on volleyball Olympics game using recycled nets: https://www.weforum.org/agenda/2019/03/ghost-fishing-gear-to-volleyball-nets-copacabana-beach/.
Bureo - turning nets into decks[19] 2013-present	• Bureo started the Net Positiva initiative as Chile's first fishing gear collection and recycling program. • A material buyback program was also set in place to help fishermen generate additional income. • Each recycled skateboard deck is equivalent to the removal of 30 square feet (2.7 m^2) of fishing nets. An online store has been set-up and the skateboards can be found at retailers across 4 continents.	• Commercial fisheries include: Spanish sardines, yellow jacks, anchovies, tuna, clams, and mackerels[20]. • Fishing gear could include: trawl nets, gillnets, and fishing rope[21, 22].	• The price could be discouraging as each skateboard deck could cost $65 USD ($85 CAD) or $149 USD ($196 CAD) for the full setup.	• During the first year of operation, more than 10,000 kilograms of fishing gear was recycled. • The team is expanding its operations and recently participated in Patagonia's $20 million USD ($26.2 million CAD) Change Fund for pro-environmental start-ups.	• For more information on Bureo: https://bureo.co/. • For more information on by-catch in Chile Fisheries: https://doi.org/10.1163/1937240X-00002123.
GGGI PROJECT: Satlink Joins GGGI – Seeks to Prevent 100 Tonnes of Discarded	• In 2018, Satlink joined the GGGI and is extending its Zero Impact campaign to fund Bureo's Net Positiva program. • The new project is expected to commence in 2019 and recover 100 tonnes of ALD	• Commercial fisheries include: Spanish sardines, yellow jacks, anchovies, tuna, clams, and mackerels[20].	• Possible difficulty in training and infrastructure development in preparation for program	• The Net Positiva program will be expanded to 4 additional areas: Pichilemu, Bucalemu, Llico, and Coliumo[24]. • 100 tonnes of fishing gear are expected to be recovered and	• For more information on Satlink and Bureo collaboration: https://satlink.es/en/spanish-technology-satlink-pledge-to-support-the-collection-of-100-000-kilos-of-discarded-fishing-nets-for-recycling-through-

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Fishing Nets in Chile[23] In Planning	fishing gear in new areas in Chile.	• Fishing gear could include: trawl nets, gillnets, and fishing rope[21, 22]	implementation by end of 2019.	upcycled into skateboards, sunglasses, and Frisbees[23].	social-business-program-in-chile/. • For more information on Satlink Zero Impact campaign: https://satlink.es/en/satlinks-zero-impact/.
Calao Africa - Sal Island Project[25] 2015-present	• Calao Africa initiated a marine debris project in 2015 at Sal Island, Cabo Verde. This project is an extension of Calao's mission on bio-diversity and environmental education, but primarily focused on plastic debris collection and recycling. • Almost one-third of marine debris collected during beach clean-ups were ALD fishing gear.	• Commercial fisheries in Cabo Verde include: tuna, lobster, and cephalopods (such as squid) [26]. • Fishing gear could include: nets, traps, pots, rope, and floating devices.	• Possible limitation of adequate marine debris collection due to limited number of volunteers.	• More than 16 tonnes of marine debris collected thus far. • A recycling unit development is underway and plastics generated from tourism industry will be used in the process. • Upcycled products will generate income for local communities, as well as environmental empowerment for achieving a local circular economy. • Training on marine plastic pollution to be provided for school teachers starting October 2019.	• For more information on the project: https://calao-africa.com/our-projects/plages-du-cap-vert/.

Project GHOST- North Adriatic Sea[27]
 	
Complete (2013-2016)
	• The project was created to investigate the amount and impacts of ALD fishing gear in the North Adriatic Sea.
	• It received a total funding worth €1,127,020 ($1.65 million CAD) from the European Union and National Research Council. The overall objective was to collect data and prepare a communication plan for awareness.
		• Commercial fisheries include: sardine, anchovy, horse mackerel, mackerel, and sprat[28].
		
