

2026

The Loss of Fishing Gear:

Insights from recreational fishers around the Baltic Sea

Popular science report based on citizen science-based knowledge about lost fishing gear and fishing accessories in the Central Baltic Sea.

Interreg



Co-funded by
the European Union

Central Baltic Programme

Re:Fish

Lost fishing gear is found in all seas, lakes, and waterways where recreational fishing takes place. It causes unnecessary suffering for fish, birds, and marine mammals. In the EU project Re:Fish, we are working towards a cleaner and healthier Baltic Sea.

Project period: May 2023 – 2026

Funded by Interreg, Central Baltic Programme

Project partners: Keep Sweden Tidy (SE, lead), Keep the Archipelago Tidy (FI), Tartu University (EE), Finland Environmental Institute (FI)

Read more at centralbaltic.eu/project/refish/



Report information

Funded by the EU's Interreg Central Baltic Programme under its "Improved Coastal and Marine Environment" priority, the Re:Fish project (March 2023–February 2026) is coordinated by the Keep Sweden Tidy Foundation in cooperation with partners from Finland, Keep the Archipelago Tidy Association and the Finnish Environment Institute, and from Estonia, the University of Tartu. The project's total budget amounts to €1,787,923.

The **Re:Fish** project addresses the problem of ghost fishing and plastic pollution caused by lost recreational fishing gear in Sweden, Finland, and Estonia. Through activities such as gear retrieval operations, end-of-life gear collection, citizen-based knowledge, and awareness campaigns, the project engages anglers and fishers using passive gears, manufacturers, NGOs, research institutions, and authorities to prevent gear loss and strengthen long-term monitoring efforts.

More information, project materials, and results can be found on the project [webpage](#).

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Preface

Every year, fishing gear is lost in seas, lakes, and waterways across the Baltic Sea region. Much of it disappears out of sight but not out of impact. In my work as a marine litter expert at Keep Sweden Tidy, I regularly meet people who care about the waters they fish in and the nature they enjoy. Fishers have extensive knowledge of these environments; their conditions, their risks, and their realities. At the same time, the broader and cumulative impacts of lost fishing gear are not always visible, and therefore not always fully recognized. A single lost hook, line, or net may seem insignificant, but together these items become a substantial and persistent source of environmental harm.

This report brings together insights from recreational fishers around the Baltic Sea, with a focus on Sweden, Finland, and Estonia. A central aim of Re:Fish has been to involve fishers directly, connecting everyday fishing practices with environmental knowledge and practical solutions. What we have gathered is not only scientifically valuable but firmly grounded in real-world experience. The knowledge shared by fishers has been essential, and I am sincerely grateful to everyone who contributed.

While the findings do not provide a complete picture, they reveal clear and important patterns. They highlight the need for prevention, better communication, and simple, accessible systems for reporting lost gear. For such systems to work, recreational fishers need to know they exist and feel motivated to use them. Just as importantly, solutions must reflect the diversity of fishing traditions and user groups across the region, so that changes are not only introduced, but sustained over time.

I hope this report will be useful to fishing associations, authorities, decision-makers, and others working toward more sustainable fisheries and healthier waters. Above all, I hope it supports greater awareness, constructive dialogue, and practical steps to reduce gear loss in the Baltic Sea. This is a challenge we share and one that we can address together.

Many thanks to the Central Baltic Programme 2021-2027 for the financial support to the Re:Fish project.

Eva Blidberg,

Marine litter expert, Keep Sweden Tidy

Summary

This report explores how recreational fishers around the Baltic Sea experience and understand the loss of fishing gear. Based on surveys, interviews, and citizen science activities in Sweden, Finland, and Estonia, it shows that lost gear is seen as a real environmental issue, but one that is often linked to specific fishing methods, weather conditions, and local knowledge.

The report also highlights what fishers consider most important for preventing gear loss, including using the right equipment, improving technical solutions, and strengthening communication within the fishing community. At the same time, it shows that reporting and recycling systems are still not well known or widely used, indicating a need for clearer information and practical solutions.

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1 Introduction

Recreational fishing is a popular activity across the Baltic Sea region. However, it also has a frequently overlooked environmental impact, particularly due to the loss of fishing gear. This report draws on citizen science-based knowledge and presents fishers' perspectives on the issue, including their views on both the problem and potential solutions. In addition, it documents fishing-related litter identified during beach clean-up activities.

Many people engage in recreational fishing in the countries around the Baltic Sea. This study focuses on Estonia, Finland and Sweden. Here it is estimated that there are 145,000 recreational fishers in Estonia (Turu-uuringute AS, 2025), 1.6 million in Finland (Luke, 2025) and 1.2 million (SwAM, 2024).

Recreational fishing gear causes significant and unnecessary suffering in the form of lost fishing gear. Abandoned nets continue to catch fish and other animals without the catch being taken care of and use. Additionally, fishing gear is often made of plastic which, when left in nature or in the sea, fragments into microplastic. These very small plastic particles remain in the environment of a long time and can even enter the food chain and further harm marine animals. It is also one of the problems that are brought up in a publication about loss of fishing gear from HELCOM associated to action RS8: "the lack of awareness and knowledge about the loss of fishing gear, the environmental impacts and possible mitigation measures" (HELCOM, 2026). In a study by Unsbo et al. (2022), it was estimated that approximately 28 million lures, 11.2 million sinkers, and 140 million metres of fishing line are lost annually in the Nordic countries. In a subsequent study, Unsbo et al. (2023) concluded that recreational fishers in the Baltic Sea countries lose around 21 million lures, 9 million sinkers, and 96 million metres of fishing line each year. Although these numbers are based on fishers' survey responses, and may be considered with caution, recreational fishing contributes to lost fishing gear in the marine environment. Knowledge about where fishing gear from recreational fishing is lost is limited and normally the reporting is voluntary. Evaluate the amounts and composition of lost angling gear in the Baltic Sea including fishing lures and casting weights with corresponding hooks, soft plastic baits and light components and develop appropriate measures to prevent their further loss.

The Re:Fish citizen science-based surveys were designed to engage the public, particularly recreational fishers. Originally aimed to collect scientific data on the scale and distribution of lost fishing equipment. This was possible in Finland through Rosgis, a service from the Finnish Environment Institute that make it possible, for recreational fishers and the public, to report litter in the environment. Tartu University also developed a web application "Mapping of found fishing gear" for the same purpose within the frame of the project. In Sweden, there was a reporting system called Ghostguard, operated by the Swedish Agency

for Marine and Water Management (SwAM). The tool was designed for recreational fishers and the public. However, it was discontinued at the end of 2024, a decision beyond the project's control. The absence of a reporting system made it difficult to implement the original project plans. As a result, the focus shifted toward exploring recreational fishers' attitudes regarding the problem of lost fishing gear and possible solutions.

Re:Fish used questionnaires and interviews as a platform to promote preventive measures, stimulate public dialogue on sustainable fishing practices, and contribute to policy-making and environmental management decisions. Other activities in the project, like dive events, attendance on boat and anglers' fairs, beach clean-ups and other community activities are integrated into the process to maintain visibility and engagement. Ultimately, the Re:Fish citizen science approach exemplifies how environmental research can be enriched through public participation, enhancing both scientific outcomes and community awareness.

The surveys address a critical environmental issue; the impact of lost fishing gear on marine ecosystems, by combining scientific knowledge with active community participation, thereby raising awareness and fostering a sense of shared responsibility. Additionally, the study explores why current reporting systems are underutilized and incorporates participant input to co-create user-friendly features that add value for the citizen science-based study.

HELCOM¹ have several actions related to abandoned, lost and otherwise discarded fishing gear (ALDFG), for example:

- RS7 Elaborate guidelines on the best practices and undertake relevant measures to reduce the input of ALDFG to the Baltic Sea from recreational fisheries with a focus on gillnets considering geographical particularities,
- RS8 Evaluate the amounts and composition of lost angling gear in the Baltic Sea including fishing lures and casting weights with corresponding hooks, soft plastic baits and light components and develop appropriate measures to prevent their further loss.

