

Bycatch Solutions Hub: 2024-2025 Summary Report

(Year 2)



**BYCATCH
SOLUTIONS
HUB™**

With founding sponsorship from:



Sustainable Fisheries™
PARTNERSHIP



Since its launch in April 2023, the Bycatch Solutions Hub (the Hub) has served as a platform to increase awareness within the seafood industry about bycatch-reduction solutions in commercial fisheries, while also providing tangible support for projects that are working to implement bycatch solutions. These projects span a variety of global fishery gear types; impact all four endangered, threatened, and protected (ETP) bycatch species groups (cetaceans, sharks/rays, sea turtles, seabirds); and represent a broad geographic range, from Chile to Canada (see Table 1).

The Hub was developed to cultivate long-term engagement and a united community committed to a future where a sustainable seafood industry and thriving marine ecosystems go hand-in-hand. By bringing together the people driving the movement – fishers, conservation professionals, seafood industry leaders, scientists, gear innovators, and engaged consumers – we foster connections to protect marine wildlife, highlight positive impact on the water, and inspire deeper collaboration.

Table 1: Bycatch Solutions Hub mitigation efforts

Number of facilitated bycatch-reduction projects by gear type, location, and vulnerable species protected

Gear types included:	Geographies included:	Projects by protected species*:
• Pot and traps (8) • Gillnets (2) • Purse seines (2) • Pelagic longlines (3) • Handlines (1)	• Northwest Atlantic Ocean (7) • Northeast Atlantic Ocean (1) • North Pacific Ocean (1) • Tropical Eastern Pacific Ocean (1) • Southeast Pacific Ocean (1) • Western and Central Pacific Ocean (3) • Indian Ocean (1) • US Gulf (1)	• Large baleen cetaceans (4) • Small-toothed cetaceans (1) • Seabirds (3) • Sharks and rays (4) • Sea turtles (4) <i>*Several projects protect multiple ETP species</i>

Since its inception, the Hub has continued to thrive, assisting with funding over USD 784,000 in bycatch-solutions-based projects. These projects have offered increased protection for ETP species by, for example, reducing entanglements of critically endangered North Atlantic right whales (NARWs), eliminating seabird bycatch, decreasing the effects of ghost gear on the environment, and providing vessels with electronic monitoring for the protection of sharks and sea turtle species.

In Year 2, several inspiring programs were supported and launched through the Hub; this report will highlight them in more detail.

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Impact

Table 2: 2024–2025 Hub contributions to global bycatch mitigation

Note: The first column in this table describes current efforts to reduce bycatch in fisheries and regions around the world, while the second column specifically highlights contributions to these efforts that were made possible by funding support through the Bycatch Solutions Hub.

Current bycatch-mitigation efforts	Related contributions through Hub funding
Pingers are being used to reduce bycatch rates of harbour porpoise in Norwegian gillnet fisheries. The pingers can reduce bycatch by 70-100%, according to the Norwegian Institute of Marine Research (IMR).	50 vessels were outfitted with a total of 500 acoustic pingers to reduce entanglement of small cetacean species.
On-demand gear libraries in the US and Canada are lending gear at no cost to fishers to trial in fisheries that pose a high risk of whale entanglement. - In Maine, 475 successful trial hauls were completed using on-demand experimental gear from the Maine innovative gear library. - In Massachusetts restricted areas between 2023-2025, fishers deployed 2,253 fully on-demand trawls and 8,793 hybrid trawls (one end with a buoy, one end with an on-demand device) using gear from the NEFSC library, with an overall success rate of 89%. - Between 2022-2024, 350,000 lbs. of snow crab were landed using on-demand gear distributed by the CanFISH gear library, with a 96-98% success rate.	- Eight on-demand units, including support technology, were purchased for distribution across the gear libraries. - Operational funding was provided to CanFISH to support gear maintenance and distribution.

Current bycatch-mitigation efforts	Related contributions through Hub funding
Tracking gear with Smart Buoys has been shown to eliminate or reduce gear loss by allowing fishers to monitor the location and movement of deployed gear at all times, ensuring that 100% of gear is hauled in at the end of the season. Pot and trap fishing gear has one of the highest rates of gear loss, increasing the chances of ghost fishing and entanglements of marine wildlife.	Over 100 smart buoys were distributed across lobster and crab fisheries with high risk of marine mammal entanglements in the US and Canada.
Since 2009, improvements to biodegradable fish aggregating devices (FADs) have focused on design, training, and testing to help tuna fishers reduce bycatch, ghost gear, and marine pollutants.	50 biodegradable FADs were distributed to fishers to help protect sharks, rays, and sea turtles.
Electronic monitoring is helping fishers to monitor and reduce bycatch, and to improve data collection on impacts to ETP species.	- Four vessels were outfitted with electronic monitoring technology to monitor and reduce bycatch of sharks, rays, and sea turtles. - On those vessels, 3,888 total individual catch records were collected, and two encounters with ETP shark species were observed.
Hookpods reduce unintended snaring of seabirds on longline fishing hooks by shielding the hook until it sinks below the diving depth of albatrosses and most petrels.	4,000 Hookpod units were donated and deployed on a longline tuna vessel in the Western Central Pacific to protect seabirds. Over 129 sets were deployed and recorded with Hookpods, resulting in only a single seabird mortality on the Hookpod branchlines, compared to 24 on the control branchlines.

