

# RECREATIONAL FISHING IN THE BALTIC SEA REGION



**Coalition Clean Baltic**

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# Background

In recent years, the recreational fisheries have been the focus of a much more active debate. This is due to a number of factors, such as EU policy reform introducing a range of new management measures, increased scarcity of certain stocks, and increasing trends for recreational catches in some countries – all contributing to a feeling of increased conflict of interest/competition between the commercial and the recreational sectors.

In the Baltic Sea region, recreational fisheries and their possible impact on the fish stocks and the environment are also high on the agenda. It has led to the establishment of special working groups or efforts on the subject within the International Council for the Exploration of the Seas (ICES) and HELCOM, and regular discussions at the regional fisheries management fora Baltic Sea Advisory Council (BSAC) and BALTFISH.

The recreational sector is large (in terms of the number of individuals involved), with valid fishing interests which have been somewhat overlooked from a management perspective. In addition, the lack of accessible knowledge and data makes the sector an easy target in the debate about overall fisheries management.

With information about the Baltic recreational fisheries still patchy, it is difficult to have an informed discussion about both impacts and possible management measures. Coalition Clean Baltic (CCB) has therefore commissioned a report attempting to provide a better overview, covering a number of aspects related to recreational fisheries in the Baltic Sea region.

# Introduction

Coalition Clean Baltic (CCB) has produced this report on recreational fishing in the Baltic Sea region with the intention to compile existing data, information about national rules, monitoring and control to form an information baseline since:

- recreational fishing is in the spotlight, and few have an overview of how it is carried out in other countries
- target species and the impacts on stocks are asked for and debated more and more
- data collection and control issues are discussed in a range of fora

This reports compiles the information we have been able to find. We have made use of existing compilations by HELCOM, ICES and the recent report for the European Parliament, but we have also consulted national documents on rules and regulations, catch statistics and enforcement to the best of our ability (many in the national languages). The national chapters have been reviewed by nationals from each country and we are grateful for their input, which has improved the end results.

We are not attempting to make an exhaustive calculation of the size of the recreational sector in the region, nor the catches and potential impacts – that is for others to do – but to really show the sector in all its forms. Some recreational fishing has likely been stable and remained the same for well over 20–30 years; in other cases there has been rapid changes in both the ways and the extent of recreational fishing.

In the current debate, there have been attempts to blame the recreational sector for the demise of some fish stocks. We have attempted to investigate if that can be the case, not with the intention to shift focus away from unsustainable commercial operations and fishing quotas set above scientific recommendations, but simply to enable a more informed debate.

In addition, we cannot just assume that recreational fishing is not having an impact on the marine environment in a wider context (not just catches and the direct impact on fish stocks), including noise (sonars, and engines), CO<sub>2</sub>, lost gears, lures and sinkers and littering. Overall, we need to know more in order to know where improvements can be made, or if regulations and harmonisation are needed.

Finally, the recreational fishing sector needs to be better recognised in terms of its socio-economic importance in many countries and should have a given right, as well as responsibilities, to be a part of management discussions and decisions. It is a subsector of substantial financial importance; in many countries of greater financial importance than the commercial fisheries sector. Many angler groups also engage in habitat restoration and control efforts.

# Summary

Recreational fishing in the Baltic Sea region is a popular past time in all of the countries, providing millions of people with joy, food and kinship. A reasonable estimate shows that around 10 % of the population in the Baltic catchment area – around 10 million – fish for recreation. It is also a valuable sector, not rarely with an estimated financial turnover greater than the commercial fishing sector, creating jobs in places where otherwise there may not be much. Only in recent years has it been the focus of much debate regionally, and then often seen as a competitor to the commercial fishery and an additional threat to fish stocks.

In this report, we have attempted to create a more exhaustive overview of the recreational sector in the Baltic Sea region, as well as to consider potential impacts on fish stocks.

What is clear is that – almost without exception – many rules and regulations surround the recreational fishing sector as well. Except for Sweden and the Kaliningrad region in Russia, all of the countries use some sort of licensing system. Sometimes it is just a fee system, where fees tend to be used to cover management costs and stock conservation efforts; at other times it is truly a licence with personal details on. In two

*Table 1.* Summary of available data on numbers of recreational fishermen and/or effort in the Baltic Sea region.

COUNTRY	Total recreational		Anglers		Other recreational	
	Total	Baltic Sea	Total	Baltic Sea	Total	Baltic Sea
<b>Finland</b>	1.5 million (2014)		1.4 million (2016)		≈ 100 000 use only passive gears; 800 000 use both (2014)	
<b>Estonia</b>	80 000–149 000 (2015)		60 758		9 819 permits for passive gear 401 permits for harpoon	
<b>Latvia</b>	≈ 120 000		100 000–120 000		2 031	
<b>Lithuania</b>	478 700 (2007) 1.5 million (2002)		160 000–200 000 (2013)		Not allowed	Not allowed
<b>Russia (Kaliningrad)</b>	≈ 100 000	< 45% of effort	≈ 100 000		Not allowed	Not allowed
<b>Poland</b>	1.5–2 million (FAO)		600 000	37 000 (2014)	Not allowed	Not allowed
<b>Germany</b>	3.4 million anglers (2004)	164 642	672 000 members DAFV 2014	163 000	2 259 (2012)	1 642 (2012)
<b>Denmark</b>	500 000	70 % of effort	191 940 licences in 2016		31 502 licences in 2016	
<b>Sweden</b>	1.6 million (2015; will be adjusted down by around 400.000)	< 29 % of fishing days in 2015	86 % of effort in 2015		< 14 % of effort in 2015	
<b>TOTAL estimates of recreational fishermen in the Baltic region</b>	8 878 700–10 869 000		Not possible to fully separate type of fishing effort or where fishing takes place			

countries, one even has to pass an exam before being eligible for a recreational licence. Most countries also have a system of more specific fishing permits, valid for a fixed time, which allows the owner to fish in a specific water body, for a particular species and/or with a particular gear.

All the Baltic countries make a distinction between angling/sportfishing and other recreational fishing characterised by passive gears. Some countries group the “divers” – spearfishing and harpooning – with angling, covered by the same regulations but in this report we have included them in “other recreational fishing”. Overall, this type of recreational fishing is marginal throughout the region. The rules and regulations for the two subsectors usually differ, though minimum size limits and closed areas/seasons often apply equally to both. Generally, regulations also limit the type of gear that can be used, and the number of gears that each person can use – for both subsectors.

There is also a raft of other rules primarily intended to protect fish stocks, the most common of which are catch limits (though often only for a few species), minimum size limits, as well as area and seasonal closures. Fishing for some species, such as lamprey, will be completely prohibited, or prohibited for part of the year. In a majority of cases, the EU discard ban has not been applied to the recreational sector. Instead there are rules about swift and careful release of any fish that is caught under the size limit or during a closed season, for example.

When it comes to monitoring, there is a bit more variation in the approach of the different countries. Catch reporting is not widespread. Some have mandatory catch reporting for recreational fisheries with passive gears. When applied to angling, catch reporting is often directly connected with fishing permits; i.e. you hand in a catch report when you return from fishing at the end of the day. Instead, surveys are used extensively and often combine telephone surveys and questionnaires targeting larger groups. They generally make use of the licence registers, or the members of national angling associations, but in some cases surveys of a cross section of society are used. Most of the countries now run surveys every second year, or even every year, which was not at all the case 15 years ago. There is also an ongoing discussion within ICES about how to improve the surveys.

Even though there is some monitoring and collection of data, it is often limited to a small number of species, or certain parameters, such as the number of recreational fishers, gender, age, geographical distribution, money spent, gears used and perhaps fishing effort. In some cases, data may be collected but then not analysed to provide accessible information on catches, making any informed discussion about the impact of recreational fishing rather difficult. It is especially surprising to see that several countries do not fully collect information or attempt estimates of species covered by the EU Data Collection Framework, such as cod, salmon and eel.

The quality of the data collection efforts, the catch estimates and the availability of such information is extremely variable across the region. There is great scope for improvement here and a strong case for increased harmonisation across the region in terms of which data is collected and how it is collected, analysed and presented. The fact that we have found several different and sometimes conflicting figures on catches, effort, etc., underscores this point.

Another key management area, which is very variable in the region is control and enforcement. We believe it is true to say that the recreational sector is not particularly well controlled in any Baltic country, but that some do better than others. In general, control efforts focus on whether the person fishing has a licence or not, whether the gear used is legal and if fishing takes place in closed areas/season. In some countries there is an underlying analysis of where and what to control – a kind of simplified risk analysis – and Denmark has recently trialled the use of drones for this purpose.

Several countries have set up collaboration between authorities and anglers’ organisations, where volunteers help patrol areas and control illegal fishing activity. This does not only help reduce illegal fishing but also fosters a culture of compliance among anglers. Such volunteer systems should be expanded and used in more countries. To conclude, control and enforcement is another area where there is much room for improvement. At the end of the day, how useful are the rules and regulations if they are rarely or never followed up?

In terms of the catch composition, there is again great variation across the region, depending on a range of factors, from cultural interest in a fish to the biological distribution of a species. Many of the species targeted

Table 2. Summary of existing regulations and restrictions on licence, permits, catch and gear rules

COUNTRY	Licence demand	Paid permits	- Bag limits - Specific rules - Size - Closures	Angling gear restriction	Other recreational gears restrictions
<b>Finland</b>	Yes (no licence for simple handline, icefishing)	Yes, both for angling and passive gears	- Yes; only salmon 2/day; - Prohibited species** - MSL* - Closed areas & seasons	Yes, one rod; special rules for trolling	Yes, 8 gillnets (240m)
<b>Estonia</b>	Yes (no licence for simple handline)	Yes, both angling and passive gears; limited no available for passive gears	- No bag limits - Prohibited species** - MSL* gear and area specific - Closed areas & seasons, e.g. 1km from all rivers	Yes, ≤ 3 gears	Yes, 70m net, 100 hooks, ≤ 3 of same gear, mandatory catch reporting
<b>Latvia</b>	Yes; for passive gears, a gear-specific limited licence	Yes, area specific	- Yes: e.g. 3 eel, 10 cod, 1 salmon/sea trout; - Prohibited species**, mandatory catch reporting - MSL* - Closed areas & seasons	Yes, ≤ 3 gears with ≤ 3 hooks/gear	Yes, only 1 gear type at a time, ≤ 100m net, ≤ 100 hooks longline, catch limits (specified in gear-specific licence), rules same as commercial
<b>Lithuania</b>	Yes	Yes	- Yes: 1 salmon/sea trout, 15kg cod - Prohibited species** - MSL* (not for cod) - Seasonal & area closures	Yes, 2 rods/w 6 hooks	Not allowed (inland crayfish trap/dipnets)
<b>Russia (Kaliningrad)</b>	No	Yes (but very few waters)	- Yes: cod 30kg, herring 15 kg - Prohibited species** - MSL* several - Seasonal & area closures	Yes, ≤ 10 hooks	Not allowed
<b>Poland</b>	Yes (mandatory exam but not for Baltic Sea)	Yes	- Yes: e.g. 14 cods and 3-5 in western, 2 eels, 5 kg herring - Prohibited species** - MSL* 10 species - Seasonal & area closures	Yes, detailed: 1 rod for salmonids/ ≤ 2 rods for other species; marked boats	Not allowed
<b>Germany</b> (a combination of national and regional legislation)	Yes (mandatory exam)	Yes (some areas free in Baltic)	- Yes: e.g. 3 salmonids, 3 pike, 3 pikeperch, 3-5 cod. - Prohibited species** - MSL* 14 species - Several seasonal & area closures	Yes, detailed	Yes (“hobby fishermen”) MWP: 100m net, 100 hooks, 8 eel traps, 1 crab basket SH: 2 fyke nets***
<b>Denmark</b>	Yes (spec for other rec fishing)	Yes	- Yes, 1 sea trout, 3-5 cod - MSL* for 12 species - Seasonal & area closures	Yes, but only in certain coastal areas for trolling: ≤ 2 rods	Yes, 3 nets 135m max, 100 hooks, 3-6 fyke nets, fish/mesh size same as commercial
<b>Sweden</b>	No	Not in Baltic Sea and five largest lakes. Other inland waters yes	- Yes, 3 pike, 2 sea trout, 3-5 w. cod. Wild salmon released; 1 salmon with cut fin - Prohibited species** - MSL* several, e.g. pike 40-75cm, - Seasonal & area closures. (species specific, not general)	Yes, norm is 1 handheld rod, ≤ 10 hooks. Trolling special rules, ≤ 10 rods	Yes, 180m nets in Baltic public waters (less inland), max 100 hooks, 6 fyke nets; (no such restrictions in private waters in Baltic Sea), mesh size restrictions

Note: Area and seasonal closures are usually general during spawning periods in different waters. However, some countries do not have any general closures at all but only local or species-specific closures.

\*MSL: Minimum size limits varies a lot between and within countries and areas. Size limits for commercial species, such as salmon, sea trout and cod, are usually the same for recreational fishing.

\*\*Prohibited species: also varies a lot around the Baltic Sea, including, for example, eel, sturgeon, lamprey, allis shad and catfish.

\*\*\* Regional legislation apply to recreational fishing with passive gear. MWP = Mecklenburg-Western Pomerania and SH = Schleswig-Holstein.



in the recreational fisheries are of little interest to the commercial fishing sector and most of the fishing mortality of coastal species such as perch, pike, pikeperch, whitefish and roach is the result of recreational fisheries, just to give a few examples.

Due to the general lack of data, it has been difficult to estimate the potential impacts of recreational fisheries on fish stocks. What we have seen is that even though angling dominates and other recreational fishing seems to be decreasing in several countries, the passive gear fisheries tend to take up to half of the recreational catch – though it varies hugely for different species. Also, the majority of the recreational catches tend to be taken inland, in lakes and rivers, though there is an increasing trend for sea angling in many of the countries, with greater effects on joint fish populations as a result.

It should be remembered that catches inland include several anadromous species, which spend part of their life cycle in fresh water, perhaps most importantly salmon and trout but also pike, pikeperch, perch and roach. Large quantities of European eel are also taken inland.

In our search for catch figures, we have chosen to focus on Baltic cod, salmon, sea trout and European eel. They are mostly under EU management and subject to the Data collection framework. Despite this, several countries have not supplied full catch data.

The importance of the recreational catches of Baltic cod is greater in the south: Poland, Germany and Denmark – in some cases equal to the commercial sector. Estimates are already partially included in ICES assessments of the two cod stocks, and this should be further developed.

In terms of salmon and sea trout, the recreational catches tend to be more important than the commercial ones. The picture here is more complex, as these species have river specific populations. In some cases, the populations are doing well, in others very poorly. However, almost universally, despite long-term goals and efforts to restore wild populations across the region, there is still a strong focus on restocking from farmed fish, sometimes driven by the recreational sector itself or as a part of old court decisions as compensation for hydropower installations.

Perhaps surprisingly, all countries but Sweden allow the targeting of European eel in recreational fisheries and in many cases it seems to be almost completely unregulated. Estimated catches varies from 1.2 tonnes to 80–180 tonnes (Denmark and Germany) per year. Recreational catches across the region may be above 300 tonnes, and could be much greater, considering that there is likely to be underreporting and underestimating. In some countries catches appear to be equal or even greater than commercial catches. Generally, all of the countries except Russia spend money on restocking of eel; in some cases substantial amounts of money, but the glass eels used come from the same critically endangered European eel population.

For many other species targeted by the recreational sector, we have not been able to assess the impact due to a general lack of data. There are bound to be effects on some populations, but equally there is some information about species doing well despite a substantial fishing pressure. Studies from Sweden and other countries show that habitat loss and other environmental factors may be more instrumental to stock developments.

Table 3. Recreational catches compared to commercial catches of key species.

COUNTRY	COD		SALMON		TROUT		EEL	
	Recreational (tonnes)	Commercial (tonnes)	Recreational (tonnes/number)	Commercial (tonnes/number)	Recreational (tonnes)	Commercial (tonnes)	Recreational (tonnes)	Commercial (tonnes)
<b>Finland</b>	5 (2016)	57 (2016) (Eastern cod)	392 (2016), of which 96 at sea	192 (2016)	474 (2016), of which 232 at sea	37 (2016)	9 (2016)	1 (2016)
<b>Estonia*</b>	12 angling (2015; survey) 1.5 (official statistics; 2016)	188 (2015) 3.92 in coastal fisheries	16 angling (2015; survey) 1 426 salmons (ICES, 2016)	1 754 salmons (ICES, 2016)	33 angling (2015; survey) 7.8 (official statistics; 2016)	20 (coastal; 2016)	1 angling (2015; survey) 0.63 (official statistics; 2016)	≈ 14 (95 % inland) (2015)
<b>Latvia</b>	0.1 (2012)	4 281 (2012) 2 717 (2016) (Eastern cod)	2.2 (2014) 989 salmons (2016)	864 salmons (2016)	5.1 (2016)	5 (2016)	0.1 (2014)	4 (inland; 2016)**
<b>Lithuania</b>	30 (2015)	1 974 (2015) 1 698 (2016) (Eastern cod)	17.7 = 3 520 salmons (2016)	1.3 = 344 salmons (2016)	-	4 (coastal; 2016)	4.9 (2015)	6 (2015), of which 5 inland + 1 C. lagoon)**
<b>Russia</b> (Kaliningrad region only 2016)	150	TAC = 5800	1 000 salmons (mixed with sea trout)	TAC = 13 000 salmons	No fishing; protected species	No fishing; protected species	< 1	= 5
<b>Poland</b>	695 (2016)	10 240 (2016) (Eastern & Western cod)	2.1 (sea only; 2016)	23 = 3 769 salmons (2016)	2.4 (2012)	137 (2012) 151 (2016)	26.5 inland + < 1 sea (2015)	102 (2015) 138 (2016)
<b>Germany</b>	3161 (2015)	2 915 (2015) 2 390 (2016) (Western cod)	3 958 salmons (2016)	8.1 = 1 616 salmons (2016)	Not available	12 (2016)	182, of which 10–12 at sea (M-VP only)**	59 (M-VP only; avg. 2005– 2015)**
<b>Denmark</b>	1 272 (2015)	16 275 (2015) (Eastern & Western cod)	40 = 8 000 salmons (2016)	51.1 = 9 684 salmons (2016)	396 (2015)	8 (2015) 1 (2016)	164 (94 % marine) (2016) 118 (2015)	264 (95 % marine) (2016) 282 (2015)
<b>Sweden***</b>	190 (2016)	5 739 (2016) (Eastern & Western cod)	134.4 = 19 304 salmons	395 = 60 740 salmons (2016)	22.1 (2016)	12 (2016)	0	278 (66 % marine) (2016)

N.B. Most data is official ICES data from different working groups (see national chapters for full references).

\*Official recreational catch statistics in Estonia only include catches while fishing with a special permit, which requires catch reporting. Catches during free and licensed angling do not have to be reported, and full estimates are therefore only included in the quantitative surveys, which we have also included in the table.

\*\*National presentations at HELCOM FISH-M, 30/11–1/12, 2017.

\*\*\*N.B. The Swedish national statistics on recreational catches for 2013, 2014 and 2015 are under revision and likely to change.

Note: We have used the most recent relevant data we have been able to find. Data from different years, in a few cases as old as 2012, are used as recreational data for all species and countries may not be available. In some cases, there are also multiple years included in order to compare same-year recreational and commercial catches, as well as using the most up-to-date figures. Regarding cod, we have used both area specific population data and combinations of eastern and western stocks, depending on which is most relevant for comparison between recreational and commercial catches – this is noted in the table. Generally, we have attempted to provide total catch of salmon, sea trout and eel, including inland catches, as this makes most sense from a population perspective.

It is our conclusion that a range of actions would improve our knowledge and ability to manage this sector, such as:

- Using a mandatory licensing/fee system – this provides better estimates of the number of people involved and can provide funds for fish conservation and management efforts.
- Applying more catch limitations – since recreational fishers are not allowed to sell their catch, there is clearly a limit to how much you can eat. For salmon, a Baltic-wide daily bag limit of 1 salmon would make sense.
- Closing all eel fishing for the foreseeable future. Recreational fishing can NOT be exempt from such a ban, on the contrary.
- Managing the use of, for example, nets and longlines and the loss of such gears better. To allow use of passive gears for recreational fishing without catch limits, as well as mandatory reporting of catches and effort is hardly acceptable, especially not during spawning times along the coast.
- Greater harmonisation of regulations such as minimum size limits, mesh sizes and seasonal closures – at least to the extent that the same underlying principles apply.
- Using more general spawning closures, not just for salmonids, in all countries. It makes no sense to allow recreational fishing to disturb spawning in, for example, sensitive coastal areas and rivers and general closures are easier to control. More general closures exist in for example Russia, Germany, Denmark and Lithuania.
- Applying the same limits and restrictions for stocks under regional management, such as cod, salmon, herring and flatfish, to recreational AND commercial fisheries.
- Creating some kind of catch reporting system to improve data. Technology makes this easier to manage – it can be “electronic log books” using smartphones. Compiling information on existing reporting tools available for recreational fishing should be done 2018.
- Harmonising data collection systems, such as surveys or random checks of catch per effort. ICES Working Group on Recreational Fisheries Surveys has proposals for how this can be developed, which would make data more comparable, reliable and provide a better basis for calculating impacts and value of the sector.
- Strengthening monitoring, control and enforcement throughout the region. An exchange of best practices under the umbrella of HELCOM FISH, for example, may also be useful.
- For jointly managed species covered by EU regulations, recreational catches should be included in the stock assessments. This would potentially improve stock management, but also open up the possibility to properly consider the valid interests of the recreational sector in the management process.