		• Fishing gear includes: trawl nets, purse-seine, gillnets, and traps[28].
			• Lack of baseline data.	• Acoustic and photographic mapping technology enabled the mapping of 17 rocky outcrop bedrocks (tegnùe), and monitoring of coastal habitats[29].
				
				• 36 ALD fishing gear recovery campaigns were held[29].
				• 14 key actions were identified such as restoration, ecosystem goods and services analysis, development of technical
					• For more information on the project:
					  ○ http://www.life-ghost.eu/index.php/en/
					  ○ http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4778.
					• For access to project's final report: http://www.life-ghost.eu/index.php/en/downlo

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				protocols, amongst many others[27].	ads/technical-deliverables/send/4-technical-deliverables/490-ghost-life12-bio-it-000556-final-report-for-website.
Ghost Fishing[30] 2015-present	• A group of divers came together in 2009 to retrieve ALD fishing gear. In 2015, the team expanded their mission to collaborate with divers around the world due to the pervasive nature of ALD fishing gear. • Ghost Fishing partnered with Star Sock and Aquafil on a "Healthy Seas" initiative; whereby, recycled nets are sent to Aquafil's ECONYL facility to create nylon yarn which is then turned it new products such as socks and swimwear[31].	• No specific fishery or gear type as it is a global project. However, nylon nets are the main focus and are processed by ECONYL® Regeneration System.	• Only nylon nets are accepted at ECONYL facility. This limits the ability to recycle other commonly found fishing gear or nets made from materials such as polypropylene and polyethylene.	• Strong global partnerships and various projects such as the Healthy Seas Initiative, Project Argo, and Operation Stone and Pots in Ireland[32]. • Hardworking and dedicated teams working on data collection and surveying, sharing knowledge on marine debris, best practices, and diving safety protocols.	• For more information on the organization: https://www.ghostfishing.org/. • For more information on Aquafil: https://www.aquafil.com/who-we-are/profile/. • For more information on ECONYL®: https://www.econyl.com/about-us/.
GWR Polymers/ Newlyn Harbour Net Recycling[33] 2011-present	• The project initially started in 2004 as a result of over-piling of old fishing nets at Newlyn Harbour. Gavin Rees, owner of GWR Polymers recycling company, provided containers to facilitate collection and improve end-of-life management of fishing gear. • The project later took off in 2011 when a baling unit was	• Commercial fishing in Newlyn Harbour includes: haddock, hake, John Dory, and megrim[34]. • Fishing gear includes monofilament and multifilament nets and ropes.	• Manual separation of collected fishing gear by local fishermen which could be time intensive.	• Local fishermen were encouraged to participate in net disposal at a no-fee charge. GWR Polymers was able to recover costs through the sale of plastic pellets to Eastern European companies. • The scope of the project expanded to other harbours, and more than 200 tonnes of	• For more information on the project: https://www.ghostgear.org/projects/2018/10/10/gwr-polymers-newlyn-harbour-net-recycling. For more information on GWR Polymers: http://www.gwrpolymers.co.uk/.