Project spotlights

Among the significant impacts and developments for Hub-sponsored bycatch mitigation programs, two standout projects of interest included funding for advancements in on-demand fishing technologies and electronic monitoring (EM) systems.

Canadian Wildlife Federation (CWF) CanFISH gear lending library.

Thanks to generous donations, the Hub has continually supported the efforts of on-demand gear lending libraries to address the threats to endangered North Atlantic right whales and other ETP species, by providing on-demand gear at no cost to harvesters to trial on the water. Without this essential lending service, the cost of on-demand gear would be prohibitive to most fishers. On-demand fishing allows for continued fishing in closed areas while still protecting ETP species, providing a strong economic benefit for harvesters to maintain their livelihoods and fish in habitats shared with vulnerable marine wildlife.

With efforts in place since 2018, on-demand trials are well-documented and researched along the US East Coast and Canada, including successful trials supported by on-demand gear lending libraries in Massachusetts, Maine, and Nova Scotia.

In Nova Scotia, as of the end of the 2024 season, 200 harvesters were licensed to use on-demand gear. The gear was provided by the Canadian Wildlife Federation (CWF) [CanFISH](#) Gear Lending Library, with support from the Hub. CanFISH maintains two separate projects under its program, including a trial program with more than 1,300 deployments that has tested nine different units, with success rates ranging from 60-97%. However, no catch is associated with this trial, as it is completed outside the commercial fishing season.



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The second project is a gear-lending program with more than 175 on-demand units available for lending. Between 2022 and 2024, 350,000 lbs. of snow crab were landed using on-demand gear distributed by CanFISH, with a 96-98% success rate.

Additionally, since on-demand gear is enabled with GPS and interoperability technology such as smart buoys, it has shown an underlying benefit of early detection and retrieval of abandoned, lost, or discarded fishing gear (ALDFG), also called ghost gear.



Ghost gear poses a threat of entanglement to ETP species and bycatch of non-target species. There is no exact data regarding the specific amount of gear lost per year, but it is believed the average is somewhere between 5-15% (or higher) of the gear fished within a given year, depending on the fishery and location. This results in millions of pounds of lost gear per year and a significant economic impact for the fishing industry. The use of smart buoy technology can prevent gear loss by tracking and alerting harvesters when gear is moved or shifted due to weather, whale interactions, theft, or other factors.

Recognizing this benefit, SFP facilitated a recent donation of USD 144,935 that provided 78 Blue Ocean Gear smart buoys and supporting technology at no cost to two Canadian snow crab vessels, thanks to funds directed through the Hub from seafood partners.



Electronic monitoring in Eastern Pacific longline large pelagics fishery

In addition to on-demand fishing technologies, the Hub supports electronic monitoring (EM) incentives. As the backbone of many HUB projects, EM is an important component of bycatch mitigation, because it allows for the project to monitor compliance, solve any issues with the gear, and collect additional data. Additionally, EM systems are often paired with wi-fi to ensure bycatch issues can be addressed in a timely manner.

In Year 2, the Hub supported a pilot project in the Eastern Pacific longline large pelagics fishery that focused on four longline fishing vessels from August 2023 to August 2024. EM systems were installed on each vessel to monitor fishing activities and collect detailed catch data, including species identification, location, time, date, and count. This data was then linked to corresponding imagery captured by the EM systems. The primary goal of the project was to evaluate the feasibility and effectiveness of using EM technology to enhance fisheries monitoring and management practices in the Panamanian longline fishery.

Data from the pilot project showed 3,888 total individual catch or discard fish records collected between the four participating vessels. The average trip per vessel was 15-20 days. The catches primarily consisted of yellowfin tuna, in addition to other species such as albacore tuna, skipjack, bigeye tuna, black marlin, mahi-mahi, sailfish, striped marlin, swordfish, billfish, and wahoo. Two encounters with ETP shark species were observed during the study.