# Terminology

In this section, we will expand on a number of terms used in the report which can be somewhat confusing, to clarify how we will be using them in this report.

## Definitions of recreational and subsistence fishing

There are numerous definitions of both recreational and subsistence fishing and the countries around the Baltic Sea all seem to have slightly different interpretations, or use different divisions in their policies and in the way that they handle statistics. For those specifically interested in this aspect, there is a very thorough overview in the recent report on recreational fisheries for the European Parliament<sup>i</sup>.

The **legal definition** of recreational fisheries generally includes all non-commercial fishing activities and excludes the sale of the catch. The term recreational fishing also includes sport and leisure fishing.

**ICES definition** (2013): Recreational fishing is the capture or attempted capture of living aquatic resources mainly for leisure and/or personal consumption. This covers active fishing methods including line, spear, and hand-gathering and passive fishing methods including nets, traps, pots, and set-lines.

**FAO definition** (2012): Recreational fishing is defined as fishing of aquatic animals (mainly fish) that do not constitute the individual's primary resource to meet basic nutritional needs and are not generally sold or otherwise traded on export, domestic or black markets.

Regarding **subsistence fisheries**, the demarcation is less clear under EU law. Any fishery where catches are sold is considered commercial, so covered under commercial fisheries data collection and management regimes. Conversely, where catches are not sold, this activity and its impact are generally monitored as recreational fisheries.

**FAO Definition** (2008): Fishing for aquatic animals that contribute substantially to meeting an individual's nutritional needs. In pure subsistence fisheries, fishing products are not traded on formal domestic or export markets but are consumed personally or within a close network of family and friends. Pure subsistence fisheries sustain a basic level of livelihood and constitute a culturally significant foodproducing and distributing activity.

## Categories of fishing

**Recreational fishing** is done mainly for leisure and/or personal consumption, and does not involve selling or bartering with the catch. It can be divided into several sub-categories, usually **angling** and **passive gear fishing**. **Angling** – or sportfishing – is done with a rod and line. **Passive gear fishing** includes the use of nets, traps, pots and set-lines. Spearfishing (and harpooning) is sometimes considered a third category, broadly encompassing the “**divers**” in recreational fishing.

**Commercial fishing** is fishing for profit, regardless of whether it is done with or without a licence and which type of gear is used.

**Subsistence fishing** falls somewhere between the two, but separating subsistence fishing from recreational fishing is generally difficult and is not supported by EU law. That said, many recreational fishers, even in wealthy countries, have strong subsistence-like incentives to harvest fish and this has been explored further in several papers, notably Macinko and Schumann, 2007<sup>ii</sup>.

Many of the countries around the Baltic Sea still use the phrase subsistence fishing for what is essentially a recreational fishery with passive gears, or similar phrases such as “domestic use fisheries” and “personal consumption fisheries”. In this report we have chosen to include it in recreational fisheries, as most of the recreational fishing in the region is used for personal consumption even when caught primarily for leisure. In addition, it is debatable if subsistence fishing can be said to exist in the Baltic region, considering the FAO definition above; certainly not in most of the countries that allow use of commercial-style passive gears in recreational fishing, such as Germany, Denmark, Sweden and Finland.

Throughout the report, we use two subgroups of recreational fishing: **angling** and **other recreational fishing** including all other recreational fishing, from spearfishing to passive fishing methods such as pots, traps, nets and long-lines.

## Licensing and permits

There are a number of distinct options used by the countries in the Baltic Sea region which provides the user/holder with a right to carry out recreational fishing, and even though we attempt here to divide them up into distinct groups, there may be national differences within each “category”.

When we use the term **fishing licence** we refer to a card or document that you have to apply for which contains your personal details and includes you as a user in a national register of some sort. Generally, it is an annual registration. In some countries you may have to carry out a knowledge test. Often a fee has to be paid in order to get your licence, and some countries use this as a way of collecting funds specifically for stock conservation and management of recreational fisheries. You may have to prove your age or that you are a national. A licence may be mandatory in order to carry out any recreational fishing in a country.

Also widely used is a simpler fee system, where you obtain a **fishing permit** valid for a limited period of time: a year, a month, a week, perhaps online or in certain shops. Access to this system is easier – often you can buy permits online – and monitoring may be less stringent. It is often open to foreign nationals as well as residents in the country.

Also commonly used are more specific fishing permits, which may be limited to a particular area, a particular gear or target species. Essentially a paid permit which allows the holder to fish in a particular area, or for a particular species; generally valid for a day, a weekend or perhaps a week. It is often a way to control access to a particular area or population, while also gaining some funds for management and staff.

These different systems may be in use on their own, or in combination. For example, even if you have an annual recreational fishing licence, you may have to buy a special permit to fish for salmon for a couple of days in a particular area.

## Coastal and sea fishing vs. inland fishing

Recreational fishing takes place almost everywhere there is fish; in the sea, along the coast and in inland waters. The importance of each type of water for different categories of fishing varies greatly between the different countries around the Baltic Sea, though generally inland waters dominate in terms of effort and catches.

In this report, we have tried to collect as much information about different aspects of Baltic Sea recreational fishing as we have been able to find. Sometimes, information that we are interested in does not come divided into Baltic and inland figures. Therefore, we have used and mention figures also for inland waters as and when we have found this appropriate, and have tried to be clear about both content and sources. The aim of this report, however, is to inform the debate about recreational Baltic fisheries in the entire Baltic Sea region.

In addition, a strict focus on marine or coastal fishing and catches is often incorrect from a species distribution point of view. Science has clearly shown that many more species migrate up into freshwater to feed or spawn than the most well-known, such as sea trout, salmon and eel, among them common coastal populations of pike, perch, roach and bream.

It is also important to emphasize that in terms of catches, if you want to get a full picture of the volumes and potential impacts on the populations, it is imperative to include all catches of migratory species, not only of eel, salmon and trout but also of a range of other species migrating between the Baltic Sea and freshwater. We have endeavoured to do so whenever possible, depending on which data is available. Both inland and coastal recreational fisheries must also be monitored and managed coherently for these species, something which is not always the case today.

## References

<sup>i</sup>Hyder, K., Radford, Z., Prellezo, R., Weltersbach, M.S., Lewin, W.C., Zarauz, L., Ferter, K., Ruiz, J., Townhill, B., Mugerza, E. & H.V. Strehlow (2017). Research for PECH Committee – Marine recreational and semi-subsistence fishing - its value and its impact on fish stocks, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

<sup>ii</sup>Macinko, S., & Schumann, S., (2007) Searching for subsistence: In the field in pursuit of an elusive concept in small-scale fisheries. *Fisheries*, 32(12), pp.592-600.

# Finland (not including Åland<sup>1</sup>)

## National Summary

### **Numbers of recreational fishers: ≈ 1 495 000 in 2016**

Anglers: ≈ 1 400 000

Other recreational: 800 000 – but only 100 000 are just involved in other fishing for recreational and household needs

### **Effort:**

About 25 % of fishing days spent at sea = 4 000 000 fishing days

Angling at sea: 2 700 000 fishing days

Other recreational fishing at sea (nets and traps): 32.5 % = 1 300 000 fishing days

### **Licensing/access:**

Payment of national fisheries management fee required for all between 18–65 years. Fees intended for stock conservation and management measures. Special permits from fishing rights owner for traps and crayfish fishing. No permit required for recreational fishing in public waters in the sea.

### **Main target species:**

At sea: perch, pike, pikeperch, bream, roach, whitefish, Baltic herring and sea trout.

### **Catches:**

Total recreational catches in 2016 = 29 580 tonnes, with around 25 % taken at sea = 7 523 tonnes (less than 5 % of total sea catches of 164 845 tonnes).

Cod: 5 tonnes in 2016 (0 tonnes in 2014; 3 tonnes in 2012)

Salmon: 392 tonnes in 2016, of which 96 tonnes at sea (280 tonnes in 2014, of which 62 tonnes at sea)

Eel: 9 tonnes in 2016, of which 7 tonnes at sea (20 tonnes in 2014; 2 tonnes in 2012).

In Finland, the catches of most species exceed the commercial catches. Commercial fisheries target mainly Baltic herring and sprat, and completely dominate catches of these species, as well as cod.

### **Rules and regulations:**

#### **Angling:**

- 2 salmon/fisherman/day = general bag limit for Baltic salmon
- Local restrictions on effort (at water owners' discretion)
- Minimum size limits for several species, such as pikeperch, salmon, sea trout, grayling.
- Some local/regional closures, permanent or seasonal
- Fishing ban for wild land-locked salmon, sea trout and brown trout. Seasonal fishing ban for salmonid species in rivers and streams, as well as permanent ban on grayling at sea.

#### **Other recreational fishing:**

- Max 8 gillnets/boat (max 240 m) + local restrictions
- Minimum size limits (same as for angling)
- Permanent and seasonal local and regional closures
- Seasonal fishing ban for salmonid species in rivers and streams + permanent ban on sea spawning grayling.

<sup>1</sup>The Åland islands are an autonomous part of Finland, with its own fisheries regulations and statistics.

# Introduction

Recreational fishing is the most important nature activity for Finns. Around 1.5 million people fish in Finnish waters, which are well suited for fishing activities. Around 10 % of the country is covered by water, with 187 888 lakes and 647 rivers, and a coastline over 1 100 km long. In these waters, over 60 species of fish can be found.

A new Fishing Act came into force on 1 January 2016. Its key objective is to regulate fishing rights and methods, the management of fish stocks and the fisheries administration in terms of the use and management of fish resources<sup>i</sup>. It has a clearly stated aim to ensure and restore the natural life-cycle of fish species through fisheries management based on the best available knowledge and regulation of fishing effort rather than restocking.

In the new Fishing Act, recreational fisheries are defined as both recreational/leisure fishing and fishing for domestic needs. Around half of recreational fishers engage in both angling and other recreational fishing, such as nets and traps.

The vast majority of Finnish recreational fishing days are spent on inland waters, and around 75 % of the total recreational catch of 29 580 tonnes was taken there in 2016. The most popular fishing areas are the Finnish Lakeland, the Kainuu inland waters and, among maritime waters, the South West coastal areas.

Recreational fisheries in Finland target a range of species, among them perch, pike, roach, crayfish, pikeperch, whitefish, sea trout and bream. Three quarters of the catches (around 19 000 tonnes<sup>ii</sup>) are used for human consumption. It plays an important role in providing people with healthy food, as around half of all domestic fish used as food is caught by recreational fishermen.

Not only Finns enjoy it; around 300 000 foreign visitors went fishing during their vacation in Finland in 2008<sup>iii</sup>, making it the most popular activity among foreigners visiting the country. Fishing tourism is on the increase, but most Finnish enterprises in the sector are small.

The estimated value of the recreational catch in 2012 was EUR 51 million (based on the prices paid to professional fishermen), but recreational fishermen are not allowed to sell their catch<sup>2</sup>. Most of the fish is used in their own household or given free of charge to relatives and neighbours.

## Angling

### Numbers

In 2014, almost half of the estimated 1.6 million recreational fishers (49.9 %) only ever used rod and line, whereas 6 % only used stationary gear – the rest used both. Within an overall long-term trend of decreasing numbers of recreational fishers, angling has increased in recent years, and the total numbers increased for the first time since 1998 in 2014, up from 1 487 000 in 2012 to 1 589 000 in 2014. No equivalent numbers were provided in the most recent survey of recreational fishing, but the overall decrease continues to 1.5 million recreational fishers in 2016. Of them, 23 % used nets on occasion<sup>iv</sup>.

### Licensing and permits

Recreational fisheries in Finland are subject to “general fishing rights”. These rights are comparable to “everyman’s fishing rights”, but unlike everyman’s rights, the general fishing rights may or may not be subject to a fee. Hook and line fishing, ice fishing, as well as fishing with a simple herring rig are free.

In 2016, a new national fisheries management fee system replaced the previous provincial lure fishing fees. Under the new system, the right to recreational fishing in the Finnish economic region and in the Finnish public water areas in the Baltic Sea requires payment of the fisheries management fee if the angler is 18–64 years old<sup>3</sup>. If necessary, the fisher must be able to prove his or her age to the fishing supervisor. No fees or

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<sup>2</sup>There is an exception for “small amounts of fish” from inland waters.

<sup>3</sup>Fishing licences can be purchased on the Eräluvut.fi website maintained by Metsähallitus. The website also contains information on fishing in State waters.



permits are required for fishers under 18 and over 65 years. The new fee system is based on the national Fishing Act and Metsähallitus is responsible for collecting the fisheries management fee.

Everyone who has paid the national fisheries management fee, and everyone under 18 or over 65 years, has the right to engage in lure fishing with one spinning rod in nearly the whole country. However, paying the fisheries management fee does not grant the right to fish in all waters<sup>4</sup>.

Anglers who have paid the fee cannot fish in protected areas, special destinations that require separate fishing permits, or in rapids and running waters with migratory fish stocks, or waters where fishing is prohibited under another provision. Trolling with more than one rod also requires an additional fishing permit.

Fishing in state-owned running waters and special fishing destinations also requires the Metsähallitus angling permit.

An area-specific angling permit grants you the right to fish in a special fishing destination (formerly known as recreational fishing areas) controlled and managed by Metsähallitus (mostly in the north) or private water owners (mostly south and central Finland). These destinations are home to especially valuable native and/or stocked fish, such as trout, grayling, char or rainbow trout. The services in and around these special destinations are also often more comprehensive than those found in other fishing areas. These destinations might have free wilderness cabins, campfire sites, lean-to shelters, suspension bridges, trails, duckboards and piers for the anglers to enjoy. Some of the special destinations have been purposefully preserved as natural wilderness destinations.

Depending on the destination, specific angling permits are sold for different durations (e.g., 3 hour permit, 1 day permit, 1 week permit and season permit). There is also a family permit for most destinations. The family permit costs twice as much and its fishing quota is twice as large. In this context, a family consists of children under 18 years of age and their parents/legal guardians. Married couples and couples in a civil union may also purchase family permits.

## Gear/fishing methods

The most common fishing methods include fishing with a hook and line, ice fishing and spin fishing. In the past few years, rod fishing for, among others, perch, pikeperch and pike has become very effective and more popular.

## Target species

Anglers target primarily perch, pike, pikeperch, roach, trout, rainbow trout and salmon.

## Other rules and regulations

Few quotas apply to recreational fisheries. There are general bag limits for Baltic salmon (2 salmon/fisherman/day) and for land-locked salmon (1 fin-clipped (i.e. reared) salmon/fisherman/day).

In addition to the above, there are local restrictions on effort. Essentially, the water owners<sup>5</sup> can set up specific regulations for their waters, such as closed areas or seasons, greater minimum sizes, number of gears.

National Minimum Size Limits are set for a number of species:

- Pikeperch: 42 cm
- Salmon: 60 cm
- Sea trout: wild: 60 cm/reared fin-clipped & north of 67° 00'N: 50 cm
- Grayling: 35 cm; north of 67° 00'N: 30 cm

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<sup>4</sup>The no fishing zones may be viewed at [kalastusrajoitus.fi](http://kalastusrajoitus.fi)

<sup>5</sup>There are more than 1 million water owners in Finland, and they are formally responsible for managing the fish stocks and the fishing efforts in their waters. But gradually, the water owners have been joined together for more rational management, first into 200 Fisheries Regions and then into 11 fishery districts (Fisheries Act of 1982). Despite this effort, around 20 000 jointly owned waters exist in Finland. The jointly managed waters may be owned/managed by private persons, a municipality or for state owned waters Metsähallitus, but usually it is a mix of water owners.

The so-called common free fishing rights, using a simple rod and line or ice fishing may also be subject to some restrictions, for example, closed areas. Local/regional closures may be permanent or seasonal, and a map system is available for recreational fisheries: <http://kalastusrajoitus.fi/#/kalastusrajoitus>.

In addition to fishing authorities and water owners, fishing may be restricted by, for instance, the Regional Environment Centres under the Nature Conservation Act. The Centres for Economic Development, Transport and the Environment may prohibit fishing based on the common fishing rights in specific areas. Decisions concerning such prohibited areas and the related maps are available from the fisheries units of the Centres.

There is a fishing ban for wild land-locked salmon, sea trout and brown trout (inland waters in Central and Southern Finland). This ban means that you are not allowed to kill/retain any wild fish but only fin-clipped ones. In the Gulf of Finland, it is prohibited to fish for wild sea trout (with adipose fin) and from 2019 this ban will cover the whole sea area. There is also a seasonal fishing ban for the salmonid species in rivers and streams from 1 September to 30 November every year. In addition, grayling at sea is protected from fishing.

## Other recreational fisheries

### Numbers

In 2016, around 800 000 people were involved in other recreational fishing for leisure or domestic use, with just under 100 000 using only stationary gears and the majority using both stationary gear and rod and line (angling). Looking at statistics since 1998, it is clear that the long term trend has been a decrease in numbers involved with recreational fishing from 2 057 000 in 1998 to 1 495 000 in 2016. In particular, there is a decreasing interest in recreational and domestic fishing with nets and traps, while angling is on the increase.

According to the national survey for 2012, of the 16 million recreational fishing days, a little over 25 % (roughly 4 million days) were spent fishing in the Baltic Sea. Of those, 32.5 % (or 1.3 million days) were spent using passive gear, such as gill nets or traps. The more recent surveys from 2014 and 2016 do not contain any effort data.

### Licensing and permits

In the beginning of 2016, a new fisheries management fee system replaced the previous fishing management system and provincial lure fishing fees. Under the new system, the right to conduct recreational fishing in the Finnish economic region and in the Finnish public water areas in the Baltic Sea generally requires the payment of the national fisheries management fee<sup>6</sup> if the fisher is 18–64 years old<sup>7</sup>. If necessary, the fisher must be able to prove his or her age to the fishing supervisor. No fees, licence or permits are required for fishers under 18 and over 65 years.

Fishermen using traps and those catching crayfish must always have an additional permit granted by the fishing right holder. Permits for fishing with nets or traps are usually sold by joint owners of fishing waters or their representatives. Trap fishing or crayfishing in state-owned waters also requires a separate permit issued by Metsähallitus.

Public fishing waters in the sea are an exception to the above, as no additional permit is required for recreational fishing.

### Gear/Fishing methods

The passive gears used in the recreational fisheries are primarily gillnets, small fyke nets, wire traps and short long lines. In 2016, fish traps or trap nets were used by 24 % of recreational fishers and gillnets by 23 %<sup>iv</sup>.

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<sup>6</sup>The fisheries management fee is variably described as national fee, licence and permit by authorities in Finland, but we will use the term fishing licence.

<sup>7</sup>Fishing licences and some permits can be purchased on the Eräluvut.fi website maintained by Metsähallitus. The website also contains information on fishing in State waters.

## Target species

While the proportion of net fishing is decreasing, it continues to yield a substantial amount of the catch. Of the total recreational catch, around 40 % was taken with nets in 2016<sup>v</sup> – a decrease from over 50 % in 2000. Another 13 % was taken in fish traps or trap nets. In 2014, half of the fishing households caught less than 8 kg, but the average catch was 29 kg; 20 % did not catch any fish at all.

The most important species of fish caught in the other recreational fisheries in 2016 were perch, pike, pikeperch, roach, whitefish, bream and vendace. Perch, pike and pikeperch made up around half of the catch. The annual crayfish catch is approximately 2.5 million crayfish.

## Other rules and regulations

As of 2016, the Finnish Fishing Act (379/2015) limits recreational gillnetting to eight gillnets (maximum 240 metres) per “fishing unit” (i.e. per boat). In the past, there was no such restriction.

In addition to the above, there are local restrictions on effort. Essentially, the water owners can set up specific regulations for their waters, such as closed areas or seasons, greater minimum sizes, and restrictions in the numbers and types of gear.

National Minimum Size Limits are set for a number of species<sup>vi</sup>, for example:

- Pikeperch: 42 cm
- Salmon: 60 cm
- Sea trout: 60 cm/reared fin-clipped & north of 67° 00'N: 50 cm
- Grayling: 35 cm/north of 67° 00'N: 30cm

Local/regional closures may be permanent or seasonal, and a map system is available online for recreational fisheries: <http://kalastusrajoitus.fi/#/kalastusrajoitus>. There is a seasonal fishing ban for the salmonid species in rivers and streams from 1 September to 30 November every year. Fishing may also be restricted by the Regional Environment Centres under the Nature Conservation Act. Decisions concerning such prohibited areas and the related maps are available from the fisheries units of the Centres.