HELCOM has carried out extensive work on these issues in recent years, and several publications document these efforts (HELCOM 2026a-e). It is further connected to the Directive (EU) 2019/904 (the Single-Use Plastics Directive) and the regulations of management of fishing gear containing plastic. The results presented here intend to complement this work.

¹ The Baltic Marine Environment Protection Commission, also known as the Helsinki Commission (HELCOM), is an intergovernmental organisation (IGO) and a regional sea convention in the Baltic Sea area.

In scientific contexts, abandoned, lost or otherwise discarded fishing gear (ALDFG) is fishing gear that has been left behind, lost, or discarded in the sea or other waters, and which may continue to interact with marine organisms and ecosystems (Hodgson, 2022). In this report, the term “lost fishing gear” is used with the same meaning.

2 Results

In general, the number of respondents in each of the surveys are small in relation to how many recreational fishers that are active in the three participating countries. In Estonia and Finland, more of the respondents are fishing with passive fishing gears (gillnets) than in Sweden where most participants were anglers.

The results should therefore be seen as indicative and not representative for the entire group of recreational fishers in Estonia, Finland and Sweden.

2.1 Comparative survey between countries

In this study, we explored how recreational fishers in Sweden, Finland, and Estonia viewed and dealt with the problem of lost fishing gear. Some of the respondents also worked as producers or retailers of fishing gear, but all shared experience as recreational fishers. In total, 88 people took part in the survey, however, it was not equal number between countries. A more detailed description of the number of participants is found in the methodology chapter.

2.1.1 Losing and retrieval of fishing gear

Fishers were asked to indicate how often they lose fishing gear during their fishing trips. This was asked regardless of the type of fishing carried out.

For all countries together, most participants answered that they rarely lose fishing gear during fishing (Figure 1). When comparing between countries, similar patterns are seen. Very few fishers admit losing gear every time. In Sweden, no one choose this alternative. For Sweden and Estonia, approximately one out of five answered that they lose gear often. In Finland, there were several answering that, almost one out of four. Finland also had the highest number of participants stated that they never have lost gear (24%), while only 10% of the Swedish participants said that they never lose fishing gear.

To follow up on how often fishing gear is lost, we also asked if the participants had tried to retrieve the lost gear. In general, eight out of ten participants answered yes to that question, with a little less for Estonian participants (70%).

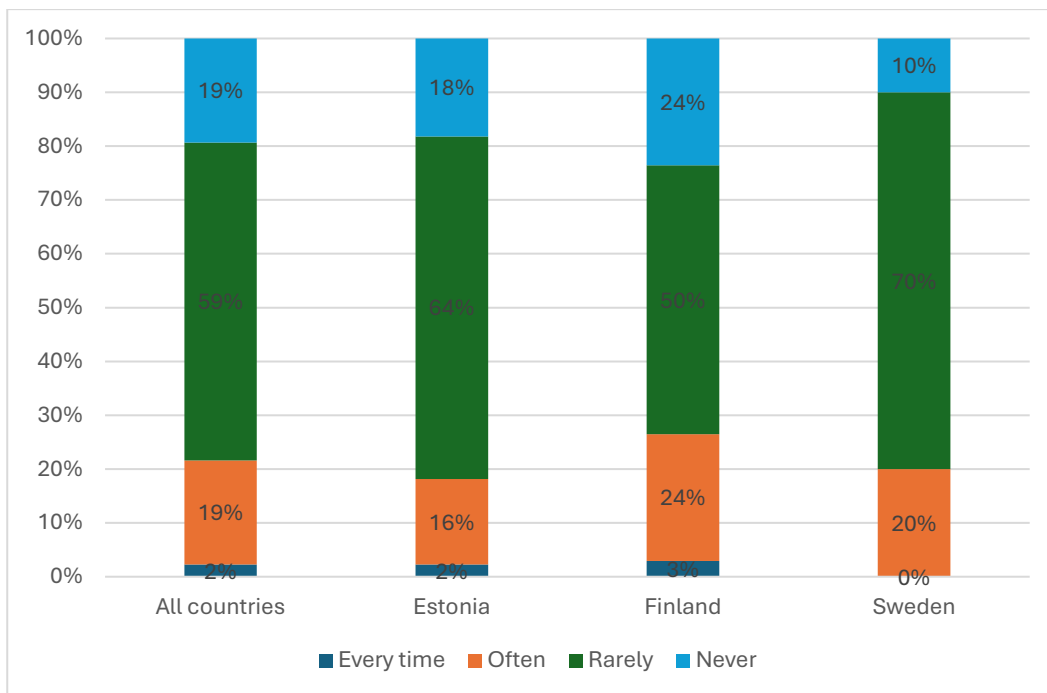


Figure 1. Survey results to the question: "How often do you lose gear when fishing?" (n=88).

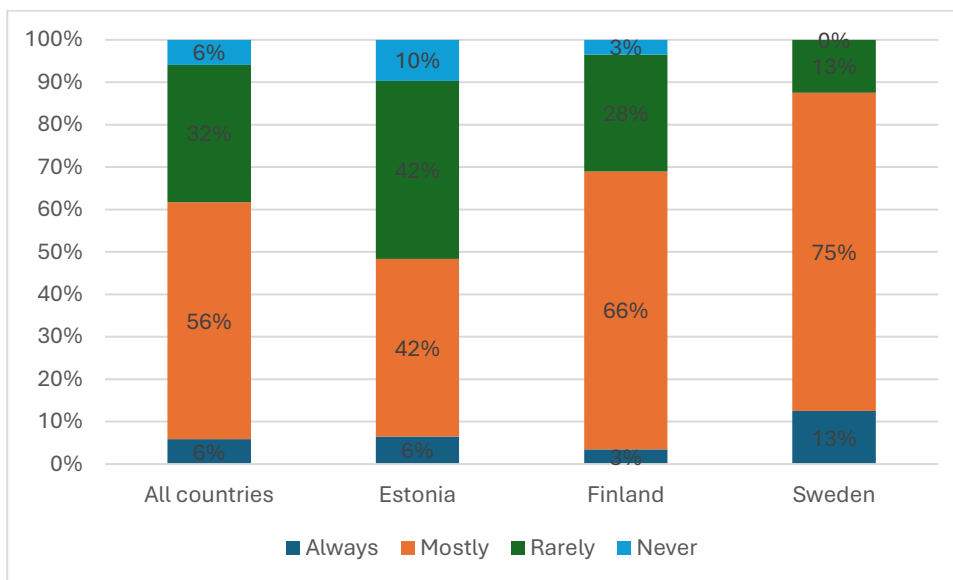


Figure 2. Survey results to the question: "If you have tried to retrieve your lost fishing gear, do you usually succeed?" (n=68).

The retrieval success was quite good. For all countries, the majority always or mostly succeed with their attempts (Figure 2). However, it was differences between countries. Estonian participants were least successful (or most honest) with only half of the attempt always or mostly successful. It is a big difference compared to Sweden where 88% of the participants answered that they succeeded always or most of the time. Most Finnish participants reported successful retrieval of their lost fishing gear.

Another interesting topic is what the participants think about solutions. For this question, they were asked to choose what they thought was the three most important ways to avoid losing fishing gear. In general, using the right equipment for current conditions (fishing area and weather), and technical solutions are what fishers see as key for not losing fishing gear (Table 1). Seven out of ten participants thought that right equipment, either for the fishing area or the weather conditions, were important solutions. Either by itself, in a combination of both (23%), or in combination with other solutions.

Table 1. Survey results for all countries individually to the question: “What do you think is the most effective way to avoid losing fishing gear?”. Multiple-choice question (n=86).