	provided to facilitate the transport and sale of batches to depolymerisation companies.			monofilament netting has been recovered since 2004.	
GGGI PROJECT: Fathoms Free - Gear Removal, Recycling and Data Collection[35] 2014-present	● The project is volunteer-led and was started in 2014 in Cornwall, UK. Over the years, the project's network has grown, and volunteers engage in activities such as beach clean-ups, diving for ghost gear retrieval and recycling, data collection, and education.	● Commercial fishing in Cornwall includes: brown crab, scallops, mackerel, haddock and many others[36]. ● Fishing gear includes: trawls, pots, and gillnets[36].	● Limited funding and reliance on donations to finance expeditions.	● Collaboration with GGGI partners such as Plastix Global (recycling facility in Denmark) for sustainable end-of-life management of retrieved gear. ● Some of the gear retrieved from beach clean-ups is used in artworks by Zillah Robertson to shed light on marine debris.	● For more information on the organization: https://www.fathomsfree.org/. ● For more information on Zillah Art: https://www.fathomsfree.org/zillah-s-art.
Cornwall Seal Group Research Trust[37] 2014-present	● Cornwall Seal Group Research Group (CSGRT) estimates that 38% of the world's seal population is located in the United Kingdom[38]. An assessment was conducted from 2014-2015, with the help of World Animal Protection, to understand the impacts of ALD fishing gear in Cornwall[37]. ● CSGRT is currently continuing research, but on a voluntary basis with partners such as Patagonia.	● Commercial fishing in Cornwall includes: brown crab, scallops, mackerel, haddock and many others[36]. ● Fishing gear includes: trawls, pots, and gillnets[36].	● A possible challenge could be disturbances to seal populations from citizen scientists sending seal sighting photos[39].	● During the initial assessment period, more than 51 tonnes of ghost gear were surveyed. ● Following the initial report, 4 years of research and photo IDs have been collected and CSGRT received funding to document the new findings.	● For more information on organization: https://www.cornwallsealgroup.co.uk/. ● For access to project report: https://www.worldanimalprotection.org/cdn/farfuture/PefxOUHXY06b1oHdYIUm01fkSifsa1ocQ3v7Hgl5MDs/mtime%3A1473683109/sites/default/files/uk_files/animals_in_the_wild/case-study-impact-ghost-gear-cornwall.pdf.
Beachwatch UK[40] 1994-present	● In 1994, the Marine Conservation Society (MCS) initiated Beachwatch as UK's national marine debris cleaning and surveying program.	● No specific fisheries. ● Fishing gear includes: fishing nets, lines, and lobster pots[41].	● Possible difficulties in policy reform following Brexit[42].	● More than 6 million pieces of marine litter has been collected so far[43]. ● Fishing gear constituted 12.1% of marine debris collected in 2018. Fishing nets and lines ranked 8th	● For more information on the project: https://www.ghostgear.org/projects/2018/10/10/beachwatch-uk.

*Note: Adapted from [Global Ghost Gear Initiative projects map](#)

	● Survey data has been recorded for more than 20 years and data has been used to increase awareness and advocate for policy reform, such as a national campaign to eliminate microbeads.			and 9th in most abundant litter found[41].	● For more information on Marine Conservation Society: https://www.mcsuk.org/. ● For access to 2018 beach clean-up report: https://www.mcsuk.org/media/gbbc-2018-report.pdf.
Pembrokeshire Sustainable Shellfish Initiative[44] Complete 2016-2017	● This pilot project took place from 2016-2017 to explore sustainability options for the lobster fishery and raise awareness on ghost fishing in Whales.	● Lobster fishery. ● Fishing gear includes: lobster pots and netting[45].	● The Pembrokeshire Marine Special Area of Conservation (SAC) expressed concern for funding as a result of Brexit[46].	● Trials for anti-ghost fishing measures were carried out such as Ghost Buster hog rings. ● Data collected from dives revealed entrapment of a high number of target species – posing a threat to the environment and economy – 29 lobsters and 19 crabs were released[44, 45]. ● Participating Fishermen (no fees were charged) were keen on escape hatches. ● A total of 92 lobster pots and netting were recovered[45].	● For more information on the pilot project: http://www.pembrokeshiremarinesac.org.uk/pssi.html. ● For project summary and funding: https://www.pembrokeshirecoast.wales/default.asp?PID=467&SDFID=105. ● For access to report "Turning the tide? Report of the inquiry into the Welsh Government's approach to Marine Protected Area Management": http://www.assembly.wales/laid%20documents/cr-ld11159/cr-ld11159-e.pdf.
Fishing for Litter (FFL)[47] 2000-present	● In 2000, the project was initiated by a collaboration between the North Sea Directorate of the Dutch Government and the Dutch Fisheries Association[48]. ● Currently, KIMO International is coordinating pilot projects across Northern Europe[47].	● No specific fisheries since the initiative is wide-scale. ● Fishing gear could include: nets, lines, ropes, and pots[47, 49].	● Unfair landfill tax is imposed on volunteering stakeholders and discourages some fishermen and ports to collaborate[50]. ● Some fishermen and ports participating in FFL complain of	● The FFL initiative currently operates in the United Kingdom, Netherlands, Sweden, Faroe Islands, and other countries in Northern Europe[51]. ● 11% and 10% of marine litter collected is attributed to fishing nets and ropes, respectively[49]. ● An evaluation program provided suggestions for FFL stakeholders	● For more information on the initiative: http://fishingforlitter.org/. ● For access to the evaluation research paper: https://doi.org/10.1016/j.marpolbul.2019.04.035.