There is a fishing ban for wild land-locked salmon, sea trout and brown trout (inland waters in Central and Southern Finland). This ban means that you are not allowed to kill/retain any wild fish but only fin-clipped ones. In the Gulf of Finland, it is prohibited to fish for wild sea trout (with adipose fin) and from 2019 this ban will cover the whole sea area. There is also a seasonal fishing ban for the salmonid species in rivers and streams from 1 September to 30 November every year. In addition, sea spawning grayling is protected from fishing.

## Monitoring and reporting

Information on recreational fishing is needed for decisions on national and regional levels about fisheries management, conservation efforts and the recreational use of nature. It is also needed by water owners responsible for the management of fishing waters and by scientists.

Research is required in order to monitor developments in fishing and fish populations, to assess the regional significance of recreational fishing, or the consequences of new regulations. Data is also needed when, for instance, the social significance of a fishery or the impact of environmental changes on a fishery are investigated.

Luke – the Natural Resources Institute in Finland – produces statistics and carries out social research. It carries out a survey and compiles statistics on recreational fishing in Finland every other year. Additional surveys and studies of specific aspects may also be undertaken.

The biennial survey samples around 6 000 households, with response rates of around 40–45 %. In 2017, the survey was sent to 7 500 households. A phone interview is carried out with a sample of those who did not

respond. The catch, as well as released catch, is measured separately by species. Generally, catch and effort data are made available by sea area, by species and by gear type<sup>8</sup>.

There are no national reporting requirements for recreational catches. However, in some of the managed fishing waters, catch reporting is mandatory and part of the deal when purchasing an area specific fishing permit. Often, catch reports should be filled in daily and left on site, or possibly be emailed up to a week after leaving the area.

## Recreational catches and potential impacts

Recreational fisheries accounted for around 16 % of the total fish landings in Finland in 2014. However, the vast majority of the recreational catch was taken in inland waters, where commercial fishing is quite limited (90 % of catch in inland waters is taken in the recreational fishery). At sea, the total catch in 2016 was 164 845 tonnes, of which recreational catches made up less than 5 %, or 7 523 tonnes. The commercial fisheries in Finland are dominated by Baltic herring and sprat fishing. This is likely to reduce conflicts and competition, but there is still a significant national debate about the effects of recreational fishing. The recreational catch of a number of species is significant and may exceed or at least be on the same level as the commercial catches.

The most important species caught in recreational fishing are perch, pike, pikeperch and roach. Perch and pike make up almost half of the total recreational catch, and catches are significantly larger than the commercial catch of these species. The recreational catches of pikeperch and whitefish are at least on the same level as commercial catches<sup>vii</sup>. The total estimated recreational catch in 2016 was 29 580 tonnes, of which about 75 % was taken in inland waters.

The estimated Baltic Sea catches in 2016 were 7 523 tonnes, and the main species were perch, whitefish, pike, bream, roach, Baltic herring and pikeperch. The Finnish Game and Fisheries Research Institute's website contains statistics on recreational fishing catches by species and region. Baltic Sea catches, including inland catches of diadromous species, in 2016 (2014 and 2012)<sup>viii</sup>:

- Perch: 2 195 tonnes (1 786 tonnes in 2014; 1 552 tonnes in 2012)
- Whitefish: 1 194 tonnes (339 tonnes in 2014; 527 tonnes in 2012)
- Pike: 1 117 tonnes (857 tonnes in 2014; 1 044 tonnes in 2012)
- Bream: 802 tonnes (483 tonnes in 2014; 284 tonnes in 2012)
- Roach: 622 tonnes (589 tonnes in 2014; 690 tonnes in 2012)
- Baltic herring: 389 tonnes (271 tonnes in 2014; 702 tonnes in 2012)
- Pikeperch: 314 tonnes (366 tonnes in 2014; 689 tonnes in 2012)
- Trout: 474 tonnes, of which 232 at sea (581 tonnes, of which 71 tonnes at sea, in 2014; 333 tonnes, of which 109 tonnes at sea, in 2012)
- Sea salmon<sup>9</sup>: 392 tonnes, of which 96 tonnes at sea (280 tonnes, of which 62 tonnes at sea, in 2014; 139 tonnes, of which 36 tonnes at sea in 2012)

Of the salmonids, whitefish, rainbow trout, trout and salmon are the main species. Catches of other species under EU management in 2016 were more marginal: flounder 12 tonnes (11 tonnes in 2014; 37 tonnes in 2012), cod 5 tonnes (0 tonnes in 2014; 3 tonnes in 2012) and eel 9 tonnes (20 tonnes in 2014; 4 tonnes in 2012).

An attempt to look at catch trends, including the latest survey from 2016, show an overall decrease in catches at sea for pikeperch and herring, while catches of perch, whitefish, and particularly salmon and bream have been increasing. Perch and pike stocks seem to be stable (listed as "least concern"). For pikeperch, there is significant yearly variation in abundance, and in the Archipelago Sea it is likely overfished. Migratory whitefish and sea spawning whitefish are both listed as "endangered", and additional restrictions have been put in place. Increasing numbers in the river Tornionjoki indicate that they are working.

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<sup>8</sup>Recreational fishery statistics are a part of the Official Statistics of Finland. The statistics are closely connected to EU Data Collection Framework.

<sup>9</sup> Unusually, there is also wild land-locked salmon in Central and Southern Finland.

Both salmon and sea trout catches show a more up and down pattern, with sea trout catches possibly declining overall. Seatrout is a common bycatch in the whitefish fishery (gillnets) and thus there is a further need for spatial/timely restrictions in the whitefish fishery and the gillnetting in general. Catches of flounder have gone down from a previously low level, and cod catches are marginal overall<sup>ix</sup>.

A quick comparison with the commercial catch data<sup>x</sup>, shows that the recreational fisheries dominate catches for many species, including perch, pike, whitefish, trout, flounder, salmon and eel. For Baltic herring, sprat and cod, however, the recreational catches are marginal in comparison.

## Baltic cod

Finnish recreational catches of cod seem to be very marginal. According to the latest recreational fisheries survey, 5 tonnes were estimated for 2016. None were reported for 2014 and the catch in 2012 was only 3 tonnes. The figures can be compared to 57 and 86 tonnes reported in the commercial fishery in 2016 and 2014 respectively, taken in the Main Basin and ICES area 29 Archipelago.

This may be due to the fact that Finland is at the northern-most end of the distribution range of Baltic cod, and since the population is currently fairly decimated, densities in Finnish waters will be low.

## Salmon

At the beginning of the last Century, Finland had 34 salmon rivers. Most of them have been degraded by pollution, dams and other habitat destruction. Today, only a few rivers with wild populations remain: Tornio, Simo, Teno and Näätämö.

In 2016, it is estimated that the recreational fisheries caught and retained 392 tonnes of salmon, of which 96 tonnes were caught at sea. Estimated catches have been increasing significantly since 2010 and are now almost twice the catches in 2000. The commercial catch at sea in 2016 was 192 tonnes.

It is unclear how much of the total catch is from wild Baltic populations that have migrated into freshwater before capture. The river Tornionjoki is the main area for recreational fishing of Baltic salmon.

## European eel

Recreational eel catches have been monitored since 2008, and the estimates are very variable: 17 tonnes in 2008, 9 tonnes in 2010, 4 tonnes in 2012, 20 tonnes in 2014 and 9 tonnes in 2016. Of the total catch in 2016, 7 tonnes were taken at sea in the Archipelago Sea and Åland area<sup>10</sup>. Rather surprisingly, only 1 tonne was reported as commercial catch in 2016, indicating that recreational fisheries target eel to a greater extent.

Finland imports young eels from the UK, which are used for restocking both in inland waters and at sea.

Eel is currently the only critically endangered fish species in Finland that has no protection or any specific fishing restrictions. A total eel fishing ban would be appropriate.

## Fisheries control

According to the Finnish Ministry of Agriculture and Forestry, the purpose of fisheries control is to ensure that fishers comply with the provisions on fishing and have the required licences. The Metsähallitus' game and fisheries staff are responsible for fisheries control. The police, the fisheries authority, customs and border control authorities, and fishing supervisors also have the right to control compliance with fishing provisions, as well as to seize any gear used for illegal fishing and any catches caught with the gear. The owners and joint owners of waters and holders of fishing rights also have the right to inspect fishing licences.

If caught, the rules around the right to fish are clear. If a fisher does not have the licence (national fisheries management fee receipt) with him, the authority or person supervising fishing may order the fisher to show proof of the licence. The fisher must present the proof at a police station within seven days of the order. The

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<sup>10</sup>In ICES WGRFS 2016, the 2014 marine recreational catches in the Baltic Sea areas 22–32 are listed as 9 tonnes.

fishing licence must be paid before fishing is started. Fishing without a licence may result in a fixed fine imposed by the police. In addition, fisheries inspectors may seize any gear that has been used for illegal fishing, as well as the catch taken with this gear.

However, in reality, control is sparse and the variation between different places and areas is large. In some areas both the authorities and water owners are rather active in controlling, but the majority of the waters are very poorly controlled.

## References

<sup>i</sup>Finnish submission to ASCOBANS, 29 March 2016.

<sup>ii</sup>Recreational Fishing 2012, Official Statistics of Finland – Agriculture, Forestry and Fishing. 2014. [www.rktl.fi](http://www.rktl.fi)

<sup>iii</sup><http://www.discoveringfinland.com/activities/fishing/>

<sup>iv</sup>[http://statdb.luke.fi/PXWeb/pxweb/sv/LUKE/LUKE\\_\\_06%20Kala%20ja%20riista\\_\\_02%20Rakenne%20ja%20tuotanto\\_\\_06%20Vapaa-ajankalastus/?tablelist=true&rxid=001bc7da-70f4-47c4-a6c2-c9100d8b50db](http://statdb.luke.fi/PXWeb/pxweb/sv/LUKE/LUKE__06%20Kala%20ja%20riista__02%20Rakenne%20ja%20tuotanto__06%20Vapaa-ajankalastus/?tablelist=true&rxid=001bc7da-70f4-47c4-a6c2-c9100d8b50db)

<sup>v</sup>[http://stat.luke.fi/sv/fritidsfiske-2016\\_sv](http://stat.luke.fi/sv/fritidsfiske-2016_sv)

<sup>vi</sup><http://www.finlex.fi/sv/laki/ajantasa/2015/20151360?search%5Btype%5D=pika&search%5Bpika%5D=26.11.2015%2F1360>

<sup>vii</sup>HELCOM FISH (2017). Information about Coastal recreational fisheries in the Baltic Sea countries. HELCOM FISH-PRO II. FISH 6-2017.

<sup>viii</sup>[http://statdb.luke.fi/PXWeb/pxweb/sv/LUKE/LUKE\\_\\_06%20Kala%20ja%20riista\\_\\_02%20Rakenne%20ja%20tuotanto\\_\\_06%20Vapaa-ajankalastus/3\\_Vapaa-ajankalastuksen\\_saalis\\_alue.px/table/tableViewLayout1/?rxid=b13b3277-7ceb-414e-a244-d2b59ddb64c7](http://statdb.luke.fi/PXWeb/pxweb/sv/LUKE/LUKE__06%20Kala%20ja%20riista__02%20Rakenne%20ja%20tuotanto__06%20Vapaa-ajankalastus/3_Vapaa-ajankalastuksen_saalis_alue.px/table/tableViewLayout1/?rxid=b13b3277-7ceb-414e-a244-d2b59ddb64c7)

<sup>ix</sup>All according to Luke – the Finnish Statistics Database: <http://stat.luke.fi/sv/fritidsfiske>

<sup>x</sup>[http://statdb.luke.fi/PXWeb/pxweb/sv/LUKE/LUKE\\_\\_06%20Kala%20ja%20riista\\_\\_02%20Rakenne%20ja%20tuotanto\\_\\_02%20Kaupallinen%20kalastus%20merella/4\\_meri\\_saalis.px/table/tableViewLayout1/?rxid=0a9ea595-53ce-4237-bb88-731f94f62ede](http://statdb.luke.fi/PXWeb/pxweb/sv/LUKE/LUKE__06%20Kala%20ja%20riista__02%20Rakenne%20ja%20tuotanto__02%20Kaupallinen%20kalastus%20merella/4_meri_saalis.px/table/tableViewLayout1/?rxid=0a9ea595-53ce-4237-bb88-731f94f62ede)

## National Summary

### **Numbers of recreational fishers: ≈ 149 000 in 2015**

Depending on sources, somewhere between 80 000 and 149 000 were involved in recreational fishing in 2015.

### **Effort:**

Just under half of the recreational fishers spent more than 10 days/year fishing.

### **Licensing/access:**

Fishing with one simple hand line is free of charge and open to everyone; for other gear a licence is required. There is a limited number of licences for gillnets, longlines and other multi-catching gears. Special permits are required for certain areas.

### **Main target species:**

At sea: perch, pike, roach, flounder, pikeperch, trout, salmon and whitefish.

### **Catches:**

Overall catch figures are unreliable, as the official statistics only include licensed fishing. The official total catch for 2016 was 215 tonnes, of which 127 tonnes were caught at sea. The total catch in 2015 (survey) was estimated to around 4 000 tonnes. Official catch statistics (2016) indicate that more than half of the recreational catches are from the Baltic Sea, but this is likely to be an effect of the licence and reporting system.

Cod: 12 tonnes in 2015 (survey)/1.5 tonnes in 2016 (official stats)

Salmon: 16 tonnes in 2015 (survey)/5.9 tonnes, of which 3.9 at sea in 2016 (official stats)

Eel: 1 tonne in 2015 (survey)/624 kg, of which 1 kg at sea in 2016 (official stats)

### **Rules and regulations:**

#### **Angling:**

- Minimum size limits for a range of species, such as perch, pike, pikeperch, salmon and sea trout.
- River mouths that are spawning areas for Salmonidae are closed to fishing in the autumn.
- Other permanent and seasonal closures are also used.

#### **Other recreational fishing:**

- Recreational fishers cannot use more than three gears at the same time.
- Gillnets may be up to 70 metres long.
- Longlines may have up to 100 hooks. Permanent residents of small permanently inhabited islands are permitted to use up to 300 hooks.
- Minimum size limits for a range of species, such as perch, pike pikeperch, salmon and sea trout.
- Fishing is prohibited in the most of the river mouth areas, and other permanent and seasonal closures are also used.

When involved in recreational fishing, it is forbidden to use more than three of the same of different types of fishing gear simultaneously, with the exception of trolling lines, dip-nets and traps.

### **Reporting:**

Catch reporting has been mandatory for users of passive gears since 2005.

# Introduction

Recreational fishing is on the increase in Estonia. According to the latest survey of recreational fishing published in 2016<sup>i</sup>, there were 149 000 recreational fishers in 2015. That is almost 14 % of the population – 25 % of men and 4 % of women – and fishing is more popular in younger age groups. Another recent publication puts the figure at around 80 000 people<sup>ii</sup>. Approximately 10 % of those fishing with a licence<sup>1</sup> in Estonia are tourists from other countries.

Among the anglers, rods with a spinning reel are most common, followed by hand lines, but ice fishing (winter angling) in lakes and bays is also very popular, as well as put-and-take. The other recreational fisheries are mainly using gillnets and longlines. The recreational value of Estonian waters, especially inland waters and coastal shallow-water bays, is comparatively high<sup>iii</sup>.

However, similarly to commercial fishing, recreational fishing may have negative impacts on fish stocks. Recreational fisheries in Estonia account for a substantial part of the catch of several species; about half of the catch of perch, about 1/3 of pike and roach. It also targets sensitive fish populations such as salmon, sea trout and European eel. Currently, only part of the catches have to be reported (by those using fishing permits<sup>2</sup>), making the catch figures from the recreational sector incomplete and unreliable.

The official total catch for 2016 was 215 tonnes, of which 127 tonnes were caught at sea, indicating that more than half of the recreational catches are from the Baltic Sea, but this is likely to be an effect of the reporting system<sup>iv</sup>. According to the latest quantitative survey report (2016), the total catches in 2015 were around 4 000 tonnes.

A majority of the catch comes from inland waters. More than 95 % of these catches were used for human consumption. Considering the increase of recreational fishers, the pressure on the resources is increasing and so is the need for better data.

Catch-and-release fishing used to be a practice adopted only by more informed fishers, but is becoming more and more accepted and may have a positive effect on the sustainability of the fish resources. Estonia also applies a wide range of management measures to the recreational fisheries, including permanent and seasonal closures, minimum size limits, gear restrictions and effort limitations in terms of a limited number of fishing cards. However, the effectiveness of these measures will remain unclear until monitoring and control improves.

Three different categories of recreational fishing are set out in the legislation:

1. Fishing with one simple hand line is free of charge and open to everyone.
2. Use of other fishing gear, such as a spinning rod, trolling line, pulling device, fly hook, bottom line, herring hook or harpoon gun, requires a licence for recreational fishing.
3. A fishing permit is required for fishing with longlines, entangling nets, dragnets and fyke nets, as well as for catching crayfish with dip nets and traps, for catching salmonid fish with spinning rod and fly hook, and for fishing with underwater fishing gear on Saadjärve and Lake Kuremaa.

## Angling

### Numbers

According to a report commissioned by the Ministry of Environment<sup>i</sup>, based on a 2015 survey, there now are 149 000 recreational fishers in Estonia – a sharp increase from an estimated 50 000 in 2008. According to another recent report – Estonian fisheries 2014–2015 – there were at least 58 000 licensed (or exempt from licence) recreational fishermen in Estonia fishing with hook and gear. If you add the number of people fishing with tackle using just a fishing permit, as listed by the Estonian Fisheries Information Centre, it was 60 758, plus another 5 116 foreigners, bringing the total to at least 65 874 anglers.

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<sup>1</sup>In our definitions, this is a licence. However, the Estonian Fisheries Information Centre calls this “a recreational fishing right”. Estonian fisheries 2014–2015.

<sup>2</sup>We use the term fishing permit throughout the report. However, the Estonian Fisheries Information Centre calls this “fishing card” in its recent report Estonian fisheries 2014–2015.



The latest quantitative survey, based on interviews in 2015, shows that there is overlap between the three categories: everyone's rights, recreational fishing licence and fishing permits, with 64 % fishing using a licence, 49 % fishing under everyone's rights and 17 % with a fishing permit. What we know from the other report is that 63 % of the holders of fishing permits also have a licence. People using just everyone's rights may account for some of the difference in figures between the survey and the other report.

## Licensing

Everyone may fish, free of charge and without a licence with one simple hand line on a public body of water or a body of water designated for public use, but the valid fishing rules must be followed. This free fishing is often called "everyone's right" to fish. Fishing on private water bodies may be performed only with the permission of the owner.

Fishing with other fishing gears, such as a spinning rod, trolling line, pulling device, fly hook, bottom line, herring hook or harpoon gun, is allowed after paying a fee for the right to fish – a licence for recreational fishing.

A selection of licences is available, priced according to the period of use: 1 EUR for one day, 3 EUR for one week, 13 EUR for six months or 20 EUR for one year. Foreign citizens can also purchase licences for recreational fishing in Estonian waters<sup>3</sup>. The one day licence is the most popular, around 50 % of licences, followed by the annual licence, almost 25 %. When fishing, one should bring a copy of the payment order and an identity document with a photo.

Students under the age of 16, pensioners, disabled persons and unlawfully repressed persons may fish for free, but have to be able to present a student card, a pension certificate, a document proving the severity of the disability, or a repressed person certificate in order to receive the right for recreational fishing. This privilege does not apply to fishing permits.

For catching salmonid fish (in salmon rivers and Järvamaa trout rivers) with spinning rod and fly hook, and for fishing with underwater fishing gear on Saadjärve and Lake Kuremaa, a special fishing permit is required. Other fishing permits give the right to fish on some water bodies within nature conservation areas. The rights granted by the fishing permit, including the water bodies where fishing is allowed, are described in the Regulation of Temporary fishing restrictions, charges for recreational fishing rights and limit numbers of fishing cards, which is issued by the Ministry of Environment every year.

In 2015, 7 351 people acquired fishing permits for angling. The fishing permits are issued by the Environmental Board but since 1 January 2011, one can buy both licences and fishing permits for recreational fishing online at [www.pilet.ee](http://www.pilet.ee).

## Gear/fishing methods

In angling, the different catch methods are simple rods, rods with spinning reels, trolling lines and pulling devices, as well as live bait.

A simple hand line – as defined under "everyone's rights" – consists of the rod, fishing-line with the length of up to 1.5 of the length of the rod, a single hook with which the natural feed is used and which may be equipped with weight and float.

## Target species

The main species targeted in the recreational fisheries are perch, roach, pike, bream, pikeperch, sea trout, salmon, whitefish and flounders. According to an OECD report from 2009, the most important Baltic species were perch and flounder. Today, the Baltic catches are dominated by flounder, perch, pike, Prussian carp and sea trout<sup>v,vi</sup> – even though a range of species are targeted and there are some local variations.

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<sup>3</sup><http://www.eraluvat.fi/en/fishing/fishing-permits-and-fees.html>

## Other rules and regulations

Fishing is regulated by the Fishing Act of 2015, as well as national Fishing Rules and temporary restrictions on fishing. There are a number of restrictions in place regulating where and when recreational fishing is allowed.