	Estonia	Finland	Sweden
Using the right equipment according to the fishing area	26%	21%	18%
Using the right equipment according to weather and ice conditions	22%	16%	9%
Technical ways (e.g. specific knots or product design/alteration)	13%	19%	27%
Fishers communicating of the problem with each other	11%	10%	5%
I don't know	6%	2%	0%
Information exchange and communication on social media	5%	9%	5%
Retailers' or producers' communication campaigns/educational sessions	5%	0%	0%
Retrieval actions (Beach cleanups, diving, dragging)	4%	9%	18%
Other	4%	5%	0%
Collaborations with environmental organisations	2%	3%	5%
Info about the fishing areas (sea charts, topography etc.)	1%	3%	5%
A reporting system	0%	1%	9%

When comparing answers from the different countries (Table 1), Swedish participants believe more in downstream solutions such as retrieval actions and reporting systems than participants in the other countries. Fishers in Finland in particular, but also in Estonia, believe that information exchange and communication in social media is important. Likewise, that fishers communicate problems with each other. A smaller proportion of Estonian fishers also responded that producers' campaigns and training sessions can be important.

Very few fishers generally thought that cooperation with environmental organizations is important in preventing losses of fishing gear.

In the end, there was an open-ended question: What do you think is the most effective way to avoid losing of gear? and several of the participants explain that recreational anglers lose lures, lines and hooks because they are getting stuck in branches, individual rocks, old fishing gear or other elements on the bottom. Divers clearing the bottom at popular fishing spots can be a way to avoid further losses of fishing accessories. Another participant wrote

“Communication regarding equipment, as mentioned, with the right equipment in the right place, loss is minimized (if not even almost zero).”

“Care and common sense!”

-A comment from one of the survey takers about how to avoid losing fishing gear.

2.1.2 Background of survey participants

To make conclusion about the results of the survey, it is also important to have some clues about the people included in the study.

Participants reported fishing in a variety of environments across Sweden, Finland, and Estonia, often in more than one location. Most indicated that they primarily fish within their home country, although many also fish in multiple regions. This multiple-choice question included four options: lake, sea, river/stream, and other. Results are shown in Figure 3. Across all countries, sea fishing was the most common (28%), followed by lake fishing (17%). The most frequent combination was fishing in both lakes and the sea (15%), while approximately one in ten participants reported fishing in all three main environments (lake, sea, and river/stream). Estonia and Finland had the highest shares of sea-only fishers (34% and 29%, respectively). In Sweden, lakes topped the list (40%). Finland and Sweden also saw many participants fishing in both lakes and sea.

In general, a little more than half of the respondents answer that they fish 1-20 days per year. About 10 % estimated that they are out fishing more than 80 days per year. Swedish recreational fishers stated that they fished for 20-100 days per year, but no one answered that they fish more often than that. It differs from Estonian and Finish fishers were some of the respondents answered that they fish more than 100 days or every day.

Many of the respondents have long experience of recreational fishing, in Estonia and Finland approximately two-third stated that they have more than 20 years of experience, while 9 out of 10 respondents answered the same amongst Swedish recreational fishers.

For all countries, both analysed together and for each country, spinning reel was the most used fishing gear (Figure 4). In general, hand line, gillnet, icefishing and bottomline were the following gear on the top-five list.

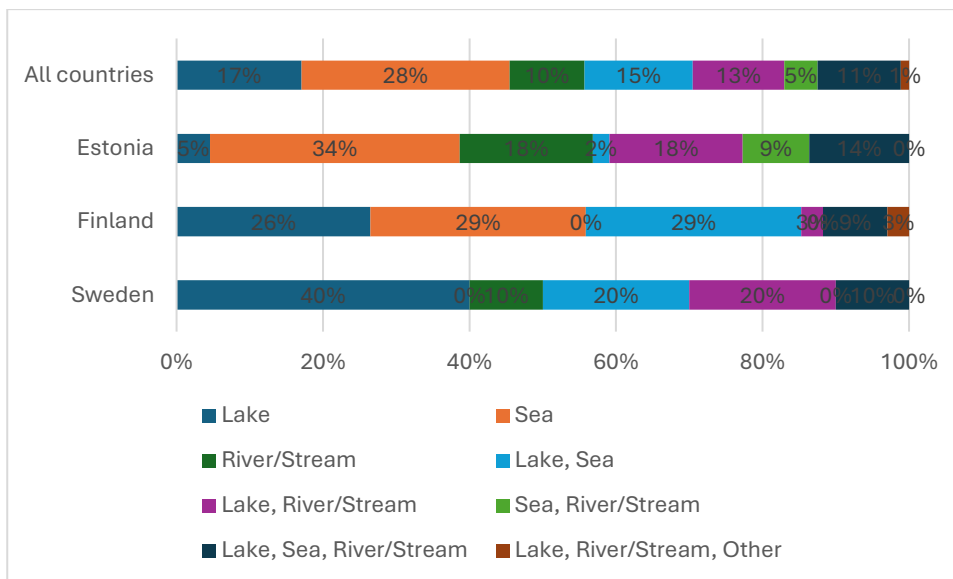


Figure 3. Survey results to the question: "Where do you fish?". Multiple-choice question (n=88).

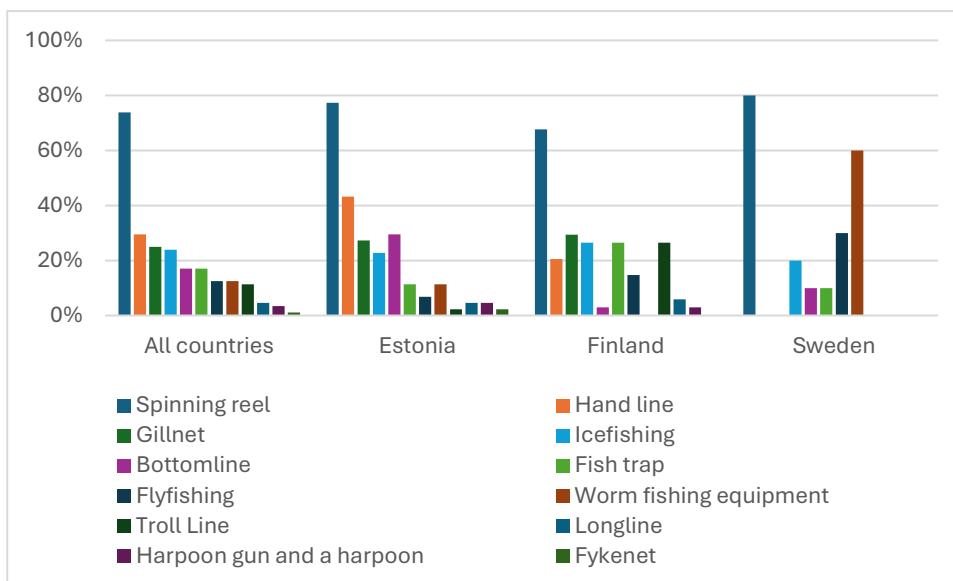


Figure 4. Survey results to the question: "What type of fishing gear do you use for recreational fishing?". Multiple-choice question (n=88). Since respondents could select multiple options, the total percentage exceeds 100%. Each percentage represents the proportion of all respondents who chose that option.

Swedish participants stood out compared to other countries as no one stated that they fished with either bottom line or net. Worm fishing equipment and fly fishing were considerably more common among Swedish respondents compared to fishers from Estonia and Finland.

2.2 Interviews with Estonian and Swedish fishers

As follow up on the results from the questionnaire described above, we also made deeper interviews with fishers. The focus was on understanding the frequency, causes, and attitudes toward lost gear, as well as preferences for reporting and recycling solutions. One of the Estonian fishers interviewed was a commercial fisher from Kihnu Island, who uses fish traps, nets, and fyke nets. The other person was a recreational fisher from the coast of Pärnu Bay, who uses nets. One of the fishers interviewed in Sweden has been fishing with gillnets in the southern Stockholm Archipelago for many years, while the other was an angler who usually fishes in the northern part of the Stockholm Archipelago.

2.2.1 Estonian fishers

The two interviewed fishers both relied on fixed fishing gear, such as nets and traps. However, their level of activity differed significantly. The commercial fisher fishes almost daily, weather permitting, while the recreational fisher fishes around 30 days per year.

Despite their different levels of activity, gear loss appears to be rare for both. The commercial fisher attributes this largely to the use of modern technological aids, such as GPS, and reports not having lost any nets in the past ten years. The recreational fisher recalls losing a net once, about 15 years ago, when it was displaced by moving ice.