*Note: Adapted from Global Ghost Gear Initiative projects map

	• FFL is supported by policies such as The European Marine Strategy Framework Directive, OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) recommendation 2010/19, and OSPAR Marine Litter Regional Action Plan[48].		uncomfortable working conditions, such as lack of space and time-intensive sorting of waste[50].	such as improving recycling options, standardizing data monitoring, amongst many others[50].	
Healthy Seas 'a journey from waste to wear'[52] 2013-present	• In 2013, Ghost Fishing partnered with Star Sock and Aquafil on a "Healthy Seas" initiative; whereby, recycled nets are sent to Aquafil's ECONYL facility to create nylon yarn which is then turned it new products such as socks and swimwear[31].	• No specific fishery or gear type as it is a global project. However, nylon nets are the main focus and are processed by ECONYL® Regeneration System.	• Limited recycling options for retrieved fishing gear as only nylon nets are processed at ECONYL facility.	• The initiative currently operates in the North Sea, Adriatic Sea, and Mediterranean Sea, and 453 tonnes of ALD fishing gear has been recovered since inception[52]. • In 2018, 100 divers and 27 fishing communities participated in the initiative and recovered 78 tonnes of fishing nets[52].	• For more information on the initiative: https://healthyseas.org/about-us/.
GGGI PROJECT: Ghost Fishing UK Scapa Flow, Orkney Islands[53] 2015-present	• In 2015, Ghost Fishing UK received funding from World Animal Protection and GGGI partners to recover ALD fishing gear from sunken German battleships from World War I in Scapa Flow. • Permissions were granted by Historic Environment Scotland to deploy vessels and trained divers to clean the maritime heritage site. • In 2018, two vessels were used to retrieve ALD fishing gear and training was	• Shellfish industry has a long prominent history in the Orkney Islands[57]. • Fishing gear includes: creels/pots, rope, queenie dredging nets, and whelk traps[53, 54].	• Ship wrecks are located at a depth of 45 metres so advanced skills and teamwork are required for safe ghost gear recovery. • Nitrogen narcosis and decompression sickness are common threats, but training is provided to reduce impacts.	• 4 years of data were collected from expeditions and will be analyzed to develop a sustainable model for fisheries and ultimately reduce the loss of gear. • More than 140 creels/pots, 200 kilograms of nets, and more than 2 kilometres of ropes have been collected since inception[55]. • Retrieved creels/pots were cleaned and donated to local fishermen and Sea Life Centres for underwater exhibitions.	• For more information on the project: http://divemagazine.co.uk/eco/7839-ghost-fishing-uk-cleans-scapa-flow. • For more information on Afrayed Knot: https://www.facebook.com/Afrayedknot-1680546895526412/. • For more information on GGGI partner Fat Face Foundation (sells swimwear made from recycled fishing nets): https://www.fatfacefoundation