Along the Baltic Sea coast, fishing is prohibited in most of the river mouth areas. At no time is fishing allowed any closer than 1 000 metres from the mouths of the rivers Kunda, Selja, Loobu, Valgejõgi, Jägala, Pirita, Keila, Vääna, Vasalemma, Punaba, Purtse and Veskiõgi. From 1 September to 31 October, this restricted area is extended to 1 500 metres for the rivers of Purtse, Kunda, Selja, Loobu, Valgejõe, Pirita, Keila, Vääna and Vasalemma.

In the autumn, fishing cannot take place any closer than 500 metres to the river mouths of all other spawning areas for Salmonidae. The exact time for this closure varies; in some water bodies from 15 August to 31 December, in others from 1 September to 30 November. However, from 1 March to 31 May, fishing only with a simple hand line and hand line is permitted closer than 500 metres to the mouth of many watercourses<sup>4</sup>.

Fishing for salmon and sea trout in the rivers is greatly restricted. Only angling with a special fishing permit in certain rivers is allowed. In addition, it is prohibited to catch salmon and sea trout in internal water bodies from 1 October to 30 November. In all salmon rivers, walking along the river bottom and carrying out recreational fishing by wading in water is prohibited during the closed seasons, except in the River of Narva and when catching lamprey. Catching any of the following endangered species is also prohibited: sturgeon, sheatfish, asp and grayling.

Minimum Size Limits are set for a range of species and can be found in the national Fishing Rules (Note 5) – see section under Other recreational fisheries. When fishing with a simple hand line, the minimum size limits for smelt, cod, turbot, flounder and plaice do not apply (Fishing Rules 43:2).

Fish of listed endangered species, undersized fish and fish caught during closed periods must be carefully removed from the fishing gear and released into the water.

The Ministry of Environment publishes a Pocket guide to recreational fishing (available in English too), which covers the most important rules.

## Other recreational fisheries

### Numbers

According to the report Estonian Fishery 2014–2015, a total of 9 819 people used multi-catching gears while in possession of a fishing permit. Another 401 permits were issued for harpoon guns.

### Licensing

A fishing permit is required for fishing with gillnets, longlines, entangling nets, dragnets and hoopnets, as well as for gear for catching crayfish. Fishing on private water bodies is only allowed with the permission of the owner.

A restricted number of fishing permits are available on a first come-first serve basis for gillnets, longlines and dragnets. The fishing permits are issued by the Environmental Board, but since 1 July 2011, they can also be acquired at [www.pilet.ee](http://www.pilet.ee).

In 2015, the highest number of fishing permits issued were for gillnets – 7 700 permits, with 1 140 permits for longlines, 906 for crayfish gear and 73 for hoopnets and dragnets. Most of the gillnet permits – 6 271 – and 288 of the longline permits were issued for use in the Baltic Sea. The rest were for inland recreational fishing.

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<sup>4</sup>Annexes 2, 3, 4 of the Fishing Rules.

## Gear/fishing methods

Other recreational fisheries (not angling) are dominated by gillnets and longlines. Traps and dragnets are also used. Fishing with harpoons and spear guns also take place but in limited numbers.

## Target species

The main species targeted are perch, flounder, roach, pike, bream, pikeperch, sea trout, salmon and whitefish.

## Other rules and regulations

The Ministry of Environment is responsible for the conservation of fishery resources and may implement a range of restrictions on fishing, such as the number of persons fishing in an area, the type of fishing gear allowed, the time or season during which fishing is allowed, or the amount of fish caught.

Fishing is regulated by the Fishing Act of 2015, as well as national Fishing Rules and temporary restrictions on fishing. There are a number of restrictions in place regulating where and when recreational fishing is allowed.

Fishing with pole splashing, electricity, toxic or narcotic substances, stabbing tools (except for recreational underwater fishing), hooking tools, firearms and explosives is prohibited everywhere. It is also punishable to use, own, manufacture, store, transfer and transport any means for fishing by electrical current. Selling, or buying, fish caught in recreational fisheries is prohibited.

Fishing with entangling nets, including gillnets, is restricted in several places and at different times. There are fishing sites and fishing methods which may only be used by holders of a fishing permit. The number of gillnets allowed, as well as the cost of the fishing permit, varies from area to area, and are specified in the Temporary Fishing Rules for the recreational sector. The allowed mesh size also differs greatly depending on the area, fishing time and target species.

1. With some exceptions in inland lakes, gillnets may be up to 70 metres long.
2. Longlines may have up to 100 hooks. Permanent residents of small permanently inhabited islands are permitted to use up to 300 hooks.
3. When involved in recreational fishing, it is forbidden to use more than three of the same of different types of fishing gear simultaneously, with the exception of pots, dip-nets and traps.

Mini-trap nets, which are popular in Finland, have now been authorised for use in Estonia (Fishing Act, 2015), but not at sea.

Along the Baltic Sea coast, fishing is prohibited in most of the river mouth areas. At no time is fishing allowed any closer than 1 000 metres from the mouths of the rivers Kunda, Selja, Loobu, Valgejõgi, Jägala, Pirita, Keila, Vääna, Vasalemma, Punaba, Purtse and Veskijõgi. From 1 September to 31 October, this restricted area is extended to 1 500 metres for the rivers of Purtse, Kunda, Selja, Loobu, Valgejõe, Pirita, Keila, Vääna and Vasalemma. In the autumn, fishing cannot take place any closer than 500 metres to the river mouths of all other spawning areas for Salmonidae. The exact time for this closure varies; in some water bodies from 15 August to 31 December, in others from 1 September to 30 November.

Minimum Size Limits are set for a range of species and can be found in the national Fishing Rules (Note 5). Unusually, two different size measures are provided:

- 1)  $l$  = the length of the fish from front (mouth closed) to the middle of where the caudal fin rays begin
- 2)  $L$  = the length of the fish from front (mouth closed) to the end of the caudal fin.

If the fish length is equal to or exceeds any (or both) of the two given measures, the fish is deemed to be at/above the minimum size limit. The Minimum Size Limits apply either in certain specified waters, or everywhere. It is prohibited to catch fish smaller than the minimum size laid down in the national Fishing Rules. However, some species are covered by bycatch conditions based on agreed EU regulations [discard ban], and therefore exempt.

Listed endangered species of fish, undersized fish and fish caught during closed periods must be carefully removed from the fishing gear and released into the water.

Table 4. Minimum Size Limits for Estonia

Species	The area in which the MLS applies	MSL (1 = beginning caudal fin) (cm)	MSL (2 = end of caudal fin) (cm)
Perch	Baltic Sea	16	19
Pike		40	45
Pikeperch	Baltic Sea, lakes Peipus, Pskov, Lämmijärvi and other inland waters	40	46
	Lake Võrtsjärv	45	51
Salmon	Rivets	55	60
Sea trout			50
Brown trout		32	36
Smelt		10	12
Whitefish	Sea and rivers flowing into the sea	30	35
	In other inland waters	35	40
Flounder	ICES subarea 28		21
	Subareas 29 and 32		18
Eel	Sea and rivers flowing into the sea		35
	Lakes Võrtsjärv, Peipus, Pskov		55
	In other inland waters		50

## Monitoring and reporting

The number of licences and fishing permits is continuously monitored. In 2015, 17 571 people acquired special permits called fishing cards – an increase of 3 % compared to 2014, and 11 % compared to 2013. This increase was mainly in permits for angling. For passive or multi-catching gear there was a slight decline from 2014 to 2015.

There is no requirement to report catches from angling, apart from particular areas – see below. However, phone-based surveys have been carried out in recent years; the latest one in 2015<sup>i</sup>.

There is an obligation to report catches from gillnets, longlines or in areas of special interest (all requires a fishing permit) since 2005. Catch data can be submitted online at the address [pilet.ee](http://pilet.ee) or [kala.envir.ee](http://kala.envir.ee) and to the Environmental Board by signing the data. However, much goes unreported and the figures are therefore not reliable, according to Estonia's report to HELCOM in 2015. The data is stored in the Estonian Fisheries Information System, which can be accessed online<sup>vii</sup>.

Other data is collected from areas of particular interest, such as salmon rivers. In general, fishing permits are used for passive gears and in areas where it is necessary to establish limitations for recreational fishing, such as fly fishing in salmon and sea trout rivers. When fishing in an area or with a gear requiring a fishing permit, one has to submit catch data.

Estonia also has a tagging programme, the purpose of which is to study the migration and ecology of fish. Recreational fishers are strongly encouraged to submit information if they catch a fish with a tag on the dorsal fin, including the species, weight, length and sex of the labelled fish, as well as the time and place the fish was caught and the fishing gear used. If they do, they receive a small sum of money for each fish, a high-quality troll and a letter with habitation data on young fish.

## Recreational catches and potential impacts

There are 75 known fish and Cyclostomata species naturally occurring in Estonia. Many of them are caught in recreational fisheries, but the main species targeted are perch, roach, pike, bream, pikeperch, sea trout, salmon, whitefish and flounders. There is little analysis available on the impacts of recreational fishing in Estonia, and as the catch data are unreliable it is difficult to assess the effects on the Baltic Sea species.

Just as recreational fishing itself, catches in the recreational sector have been increasing. Figures from an OECD report shows total catches in 2005 as 372.3 tonnes, of which 92.5 in the Baltic; 2006 catches as 180 tonnes, of which 86.6 in the Baltic; and 2007 catches as 186.1 tonnes, of which 87.8 in the Baltic. An earlier quantitative survey puts the total recreational catch for 2010 at 5 000 tonnes. In the most recent 2016 report<sup>viii</sup>, total catches from using just fishing tackle and harpoons were estimated to 4 000 tonnes in 2015. According to official statistics (licensed fishing only), the total catch for 2016 was 215 tonnes, of which 127 tonnes were caught at sea.

According to the 2010 survey of recreational fishers, about half of the perch catch was taken by anglers, over 1/3 of catches of roach and pike, 1/6 of catches of bream, and for all other species less than 5 %. The total reported catches were around 5 000 tonnes. A majority of the catch comes from inland waters. More than 95 % of these catches were used for human consumption.

In the latest qualitative survey, perch catches dominate both inland and in the Baltic Sea, totalling 1 193 tonnes in 2015. This is followed by pike at 931 tonnes and roach at 707 tonnes. The 2015 survey does not divide the catch clearly into inland and Baltic Sea catches, but one can still compare the numbers with the commercial catches from the Baltic of the same species. Official recreational catch data are lower overall, as it only covers licensed fishing and reporting is believed to be poor. According to the 2016 statistics, licensed catches in the Baltic Sea are dominated by flounder (41 tonnes), followed by perch (21 tonnes), pike (13 tonnes) and Crucian carp (11 tonnes).

In 2015, coastal fishing catches (small-scale fleet) caught 1 523 tonnes of perch, 52 tonnes of pike, 198 tonnes of flounder and 95 tonnes of roach. This indicates that the figures from 2010 about the shares of total catches may still be roughly valid. For pikeperch, the coastal commercial catches were 83 tonnes, whereas anglers took 66 tonnes (including inland catches). Recreational catches dominate for a number of species such as ide, bleak and chubb, whereas commercial catches dominate for smelt, herring, flounder and garfish.

There is little information available on the status of these species, but in the coastal fishery perch, herring and pikeperch provided the highest revenues<sup>ii</sup>. It is therefore quite possible that the perch resources are under pressure and also that there could be a conflict of interest between commercial and recreational fishers. Commercial catches of perch in the Gulf of Finland have been declining for a number of years, which could indicate that the populations are declining, as it is still a profitable catch. In Väinameri Sea, however, catches have been increasing since 2013 and populations there have recovered since the early 1990s perch stock crisis. Commercial perch catches have also been increasing in the Gulf of Riga.

According to an OECD report from 2009, a survey carried out by the Estonian Marine Institute showed that in winters with prolonged ice cover, catches of perch in Pärnu Bay may reach hundreds of tonnes (bigger than commercial catches in the area). A remarkable part of the catch consisted of juvenile fish, which had not reached the minimum legal size, and a substantial part of the catch was sold to fish processing companies. However, since then the Estonian Environmental Inspectorate has intensified the monitoring of first sales documents and quantities processed in the processing industry with the aim to reduce this illegal activity.

## **Baltic cod**

Along the Baltic Sea coast, recreational fishing for cod takes place and the majority of the catch comes from passive gears. In 2014, 0.9 tonnes of cod was caught<sup>ix</sup>. This can be compared to a commercial catch of 7 tonnes in the coastal fishery and total commercial catches of 165 tonnes in the same year.

The latest quantitative survey of recreational fishing estimates the 2015 catches of cod to 12 tonnes, whereas the coastal fisheries caught 3.92 tonnes and the total commercial catches were 188 tonnes. However, according to official catch statistics based on reported catches under special fishing permits, which are available on the Ministry of Environment website, 1.2 tonnes were caught in 2015 and 1.5 tonnes in 2016.

From this, we can conclude that Estonian recreational fisheries do not have a significant effect on the cod stock compared to the commercial fishery, but that locally it may affect the coastal commercial fishery.

## **Salmon and sea trout**

Salmon and sea trout are caught both in gillnets and in rod fishing in the rivers. Salmon and sea trout fishing in rivers is heavily restricted (permit only) and only recreational.

According to the latest report by ICES WGBAST (2017), wild populations of Estonian salmon in the Gulf of Finland are showing signs of recovery. There is no targeted commercial fishery for salmon; salmon is a bycatch in the coastal fishery, where the main targeted species are sprat, flounder and perch.

The total Estonian salmon catch in 2016<sup>x</sup> was 11 tonnes – 22 % more than in the previous year – and a vast majority of that is caught in the Gulf of Finland. In that region, there are about 570 commercial fishermen, as well as up to 6 433 monthly gillnet licences distributed annually to non-commercial fishermen. Commercial fishermen take about 68 % of all caught salmon; a vast majority (88%) are caught in gillnets and the rest in trapnets. About 75% of the annual salmon catch is taken in September to November, when nearly all the salmon caught are spawners.

In 2015, the total coastal salmon catch including both commercial and recreational gillnet fishery was 9 tonnes. Another report<sup>ii</sup> shows coastal commercial catch for 2015 as 5.59 tonnes, indicating a significant recreational catch with passive gear at around 3.5 tonnes.

The quantitative survey of recreational fishing – angling – estimated a total catch of 16 tonnes in 2015, which is substantial and much larger than other estimates. In comparison, the official statistics for 2015 lists 3.4 tonnes at sea and 3.6 tonnes in total licensed catches, with 3.9 and 5.9 respectively for 2016. These sea catches are also the figures reported at the ICES WGRFS in 2016. In 2016, recreational river catches were 1.97 tonnes<sup>5</sup>.

**Sea trout** angling on the coast has become more and more popular, as the trout stocks have recovered from the poor state they were in during the 1990s. Today, Estonian sea trout populations are doing well, particularly in the Gulf of Finland<sup>ii</sup>.

According to Estonian Fisheries 2014–2015, the coastal sea trout catch in 2015 (commercial and recreational gillnets) was 22.7 tonnes. There is also significant angling for sea trout on the coast; the total estimate provided by the 2016 recreational fishing survey was 35 tonnes. ICES WGBAST estimates recreational coastal catches to 6.3 tonnes in 2015 and 7.2 tonnes in 2016. This is in line with the official catch statistics covering licensed recreational fishing. In 2016, an additional 0.561 tonnes were caught in the rivers, bringing the total to 7.8 tonnes.

Although the figures vary between different sources, some conclusions can perhaps be made. Looking at overall Baltic catches of these species, Estonian catches are not significant, but as they are both species with river-specific populations that is not so relevant. In terms of Estonian catches, it appears that recreational catches make up a substantial proportion of the total catch and could have effects on the populations. However, Estonia has put a range of restrictions in place to protect populations, particularly in and around the rivers, and both salmon and sea trout are recovering, particularly in the Gulf of Finland. The ICES lists habitat degradation as the foremost threat to wild populations, followed by overexploitation and pollution.

## European eel

Eel is also targeted in the recreational fisheries, but is mainly caught in inland waters. In 2015, a total catch of 800 kg was taken at sea and 14.5 tonnes in inland waters. Around 95 % of the catch is taken in the commercial fishery, mainly from Lake Võrtsjärv and its surroundings. However, based on long-term studies including restocking volumes, catch ratios and mark-recapture data, total eel catches from Lake Võrtsjärv alone could be more than 30 tonnes per year. N.B. restocking of eel in Lake Võrtsjärv is substantial.

According to the recent report on Estonian fisheries 2014–2015, [commercial] eel catches have been relatively steady since 2009, in the range of 10–13 tonnes, which is about a third of the long-term average of 32 tonnes. It reports the recreational catches in 2015 to be 280 kg. The latest quantitative survey puts recreational catches of eel using fishing tackle and harpoon at 1 tonne in 2015. According to official statistics, recreational catches were 536 kg in 2014, 744 kg in 2015 and 634 kg in 2016, almost all taken in inland fisheries.

Overall, substantial amounts of eels are caught in Estonia, but the vast majority in the commercial fisheries.

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<sup>5</sup>A recent report commissioned by the Fisheries Committee in the European Parliament, reports salmon catches in the recreational fisheries to 1.1 tonnes, accounting for 58 % of total catches.

The Estonian eel fishery is dependent on restocking of glass eels. As European eel is an endangered species, however, and with the population at a level of less than 1 %, the eel fishery should be closed.

## Fisheries control

When involved in recreational fishing, a number of actions are considered a serious violation of the fishing requirements set out in the law:

- 1) fishing during a closed season or in a prohibited place
- 2) prohibited species catch
- 3) fishing with prohibited fishing gear
- 4) catching undersized fish
- 6) using prohibited fishing methods
- 7) violating catch limits.

The Environmental Board may refuse to issue a new fishing card, if the applicant has, at some earlier time, failed to submit catch data or has violated any requirements provided for by laws which regulate fishing.

There are a number of problems with fisheries control in Estonia, and the main focus of fisheries inspectors is the commercial fisheries. Sometimes recreational fishermen are inspected, but it is relatively rare.

In recent years, groups of anglers have become more proactive and will guard some salmon rivers during critical periods and it has had very good effects. This voluntary guard has been organised in cooperation with fisheries inspectors. The anglers don't have the right to arrest anybody if they spot any illegal action. Instead, they must inform inspectors if something happens. However, it seems as if a simple presence of the so-called guards is enough to prevent poaching.

The Government has set up a round-the-clock emergency phone system managed by the Environmental Inspectorate. People are encouraged to phone in if they see any violations of fishing rules, whether it is use of fishing gear which is not properly marked, fishing during closed seasons or in closed areas, poaching or even pollution. This is highlighted in the annual pocket guide to recreational fishing in Estonia, as a way to ensure healthy fish resources and securing future fishing opportunities. A Rescue Service number is also provided.

## References

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- <sup>iv</sup><http://www.envir.ee/et/eesmargid-tegevused/kalandus/harrastuspuuk/statistika-ja-uuringud>
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- <sup>ix</sup>ICES Working Group on Recreational Fisheries Surveys (2016).
- <sup>x</sup>ICES Report of the Baltic Salmon and Trout Assessment Working Group (2017).
- <sup>xi</sup>ICES WGBAST, 2017.

## National Summary

### **Numbers of recreational fishers: ≈ 120 000**

Anglers: 100 000–120 000 anglers

Other recreational fishers: 2 031 fishers

### **Effort:**

There is no monitoring of anglers' catches aside from occasional surveys, but there are general effort restrictions. In the other recreational fisheries, daily logbooks are used together with gear limitations.

### **Licensing/access:**

For angling, there is a general fishing licence, as well as additional fishing permits for specific water bodies. Gear-specific limited licences are required for other recreational fisheries.

### **Main target species:**

At sea: perch, flounder, cod, garfish, round goby, roach, Baltic herring and sea trout.

### **Catches:**

Anglers' catches are estimated to around 1 600 tonnes per year. Total recreational catches, including inland waters comprise around 40 % of total Latvian catches. In 2010, recreational catches in coastal waters were reported as 6.5 % of the total Latvian catches, with more than 2/3 taken in recreational fisheries using commercial style, multi-catching gears.

Cod: 0.1 tonne in 2012 (earlier 5–10 tonnes).

Salmon: 2.2 tonnes for 2013 & 2014.

Eel: 100 kg in 2013 & 2014.

Based on 2010 data, recreational catches of salmon and sea trout are roughly equal to commercial catches, of perch about 27 % of catches and of eel around 22 %; for other species fairly insignificant (at most 18 % of total catches). Catches of flounder may be comparable to commercial catches, but there is no data.

### **Rules and regulations:**

#### ***Angling:***

1. Catch per person and occasion restricted, e.g. 3 eels, 10 cod, 1 salmon and/or sea trout
2. General effort restrictions: ≤ 3 angling gears and ≤ 3 hooks of any type in sea waters
3. Minimum size limits (same as for other recreational fishing)
4. Permanent and seasonal closures
5. Fishing ban for lamprey, as well as salmon and sea trout in inland waters (with some exceptions). Spawning bans for several other species.