When gear is lost, it is typically linked to extreme weather events, particularly ice movement or spring storms. Both fishers have occasionally come across lost gear belonging to others but describe such incidents as uncommon and usually connected to specific weather conditions. Discussion among fishers about lost gear appears to be limited, arising mainly in relation to ice fishing.

The two fishers express different perspectives on the risk of gear loss. The commercial fisher shows little concern due to his experience and does not actively worry about losing gear, citing many years without incidents. The recreational fisher does consider the risk and associates it with a sense of environmental responsibility, even describing a potential “guilty conscience” if gear were lost. Overall, gear loss does not seem to be perceived as an immediate or pressing issue in everyday fishing practice.

Neither fisher was familiar with any reporting tool, systems designed to report lost fishing gear. The commercial fisher suggested that such reporting tools might be more relevant for commercial fishers and was uncertain whether they are necessary for recreational fishers. Both fishers were unsure what would motivate them to report lost gear. Neither could specify what type of feedback or incentive would encourage reporting. This suggests that awareness and engagement with formal reporting systems may currently be low among small-scale or recreational fishers in Estonia.

Beginning in January 2025, municipalities will introduce collection systems for worn-out fishing gear. Reactions to this initiative were mixed. The commercial fisher welcomed the idea, noting the current lack of disposal options. Old nets are presently stored at home, and he suggested installing collection containers at harbours. The recreational fisher was uncertain about the importance of recycling fishing gear. Importantly, neither fisher was aware that producers recommend recycling end-of-life plastic fishing gear, nor did they have suggestions for how such information could be communicated effectively.

The interviews did not provide clear insight into whether these fishers would discuss issues such as gear loss, reporting systems, or recycling practices with other fishers. This may indicate that such topics are not yet central in everyday conversations within local fishing communities.

A Fishing Story from Pärnu Bay, Estonia

He lives by the coast of Pärnu Bay and spends about 30 days each year fishing with nets in the Gulf of Riga. Losing fishing gear, he says, is a rare thing. In fact, it's only happened to him once, about fifteen years ago during ice fishing. The ice shifted, and he lost a net.

Occasionally, during the spring, he found gear lost by others that had washed up on the shore. But these days, he hasn't heard of anyone else losing their gear. "It's not something fishers really talk about," he says.

When gear does get lost, it's usually because of the ice is moving during storms or in springtime. He keeps that in mind whenever he's out on the water, and sometimes it weighs on him, a little guilty feeling about the impact on the environment. Still, he's not sure what could be done to stop it from happening.

Interviewed by UTARTU, April 2025

2.2.2 Interview with a Swedish angler

The fisher uses rod fishing in the northern Stockholm archipelago and occasionally on the Swedish west coast. Gear loss varies depending on the target species and the type of lures used. When fishing for pike, which have large teeth, soft plastic jigs are frequently damaged and may need to be replaced often, sometimes at least ten in a single day. However, only a small number are actually lost in the water. This issue is less pronounced when fishing for perch.

According to the fisher, one advantage of using jigs is that they are equipped with a single hook. This reduces the risk of snagging in vegetation when fishing in shallow waters. The hook is also easy to remove, which is beneficial for catch-and-release practices, as it minimizes harm to the fish.

The interviewed fisher does not consider it important to report lost gear from recreational fishing. The interviewed fisher does not view this type of fishing as a significant source of the problem and would not report lost gear personally. In contrast, the interviewed fisher considers the use of nets to be a different matter and would report lost gear if using such equipment.

The interviewed fisher states that motivation to report lost gear would increase if it were clear that the information is used for a specific purpose. This does not necessarily need to involve retrieval actions by authorities; the data could also be used for research or other purposes that benefit the environment in the long term or inform future measures. Understanding how the contribution is used is important, and access to such knowledge is therefore essential.

The interviewed fisher considers a website to be the most suitable reporting method. When a mobile application is suggested, the fisher agrees that this would be a good solution, as it would allow automatic recording of coordinates. Another important motivating factor is receiving feedback on submitted reports, either via the website or within a mobile application.

Bad weather is identified as a factor contributing to gear loss on the Swedish west coast. In the Stockholm archipelago, the interviewed fisher considers local knowledge of fishing areas to be more important in preventing gear loss. Illegal fishing is also described as a major issue contributing to lost gear. The interviewed fisher has on several occasions found unmarked and abandoned gear used for eel fishing, which is prohibited in Sweden. The interviewed fisher believes that if regulations requiring the reporting of lost fishing gear were introduced, responsibility would be shared among all fishers. This could make it easier to increase reporting rates. However, it remains important that the collected information is used.

The fisher states that plastic lures would not be taken to recycling facilities but would instead be disposed of as household waste. If using nets, however, the fisher would take them to a recycling centre, typically for incineration. If a designated container for such gear were available, the fisher would use it. The interviewed fisher was not aware that producers have a responsibility to provide information on how end-of-life plastic fishing gear should be collected and recycled. The fisher suggests that providing information at recycling centres could encourage fishers to bring gear for proper disposal during future visits. Receiving such information by mail is also considered a good alternative.

2.2.3 Interview with a Swedish former commercial fisher

The fisher said that he does not fish much these days, but previously he was out almost every day. He primarily fished with nets, including bottom-set nets and standard gillnets, and occasionally also used cod nets. His fishing activities took place in the Baltic Sea, including areas such as Mysingen, Blekinge/Skåne, and the Stockholm archipelago.

He recalls losing a net on only one occasion, approximately ten years ago, when a bottom-set net was lost after ice pulled the moorings toward the shore. However, he is aware of other fishers who have lost nets, particularly cod fishers in the Nynäshamn area, as well as others who have lost gear during storms or due to unfamiliarity with local waters. He notes that nets are especially likely to be lost in areas with shipwrecks. According to him, common causes of gear loss include storms, waves, strong winds, contact with the seabed, wrecks, ice conditions, lack of local knowledge, and gear becoming entangled on the bottom.

Through his own experience, as well as knowledge shared by colleagues, project work, documentation, and intergenerational tacit knowledge, he is aware of locations where fishing gear is frequently lost, although he did not specify these areas in detail.

He also explained that when he was actively fishing, risk assessment was an integral part of his practice. This included considerations such as weighting, the use of markers or buoys, and how nets were set to minimize the risk of loss. The main motivations were financial, but also practical and technical, including the high cost of equipment, the importance of durability, and the need to reduce damage and loss. Practical measures to avoid losing gear included using appropriate weights, assessing seabed conditions, avoiding high-risk areas, selecting suitable gear materials, and setting gear in a way that prevents it from becoming snagged.

He regularly discussed lost fishing gear, fishing locations, and preventive measures with other fishers. Knowledge is shared within the fishing community through conversations, personal experience, and tacit knowledge passed down over time.

As a former licensed commercial fisher, he is aware that lost fishing gear should be reported. However, he was not aware of any reporting system available to recreational fishers, although he considers such a system reasonable and aligned with a sense of responsibility.

If he were to lose fishing gear, he would prefer to report it through a simple and practical system adapted to fishers' needs, and one that leads to tangible outcomes. He emphasized the importance of functionality, feedback, and the possibility that lost gear can be recovered or properly managed. During the interview, he repeatedly highlighted that

marking, retrieval, and reuse or proper disposal are key components of effective management. This suggests that he favours reporting systems that are directly linked to retrieval and follow-up actions, rather than systems focused solely on registration. Feedback would be particularly valuable if it resulted in concrete outcomes, such as the gear being recovered, the owner being contacted, or the information being used in retrieval efforts.

Regarding the handling and recycling of end-of-life fishing gear, he described a project a few years ago in which discarded fishing gear were collected directly from his home. The nets were then transported to the marine recycling facility in Sotenäs. He expressed strong appreciation for this initiative, particularly as the service was provided free of charge.

2.3 Survey at the Swedish Anglers fairs

During the Re:Fish project period (2023–2026), Keep Sweden Tidy participated in the annual Anglers' Fairs on three occasions. At these events, we presented key highlights from the project, shared information about recreational fishing and the environmental challenges posed by lost fishing gear and engaged visitors through interactive activities. These included games for children, competitions for adults, and the collection of end-of-life fishing gear brought in by attendees.