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	provided to volunteer divers on safety protocols and data documentation.			● Retrieved ropes were sent to be repurposed by Afrayed Knot, and retrieved nets were sent to be processed at ECONYL® and Plastix Global[53, 56].	.org/about-us/our-purpose.php.
World Animal Protection and Ghost Fishing UK Tackles Ghost Gear in Orkney, PART 2[57] 2015-present	● The recovery of heavy ALD fishing gear at depths such as Scapa Flow requires professional training to ensure safety. ● Rich Walker, the head of a renowned international driving group, provided safety and legal training for various participating diving groups in Ghost Fishing UK. ● An application was developed – SeaCleanMachine – to facilitate the collection of data and mapping.	● Shellfish industry has a long prominent history in the Orkney Islands[57]. ● Fishing gear includes: creels/pots, rope, queenie dredging nets, and whelk traps[53, 54].	● Ship wrecks are located at a depth of 45 metres so advanced skills and teamwork are required for safe ghost gear recovery. ● Nitrogen narcosis and decompression sickness are common threats, but training is provided to reduce impacts.	● SeaCleanMachine will offer an interactive interface for data collection and mapping of ALD fishing gear. ● The application will also contribute to the 2019 Battleship Explorer project; whereby photographs and videos will be used to recreate 3D visualizations of the wreckage on their 100-year anniversary[58].	● For more information on SeaCleanMachine: http://www.seacleanmachine.org.uk/. ● For more information on UK Marine and Coastal Access Act 2009 legislation: http://www.legislation.gov.uk/ukpga/2009/23. ● For more information on Battleship Explorer: https://discovery.dundee.ac.uk/en/publications/immersion-and-the-submerged-the-scapa-100-project.
Olive Ridley Project (ORP) – Pakistan[59] 2015-present	● In 2013, the Olive Ridley Project (ORP) was founded to investigate the vast amount of entangled Olive Ridley sea turtles in the Maldives – which are rare to find[60]. ● WWF Pakistan expressed concern for fishing gear waste and the conservation of turtles in Pakistan and globally. Migration patterns of Olive Ridley sea turtles are not understood in Pakistan, but they have been sighted in offshore waters[61].	● Commercial fisheries in Pakistan include: shrimp, sardines, anchovies, tuna, and mackerel[63]. ● Fishing gear includes: gillnets, nylon trawling nets, clothing nets (to capture lobsters and other crustaceans), and fishing lines and ropes[63, 64].	● Fishermen report losing gillnets on a daily basis[65]. ● Lack of facilities to allow for safe disposal of old or retrieved fishing gear[65].	● More than 550 kilograms of fishing gear retrieved so far[59]. ● Educational talks to fishermen and local schools, as well as social media platforms help in promoting discussions and increasing awareness[59]. ● Marine debris such as plastic bottles were collected and are being transformed into storage containers for retrieved fishing gear[59, 64]. ● Retrieved fishing gear is being used for construction, harnesses	● For more information on Olive Ridley sea turtle: https://www.fisheries.noaa.gov/species/olive-ridley-turtle. ● For more information on fate of retrieved nets: https://oliveridleyproject.org/blog/from-ghost-nets-to-good-nets. ● For access to ORP Pakistan Facebook page: https://www.facebook.com/groups/538541109638154/. ● For access to research article on sea turtles in Pakistan:

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*Note: Adapted from Global Ghost Gear Initiative projects map

	● In 2015, WWF Pakistan and ORP collaborated to investigate ALD fishing gear in Rehman Goth fishing community, increase awareness and improve end-of-life management[59, 62].			and dog leashes, and for fashion and accessories[64].	https://doi.org/10.2744/CCB-0767.1.
Olive Ridley Project – Maldives[66]

2013-present | ● In 2013, the Olive Ridley Project (ORP) was founded to investigate the vast amount of entangled Olive Ridley sea turtles in the Maldives – which are rare to find[60].
● Bycatch attributed to Maldivian fisheries and industry bans point the investigation to fisheries in neighbouring countries[67, 68].
● The project is a multi-disciplinary approach aimed at retrieving ALD fishing gear, rehabilitating entangled animals and Olive Ridley sea turtles, and collecting data to trace the origins of ALD fishing gear floating in Maldivian waters[66]. | ● Commercial fisheries in Maldives include: skipjack tuna, yellowfin, and reef fisheries[69].
● Fishing gear (mostly from other countries) includes: nets, floats, trawls, and fish aggregating devices (FADs)[70]. | ● Lack of disposal and recycling facilities in the Indian Ocean[66]. | ● More than 1400 ghost nets were retrieved, and 812 entangled turtles were rescued since 2013[60].
● Establishment of Marine Turtle Rescue Centre with the help of Coco Collection – a chain of resorts in Maldives[60].
● A database is being compiled with various details (such as mesh size) to trace the origin of manufacturing companies and countries (ex: Indian manufacturer Garware)[71]. | ● For more information on the project: https://oliveridleyproject.org/about-us.

● For access to research article on bycatch in Maldivian fisheries: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0177391.