#### ***Other recreational fishing:***

1. Local gear limitations, e.g. ≤ 50–100 metres for nets; ≤ 100 hooks on longlines and ≤ 5 crayfish trapnets.
2. Catch limits: ≤ 10 kg/day for perch & flounder; ≤ 10 cod and ≤ 5 sea trout.
3. Minimum size limits for several species, such as perch, eel, cod, salmon and sea trout.
4. Permanent and seasonal local and regional closures.



# Introduction

According to the Latvian Fishery Law, fish belongs to the person who acquires them. Before the law was changed in 2001, all fish resources belonged to the state. Latvia divides recreational fisheries into two categories: 1) subsistence fisheries for personal consumption (passive gears) and 2) sportfishing (mainly angling). In this report, we have chosen to refer to “angling” and “other recreational fisheries” (see the chapter on Terminology).

More than 42 different species of fish inhabit the Latvian waters. Recreational fisheries target flounder, herring, perch, salmon, seat trout, cod, eel, garfish, eelpout, round goby and several other species.

## Angling

### Numbers

It is estimated that 100 000–120 000 people are engaged in angling activities in Latvia. About 90 000 people obtain an angling licence every year, and the Latvian anglers' organisations have around 2 000 registered members. Angling is more common in inland waters, than in the coastal areas of the Baltic Sea. We have not found any figures on the number of sea anglers in Latvia.

### Licensing

For anglers, two different kinds of fishing rights provide access in Latvia: an angling licence (often called an angling card; since 2015 it's called “angling, crayfish catching and underwater hunting card”) and specific fishing permits. No licence is required for persons under the age of 16 and over 65, or for disabled people carrying a disability certificate.

Purchase of an angling licence allows general angling in all public and private lakes and rivers, fish ponds and the sea. Then there is limited access angling, for which the angler buys an additional permit and conducts his activities in a certain water body. In places where limited access angling has been established, both an angling licence and a permit are required.

Fishing permits are used for a body of water, or part of it, as well as part of coastal waters, if any of the following conditions apply:

1. there is scientific justification to limit the fishing of certain species of fish or crayfish to a specific time and place.
2. there is evidence of the need to regulate the number of anglers at a specific time and place to limit the exploitation of fish stocks and fishermen's impact on the environment.

An angling licence can be purchased in all specialised fishing and hunting shops, as well as in post offices. When fishing, you need to carry both the angling licence and a personal ID.

### Gear/fishing methods

Most of the common types of angling are practised in Latvia: float angling, spin-fishing, fly-fishing, ice fishing and others. Ice fishing is especially popular and sea angling is increasing.

### Target species

The most popular fish among anglers fishing in the Baltic Sea are perch, flounder, cod, garfish, round goby, roach, Baltic herring and seat trout.

### Regulations

Angling in Latvia is governed by special angling rules set out in the Angling, cray fishing and underwater hunting regulations (2015<sup>1</sup>).

In general, angling is allowed all year round. There are public bodies of water in Latvia where unrestricted fishing is allowed, but there are also stretches of rivers and lakes where fishing is restricted to those purchasing a special angling permit, as well as private waters where the permission of the owner is required. The best way to find out about possibilities to fish in a particular body of water is to check online or enquire at the local municipal authorities.

No fishing is allowed in river mouths and channels flowing into the sea, but the radius of the closed area varies from river to river and may be from 200 metres to 2 000 metres. Angling is also prohibited less than 50 metres from marked commercial fishing gear. There are also a number of permanently closed areas as well as periodically closed areas, most of them in inland waters.

If needed, temporary measures may be put in place by the Ministry of Agriculture. These have to be published in the newspaper *Latvijas Vēstnesis*.

In the coastal waters of the Baltic Sea, angling can be performed from a boat or from the shore.

In sea waters, no more than three angling gears may be used at the same time, and each gear may not have more than three hooks of any type. In inland waters, the limit is a maximum of two gears each with a maximum of three hooks. Bait can only be used in the waters where the bait was acquired, and specific rules apply to the catching of bait fish.

There are also other restrictions, for example, the snagging method or use of natural bait when angling for salmon, grayling and trout are both prohibited. It is forbidden to leave freely floating angling gear in the water, or to leave any angling gear without active supervision.

At each fishing occasion, the catch per person is restricted. The number of fish allowed varies with the species, but one angler may keep three eels and ten cod and one sea trout or salmon, for example. The catch limits sometimes differ between coastal waters and inland waters. The catch of species not specifically listed in the Fishing, crayfish catching and underwater hunting regulation is unlimited.

Minimum size limits apply to a number of species, such as perch (19cm), eel (40 cm), cod (35 cm), sea trout (50 cm) and salmon (60 cm). The length of fish is determined by measuring the distance from the tip of the snout to the end of the caudal fin. Any fish caught in addition to the catch limit, or under the minimum size limit, should be released and let back into the water.

It is prohibited to catch lamprey throughout the year. Fishing for salmon and sea trout is prohibited throughout the year in inland waters, with some exceptions, and between 1 October and 15 November in coastal waters. In rivers with natural reproduction, all fishing is prohibited (including angling), aside from spring time angling in the rivers Salaca and Venta with special fishing permits. A number of other fish species are subject to season closures, most commonly for protection during spawning, and there are several other fishing prohibitions and fish protection regulations.

It is prohibited to move fish and crayfish from one body of water to another<sup>1</sup>.

## Other recreational fisheries

### Numbers

In 2010, ICES estimated there to be 430 commercial fishers and 2 031 persons fishing for “personal consumption” (recreational fishers using passive gears) in Latvia. Of the latter, around 40 % fish in coastal waters (about 800 people); the same figure for commercial fishers is 36.5 %.

### Licensing

For other recreational fishing (not angling), everyone needs a gear-specific limited licence. To get the licence – which has to be renewed annually – the fisherman must have a fishing right lease contract for the waters he/she intends to fish in. Under such a licence, fish can only be caught for personal consumption. It cannot be put on the market, sold or even transferred to another person.

The licence will regulate the gear type, the number of each fishing gear and, in some cases, the catch. As part of the licence, there is a fee for each fishing gear that will be used<sup>2</sup>, but gear allocations in coastal waters will vary depending on scientific advice, national and regional policy. Whatever gear types allowed under the licence, only one gear can be used at any one time.

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<sup>1</sup>Article 10.3, Fishing, crayfish catching and underwater hunting regulations; issued under the Fisheries Law, Article 13, § 1.3.

<sup>2</sup>The prices for each gear type are set by the local municipality every year.

## Gear/fishing methods

In Latvian recreational fisheries for personal consumption nets, pots and long-lines are used, particularly gillnets, trap nets and fyke nets.

Spear and harpoon gun fishing is also practiced. It should be noted, that spear fishing is relatively uncommon, as conditions are not ideal in Latvian waters and it is a fairly expensive hobby.

## Target species

The information on target species is less detailed for other recreational fisheries, but flounder, herring, perch, salmon, sea trout, cod, eel and crayfish are all common. In coastal spear fishing, flounder and turbot are the main target species, but the total catch is negligible.

## Regulations

There are numerous rules and regulations which apply to other recreational fishing, including gear limitations, catch limitations, closed areas and seasons and minimum landing sizes, and these have become stricter in recent years. Overall, conditions for use of fishing gears and catch reporting requirements (daily log-books) are very similar to the commercial fisheries.

In rivers, only traps are allowed, whereas in lakes nets or traps can be used (but only one gear type at a time). In the coastal waters, nets, traps and longlines may be used, but again only one gear is allowed at any one time. No more than five crayfish trap-nets may be used. Underwater hunting with harpoon guns cannot take place close to public recreation areas used for swimming, water sports or cultural events. There are other gear limitations, such as a maximum length for nets of 50 or 100 metres depending on the municipality, or a maximum of 100 hooks on a long-line.

There are also quota restrictions for several species, for example: < 10 kg/day of perch and flounder, and < 5 sea trout per day. For cod, the same catch limits apply to other recreational fisheries as to angling: no more than 10 individual fish of a length of 35 cm or more (minimum size limit).

Minimum size limits apply to a number of species, such as perch (19cm), eel (40 cm), cod (35 cm), sea trout (50 cm) and salmon (60 cm). The length of fish is determined by measuring the distance from the tip of the snout to the end of the caudal fin. Any fish caught in addition to the catch limit, or under the minimum size limit, should be released and let back into the water.

Fishing for salmon and sea trout is prohibited throughout the year in inland waters, with some exceptions, and in coastal waters between 1 October and 15 November. At other times, salmon fishing in coastal waters is subject to effort limitations through restrictions on the number of gears used. In addition, gillnet fishing is prohibited in a 3 km zone around the mouth of the Salaca river, and fisheries restriction zones around the rivers Gauja and Venta apply out to 2 km.

A number of other fish species are subject to seasonal closures, most commonly for protection during spawning, and there are several other fishing prohibitions and fish protection regulations. It is prohibited to catch lamprey throughout the year.

## Monitoring and reporting

Anglers are not obliged to report the catches, except for salmon and sea trout caught in rivers where angling targeting these species is carried out with a special permit. The share of angler's catches in fisheries is estimated from questionnaires, interviews, number of angling cards sold, and returned licences which contain information on catches. Such data have been collected in 2007 and 2012. More recent surveys by the Institute of Food Safety, Animal Health and Environment (BIOR) estimate anglers' catches to be about 1 600 tonnes per year. BIOR also collects data on anglers' catches in limited access waters (angling permits), but does not publish them.

Any fish among the catch bearing numbered marking tags for the purpose of research, must be sent to the State scientific institute for analysis.

Recreational fishers using commercial gears are obliged to report all their catches in the same way as commercial fishermen since 1993<sup>ii</sup>. The catches, as well as the gear used, have to be reported daily in the fishing log book and submitted to the Marine and Inland Waters Administration (MIWA) each month. For salmon and sea trout, the number of individual fish caught has to be reported.

The log books are collected in the central office of MIWA and then submitted to the Institute of Food Safety, Animal Health and Environment (BIOR), where the data is entered into the national Fisheries Integrated Control and Information System.

This information is not widely available (i.e. not in the public domain), but each year fairly extensive data is published in a “Latvian Fisheries Yearbook” produced by the Latvian Rural Advisory and Training Centre, and distributed to organisations engaged in extractive fishing.

The data collected covers all seasons, gear types and waters. The recreational catches from use of commercial gears are included in total catch statistics, making catch data on salmon, sea trout and eel available. In addition, information on the catches of non-commercial species is collected. The species composition in the catches is similar to commercial fisheries with the same type of fishing gears.

Catches of commercial fish species, such as herring, sprat, salmon and cod in the recreational fisheries should be monitored and accounted for under the Baltic quotas allocated to Latvia. For some reason, cod data is not available to the same extent even though it is covered by the EU Data Collection Framework. As the effort and catches of cod and other species seem to be comparatively low, it would not be cost effective to implement a wide scale data collection program for the offshore recreational fishery, according to the Latvian authorities.

## Recreational catches and potential impacts

Despite regular surveys and obligatory reporting of catches at least in the recreational fisheries using commercial gears, data on catches and information about the effects on the fish populations are fairly limited.

According to an ICES report from 2011<sup>iii</sup>, recreational catches made up 38.7 % of the total catches in 2009. However, the vast majority of these fish were caught by anglers in inland waters. In coastal waters, recreational catches were only 6.7 %, with more than 2/3 taken in other recreational fisheries using commercial gears. In 2010, recreational catches in coastal waters were 6.5 %, while the share in inland waters had increased from 85.8 to 88.5 %, bringing the total share to 40 %.

Catches of cod, salmon and eel are covered by EU data collection requirements (Commission Decision (2008/949/EC), Appendix IV) and Member States should be collecting data on catches of these species.

### Baltic cod

During 2009–2010, Latvia obtained a derogation for cod sampling, making it impossible for ICES to include cod catches in the report. However, a more recent survey of recreational fishing vessels in 2012 showed very low cod catches – 78 specimens of less than 100 kg in total<sup>iv, v</sup>. Since then, no data has been collected.

From 2013, recreational fishers using commercial gear were allowed to target cod within a limit of maximum 200 kg/year/person (the catch is deducted from the overall quota allocated to Latvia and each municipality). Since 2016, a catch limit of 10 specimens  $\geq$  35 cm apply to recreational fishing, including angling. According to the Latvian authorities (“expert judgment”), the cod catches in the recreational fisheries are fairly insignificant (5–10 tonnes) compared to commercial landings (4 281 tonnes in 2012).

### Salmon and sea trout

Commercial salmon fishing in the coastal waters of Latvia has been very heavily affected by seal damage and is no longer financially viable. Together with seasonal and gear restrictions, this has led to a very limited commercial fishery, making the recreational catches more significant in terms of population conservation. As Latvia has only used less than 6 % of its salmon quota in recent years, it has swapped 3 400 salmon to Finland (2016).

In 2016, the total Latvian salmon catch, including both commercial and recreational catches, was 1 853 salmon (5.9 tonnes), which is similar to 2015, of which 1 700 salmon (4.7 tonnes) came from coastal catches<sup>vi</sup>.

The recreational catch at 989 salmon was somewhat larger (53 %) than the commercial catch of 864 salmon. In 2009, recreational catches of salmon was estimated to 3.9 tonnes, of which 0.8 tonnes was caught by anglers and 3.1 tonnes was caught in other recreational fisheries<sup>iii</sup>. Data from 2010, shows that salmon catches in the personal consumption fishery was higher than in the commercial sector, 1.9 tonnes and 1.6 tonnes respectively. For 2013 and 2014, the recreational catch documented by ICES (2016) was 2.2 tonnes.

The overall status of **sea trout** is reasonably good in Latvia, with wild sea trout populations found in about 14 rivers. In 2016, Latvia reported 5.1 tonnes of recreational catches of sea trout, of which 5 tonnes were taken in the coastal waters and 1 tonne in the rivers. The commercial catch was 5 tonnes.

## European eel

The angling for eel takes place mainly in lakes where eel is restocked. In several of these lakes, licensed angling has been introduced and catches of eel have to be reported. Anglers and other recreational fishers are allowed to keep 3 eels of a minimum size of 50 cm at each fishing occasion.

In 2014, 1 386 200 eels were released into Latvian waters. Stocking has been taking place since 1960, and over the years a total of 28.4 million glass eels have been released in Latvian waters.

Anglers occasionally catch eel in other lakes and rivers. Recreational catches of eel were estimated in 2007, combining log book data and a survey targeting anglers. The estimated catches in 2009, based on information returned with purchased licences, as well as the earlier inquiry, were 1.2 tonnes by anglers and 0.2 tonnes in other recreational fisheries. Commercial fisheries targeting eel in inland waters are allowed in 10 lakes and 19 water courses. The catches have to be recorded in logbooks and there are gear limits, but no catch limit<sup>3</sup>.

In 2010, catches of eel in coastal waters was reported to 700 kg in the commercial fishery and 200 kg in the recreational fishery using commercial gears. In the ICES report from 2016, the recreational marine catches of eel are estimated to be 100 kg in 2013 and 2014 respectively. We have not found any data on recreational catches in inland waters.

In terms of the impacts of recreational fisheries overall, the ICES report on recreational fishing included a comparison between catches in the commercial fisheries and the personal consumption fisheries in coastal waters based on 2010 data, showing that recreational catches of salmon and sea trout were roughly equal to the commercial catches. Also, about 27 % of the total catches of perch and 22 % of eel were taken in the personal consumption fisheries. For the other species listed – turbot, cod, flounder (around 18 %) and herring – recreational catches were less significant.

In Latvia's submission to HELCOM on recreational fishing, however, it seems as if the flounder fishery on the Baltic Sea coast may have increased significantly. Most of the flounder is caught fishing from the shore using rod and line. It is a seasonal activity, with most of the fishing taking place from August to December in the ICES area SD 28. The total recreational landings of flounder could be nearly comparable to landings in the commercial fishery. However, there is no EU quota for flounder in the Baltic Sea, and no funds are allocated collecting data on the recreational flounder fishery in Latvia.

## Fisheries control

Following European Commission audits, an action plan to improve the fisheries control system in Latvia was drawn up in 2013, which listed a set of actions and deadlines to redress by the 2nd quarter of 2015. However, most of these improvements were related to control of the commercial fisheries sector.

Authorised officials, such as the public environmental inspectors from the State Environmental Service and persons authorised by the local government, are responsible for the protection and monitoring of the fish resources in all Latvian waters, including coastal and territorial waters<sup>4</sup>. The activities of persons authorised by the State Environment Service are regulated by special Rules of Cabinet of Ministers<sup>vii</sup>, while activities of persons authorised by the local government are not regulated by any normative acts.

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<sup>3</sup><https://likumi.lv/ta/id/271238-noteikumi-par-rupnieciskas-zvejas-limitiem-un-to-izmantosanas-kartibu-ieksejos-udenos>

<sup>4</sup>Section 18 of the Fishery Law on Protection and monitoring of fish resources.

If the law has not been followed, these officials may confiscate the gear and/or the catch. If found liable of violations, the angler is obliged to compensate for the losses caused, generally by paying a fine.

In reality, fisheries control activities are irregular and it is unusual to encounter inspectors when fishing, leading to lax compliance, high levels of illegal catches and a shadow economy based on illegal catches (pers. comm. Alvis Birkovs, the Chairman of the Board of the Latvian Anglers Association).

## References

<sup>i</sup>Cabinet of Ministers No. 800. Adopted 22 December 2015. Angling, crayfishing and underwater hunting regulations; issued under the Fisheries Law, Article 13, § 1.3.

<sup>ii</sup>Recreational fisheries in the Baltic Sea and availability of data; HELCOM FISH2-2015, 4-1.

<sup>iii</sup>ICES PGRFS REPORT (2011). Report of the Planning Group on Recreational Fisheries Surveys (PGRFS), 2–6 May 2011.

<sup>iv</sup>ICES WGRFS REPORT (2016). Report of the Working Group on Recreational Fisheries Surveys (WGRFS), 6–10 June 2016.

<sup>v</sup>Overview of recreational fisheries in Latvia, HELCOM submission, 2015.

<sup>vi</sup>ICES WGBAST, 2017.

<sup>vii</sup><https://likumi.lv/doc.php?id=167642>: Rules on public environmental inspector status and cancellations, proposed criteria and requirements and licence model, Cabinet of Ministers Regulation No. 833, 2007.

# Lithuania

## National Summary

### **Numbers of recreational fishers: ≈ 200 000**

Up to 200 000 anglers, with 160 000 annual licences issued in 2013.

### **Effort:**

There are restrictions in terms of the number of rods and the length and number of nets and traps that can be used.

### **Licensing/access:**

A fishing licence is needed for all recreational fishing and in some waters a special fishing permit is required as well. In order to fish for salmon, sea trout, whitefish and river lamprey, an amateur fishing permit is necessary.

### **Main target species:**

At sea: perch, flounder, cod, garfish, round goby, herring, salmon and sea trout.

### **Catches:**

No recent estimates of the total catches in recreational fisheries are available. Inland catches dominate and earlier studies show around 7 % of catches come from the Baltic Sea.

Cod: 30 tonnes in 2015.

Salmon: 10 tonnes in 2015.

Eel: 4.9 tonnes in 2015.

### **Rules and regulations:**

#### ***Angling:***

- Catch per person and occasion restricted: 1 salmon, 1 sea trout, 1 whitefish and 5 turbot in the Baltic Sea. For cod there is a bag limit of 15 kg live weight per person and occasion. Effort restrictions: ≤ 2 rods and ≤ 6 hooks in sea waters
- Minimum size limits, but not for cod
- Seasonal closures, often to protect fish during spawning

#### ***Other recreational fishing:***

- In the Baltic Sea, only angling is allowed; no passive fishing gear. In inland waters, small trapnets for crayfish or dipnet are allowed.
- Underwater spearfishing is not allowed at night.
- Gear limitations, e.g. crayfish trapnets ≤ 1 metre long x 0.5 metres wide.

# Introduction

In Lithuania and its Baltic Sea waters, angling is the only recreational fishing allowed; there is no recreational fishing with commercial type, passive gears. Inland, smaller traps and dipnets are allowed, mainly in order to catch crayfish.

Non-commercial fishing is distinguished from commercial fishing by being undertaken by “means of non-commercial fishing gear”, and is split between recreational fishing and fishing activities for other purposes, such as scientific research, monitoring and fish breeding.

Angling has always been one of the most popular leisure pursuits in Lithuania. Up to 200 000 people enjoy angling, with 160 000 purchasing an annual licence in 2013<sup>i</sup>. Other sources claim angling for leisure is a past time enjoyed by around half the population, or 1.5 million people.

Four per cent (2,639 square km) of the country’s territory is covered by water. There are many places suitable for recreational fishing<sup>ii</sup>. Internal waters include the Curonian Lagoon, reservoirs, lakes, rivers and ponds. In the Nemunas River and the Curonian Lagoon pike, perch, salmon, zander, catfish, bream and many other species are found.

The most popular places for angling are Nemunas, the biggest river in Lithuania, and its tributaries, the Lithuanian part of the Curonian Lagoon and the waters surrounding Klaipeda.