We also collaborated with students from the fishing tourism programme at the Älvdalen upper secondary school. The students assisted in surveying visitors at the fairs, providing valuable insights into anglers' attitudes toward the loss of fishing gear and accessories. A summary of the key findings from these surveys is presented below. It should be noted that the survey questions varied between years.

At the 2023 Anglers' Fair, visitors were asked to indicate whether they agreed with a series of statements. The results (Figure 5) showed that a majority (63%) agreed that popular fishing spots are often littered with waste other than fishing gear. At the same time, 69% of respondents considered themselves responsible fishers who do not lose their gear. Only 15% agreed with the statement that lost fishing gear has no impact on wildlife, suggesting a general awareness of its environmental consequences. However, fewer than half of the respondents felt it was important to report lost fishing gear when encountered, highlighting a gap between awareness and action.

Overall, the findings indicate that anglers are aware that lost fishing gear can have environmental impacts. However, it does not seem that litter on land is seen as equally problematic. Most respondents, six out of ten, also supported clearer information on hazardous substances in fishing gear. Perhaps with the intention of being able to buy more environmentally friendly products.

Re:Fish

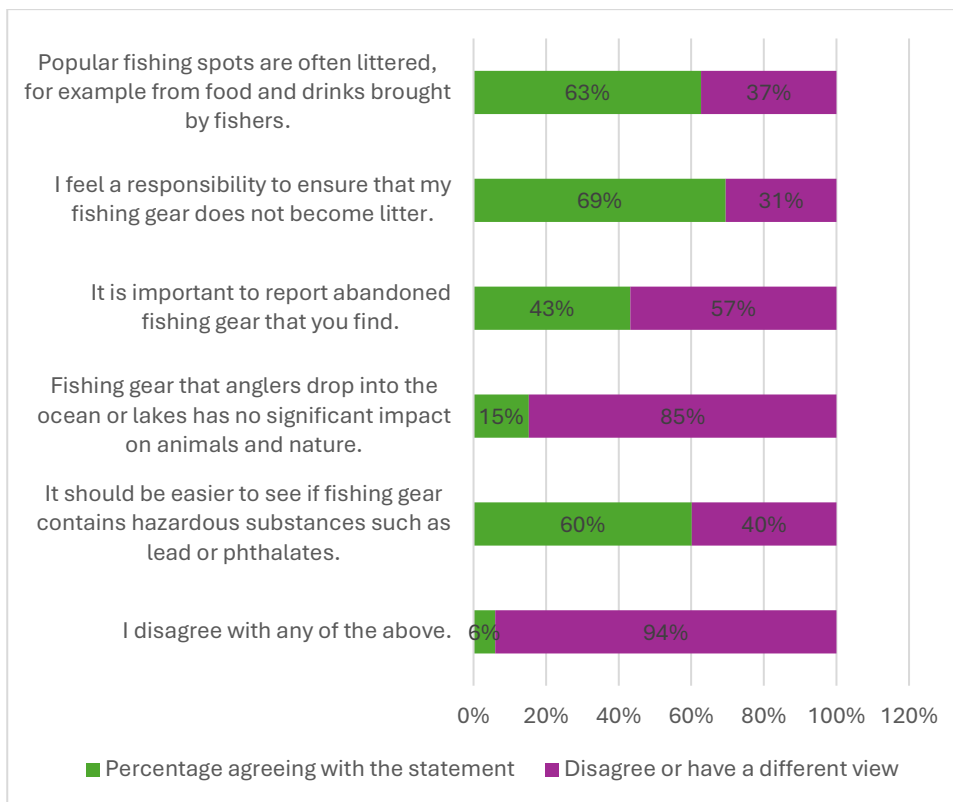


Figure 5. Survey results from the Anglers' fair in Sweden in 2023 (n=118).

The participants in the surveys at the anglers' fair in 2024 and 2025 in Sweden, it was surprisingly many of the participants that said they lose fishing gear when out fishing, about nine out of ten (Figure 6).

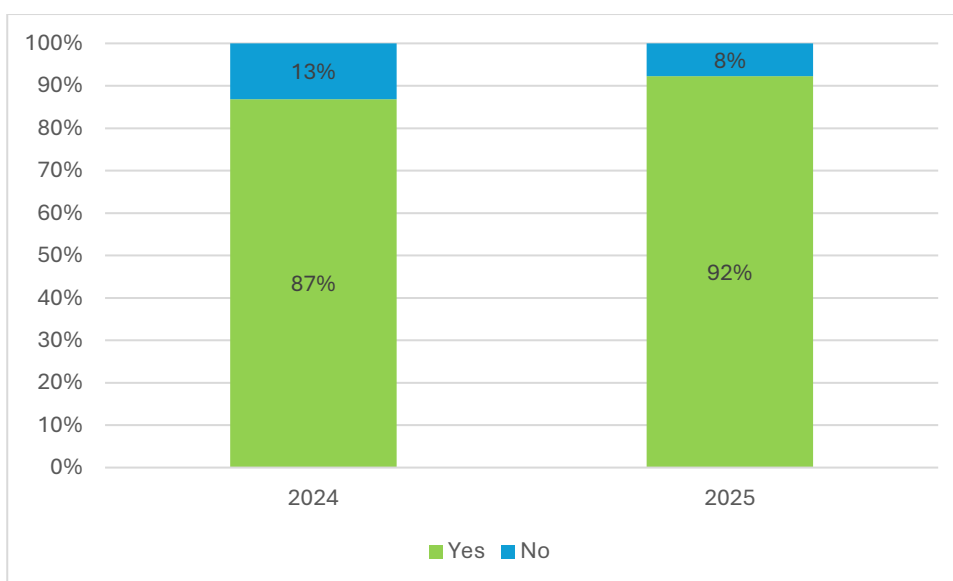


Figure 6. Survey results to the question: "Have you ever lost fishing gear during a fishing trip?". From the Anglers' fair in Sweden in 2024 (n=129) and 2025 (n=39).

In 2025, we also asked what kind of fishing gear or accessories that were lost. Hooks were the most lost fishing gear, followed by lines and sinkers. Nets and buoys were the least common to lose since very few fished with passive fixed gear (Table 2). The following question was what the participants considered as the reason for the loss of gear and accessories. The clearly most common reason was to get stuck to the bottom (Table 3).

Table 2. Survey results to the question: "What have you lost?". Multiple-choice question (n=35).

	Lost fishing gear	Share of the number of participants
1	Hooks	91%
2	Lines	71%
3	Sinkers	54%
4	Flies	40%
5	Others	34%
6	Nets	6%
7	Boys	3%

Table 3. Survey results to the question: "Reasons for the lost?". Multiple-choice question (n=35).

	Reasons for lost	Share of the number of participants
1	Gets stuck in bottom substrate (rocks or vegetation)	94%
2	The line breaks during capture	34%
3	Bad knots	23%
4	Old/end-of-life gear	11%
5	Conflict with boaters	6%
6	Environmental factors like ice or currents	0%

Unfortunately, the multiple-choice question how often gear is lost, the answers were not the similar for the different years (Figure 7). To summarise the results, the majority of the participants claimed that it is not common that gear is lost. It happens once or a few times per year. Once a month or a few times per month were answered by a little more than one out of four fishers. The answers are of course dependent on how often the participants are out fishing.