● For access to research article on sea turtle entanglements: https://www.iotn.org/iotn22-06-a-two-year-summary-of-turtle-entanglements-in-ghost-gear-in-the-maldives/. |
| GGGI PROJECT: Myanmar Ocean Project - Ghost Gear Removal in the Myeik Archipelago[72] | ● In 2018, National Geographic Society and World Animal Protection funded the Myanmar Ocean Project as the first pilot project to explore disposal and recycling options for fishing gear in Myanmar[72, 73]. | ● Commercial fisheries in Myanmar include: eel, shrimp, hilsa, crab, and white pomfret[75].
● Fishing gear includes: trawls, nets, purse seine, and traps[76]. | ● Lack of data[72].
● ALD fishing gear poses huge threats to coral reefs, threatened species such as manta rays and sea turtles, and uninhabited areas | ● 22 sites at Myeik Archipelago were surveyed and more than 1000 kilograms of nets were retrieved so far[74].
● Data collection, imagery, and mapping will help in understanding the impact of ghost gear on keystone species | ● For more information on the project: https://www.ghostgear.org/projects/2018/11/21/gggi-project-myanmar-ocean-project-ghost-gear-removal-in-the-myeik-archipelago. |

*Note: Adapted from Global Ghost Gear Initiative projects map

2018-present	• The project is headed by Thanda Ko Gyi who raised concern on the alarming amount of ALD fishing gear she experienced diving in Myanmar. Ghost gear could have grave impacts on the productive ecosystems in Myanmar and on coastal communities if unresolved[72, 74].		such as the Myeik Archipelago[72].	(such as corals) and the overall biodiversity in Myanmar islands[72].	• For access to Thanda Ko Gyi's testament: https://frontiermyanmar.net/en/the-ghost-net-menace-in-myanmars-myeik-archipelago.
GGGI PROJECT: Gear Marking in Indonesian Small Scale Fisheries[77] 2016-present	• In 2016, Indonesia was one of the developing countries for which ghost gear pilot projects were recommended by the United Nations Committee on Fisheries[77]. • The pilot project will test FAO guidelines on gear marking methods at two sites in Java – Pekalongan and Sadeng. • The project is headed by the Indonesian Ministry of Marine Affairs and Fisheries and hopes to reduce ALD fishing gear and Illegal, Unregulated, and Unreported (IUU) fishing activity[77].	• Commercial fisheries in Indonesia include: tuna, shrimp, crab, lobster, and squid[78]. • Primary fishing gear: gillnets[77].	• Gillnets are subsidized by a government program and are of low value to fishermen – retrieval of gillnets is thus seen as a disincentive[77].	• Six different gear marking methods were tested. • Feasibility study revealed that fishermen preferred their method of using flashlights and flags over recommended suggestions. However, consensus was reached to collaborate on improving identification methods. • Some of the recommendations for future phases of the project include: co-management with local fishing communities, gear marking at manufacturer level (such as colour coding), and a standardized system for reporting[79].	• For more information on the pilot project: https://static1.squarespace.com/static/5b987b8689c172e29293593f/t/5bd6e743a4222f4430aabf3b/1540810590236/Casestudy-INDONESIA.mk2.single.pdf. • For access to FAO Fisheries and Aquaculture Technical Paper on pilot project: http://www.fao.org/3/BU654en/bu654en.pdf.
GhostNets Australia[80] 2004-present	• GhostNets Australia has been operating since 2004 by working with local communities and indigenous rangers to retrieve ghost gear.	• No specific fishery due to wide scope. • Fishing gear could include: gillnets, trawls, and ropes[81].	• Unregulated fisheries, from Arafura Sea to the north of Australia, challenge proper retrieval and	• More than 13,000 nets have been recovered since inception, and more than 10 years' worth of data has been recorded[80]. • Retrieved nets have been transformed into art creations	• For more information on the project: https://www.ghostnets.com.au/about/. • For more information on Ghost Net Art Project:

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			prevention of ghost gear[80]. Recycling of fishing gear or waste-to-energy programs are expensive to implement in remote indigenous communities[82].	which generate profit for local communities[83].	https://www.ghostnets.com.au/ghostnet-art/.
	● The initial purpose was for capacity building in indigenous communities for end-of-life fishing gear management. In 2012, the scope expanded to conduct workshops in Arafura Sea and explore sustainability options.				
Northern Prawn Fishery - Cleaning Up Ghost Nets[84] 2015-present	● The Northern Prawn Fishery (NPF) is valued at $130 million AUD ($116 million CAD). NPF is MSC certified and was awarded the gold standard of trawl fisheries by FAO[84, 85]. ● In 2015, NPF incorporated in their operation's manual guidelines for ALD fishing gear management, retrieval, and data collection protocols[84]. ● NPF joined GGGI in 2015 and is collaborating with A Raptis & Sons for disposal of retrieved fishing gear[84].	● Northern Prawn Fishery which includes banana, tiger, and endeavour prawns[86]. ● Fishing gear could include: gillnets, trawls, and ropes[81].	● The Gulf of Carpentaria is a global hotspot for ALD fishing gear – proper management of retrieved ALD fishing gear can be limited due to funding.	● GGGI reports that a large number of nets were retrieved since inception (no exact numbers available). ● Collaboration with indigenous groups and NGOs to conduct workshops and find sustainable fishery options to reduce ALD fishing gear impacts.	● For more information on the project: https://www.ghostgear.org/projects/2018/10/10/northern-prawn-fishery-cleaning-up-ghost-nets. ● For more information on the NPF industry: http://npfindustry.com.au/the-northern-prawn-fishery/.
GGGI PROJECT: FAD Best Practice Management in South Pacific[87] 2017-present	● The project was launched in 2017 to evaluate the current management of fish aggregating devices (FADs) in the Pacific and contribute to the drafting of the FAO fishing gear marking guidelines.	● Tuna Fishery as the main focus. ● Commercial fishing in Vanuatu includes: tuna, cephalopods, shellfish, and others[88]. ● Main fishing gear: FADs.	● The deployment of tracking devices could be challenged by their cost-effectiveness and extent of cellular range coverage[89].	● A non-entangling drifting fish aggregating devices (dFADs) policy was adopted by the participating tuna company. They are currently testing biodegradable dFADs under the TUNACONS ETP Fishery Improvement Project[89].	● For more information on the project: https://static1.squarespace.com/static/5b987b8689c172e29293593f/t/5bd6e7751905f4f40ebc5d96/1540810634915/LO-RES.Casestudy-PACIFIC.amended.pdf.

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Note: Adapted from [Global Ghost Gear Initiative projects map](#)

	The project is two-folds: (1) evaluate the practices of a tuna company against the FAO draft guidelines and GGGI best management practices; (2) Satellite buoy tracking and monitoring with Vanuatu Fisheries Department (VFD).			Satellite buoy tracking costs almost 50% of an anchored fish aggregating fishing device (aFADs) and are not limited by cellular range. VFD aims to find a tracking device which is less than 10% the cost of an aFAD; therefore, more research is needed[89].	For more information on TUNACONS ETP Fishery Improvement Project: https://fisheryprogress.org/fip-profile/eastern-pacific-ocean-tropical-tuna-purse-seine-tunacons.
Project AWARE®: Dive Against Debris™ [90] 2011-present	The project is driven by citizen science and is the world's first underwater marine debris removal and global survey. Data collected will be shared with partners in international conferences to ensure ALD fishing gear remains in the political narrative.	No particular fishery due to the wide scope of the project. No particular fishing gear but could include fishing line and metal fishing components[91].	Difficulties could be faced to meet the #NextMillion2020 challenge; whereby, the organization aims to enter more than one million marine debris collected in a dataset[92].	Plastic fishing line was identified as the top marine debris found in surveys[91]. More than 28,000 citizen scientists participated, and 10,213 surveys were conducted since inception. So far, 1,529,499 pieces of marine debris were collected[90, 91]. #NextMillion2020 challenge and dataset is expected to be completed by the end of 2020[92].	For more information on the project: https://www.projectaware.org/diveagainstdebris.

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Appendix A – International Ghost Gear Projects*

***Note**: Adapted from [Global Ghost Gear Initiative projects map](#)

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