## Angling

### Numbers

A survey was conducted by Vilmorus, a market research company, on behalf of the Alliance of Associations “Žuvininkų Rūmai” (The Chamber of Pisciculturists, NGO) in 2002. They found that approximately 1.5 million Lithuanian citizens (55 %) quite often take fishing rods and spend their leisure time by the rivers and lakes. Angling was most popular among men (8 out of 10) but also common among women (3–4 out of 10). The survey showed that recreational fishing was most popular among people of between 18 and 30 years of age.

According to another study from 2007, around 478 700 people are involved in recreational fishing<sup>iii</sup>.

More recent estimates put the number between 160 000 and 200 000. In 2013, 160 000 annual fishing licences were issued and according to some questionnaires there may be more than 200 000 who fish regularly.

### Licensing

A recreational fishing licence is needed for general angling. With a licence<sup>1</sup>, recreational fishing is generally allowed, provided that fishing in the water body is not otherwise restricted, and this permission is extended to foreign nationals. For certain species or areas where fishing is limited in some way, such as fishing for salmon, sea trout, whitefish and river lamprey, an additional daily fishing permit<sup>2</sup> must be purchased.

In addition, small commercial angling boats are licensed and charter vessels and other boats engaged in recreational fishing are registered with the Border Police<sup>iv</sup>.

On two days a year – 6 July and 15 August – everyone has the right to fish free of charge in all state water bodies where amateur fishing is not prohibited or limited<sup>v</sup>.

The Ministry of Environment is responsible for the distribution of recreational fishing licences. As those licences allow recreational fishing both inland and at sea, it is difficult to estimate fishing effort for each.

### Gear/fishing methods

In the Baltic Sea, rods are used from shore, from private boats and chartered boats. Ice-fishing is very popular in inland waters and in the Curonian Lagoon.

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<sup>1</sup>Lithuanian authorities call this general licence to fish in public waters an “amateur fishing ticket” or “amateur fishing permit”.

<sup>2</sup>In Lithuania, this is called an “amateur fishing card”, but we will call it a fishing permit (see section on Terminology).



## Target species

Most angling takes place in shallow water, less than 20 metres, and a range of species are targeted including cod, flounder, perch, round goby, smelt, garfish, salmon, sea trout, herring and turbot.

## Regulations

Recreational fisheries are regulated in the Rules for amateur fishing in internal waters, but they do not apply to the Baltic Sea or private waters. These are covered in special Fishing Orders.

In the Baltic Sea, catches of several species are restricted: 1 salmon, 1 sea trout, 1 whitefish and 5 turbot. There is also a 7 kg bag limit for the Curonian Lagoon, but smelt catches are unlimited since 2015<sup>vi</sup>. Any fish caught above the bag limit must be released back into the water immediately. In addition, there is a catch limit on cod – the live weight shall not exceed 15 kg per person and occasion<sup>vii</sup>.

It is prohibited to catch common nase, European weatherfish, sea lamprey, European brook lamprey, sturgeon and zope. Grayling, brown trout, sea trout and salmon may not be targeted using natural bait.

There are also gear limits. When fishing from a boat, a maximum of two fishing rods per person may be used and the total number of hooks may not exceed six. When smelt fishing on ice, however, a total of 12 hooks may be used. A double or triple hook shall be considered one hook.

Angling may not take place closer than 50 metres from any commercial fishing gear. There are also a number of seasonal fishing closures. From 15 August to 31 October, fishing for salmon and sea trout is restricted to outside 500 metres of Klaipėda Strait and the B. Šventoji river mouth. Fishing for turbot is restricted from 1 June to 31 July and for whitefish from 1 October to 31 December. Closed seasons also exist for a number of species in order to protect them during the spawning periods, for example, pike, brown trout and whitefish.

Minimum size limits apply to many species, among them salmon (60 cm), sea trout (60 cm), pikeperch and pike (45 cm), whitefish (36 cm), turbot (30 cm) and ide, vimba and bream (28 cm). Undersized fish or fish caught during a closed season have to be released immediately.

Recreational catches cannot be sold.

## Other recreational fisheries

### Numbers

Aside from limited spearfishing and inland use of smaller traps and dipnets, no other recreational fishing is allowed in Lithuania.

## Monitoring and reporting

The Fisheries Service under the Ministry of Agriculture is the main institution involved in recreational fisheries data collection, particularly the Division of Fisheries Research and Science. Data on recreational fisheries is collected for cod and eel through a combination of passes through a gate in the port of Klaipėda and questionnaires providing estimates for catch per unit of effort (CPUE), and regional surveys, respectively<sup>viii</sup>.

In the HELCOM survey of Baltic recreational fisheries in 2015, Lithuania reported that they had no monitoring and no data on recreational catches. However, according to a recent ICES report<sup>iv</sup>, Lithuania implemented a new system for data collection in 2013, including daily catch reports from licensed commercial angling vessels. This is combined with direct interviews of anglers regarding catches. Also, Lithuania now has a mandatory catch reporting system including recreational catch data<sup>ix</sup>.

In 2015, a pilot study to estimate recreational salmon catches was implemented, including personal interviews and an online questionnaire. This was done to address the fact that very low numbers were reported, despite mandatory reporting requirements to the Ministry of Environmental Protection. This survey was repeated in 2016 and 2017, but we have not been able to access any of them at the time of writing this report.

In the National Programme for data collection from 2006<sup>x</sup>, it is mentioned that the recreational cod fishery has been developing rapidly over the past 3 years, and that Lithuania will therefore analyse and provide data on recreational cod catches. It appears that this was not carried out in the end. According to the same programme, recreational fisheries targeting salmon and trout in Lithuanian rivers and along the Baltic Sea coast are not yet well developed.

## Recreational catches and potential impacts

In a feasibility study completed in 2007, the average catch per recreational fisher was estimated. According to surveys in 2005 and 2007, each fisherman would catch on average 23.2 kg per year, resulting in a total catch of 11 105 tonnes. However, Professor J. Virbicko calculated the total fish biomass in Lithuanian water, including both inland waters and the Baltic coastal zone to about 29 000 tonnes, putting recreational catches at 38–40 % of the total. This is approximately the same as the total annual production, and it is unlikely that recreational fishermen would take that much. The study concluded that when interviewed, recreational fishers may overestimate their catch. More likely, data from previous years estimating the average annual catch to be around 10 kg are closer to the truth.

The vast majority of catches are taken in inland waters. According to the above study, only around 7 % of catches are from the coastal waters of the Baltic Sea. However, in the past decade, there has been an increase in salmon and sea trout fishing in marine waters, as well as a considerable increase in cod fishing in the Baltic Sea. Ice-fishing is the best way to catch both burbot and smelt. In spring, fishermen target Baltic herring in the Klaipeda Channel.

### Baltic cod

According to ICES WGRFS (2016), recreational fishing took 30 tonnes of cod in 2015, while commercial catches were 1 975 tonnes (eastern population). With recreational catches at less than 1.5 % of total catches, it is unlikely to have a great effect on the population even if sea angling for cod is on the increase.

### Salmon and sea trout

Lithuanian salmon rivers are typical lowland ones, and many of them are tributaries in the Nemunas river system. Twelve rivers in Lithuania have salmon populations of different abundance and status. The river Žeimena and its tributaries Mera and Saria have never been stocked with reared salmon and is considered to have a pure wild population. A number of other rivers – Neris, Šventoji, Vilnia, B. Šventoji, Dubysa, Siesartis, Širvinta and Vokė – have mixed populations. Overall smolt production in the Nemunas basin is increasing very slowly, despite a range of measures taken in Lithuania to improve habitats and monitor populations.

Successful reproduction seems to depend greatly on good weather conditions, especially temperature in the rivers. In 2016, total smolt production was 36 702 salmon. It increased significantly in some rivers, such as Neris, Žeimena, Šventoji and Miniņa, and slightly decreased in others. Predation is higher than in rivers in the northern Baltic Sea.

Recreational fishing for salmon was prohibited until 2012. In 2016, the total Lithuanian catch of salmon was 19 tonnes, of which 9 tonnes were taken in coastal waters and 10 tonnes in the rivers, and all of the catches for rivers were reported as recreational<sup>ix</sup>. Of these, 3 520 salmon (17.7 tonnes) were taken in Lithuanian recreational fisheries (trolling) in the Baltic Sea (1 510 salmon) and rivers (2 010 salmon), whereas commercial fishermen only caught 344 salmon (1.3 tonnes), despite a TAC of 1 486. Also in 2016, estimated unreported catches for sea and river were 29 and 580 salmon respectively (consistent with numbers for 2015), indicating that there is a substantial uncontrolled/illegal fishery in the rivers.

According to the ICES Working Group on Recreational Fisheries, 10 tonnes of salmon were caught in 2015<sup>iv</sup>. The recent EP report estimates marine salmon catches for 2016 to be 690 individuals in recreational and 330 in commercial fisheries<sup>xi</sup>.

Recent surveys and the estimated catches reported to ICES show that the recreational fishery has a much greater impact on salmon populations than the commercial fishery. The recreational catches make up > 90 % of the total catch. Reared and released salmon are not fin-clipped, making it impossible to distinguish these individuals from the wild populations.

**Sea trout** are found in 19 rivers in Lithuania, of which 4 have wild populations while the rest are supported by releases. Estimated natural smolt production increased significantly in 2016 but is generally low, whereas the number of spawners seems to have been pretty stable over a number of years. Dam building, habitat degradation and pollution are listed as the main threats to populations; not overexploitation.

There is very little data on commercial catches of sea trout in Lithuanian waters. ICES Working Group on Baltic Salmon and Trout reports coastal catches to be around 1–2 tonnes from 1999 to 2011. After that coastal catches increase to 3–6 tonnes, with an exception 11 tonnes in 2013, and no commercial catches are reported for rivers.

We have not been able to find any data on recreational catches of sea trout in Lithuania. ICES WGBAST specifically recommends that data on recreational sea trout catches should be consistently collected, taking into account the potentially high impact of recreational fisheries on sea trout stocks and the lack of these data in several countries<sup>ix</sup>.

## European eel

The recent study carried out by the European Parliament Fisheries Committee compares recreational and commercial catches for some species, including European eel in the Baltic. According to this report, Lithuanian recreational fishers took 5 tonnes of eel in 2016. This is similar to figures provided by ICES WGRFS, with recreational catches of 4.9 tonnes in 2015<sup>iv</sup>.

ICES Working Group for eel reports inland angling catches at 1.8 tonnes for 2014, and total catches at 3 tonnes, indicating commercial catches at sea of 1.2 tonnes<sup>xii</sup>. Data from a study of recreational eel fishing in Lithuania in 2012, shows that recreational catches may comprise as much as a quarter of the total Lithuanian eel catch<sup>viii</sup>.

Since 1956, Lithuania has released a total of 50.8 tonnes of glass eels in Lithuanian waters, but the highest and most regular releases took place between 1960 and 1988. After a gap, more irregular restocking was resumed in 1994 but at much lower levels. They then stopped again in 2004-2012. Some restocking is reported since then, but there are also unaccounted exports to Lithuania from France and Portugal (small quantities)<sup>xiii</sup>.

As European eel is still in a critical condition, it is not sustainable to continue any fishing. It is indicated by the available data that Lithuanian recreational catches may be substantial but are not collected in all waters.

## Fisheries control

The Fisheries Service under the Ministry of Agriculture is responsible for the control of fisheries in marine waters.

According to the Rules for Amateur Fishing<sup>3</sup>, recreational fishers are required to show their fishing licence, relevant fishing permit and personal ID when requested. If they do not comply with the fishing rules, they may be required to compensate for any damaged caused to fish resources<sup>4</sup> and, if the owner is absent, fishing gear may be confiscated.

A survey conducted in 2004 indicated that Lithuanian citizens severely breached fishing regulations on as many as 0.7 million occasions per year. The survey looked at a range of different fisheries related violations:

1. Fishing without a valid permit
2. Catching of a larger amount of fish than allowed
3. Fishing in protected areas or during closed seasons
4. Fishing with forbidden gear
5. Unlawful parking of vehicles on the coastline of water bodies or unlawful driving of vehicles along the coastline

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<sup>3</sup>[http://lithuanianfishing.com/?page\\_id=512](http://lithuanianfishing.com/?page_id=512)

<sup>4</sup>In accordance with the calculation procedure for damage of fish resources, approved by Order No. D1-280 of the Minister of Environment of the Republic of Lithuania of 21 May 2009 (O.G. 2009, No. 63-2526).

6. Washing of vehicles near or in water bodies
7. Making of fires in inappropriate locations near water bodies
8. Littering and polluting of waters and locations near them

According to the survey, fishing regulations were violated in one of the ways above on 4 862 565 occasions over the year. As poaching is not an activity that is always truthfully reported, the actual figures referring to violations of fishing regulations may well be bigger than the survey results. The survey also concluded that young people, under the age of 29, were more likely to breach fishing rules than older people.

A comparison of the survey's data with figures provided by the fisheries agencies, merely 1 or even 0.1 % of 1 000 violations of fisheries regulations are solved. Failure to take efficient measures might lead to yet higher numbers of violations in the future. According to the data published in Lithuanian media, environmental agencies solved 4 462 violations of fishing rules in 2003 and imposed fines of – on average – approximately 53 EUR.

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- <sup>xii</sup>ICES WGEEL, 2015.
- <sup>xiii</sup>ICES WGEEL, 2016.

# Russia (Kaliningrad region)

## National Summary<sup>i</sup>

**Numbers of recreational fishers:** > 100 000

**Effort:**

Angling at sea/coast: 30 000–50 000 fishing days (survey from 2011–2016).

Angling in the Vistula and Curonian lagoons, including rivers in the catchment area: about 20 000–60 000 fishing days.

**Licensing/access:**

No licences or any special permits for fishing on common water-bodies. Only when fishing in private waters is a fishing permit required.

**Main target species:**

At sea and in lagoons: Cod, herring, roach, pikeperch, bream, perch and pike.

**Catches in recreational fisheries:**

Cod: 150 tonnes

Salmon: up to 1 000 individuals (mixed with sea trout)

Eel: 1 tonne

Herring: 150–200 tonnes

**Rules and regulations:**

- Recreational fishing with passive gears is not allowed.
- Not more than 10 hooks per one angler.
- Closed seasons – 20 April–20 June in spawning rivers and out to 500 metres from the coastline of Curonian and Vistula lagoons.
- Daily quotas for cod (30 kg), herring (15 kg), most of others species (10 kg).
- Minimum landing sizes for 13 species.
- Fishing ban on several species, e.g. sea trout, sturgeon, Thwaite shad.

# Introduction

This chapter on Russia only covers the area around Kaliningrad on the Baltic Sea coast. We have not made any attempts to collect more general information on angling in Russia, whereas in many of the other chapters we have included such more general information.

In the Kaliningrad region, recreational fishing with passive, commercial style gears is prohibited, but angling is popular – more than 10 % of the population go fishing on occasion. The region has a total population of around 1 million people.

The main fishing areas along the coast are the transboundary Curonian (RU/LT) and Vistula (RU/PL) lagoons, as well as a few rivers flowing into lagoons, for example Neman (RU/LT), Pregel, Matrosovka and Deima; inland it is mainly Vistylis Lake (RU/LT) and about 200 other small lakes and river sites. The Baltic Sea fishing area includes part of the territorial waters, a coastal zone of 2.5 nautical miles from the coast. There are very few suitable fishing places on the coast.

Recreational fishing in private ponds requiring a fishing permit is not popular and play minor role in the recreational fishery as a whole; there are no more than ten such places in the region.

## Angling

### Numbers

It is estimated that more than 100 000 people in the Kaliningrad region go fishing from time to time. There are few fishing clubs. They do not have any privileges but play a role for communication with anglers.

### Licensing

Access to recreational fishing is free, and free of charge, for all citizens. Anglers do not need a licence (registration) or fishing permit, but they have to follow the fishery rules adopted for the Western-Baltic region. Only when fishing in private waters is a permit required, but the total area of such private waters is less than 0.1 %.

However, a licence system, as well as permits to pay for fishing, is expected in the new Federal Law on Recreational Fishing currently in Parliament, and may be applied to 12 species listed in the draft text.

### Gear/fishing methods

Only angling is allowed in Kaliningrad: fly fishing, trolling, jigging, ice fishing and bait fishing with rods. Sea angling from boats is popular but expensive to most people.

### Target species

The most popular species targeted by anglers along the Baltic Sea coast are cod, salmon, flounder, garfish and herring. In the lagoons and inland water: roach, bream, pikeperch and pikeperch.

### Regulations

All recreational fishing with commercial style gears, such as nets and traps, is prohibited. Several different pieces of legislation currently govern recreational fishing in Kaliningrad:

- Federal law on fishery and protection of aquatic biological resources (2004)
- Fisheries rules for the West Fishery basin (2008)
- Federal law on aquaculture (2013)
- Some aspects of recreation fisheries are also noted in the Federal law on aquaculture (2013)

A number of rules and limitations are contained in the current laws applied to angling, including gear limitations, bag limits, minimum size limits and closed seasons. The legal framework for recreational fishing is under revision, however, and a new federal law on recreational fishing is expected to be adopted in 2018. Considering the proposed bill, it will bring substantial change.

From 2004 to 2017 there were no bag limits. The only restriction was a limitation of fishing effort – i.e. the number of hooks per person – allowing no more than 10 hooks for fishing with a rod and no more than 2 hooks (bait) for trolling.

Some bag limits are in place since 2017, but these are not based on a biological need to protect populations. The new limits were adopted in 2017 to combat illegal semi-commercial fishing. The daily catch limits are: cod 30 kg, herring 15 kg and other fishes 10 kg. For vulnerable species, the daily catch limit may be few kilos or individual fish.

Fishing for a number of species is prohibited; they are covered in the Russian Red List and include sea trout, sturgeon and shad.

Minimum landing size is used for few species: salmon 60 cm, pike 50 cm, pikeperch 46 cm, eel 45 cm, cod 38 cm, white-fish 36 cm, bream 35 cm, perch 18 cm and herring 16 cm.

In terms of closed seasons, no fishing is allowed in spawning rivers or out to 500 metres from the coastline of the Curonian and Vistula lagoons from 20 April until 20 June.

Catch and release is not common practice. Only fish smaller than the minimum landing size have to be released. The catch can only be used for personal consumption and any trade in fish from recreational fishing is forbidden.

Angling in Kaliningrad also comes with a few “natural restrictions”:

- the most productive ice-fishing season is very short – only 2–6 weeks when there is ice on the Curonian and Vistula lagoons
- spring fishing is only possible during a few weeks before the closed season begins on 20 April
- summer fishing in the lagoons and inland lakes is not very productive and is mostly a supplementary activity for relaxing
- fishing in the Baltic sea is very expensive (needing boats) and therefore not very common.
- Monitoring

Recreational fisheries are under the control of the regional branch of the Federal Fishery Agency. There is no official monitoring, but some scientific research is done by Kaliningrad State Technical University, mainly through surveys.

Currently, there is no reporting obligations. As a result, official information about the number of anglers, fishing effort (number of gears or fishing days), as well as any catch statistics is almost non-existent.

Nevertheless, despite unlimited catch opportunities for more than 10 years, scientific research has not observed any negative impacts on fish stock. During this period, stocks status and TAC:s have stayed almost on the same level with only small fluctuations, except for eel.

It should be emphasized that the situation described here is only for the Kaliningrad region of Russia. There are many other places in Russia, for example on the River Volga and in the Caspian Sea, where angling has had a clear impact on fish stocks.

## Recreational catches and potential impacts

There are a number of important recreational fisheries in the region. We cover cod, salmon and eel in more detail further down, but a number of other fisheries are popular too:

1. Fishing for **cod** in the Baltic Sea with small boats (mostly inflatables) using vertical flashing.
2. Spring fishing for Baltic **herring**. This fishery mainly takes place in one location near the town Baltisk, in the narrow strait between the Vistula Lagoon and the Baltic Sea. At its peak, this fishery is intensive and may include up to 2 500 anglers per day on weekends during the spawning migration of herring. The fishing gear used is spinning with 5–10 hooks without any bait. Total fishing effort is about 25 000–35 000 fishing days, with a catch of up to 150–200 tonnes. The commercial TAC for herring is 25 000 tonnes.
3. Ice-fishing for **pikeperch** on the Vistula lagoon. This takes place in end of December to early February when there is ice on the lagoon. In reality, it does not occur every year and the fishing period is very short, just 10–15 days on Saturday/Sunday. At its peak, it involves 2 500–3 500 anglers per day. Total

fishing effort is about 10 000–15 000 fishing days, with a catch of up to 20 tonnes. The commercial TAC for pikeperch is 120 tonnes.