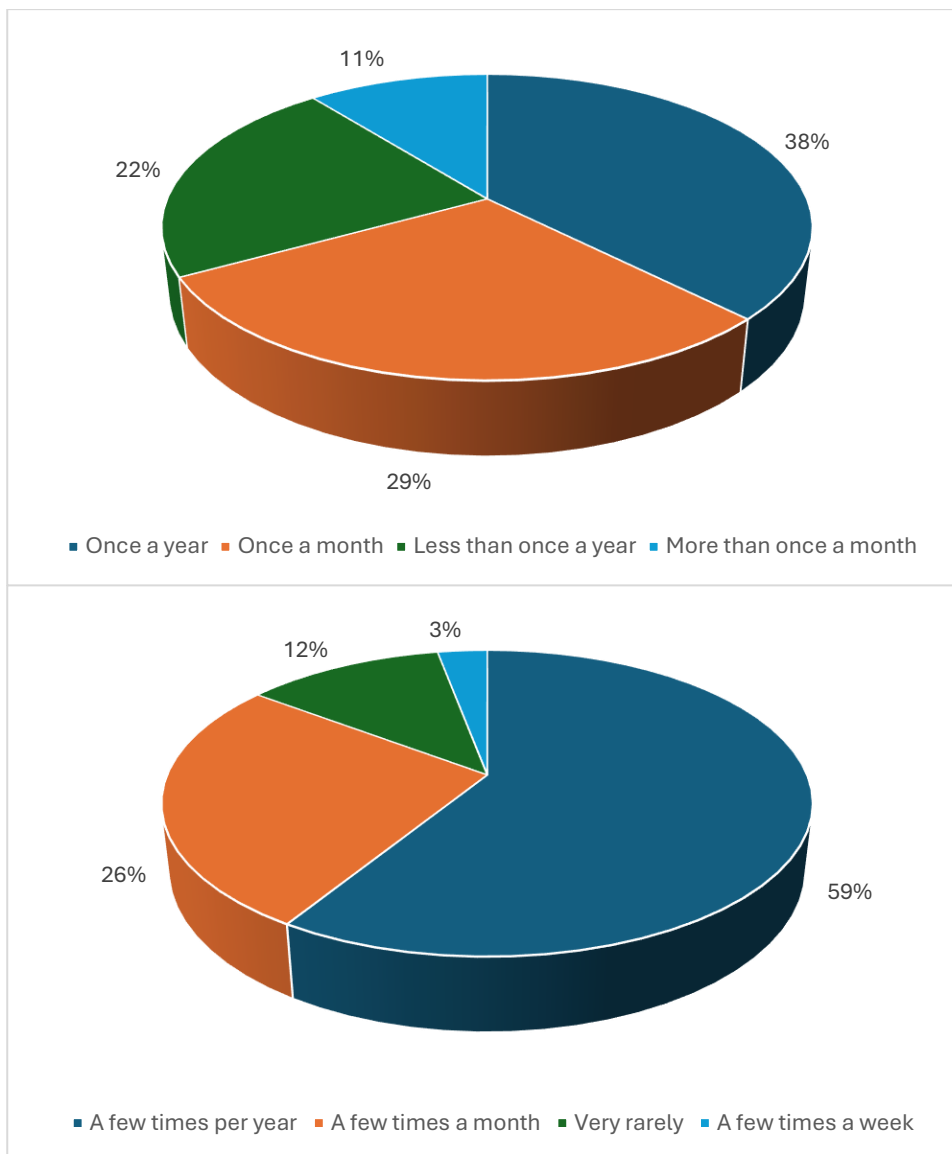


Figure 7. Survey results to the question: “Approximately how often have you lost fishing gear while fishing?”. From the Anglers’ fair in Sweden in 2024 (above) (n=112) and in 2025 (below) (n=34).

At the Anglers fair in 2025, we had an open-ended question: “What can be done to minimise the risk of losing gear?”. Participants suggested that improved fishing practices and better awareness could help reduce gear loss and environmental impact. Common proposals included using stronger and higher-quality equipment, improving knots and line maintenance, being more careful about where and how casts are made, and checking equipment more regularly. Several responses also emphasized education for beginners and children, as well as guidance on inspecting gear and handling fishing equipment responsibly.

A few participants highlighted the importance of environmental care and shared responsibility. Suggestions included using more environmentally friendly gear, recovering broken equipment whenever possible, reducing snagging risks by avoiding debris-rich areas, and taking measures to clean up the bottom in heavily fished waters. Some participants also called for limits on gear-intensive fishing methods and for better solutions to retrieve lures and flies from underwater snags.

At the Anglers fair in Sweden 2024, we also asked the participants if they were aware of the recreational reporting system for lost fishing gear (Ghost Guard) that was available in Sweden at the time. Only 14% (18 out of 129) knew about the system and answered the question how likely it would be for them to report lost fishing gear in such a system if they knew about it. The answers were rather scatter but many said that it is very likely that they would report lost fishing gear (44%) as can be seen in figure 8.

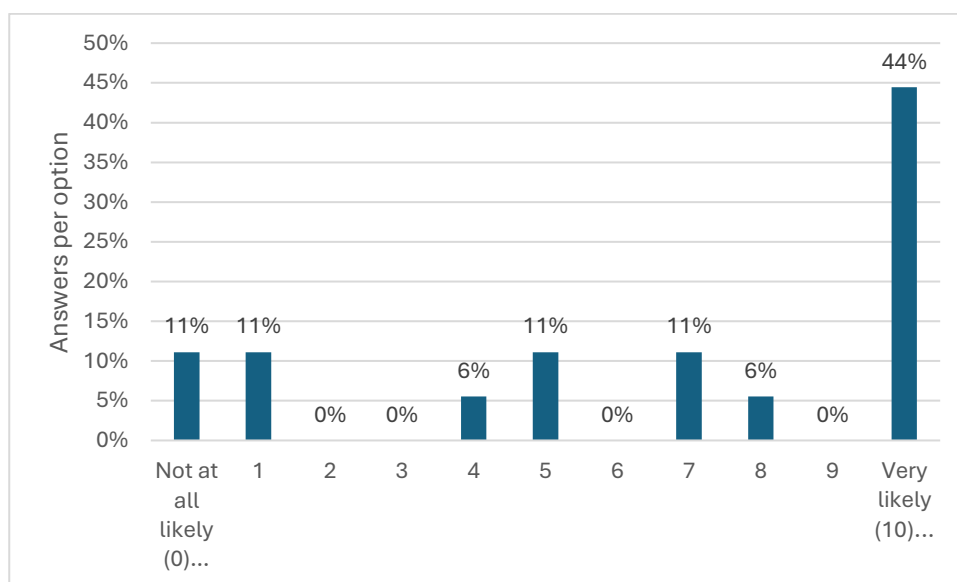


Figure 8. Survey results to the question: "How likely is it that you would report lost fishing gear to GhostGuard?" (n=18).

All participants also answered the question how important it is to report lost gear. In figure 9 it is shown that a majority considered it important or very important to report lost fishing gear (68%).

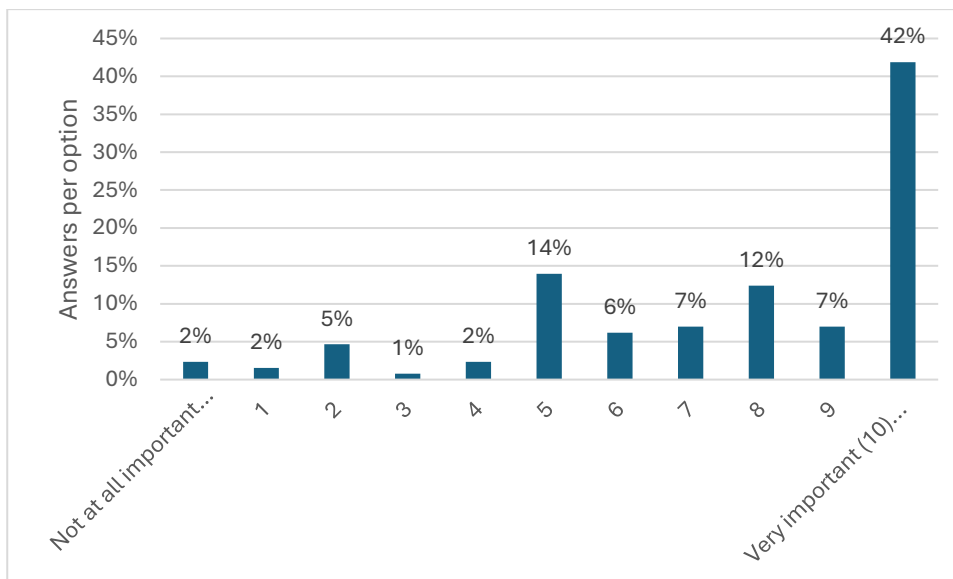


Figure 9. Survey results to the question: "How important do you think it is to report lost fishing gear?" (n=129).