Additionally, essential data was collected that can be used for future EM improvement, including obstacles observed during the project such as limited camera angles, improperly aligned cameras, obscured/dirty cameras, and limited GPS camera data.

Although the project did not note a high occurrence of non-target catch, which may have been due to the type of gear set and retrieval, it did show the value of EM projects to track vessel operations, verify bycatch interactions and provide data.



Photo credit Álvaro Terán

Bycatch Solutions Hub funding

To date, Hub-based incentives have helped fund over USD 784,000 in bycatch-solutions-based projects, including:

- USD 144,935 to reduce entanglement of North Atlantic right whales in Canadian waters and increase harvester income by preventing gear loss with the use of smart buoy technology
- USD 58,744 for the implementation of acoustic pingers to reduce dolphin and porpoise entanglement in cod and monkfish gillnets
- USD 66,100 to support a training workshop and implementation of biodegradable fish aggregation devices (FADs) to protect sharks, rays, and sea turtles in a tuna purse seine fishery
- A USD 60,000 donation to support an electronic monitoring pilot project for the U.S. Gulf shrimp fishery to determine effects on sawfish populations
- An additional donation of USD 7,000 to support the implementation of on-demand gear in the Canadian snow crab fishery to protect NARWs and other large whale species
- A donation of approximately USD 25,000 in on-demand equipment for the Maine Department of Resources Gear Lending Library, also to protect NARWs and other large whale species
- USD 65,000 to provide smart buoy technology to track and receive lost fishing gear to reduce the threat of marine entanglement and pollution in the state of Maine.

FUNDING OVERVIEW

21 total project funding requests

\$849,191 total value of funding requests

16 total projects funded

\$699,401 total value of projects funded

3 total additional donations facilitated by the Hub

\$85,000 total value of additional donations

**Total value of bycatch mitigation efforts facilitated by the Hub:
USD 784,401.59**

Outreach

SFP hosted its fourth annual Bycatch Solutions Showcase at Seafood Expo North America in Boston in March. The Showcase featured the latest fishing tools and strategies for protecting ETP species. Each year, this unique event brings together solutions-based incentives that have received supportive funding or are in need of funding through the Hub, offering the rare opportunity for industry leaders to meet directly with changemakers working to solve bycatch problems while still supporting the seafood industry.

In addition to the Bycatch Solutions Showcase, SFP continues to introduce the platform to new audiences by promoting the work of the Hub through updates to the Hub website, attendance at local and regional events, research to engage new technology, and other channels.



As part of the Hub's outreach and educational efforts, the quarterly Bycatch Solutions Hub Newsletter provides the latest information on bycatch solutions and projects supported by the Hub. To date, 370 individuals have registered to receive the newsletter.

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Thanks to a generous donation from the Binnacle Foundation, SFP recently partnered with Fat Moon Creative to examine the Hub's outreach efforts to both the seafood industry and partnering NGOs. Through this collaboration, we plan to improve communications with both groups and extend SFP's messaging through social media campaigns, website improvements, and internal operations.

Finally, Year 2 saw a new and improved Hub logo (*right*). The logo aims to better showcase the work of the Hub by featuring not only ETP species protected by the Hub's initiatives but also the fishing industry, as represented by a fishing vessel.

Looking ahead, SFP is developing an internship program to assist with outreach opportunities associated with the Hub, such as website development, social media messaging, and research. This would allow SFP to pursue additional Hub incentives while offering undergraduate students the benefit of hands-on experience in the fields of marine sciences, food studies, and environmental conservation, thus cultivating the next generation of scientists and industry seafood leaders.



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Spotlight on the future

As Year 3 of the Hub initiative begins to take shape, multiple projects are in development, and several proposals are expected to be submitted within the coming year, including:

- The Procella Hook, a newly designed weighted hook shown to reduce or eliminate seabird bycatch
- Transitioning the regional Northeastern US bottom trawl squid fishery to squid jigging systems to reduce the impact on bycatch species
- A project to add five additional modified purse seiners for sardine and anchovy fishing, which has been shown to reduce diving seabird bycatch by 98%, with no impact on target fish catch
- Prevention of albatross extinctions with the Seabird-Safe Fishing Toolkit, developed by Southern Seabird Trust
- Marine mammal disentanglement kits and global disentanglement workshop training, in partnership with the International Whaling Commission and the Center for Coastal Studies.

Knowledge gained during the first and second year of the Hub initiative has provided essential information to guide future efforts to support bycatch mitigation efforts within the seafood industry.

As projects are developed, trialed, improved and, in some cases, fall short, we are gaining valuable insights to support more impactful projects, data collection, and project design going forward.

Be part of the bycatch solution. Contact us at bycatchsolutions@sustainablefish.org to learn how your support can help.



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