4. Ice-fishing for **perch**, **roach** and **bream** on the Curonian lagoon. This fishery depends on the period with ice cover and may be zero or up to 15–20 days. At most, it may involve 3 000–8 000 anglers per day. The average catch per person is about 0.5 kg, though catches of perch may be as high as 5–10 kg. The total catch of those species is estimated to around 40 tonnes; the commercial TAC is 600 tonnes.
5. Spring fishery for **roach** and **bream** during their spawning migrations into rivers flowing into the Curonian Lagoon. This takes place during March–April with hook gear. At its peak, it involves up to 3 000 anglers per day and the total fishing effort is about 20 000–40 000 fishing days. The total catch may be about 30–40 tonnes; the commercial TAC is more than 1 500 tonnes.
6. Fishing for **smelt** in the rivers of Vistula and the Curonian watershed. This happens during a very short period of 1–2 weeks. It involves around 500 anglers and the total catch is 1–2 tonnes.
7. There are a few other fisheries which are very popular, but where the catch is limited, including fishing for salmon, sea trout and eel.

## Baltic cod

In the Kaliningrad region, most of the cod fishing in the Baltic sea takes place from small boats (mostly inflatable s), using vertical flashing. Aside from the closed season, it takes place all year, but the peak is in July to September. Common bycatch species are garfish, sea trout and salmon.

The fishing effort is about 15 000–20 000 boat days per year, with a total estimated catch of around 150 tonnes. The commercial TAC for cod in the Russian part of ICES area 26 of the Baltic Sea is 5 800 tonnes. The recreational fishery is equivalent to only 2.5 % of the TAC, and is unlikely to have any significant effect on the stock.

## Baltic salmon and sea trout

There are two main recreational fisheries for salmon and sea trout. Firstly, trolling from small boats. There are about 20 boats, resulting in a fishing effort of 200–400 fishing days per year. The annual catch is about 100–600 individuals of salmon and sea trout, roughly in 50/50 proportion.

Secondly, fishing for salmon from the coastline of the Baltic Sea with spinning gear is very popular. On any given day, there may be up to 200 anglers, but catches are low. The total annual catch may be 100–200 individual fish, taken with a fishing effort of 3 000–5 000 fishing days.

The most effective period is August to November, but it is possible until the beginning of May, when water temperature is still below 10°C. Both fisheries are very weather dependent. In 2017, for example, the number of days suitable for fishing was lower than usual.

A common bycatch in these fisheries is garfish, which has become more abundant in recent years.

In general, the total annual catch of salmons is lower than 1 000 individuals, while the commercial TAC is about 13 000 individuals. The recreational angling for salmon is likely to have only a small impact on the stock in comparison.

However, the commercial fishery for salmon has not been very active during the last 10 years, due to inconsistencies in the law in relation to the biological features of species. These inconsistencies are being addressed, but no new restrictions for the recreational fishery are foreseen.

## European eel

Fishing for eel used to be very popular in the Vistula and Curonian lagoons a few decades ago, when the stock status was much better. Now, the depletion of eel has led to a reduction in this fishery to a very low level. The estimated recreational catch is less than 1 tonne and the commercial catch is about 5 tonnes.

Overall catches in the recreational fisheries are between 1–20 % of total catches, with the highest proportions for eel and pikeperch. We conclude that angling is unlikely to have great effects on the fish populations, but that better statistics in connection with the adoption and implementation of the new Fisheries Law will be welcome.



## Fisheries control

Because there are so few restrictions on recreation fishing (i.e. 10 hooks per person; previously no daily catch quota), the number of violations of the rules are limited. The most common violations are landing sizes and fishing in closed areas and seasons.

Formally, sea trout is on the Russian Red List and fishing for this species is completely prohibited, but due to “difficulties” in distinguishing between salmon and sea trout, both those species are generally labelled as salmon.

Other Russian Red List species, such as Thwaite shad (*Alosa fallax*) and Atlantic sturgeon (*Acipenser oxyrhynchus*) are not targeted by anglers.

There are some known problems with recreational fisheries:

1. Due to the absence of daily quotas, illegal commercial catches are usually brought to the markets as “angler catches”. To stop this practice, daily quotas for anglers were adopted in 2017.
2. Some anglers sell their catch to commercial fishermen, who then sell it to consumers. This has been noted for ice-fishing of perch, pikeperch and spring fishing of herring.
3. There are poachers using gill nets. It is possible in all water-bodies and for all valuable species. However, the number of poachers is unknown.

## References

<sup>i</sup>Data from Prof. Sergey Shibaev, Kaliningrad State Technical University

# Poland

## National Summary

### **Numbers of recreational fishers: 1.5 - 2 million**

Sea anglers: around 37 000 in 2014.

### **Effort:**

Not known, but increasing.

### **Licensing/access:**

Mandatory rod licence for everyone over 14 years, as well as an area-specific permit, for inland waters. Everyone has to pass an exam to get their rod licence. For the Baltic Sea, no licence but a sea fishing permit is required.

### **Main target species:**

At sea: cod, sea trout, salmon, garfish, bream, eel, herring and flounder.

### **Catches:**

Cod (angling): 695 tonnes in 2016 (857 tonnes in 2015)

Salmon (angling): limited data available; sea catches at 2.1 tonnes in 2016

Sea trout (angling): 2.4 tonnes in 2012.

Eel (inland angling/marine): 60.9 tonnes, of which < 1 tonne at sea in 2014.

### **Rules and regulations:**

- "Rod rules" = 1 rod/person for salmonids, otherwise 2 rods
- Minimum distance between anglers to control situational fishing pressure.
- Daily catch limits for a number of species
- Minimum size limits
- Protected areas and seasonal closures
- Fishing ban for a number of species, such as lampreys, barbel and Atlantic sturgeon.

# Introduction

In Poland, angling and spearfishing are the only recreational fishing methods allowed. The country has a long history of angling for leisure. The Polish Angling Association celebrated its 65th anniversary in 2015, but organised angling is older still – 137 years.

The Polish Angling Association (PZW) has over 630 000 members but older surveys puts the number of Poles enjoying angling at around 2 000 000<sup>1</sup>. PZW organises angling events and protects the members’ interests, but it is also heavily involved in water and fish stock management, including the running of a substantial restocking programme. It controls 66 % of all rivers, 84 % of all fresh water reservoirs and 26 % of all stillwater. However, it is only involved with management and activities in inland waters.

Until the mid-1990’s, the vast majority of Polish anglers fished in inland waters, but recreational fishing in marine waters is on the increase and has already led to increasing competition and conflict between anglers and professional fishermen.

Recreational fishing in Polish marine waters can be carried out from the shore or from a boat, as an individual, a ship owner or as an organiser of a fishing event (fishing cruises).

## Angling

### Numbers

Angling is very popular in Poland and the country’s largest angling organisation the Polish Angling Association (PZW) has around 630 000 members involved in management and angling in inland waters. The total number of active recreational inland fishermen is much higher – around 1.5 million – and older studies estimate as many as 2 million involved in angling overall. There are no figures on spearfishing.

Sea angling in Polish waters started in earnest in 2011. Since then the number of charter boats has increased to approximately 30. The number of sea fishing permits issued has increased steeply in recent years, from around 10 000 in 2008 to 37 000 in 2014 (see Figure 1).

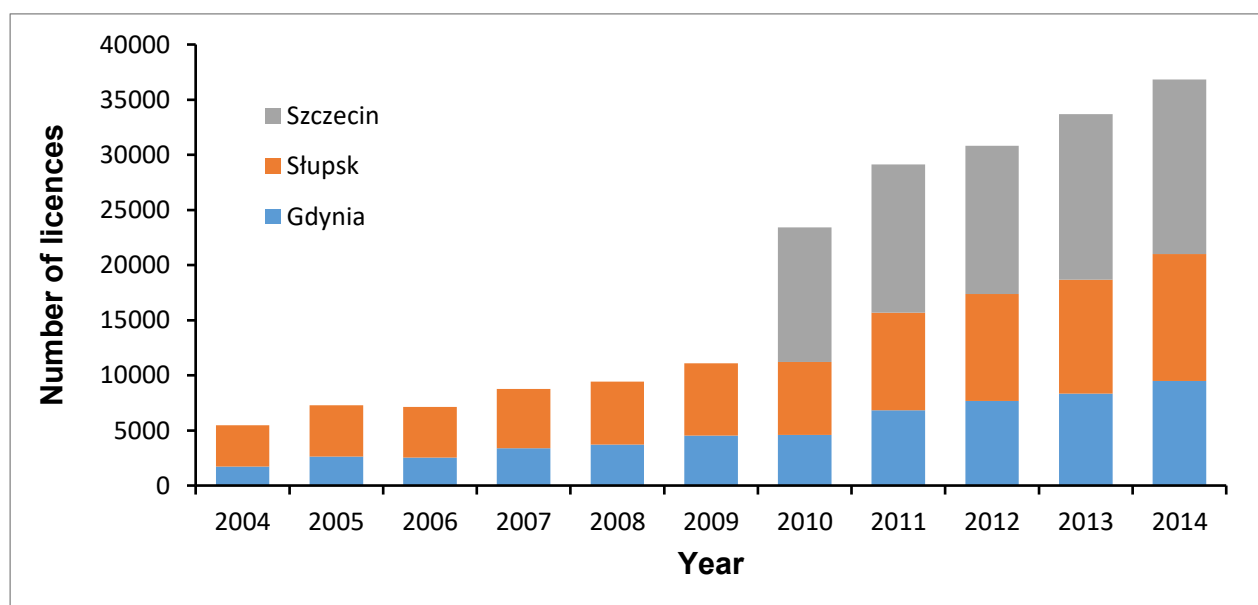


Figure 1: Number of individual fishing permits issued by the Regional Maritime Fisheries Inspectorates over a number of years. RMFI in Szczecin data available since 2010. Source: RMFI:s in Gdynia, Słupsk and Szczecin.

### Licensing

Before engaging in recreational fishing in inland waters, a rod licence has to be obtained. To get a licence you have to take a special exam about fishing rules and regulations (“karta wędkarska”). The examinations are organised by local anglers’ clubs and you only have to sit it once in your life, whereas the licence is issued

for a fixed period of either one month or one year. Information on the licence includes: full name, place of residence/address and the period that it is valid for. Children up to 14 years old do not need a rod licence but are only allowed to fish under the supervision of adults with a licence and relevant permission from the water authorities.

A recreational licence authorizes fishing in all Polish waters, but a separate recreational catch permit from the relevant water authority is needed as well. All streams in Poland are owned by the state, while stillwaters can be state owned or private owned. Polish inland waters are mainly managed by the Polish Angling Association, but also water companies, fishermen cooperatives, private persons, or other angling clubs. The permit can be issued for one or a few fishing districts and a chosen fishing method (e.g. short angling, boat angling), and the timeframe is optional (e.g. 1 day, 2 days, 1 month, 1 year). The cost of the permit depends on where, how and how long it is valid. Foreigners are allowed to fish without a rod licence, but they have to get a valid fishing permit.

Members of the Polish Angling Association (PZW) pay a subscription and a local fishing fee, which allows them to fish in local waters (and adjoining areas). The Polish Angling Association also issues fishing permits for the fisheries under its control. If you are not a member, or a foreigner, you can get a fishing permit from the Polish Angling Association, fishermen cooperatives, another angling club, a private water owner or a water company. Fishing shops also sell permits. It is optional to have a permit for coarse fishing or game fishing<sup>ii</sup>.

A rod licence is not needed for sea fishing but you have to have a valid fishing permit. Recreational catch permits for sea fishing are issued for a fee by the Regional Maritime Fisheries Inspectorates and their field units, and are valid for 1 day, 1 month or 1 year. You can also pay online and apply electronically to the relevant Inspectorate, which will then send the fishing permit back electronically.

## Gear/fishing methods

Only angling (rod fishing) and spearfishing are allowed. Trolling is increasingly popular at sea. Since sea angling in Polish waters started in 2011, the number of charter boats has increased to approximately 30.

## Target species

The most important target species at sea or along the coast are cod, sea trout, salmon, garfish, bream, eel, herring and flounder. Trolling for salmon is on the increase. In estuaries and lagoons, freshwater species such as perch, pikeperch and roach are also common.<sup>iii, iv</sup>

## Regulations

The fishing regulations in Poland are quite detailed and may differ between regions and for different fisheries. A number of different management tools are used, such as catch limits, size limits, closed areas and seasons, as well as some gear limitations.

There are daily catch limits for a number of species and general rod rules: 1 rod per person when targeting salmonids, otherwise 2 rods. Catch and release fishing is not forbidden but not very common – it is up to the relevant water authority to decide. In some Polish waters there is instead a “no kill” policy – the other extreme. Fish under the size limit or caught during a closed season must always be released quickly and carefully.

Catch limits (per day/per angler):

1. Max 2 salmon (*Salmo salar*) and/or sea trout (*Salmo trutta m. trutta*)
2. Max 2 eel (*Anguilla anguilla*)
3. Max 3 rainbow trout (*Oncorhynchus mykiss*), pikeperch (*Sander lucioperca*), pike (*Esox lucius*)
4. Max 5 tench (*Tinca tinca*)
5. Max 5 garfish (*Belone belone*)
6. Max 14 cod (*Gadus morhua*), with some exemptions. In ICES areas 22–24, the catch is limited to 5 cod, or 3 cod from February to March<sup>1</sup>.

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<sup>1</sup>Arts 7.1 & 7.2 in Council Regulation (EU) 2016/1903.

7. Max 10 bream (*Abramis brama*)
8. ≤ 5 kg herring (*Clupea harengus*)
9. ≤ 5 kg other fish species, not including round goby (*Neogobius melanostomus*).

Minimum size limits are used for 23 species in total, for example:

1. bream 40 cm
2. perch 17 cm
3. roach 20 cm
4. pikeperch 45 cm
5. whitefish 40 cm
6. pike 45 cm
7. rainbow trout 40 cm
8. eel 50 cm
9. cod 38 cm
10. salmon and sea trout 50 cm

In order protect fish species, a number of seasonal or permanent closures are in place, notably:

1. the fishery for salmon and sea trout is closed from 15 September to 30 November out to 4 nautical miles from the coast;
2. for pikeperch: from 25 March to 10 May on the area to the west of the meridian 16° 40'00" east longitude; from 10 April to 31 May, on the area between the meridians 16° 40'00" and 19° 21'00" east longitude; from 20 April to 10 June on the area to the east of the meridian 19° 21'00" east longitude;
3. for eel from 15 June to 15 July in all Polish marine waters<sup>2</sup>; and
4. the fishery for turbot east of 15°00'00 from 1 June to 31 July.

It is forbidden to target a number of species, such as lampreys, sabre carp, stone loach, twaite shad, barbel and Atlantic sturgeon (*Acipenser oxyrinchus*)<sup>v</sup>. In addition, anglers must release all salmon caught in the rivers Ina, Reda, Parseta and Słupia.

There is also a rule about minimum distances between anglers to control situational fishing pressure: 20 metres for coastal rod fishing, 50 metres for coastal spinning and 100 metres for coastal spearfishing. When using a boat or belly boat, the distance must be greater: 50 metres for rods and 150 metres for spinning.

Boats used for fishing must have registration plates visible from a distance on both sides, including belly boats<sup>3</sup>.

## Monitoring

In the past, marine recreational fishing has been marginal and therefore largely ignored by fisheries management. However, the growing popularity of sea-based sport fishing in recent years is gradually changing the perception of recreational fishing in the institutions responsible. Data on inland catches, on the other hand, have been collected by the fishing districts for several years and are considered fairly reliable.

Polish fisheries management is the responsibility of the Department of Fisheries at the Ministry of Agriculture and Rural Development. The Department of Fisheries directly supervises the work of the Regional Maritime Fisheries Inspectorates (RMFI) in Gdynia, Słupsk and Szczecin. They cover the management of the entire Polish coast.

Information about the number of individual sea fishing permits issued by each Regional Marine Fisheries Inspectorate (RMFI) and their field units has been collected since the beginning of 2000.

Since 2006, the Marine Fisheries Institute in Gdynia has been carrying out an onboard observer programme, as part of Poland's Multi-Annual Programme of Fishery Data Collection under the EU Data Collection Framework, with scientists joining 12 organised fishing cruises per year.

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<sup>2</sup>This will likely be reviewed in light of the recent EU decision to apply a 3 month closure during September to January.

<sup>3</sup>This may change as it is not a fully regulated area.

In 2016, 12 onboard observer trips were performed to collect biological data and nine Harbour Master's Offices were visited to collect data on the number of angling trips and the number of anglers onboard each charter vessel. A similar effort was made in 2014, with 11 observer trips and visits to ten Harbour Masters Offices<sup>vi</sup>.

Catch (landings, discard), individual fish length and body weight are also recorded. This data is available since 2006. It is supplemented with individual questionnaires filled in by the participants of the fishing cruises. Only the charter boats are sampled; land-based activities or the private boats are not included in the resulting estimates.

In the Baltic Sea area, ICES recently assessed that surveys are likely to provide significant underestimates of recreational catches. A number of weaknesses were identified, such as not sampling all kinds of recreational fisheries and not applying a randomized sampling scheme for charter boats, which may create biases in the estimates. Therefore, a review of the survey design was recommended in order to provide more reliable data to be included in stock assessments.

Before the new fisheries law came into force in 2015, monitoring of the recreational catches was very limited. Since then, there is an obligation to report both effort (number of rods used) and catches in marine waters. For the recreational sea fishing permits, data on the catches of species covered by a multiannual management plan are collected by the field units of the Regional Maritime Fisheries Inspectorates and can be obtained on request.

The new Law on Fisheries contains a number of changes related to sport (recreational) fishing in Polish marine waters, including a significant increase in the cost of fishing licences and more stringent reporting of the catch. According to the new law, anglers (skippers) using a boat targeting cod and eel have to write a report including species, fishing area, number of rods used, landing and the date before entering the port.

Baltic salmon is mainly caught by trolling, but so far there has been no monitoring of catches. A pilot study on the recreational fisheries of salmon and sea trout in Polish waters is planned for 2017–2018. The aim of the study is to gather information and identify potential issues in order to devise a more long-term programme for monitoring the catches<sup>vii</sup>.

## Recreational catches and potential impacts

Public information about Polish recreational catches is hard to find. There are some very old figures from a comprehensive study by the Inland Fisheries Institute and the Polish Anglers Association – most likely the largest survey on angling that has been conducted in Poland – showing average catches of 54.3 kg per year<sup>viii</sup>.

From a recent request by the Polish Ministry of Maritime Economy and Inland Waterways, we know that the total catch in the inland recreational fisheries is likely to be 10 000–12 000 tonnes, including 33 different fish species. There are no estimates for individual species but the most common are bream, roach, pike and perch.

In terms of marine recreational catches, Poland has not reported estimates for anything but cod to the ICES Working Group on Recreational Fisheries Surveys<sup>ix</sup>, despite the new monitoring programme and catch reporting introduced in 2015. Notably, no data were reported for eel or salmon despite requirements under the EU Data Collection Framework, but limited data on eel has been provided to another ICES Working Group.

Cod is usually caught from charter boats, smaller private leisure boats, or belly boat fishing, whereas species such as bream, eel, garfish and flounder are caught in shore angling.

### Baltic cod

A lot of the recreational fishing for cod takes place from boats (see above) and in the past two years (2015/2016), there has been between 9 000–10 000 registered recreational fishing trips along the Polish coast; slowly going down from around 13 000 registered trips in 2011.

It is estimated that sea anglers caught 857 tonnes of cod in 2015 and 695 tonnes in 2016<sup>ix, vii</sup>. In 2014, the sea angling catches were even larger at 1 273 tonnes<sup>d</sup>. With commercial catches in the region of 12 000 tonnes,

that is fairly substantial but of lesser importance for stock management – less than 6 %.

## Salmon and sea trout

Poland, Denmark, Sweden and Finland together have caught more than 95 % of the total Baltic salmon catch in the last several years. There have been significant issues regarding unreported and misreported catches of salmon and sea trout in Poland over a number of years. It is also known that a substantial illegal fishery takes place in Polish rivers during the salmon and sea trout spawning season (October to December).

Since 2010, there has been a sharp increase in salmon trolling along the Baltic coast of Poland. However, very limited catch data is available. A recent report for the European Parliament<sup>x</sup> listed a marine recreational catch of 2.1 tonnes and a commercial sea catch of 4.1 tonnes. According to ICES<sup>xi</sup>, however, the reported commercial catch for 2015 and 2016 was 23 tonnes, or 3 896 salmon and 3 769 salmon respectively – the vast majority of which was taken in the Baltic Sea (22 tonnes).

We also know that there have been substantial illegal catches and misreporting over a number of years. Illegal fishing takes place in many rivers using electrofishing or nets, catching large quantities. ICES WGBAST estimated Polish misreported catches in 2015 and 2016 to be 4 300 and 16 990 salmon respectively – the latter several times higher than the reported catch.

In Poland, **sea trout** are found in 25 rivers (2013), mainly in Pomerania (10) but also in the Vistula (6) and Odra (6) river systems. After many years of stocking, all Polish sea trout populations are mixed. A total of 934 000 smolts, mostly reared from spawners caught in each river, were released into Polish rivers in 2016; which is a little less than the ten-year average of 1 199 000 smolts.

A long time series is available for commercial catches of sea trout only, with total catch in 2016 at 151 tonnes, the vast majority of which was taken in marine waters. No information on recreational catches is available for that year. For 2012, however, we have both commercial and recreational catch data at 137 tonnes and 2.4 tonnes respectively. This indicates that recreational catches of sea trout are negligible compared to commercial catches, but the reliability of these figures is not known. Recreational catches for 2011 were 1.7 tonnes, and 1.6 tonnes for 2010.