To better understand the survey results, it is valuable to know who the respondents are. Their level of experience, where they fish, and how often they go fishing all shape their views on lost gear and environmental impacts. The following background information describes the participants in the 2024 Anglers' Fair survey.

- 75% had never fished with a net.
- About 20% had tried net fishing a few times.
- 75% fish in inland lakes.
- 10% fish in the Central Baltic area.
- Nearly half fish a few times per month.
- About 20% fish a few times per week.
- A similar share fish only a few times per year.

We do not have the same background information for visitors to the 2025 Anglers' Fair. Among respondents who provided their names, 66% were men and 33% were women. The two fairs were held in two different locations in Sweden, which may contribute to a certain difference in where the visitors come from, but generally we assume that there are small differences between them in years 2024 and 2025.

2.4 Data on Swedish fishers using fixed passive fishing gear

It turned out to be difficult to reach Swedish recreational fishers who use nets or similar gear in the Central Baltic Sea. These are not organized in the same way as anglers. An attempt to find out more about fishing within this group was to send out a questionnaire to affiliated fishing water owners in fishery conservation areas via their organisations. In the survey that was sent to two fishing conservation associations in 2025, both were situated in the Stockholm archipelago. Not many answers were received (17) but luckily, most of the participants (93%) are fishing with passive gears (Figure 10).

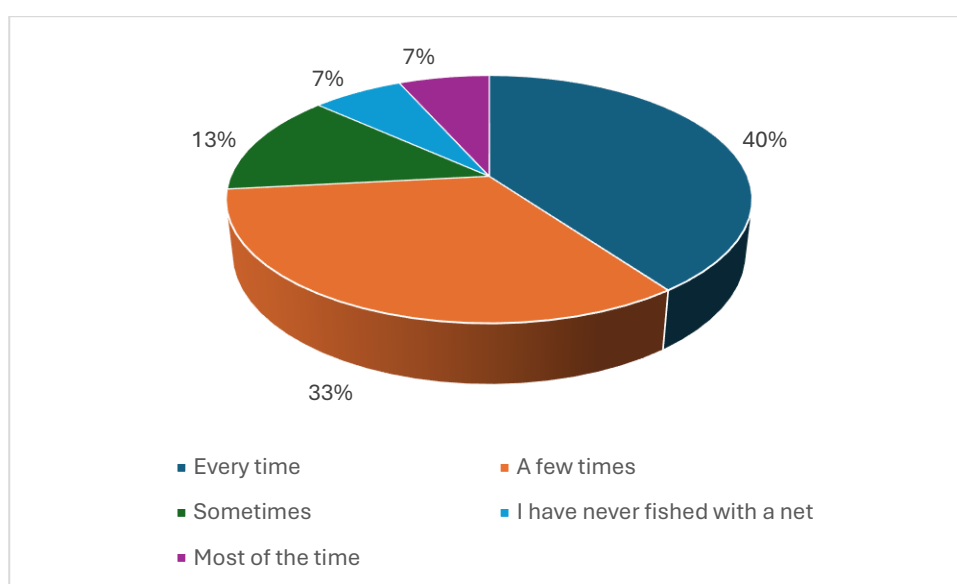


Figure 10. Survey results to the question: “How often do you fish with nets or other passive fishing gear?” (n=15).

Fifteen of the participants also answered the question: “Have you ever lost nets or other passive fishing gear?” 40% said that they have lost nets or other passive fishing gear, while 60% claimed that it has never happened. Of those that answered yes of the question above, which was six persons, five claimed that it happens rarely, and one said it happens every time.

When asking about the participants willingness to report lost fishing gear in a reporting system, most of the answers were in the positive part of the scale of one to ten. Figure 11 shows that approximately 30% thought it was very likely that they should report lost gear. Almost 20% said it was not at all likely to report lost fishing gear.

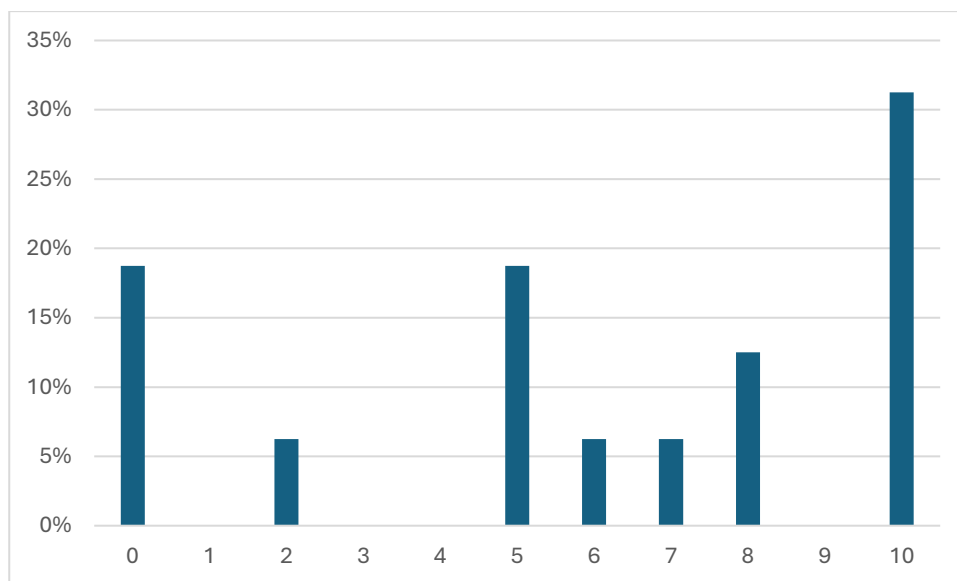


Figure 11. Survey results to the question: “How likely are you to report lost fishing gear if there was a reporting tool for the purpose?” (n=16).

2.5 Beach clean-up activities

During the Re:Fish project, there were also clean-ups conducted in Estonia and Finland. In relation to this, Estonia developed a reporting system to enter the findings. Information about the work done by Tartu University regarding this can be found in the Re:Fish report, A popular science report on the application of citizen science to map hotspots of abandoned, lost or discarded fishing gear (ALDFG) along Estonia’s marine shoreline.

Finland already had a reporting system for litter, the Rosgis². The service collects information about litter in the environment to support research and monitoring data. The application was developed at the Finnish Environment Institute. Within the framework of Re:Fish and other EU-projects, this system has further been developed. Rosgis works in several language and during the Re.Fish project, it was translated in Estonian. Finnish reports are available since June 2024.

In total, 103 notifications were reported to Rosgis between June 2024 until the middle of May 2026. These were uploaded and analysed. In average, the number of reports increased from 2 per month in 2024 to 6 per month in 2026. It can be noticed that most reports came in during the summer period, which means that the number of reports in 2026 may rise even further when results from the entire year can be looked at.

The first question asked in the reporting form is: “Is the fishing gear found or lost?”. The results show that almost all reports are from fishing gear found (96%). Only 4% were from

² <https://rosgis.syke.fi/>

fishers that have lost their gear including lures and hooks, a rod and a net. Therefore, it is not surprising that 87% of the fishing gear were found by a sighting. 4% were found by sonar and 9% in other ways. Two third of the fishing gear were found of land and the rest was found in water.

In a multiple-choice question, the reporters were asked what type of gear that was lost or found. The most common gear was fishing lines (45%), followed by lures and hooks (30%). Nets and traps were also often reported, 19 and 17 percentage respectively. In total, only three fyke nets (3%) were reported. Results are shown in figure 12.

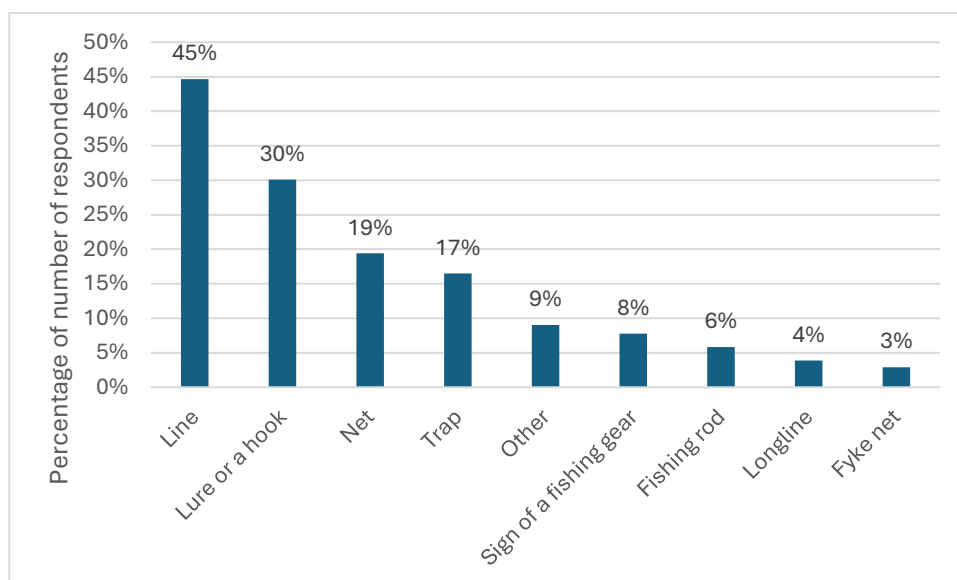


Figure 12. Survey results to the question: “Type of the fishing gear or fishing gear part that was lost or found?” (n=103).

The report forms also had an open-ended question where it was possible to give a comment to your report. Below is a summary of what was additionally told in these reports.

Fisher’s gear and fishing-related litter are repeatedly found on beaches, jetties, under bridges, and in the water at various locations. This often includes fishing line, hooks, lures, crayfish traps, nets, and parts of gear that have become stuck on the bottom, on structures, or in vegetation and have therefore been left there for a long time. Several comments mention ghost nets and other abandoned fishing gear that contained dead fish or could not be retrieved. At the same time, fishing litter accumulates on land near bridges, rocks, mooring places, and waterfront paths, where it is either cleaned up occasionally or reappears almost daily.

The comments also highlight that fishing line and other gear harm birds, which become entangled in lines and hooks and sometimes die as a result. In several places, the problem is described as recurring, with fishers leaving behind large amounts of litter, and volunteers therefore regularly collecting line, lures, and other waste.

As a conclusion, these comments and the way they are written, indicate that many of those that report fishing gear as litter are not fishers themselves. There is a certain amount of irritation about the litter that recreational fishers leave behind.

2.6 Other fishing related litter surveys

2.6.1 Finland

National beach litter monitoring data from 2023–2024 show that fishing gear accounts for only 0.4% of the total number of litter items.

Keep the Archipelago Tidy also organizes the beach clean-up campaign “Snygg Beach” in Finland. Between 2022 and 2024, the number of fishing gear items recorded increased by nearly 240%. However, fishing gear still represents only 0.6% of the total litter. This is close to the proportion found in the national monitoring data.

2.6.2 Sweden

Swedish national beach litter data from the Baltic Sea show that the median value for 2023–2024 is 0.25 items per 100 metres of coastline. This represents a decrease of about 50% compared to 2019–2020, although from an already low level. Over the longer term, from 2012 to 2024, no notable change can be observed, which is a significant result.

One of the beaches, included in the national beach litter monitoring programme, is called Rullsand. It is in the mouth of Dalälven river that goes out in the Central Baltic Sea. The mouth of Dalälven is a popular fishing spot. Fishing lines and baits of various kinds are the most common fishing litter found. In 2025, these fishing related litter constituted 5,6% of total number of litter on Rullsand.

3 Overall discussion and conclusions

The report shows that lost fishing gear is widely recognized as an environmental problem. At the same time, most recreational fishers describe gear loss as something that happens only occasionally. When it does occur, many try to retrieve the lost gear. There is a common view that losses can best be reduced through better equipment, careful fishing practices, and practical technical solutions. However, the findings also reveal a gap between awareness and action. Many fishers say that reporting lost gear is important, but

few know about existing reporting systems or use them. This suggests that such systems need to be easier to find, simpler to use, and better communicated.

Some differences can be seen between countries. Swedish respondents place more emphasis on retrieving and reporting lost gear, while fishers in Finland and Estonia more often highlight communication, shared experience, and knowledge exchange as ways to prevent losses. Despite these differences, the overall message is clear: preventing gear loss is more effective than trying to recover it afterward.

Fishing-related litter remains a visible and recurring problem in certain areas, especially around popular fishing spots such as jetties, bridges, and shorelines. Lost lines, hooks, lures, nets, and traps can harm birds and other wildlife. This highlights the need for both preventive measures and better systems for collecting and managing end-of-life gear.

The results also suggest a distinction in how different groups perceive their role in the problem. Many anglers do not see themselves as contributing significantly to gear loss and tend to distance their practices from those of fishers using nets or other fixed gear. There is a reluctance to be grouped together, as anglers often associate environmental impacts primarily with larger or commercial gear types, like gillnets. This indicates that communication and measures may need to be tailored to different fishing groups, as a general message may not resonate equally with all.

Different types of fishing also come with different challenges. Anglers more often lose small items such as hooks and lines, usually when gear gets stuck. Fishers using nets or traps more often lose gear due to weather, ice, or other environmental conditions. Even so, both groups share a similar concern about avoiding gear loss, and in both groups awareness of reporting systems remains low.

When comparing different data sources, a more complex picture emerges. Surveys and interviews suggest that fishers often see gear loss as limited and manageable. At the same time, beach clean-ups and underwater observations show that lost gear and fishing-related litter are still present in the environment. This may mean that gear loss is sometimes underestimated, or that it is concentrated in specific hotspots where it becomes more visible.

Citizen science has played an important role in this work. It has made it possible to collect observations from many places and to involve people with direct knowledge of fishing and local conditions. It can also increase awareness, as participants often become more attentive to the issue. However, the method also has limitations. Participants are often already interested in the topic, and observations tend to focus on visible and accessible locations. As a result, some types of gear loss may be underrepresented.

This does not reduce the usefulness of the results, but they should be considered indicative rather than fully representative. Citizen science-based knowledge provides valuable insights and helps identify patterns, particularly when combined with methods such as interviews, beach surveys, and underwater observations.

Overall, the report suggests that reducing fishing gear loss will require a combination of practical measures and clearer communication. Improvements in equipment, increased awareness, more accessible reporting systems, and convenient disposal options could all contribute. Different types of fishing may also require tailored approaches. The findings should be interpreted with caution due to relatively small and uneven sample sizes, but they highlight a shared need for practical, well-communicated measures to strengthen engagement in sustainable fishing practices across both recreational and small-scale fisheries.

4 Methodology

This report draws on surveys, interviews, and citizen science activities conducted within the ReFish project in Sweden, Finland, and Estonia between 2023 and 2026. The material includes responses from recreational fishers, survey data from anglers' fairs, interviews with selected fishers, and reporting data from project tools and related environmental activities. The results are descriptive and should be read as examples of patterns and experiences rather than representative national statistics, as the number of respondents was limited and uneven across countries. Table 4 describes the methods used for the different surveys, including their purpose and how the data were collected.

Table 4. Summary of the methodology used in the different surveys reported.

Method	Purpose	Main material	Notes
Comparative survey	Compare experiences and views across countries	88 respondents: Estonia 44, Finland 34, Sweden 10	Uneven sample sizes; indicative results
Semi-structured interviews	Explore experiences in more depth	Fishers in Sweden and Estonia	Included anglers, passive-gear fishers and a former commercial fisher
Anglers' fair surveys	Capture attitudes among active fishers	Visitors at Swedish anglers' fairs	Questions varied between years
Citizen-science reporting	Map lost and found fishing gear	Rosgis in Finland, project web app in Estonia	Supported location-based reporting, Estonian result in a separate report
Beach-cleanup	Collect contextual litter data and raise awareness	Findings from cleanup events	Used as supplementary material
Monitoring and background data	Provide broader context	National and project-level data	Not a stand-alone analysis

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