## European eel

According to the report of ICES Working Group on Recreational Fisheries Surveys from 2016, the recreational eel fishery will be further investigated in the framework of the Polish Eel Management Plan (implementation of Council Regulation 1100/2007). No figures on catches were provided to the ICES WGRFS in 2017. National catch statistics submitted to ICES, however, show a recreational catch of 26.5 tonnes inland and ≤ 1 tonne in marine waters for 2015<sup>xii</sup>.

The 2015 report from ICES Working Group for European Eel (WGEEL) contains information about angling in inland and marine waters in 2014. Angling for eel almost exclusively takes place inland and catches for 2014 were reported to be 60.9 tonnes, with marine angling catches < 1 tonne.

A more recent report for the European Parliament contains estimates of average angling catches in marine waters at 720 kg (comparable to the ICES WGEEL figure above), while 31 tonnes were taken in the commercial fishery at sea. That report does not, however, provide any estimates for eel angling inland.

Also, while commercial fisheries for yellow and silver eels have been closed in some countries and has declined in many others since the joint EU management approach was introduced, there has been an increase in the yellow eel fisheries in Poland, with effort increasing by about 20 % from 2014 to 102 tonnes in 2015. The commercial catch increased further in 2016 to 138 tonnes<sup>xii</sup>.

Poland started restocking with glass eels in 1952 and carried out restocking at high levels in 1960s, 1970s and 1980s – up to 79 million glass eels. Much lower numbers were stocked in 1990s and early 2000. Last reported restocking took place in 2004, with 2.3 million. Since the 1970s, Poland has also been restocking with reared

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<sup>4</sup>ICES WGBFAS, 2016. Table on recreational catches of cod, page 16.

yellow eel and this has continued, with the latest reported release of 2.3 million yellow eels in 2014.

## Fisheries control

Polish fisheries management is the responsibility of the Department of Fisheries at the Ministry of Agriculture and Rural Development. The Department of Fisheries directly supervises the work of the Regional Maritime Fisheries Inspectorates (RMFI) in Gdynia, Słupsk and Szczecin. Together, they cover the entire Polish coast, as well as internal Polish marine waters (lagoons, river mouths and harbour waters).

1. The RMFI in Gdynia has five field units, with two operate in the Vistula Lagoon from Frombork and Sztutowo; the other three field units are in Władysławowo, Hel, and Gdynia.
2. The RMFI in Słupsk has four field units in Łeba, Ustka, Darłowo and Kołobrzeg.
3. The RMFI in Szczecin has six field units, with three operate in the Szczecin Lagoon from Szczecin, Wolin and Trzebież; the other three units located on the open Polish coast, in Dziwnów, Świnoujście and Mrzeżyno.

Inland waters are controlled by the Polish Angling Association (PZW), water-companies, fishermen's cooperatives and also by private persons. The Angling Association has around 10 000 volunteers contributing to its Voluntary Fishing Guards, which protects inland waters against poaching, in collaboration with the National Fishing Guard and the police. Every year they carry out about 100 000 patrols, controlling around 550 000 people, as well as confiscating illegal equipment.

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<sup>iv</sup>Information about Coastal recreational fisheries in the Baltic Sea countries. HELCOM FISH-PRO II, 21/04/2017. Group on Ecosystem-based Sustainable Fisheries, FISH-6, 2017.

<sup>v</sup>Amateur Fishing Rules, 2016.

<sup>vi</sup>ICES WGBFAS, 2016. Table on recreational catches of cod, page 16.

<sup>vii</sup>ICES WGRFS, 2017.

<sup>viii</sup><http://www.fao.org/docrep/005/W0318E/W0318E13.htm>

<sup>ix</sup>ICES WGRFS, 2016.

<sup>x</sup>Hyder, K., Radford, Z., Prellezo, R., Weltersbach, M.S., Lewin, W.C., Zarauz, L., Ferter, K., Ruiz, J., Townhill, B., Mugerza, E. & H.V. Strehlow (2017). Research for PECH Committee – Marine recreational and semi-subsistence fishing - its value and its impact on fish stocks, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

<sup>xi</sup>ICES WGBAST, 2017.

<sup>xii</sup>Polish official eel data from Tomasz Nermer, National Marine Fisheries Research Institute, Department of Monitoring and Logistics, Gdynia; Poland.



# Germany

## National Summary

### **Numbers of recreational fishers: ≈ 3.4 million**

174 000 sea anglers, of which around 163 000 fish in the Baltic Sea.

2 259 recreational fishermen, of which 1 642 in the Baltic Sea, registered to use passive commercial fishing gear, such as nets (2012).

### **Effort:**

Angling at sea: 1 365 000 fishing days (survey 2014/2015).

### **Licensing/access:**

Generally, both a federal fishing rod licence and a coastal fishing permit are required (except in Lower Saxony). German anglers have to pass a sport fishing exam to get a licence. In some federal states, notably both Baltic coastal States, domestic and foreign tourists can purchase a restricted tourist licence (valid 28 days) without passing an exam.

A special licence only available to people with a professional education in fisheries (mostly former fishermen) allows limited use of passive gears. Additionally, in Schleswig-Holstein, holders of a rod licence can also apply for an extra licence for minimal use of passive gears.

### **Main target species:**

Cod, flounder, plaice, dab, salmon, sea trout, whiting, garfish, perch, pike, pikeperch, herring and European eel.

### **Catches:**

Cod: 3 161 tonnes in 2015 (commercial catches 2 915 tonnes)

Salmon (angling): 3 958 (SE ± 369) individuals

Eel: 182 tonnes in Mecklenburg-Western Pomerania (inland + marine; average 2005–2015); 1.5 tonnes (4 134 individuals) in the marine recreational passive gear fishery in 2012

### **Rules and regulations:**

#### **Angling:**

- Anglers are only allowed to use rod and line and drop nets (for catching bait fish)
- Daily quotas for several species: 3 salmonids, 3 pike, 3 pikeperch (Mecklenburg-Western Pomerania); 3/5 cod (whole western Baltic)
- Minimum landing sizes for many species
- Permanent and seasonal (spawning) closures
- Fishing ban on several species: e.g. lamprey, sturgeon, shad.

#### **Other recreational fishing:**

- Gear limitations for “hobby fishermen”: ≤ 100 metres of set nets, longlines with ≤ 100 hooks, ≤ 8 eel baskets (max entrances), 1 crab basket
- Extra licence in Schleswig-Holstein: ≤ 2 fyke nets with ≤ 4 entrances
- Minimum landing sizes
- Spawning and area closures

# Introduction

Germany has a variety of fishing areas, from mountainous springs and rivers in the south of the country to cod fishing in the Baltic Sea to the north. Many of Germany's major cities have lakes nearby, for example Berlin is surrounded by over 100 lakes, rivers and water-filled open mines. There are two German States with a Baltic Sea coast, offering recreational fishing opportunities: Schleswig-Holstein and Mecklenburg-Western Pomerania.

Germany has two main categories of recreational fisheries: angling with rod and line and recreational fishermen using passive commercial fishing gear, such as gillnets, longlines and fyke nets ("hobby fishermen"), who need a special licence which is only available in Schleswig-Holstein and Mecklenburg-Western Pomerania<sup>i</sup>.

It is estimated that around 3.4 million Germans go fishing from time to time<sup>ii</sup>. There are around 174 000 sea anglers in Germany, with 163 000 fishing in the Baltic Sea<sup>iii</sup>, and 2 259 recreational fishermen, of which 1 642 in the Baltic Sea using passive commercial fishing gear, such as nets and pots.

A socio-economic study has shown that recreational fisheries in Germany had an overall benefit to the German economy of more than 6.2 billion EUR in 2002, and that they generate around 52 000 jobs<sup>ii</sup>. The number of jobs generated is in fact equal to the whole commercial fishing sector in Germany, with many tourism and gear industries depending heavily on the activities of anglers. A recent study showed that Germans spent 118 million EUR per year on recreational sea fishing in Germany<sup>iii</sup>.

## Angling

### Numbers

According to older studies<sup>ii</sup>, more than 3.4 million Germans go fishing from time to time. A more recent figure provided to ICES WGRFS is 174 000 sea anglers, of which 163 000 go angling in the Baltic Sea<sup>iv</sup>.

### Licensing

In order to carry out recreational fishing, German nationals must have a rod licence ("Fischereischein"). An additional fishing permit is also required in all German federal states, apart from Lower Saxony (bordering the North Sea). The Baltic Sea states require a coastal fishing permit (Mecklenburg-Western Pomerania) or a federal rod licence (Schleswig-Holstein)<sup>v</sup>.

A fishing licence can be obtained only after completion of a sport fishing exam (Sportfischerprüfung), before which a one week course (around 30–40 hours of supervised fishing lessons) must be attended. The exam tests the knowledge of:

- Different types of fish
- Fish biology and habitats
- Fishing equipment and its uses
- Treatment of catch
- Different types of waters (lakes, rivers, seas) and their ecology
- Relevant legislation on fish, animal welfare and nature protection

On successful completion of the sport fishing exam, the examination office will issue a pass certificate which can be exchanged at the local town hall for an official fishing licence. The pass certificate is valid for life but maintaining a valid fishing licence requires the annual payment of a licence fee or regular renewal.

Mecklenburg-Western Pomerania requires everyone over 14 years old to carry a fishing licence, whereas Schleswig-Holstein allows fishing with a hand-held rod or a drop net up to 1 m<sup>2</sup> for children under 12 but only when accompanied by an adult with a valid fishing licence.

In many German federal states, foreigners can obtain a rod licence without passing an exam, or might not even need one, but the regulations vary from state to state. Many will require "proof of competence" such as membership in an anglers' association or a valid foreign fishing licence. The rod licence for foreigners may be valid from 28 days to 1 year.

For anglers wanting to fish in the Baltic Sea, foreigners and Germans alike can buy a German tourist fishing rod licence in both Mecklenburg-Western Pomerania and Schleswig-Holstein which is valid for 28 days. Like all other anglers, anglers with a tourist fishing rod licence require an additional fishing permit from the owner of the particular water they want to fish – it may be the state, a private person or an angling club. In some coastal waters in Schleswig-Holstein, an additional permit is not needed<sup>vi</sup>.

To obtain a fishing permit, anglers must present their fishing licence to the local fishing shop or club. You may also be able to buy it online. A fishing permit may be valid for daily, weekly, monthly or annual fishing. They are specific to the respective waters. A proportion of the cost of the permit goes to the lake, sea and river authorities, who are responsible for keeping the waters clean and stocked with fish. Fishing without a valid fishing permit and/or licence is an offence.

## Gear/fishing methods

Only angling (fly fishing, trolling, jigging, bait fishing with rods, etc.) and the use of a drop net when fishing for bait is allowed. Sea angling from boats have become very popular; according to the German Anglers' Association (DAFV) there are around 5 000 angling boats today<sup>vii</sup>.

## Target species

The most popular species targeted by anglers along the Baltic coast are cod, herring, sea trout, salmon, flounder, plaice, dab, whiting, garfish, pike, perch and pikeperch.

## Regulations

In addition to national legislation, regional inshore fishery regulations apply when fishing along the Baltic Sea coast, in Schleswig-Holstein (KüFO-SH) and in Mecklenburg-Western Pomerania (KüFVO-MV).

In Mecklenburg-Western Pomerania, anglers are only allowed a limited number of rods; permit holders may use a maximum of three rods with bait at any one time, and the gear has to be supervised at all times. Each rod may have up to six hooks. In several areas along the coast of Mecklenburg-Western Pomerania, it is prohibited to angle from a moving boat, or you need to set a drift anchor.

For some species, there is a daily catch limit for recreational fisheries. In Mecklenburg-Western Pomerania, a licence holder may keep up to 3 pike, 3 pikeperch and 3 salmonids (salmon, sea trout), as well as cod quantities set according to EU law (5/3 individuals) per fishing day and person. Fish which are subject to catch limits may be stored or landed only as whole fish, with the exception of head or two fillets with skin per fish on board. There are no bag limits in the coastal waters of Schleswig-Holstein, except for the EU limit for cod.

Minimum landing sizes apply to a number of species, and the exact measures are specified in the regional legislation that is complementary to the national Fisheries Law. In Mecklenburg-Western Pomerania, for example, there are minimum size limits for 14 species, among them eel (50 cm), cod (35 cm), salmon (60 cm), sea trout (45 cm), perch (20 cm) and plaice (25 cm). Schleswig-Holstein also has minimum size limits for a number of species, but some are slightly different, such as a 40 cm limit for sea trout, 45 cm for eel and 38 cm for cod.

A number of areas along the German coast are closed to fishing, both permanent closures and seasonal closures. There are also regional rules regulating the fishing season for some species.

There is a seasonal closure in place for salmon and sea trout caught in the sea in Schleswig-Holstein: 1 October to 31 December (with exception of silver fish with loose scales). The turbot fishery is also closed from 1 June to 31 July, and the eelpout fishery is closed from 15 September to 31 January.<sup>viii</sup>

In Mecklenburg-Western Pomerania<sup>ix</sup>, angling for eel is closed in all waters from 1 December to 28 February. Angling for salmon and sea trout is closed from 15 September to 14 December.

The targeting of a number of species is banned, for example river and sea lamprey, sturgeon and allis shad in both Mecklenburg-Western Pomerania and Schleswig-Holstein.

Anyone who catches an undersized or protected fish, or one for which the season is closed, has to release it as swiftly and carefully as possible.

# Other recreational fisheries

## Numbers

In 2012, there were 1 020 active recreational fishers using passive gear in the Baltic Sea<sup>iv</sup>. Another study showed that in 2011, there were 237 recreational fishermen using passive gear (“hobby fishermen”) registered in Mecklenburg-Western Pomerania and an estimated 1 405 in Schleswig-Holstein fishing in the Baltic Sea<sup>x</sup>.

## Licensing

A special licence is required for recreational fishing with commercial passive gear, and it can only be obtained by persons with a proven professional fisheries background and education (e.g. retired commercial fishermen). The licence needs to be renewed annually (Mecklenburg-Western Pomerania) or biannually (Schleswig-Holstein). Based on traditional practices, in Schleswig-Holstein, the holder of a normal rod licence can apply for an extra licence (valid for 2 years), which allows the use of up to two fyke nets.

## Gear/fishing methods

Licensed recreational fishermen are allowed to fish with passive fishing gears for their personal consumption using a restricted number of gillnets, longlines, pots and fyke nets.

## Target species

The recreational fishery using passive gear in the Baltic Sea mainly targets herring, cod, flounder, plaice, dab, sea trout, eel, garfish, pike, pikeperch and perch.

## Regulations

The German Federal and State Governments both have legal responsibilities for sea fishing under the Basic Law of the Federal Republic of Germany (1949). However, recreational fishing in freshwater is mainly regulated and monitored by regional fishing associations (*Landesfischereiverbände*). Each federal state has one or more *Landesfischereiverband* and regulations differ between states.

In addition to national legislation, regional inshore fishery regulations apply when fishing along the Baltic Sea coast, in Schleswig-Holstein (KüFO-SH & LFischG SH) and in Mecklenburg-Western Pomerania (KüFVO-MV & LFischG M-V).

There are gear limitations in place for the recreational fishery using passive gears. According to the inshore fishery regulation of Mecklenburg-Western Pomerania, licensed recreational fishermen may use up to 100 metres of set nets (gillnets), longlines with 100 hooks, 8 eel baskets (fyke nets with  $\leq 8$  entrances), as well as 1 crab basket. In Schleswig-Holstein, recreational fishermen using passive gears are allowed to use up to 2 fyke nets with  $\leq 4$  entrances in the Baltic Sea.

There are also mesh size regulations for nets, which vary depending on the target species. For other regulations, such as minimum size limits and closed areas, see the Angling section. Recreational fishermen using passive gears are not allowed to sell their catch. They may use fishing boats but these are not registered fishing vessels as they are not allowed to sell their catches.

## Monitoring

Recreational data collection was initiated in 2002, and since 2005 there have been annual multi-species surveys of marine recreational catches in the Baltic Sea<sup>xi, iii</sup>. These are complemented by specific surveys for certain recreational fisheries, such as eel, salmon and sea trout<sup>x, xii</sup>.

In the past, there has been a strong focus on the collection of data from recreational cod fisheries for stock assessment purposes. However, in general multi-species data is collected, which is not used in stock assessments. Recently, pilot studies focusing on marine recreational salmon and sea trout fisheries in the Baltic Sea have been conducted as these specialised fisheries are not very well covered in national surveys<sup>xiii</sup>.

Parallel to national population surveys to estimate total numbers of anglers and fishing effort (mail-diary

& telephone-diary), CPUE<sup>1</sup> data is collected during onsite surveys. Since 2005, Germany conducts annual stratified random access-point intercept surveys, which covers all access points along the Baltic coast<sup>xiv</sup>. This provides Germany with one of the longest time series on marine angling catches in Europe.

A range of tools have been used over the years to estimate catches: fishing diaries, mail surveys, questionnaires, interviews, register of licence sales, onsite sampling, length and weight sampling. Effort estimates were initially provided by a mail survey (2006/2007), but have been replaced by a nationwide telephone screening, including 50 000 households, combined with a one-year fishing diary study. An on-site access point intercept survey is used to collect CPUE data. Onboard sampling of charter vessels provides length distribution data, and commercial sampling has produced a length-weight key that is used to convert this data into weight. The German authorities have five staff working with this data collection all year round.

Since 2013, data on sea angling catches of cod have been included in the scientific assessments of the western Baltic cod stock and ICES has been involved in improving the catch assessment methods. Next to northern sea bass and Baltic salmon this is one of the few fish stocks in Europe, for which recreational catches are included in stock assessment and fisheries management advice.

Marine eel catches are sampled by the national survey; however, there is no national survey on recreational freshwater catches of eel. There are limited annual catch data from licensed fishing in several inland water bodies.

Similar to the recreational rod-and-line fishery, activities of recreational fishermen using passive gears do not have to be reported, and there is no regular data on catches available. However, in 2011 the Thünen Institute of Baltic Sea Fisheries conducted a pilot study (telephone-diary survey) to evaluate the recreational eel catches with passive gears in the German waters of the Baltic and North Sea<sup>x</sup>.

## Recreational catches and potential impacts

The most popular species targeted by recreational fisheries along the Baltic coast are herring, cod, flounder, plaice, dab, sea trout, salmon, garfish, eel, perch, pike and pikeperch. We have focused on the species covered by the EU Data Collection Framework, but more readily available information on catches of other species would also be valuable.

### Baltic cod

Germany has conducted regular surveys of the recreational catches of western Baltic cod since 2002 and annual surveys since 2005, and now has access to one of the longest time series of recreational catches in the Baltic region. In recent years, German recreational catches of western Baltic cod have been roughly the same as the German commercial landings. In 2015, German catches of western Baltic cod were reported as 2 915 tonnes in the commercial fisheries and 3 161 tonnes in the recreational fisheries<sup>xv</sup>.

Recreational figures reported to ICES WGFRS (2016) are 2 962 tonnes (2 430 020 specimens), with 410 tonnes (1 138 514 specimens) released. The catch of western Baltic cod in German recreational fisheries represented one quarter of the total catch in 2015. Cod are mainly caught from private and charter boats; only to a small degree from land-based fishing activities. Catches are quite variable from year to year and largely driven by fluctuations in catch rates, underscoring the importance of annual data collection<sup>xi</sup>.

In 2006, a survey was carried out by the German Anglers' Association (VDSF)<sup>xvi</sup>. According to them, around 175 753 anglers spent 767 330 days out fishing (4.4 days/angler). The average catch of cod was 1.7 kg per day per person, equal to 7.4 kg/year. That brings the total cod biomass removal to around 1 300 tonnes per year, a significantly lower figure than the other study but still substantial. There are several other studies<sup>xvii</sup> on cod and recreational fishing in Germany and numbers vary, underlining the need to standardise assessments across the region.

German recreational catches of cod are already being considered when setting the annual fishing

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<sup>1</sup>Catch Per Unit Effort

opportunities for the western stock. This is good since recent recreational catches are substantial, but data is now urgently needed from the other countries, in particular Sweden and Denmark<sup>xviii</sup>.

## Salmon and sea trout

The possible historic existence of wild Baltic salmon populations in German rivers is a matter of controversy. There are no wild salmon populations in German rivers running into the Baltic Sea and no significant natural salmon smolt production. For natural reasons, therefore, there is no German salmon fishery in rivers entering the Baltic Sea.

Salmon is mainly caught in the marine waters of the Baltic Sea using trolling. Marine recreational catches have not been monitored historically and regular collection has only started recently.

ICES data on catches<sup>xiii</sup> shows that while commercial catches have been decreasing steadily since early 1970s and been at or below 10 tonnes since 2010, recreational catches have gone up. In 2016, 8.1 tonnes of salmon (1 616 individuals) were caught in the commercial fishery and 3 958 individuals in the recreational fishery. Regardless of yearly variations, it is safe to say that recreational catches are higher than commercial catches.

Regarding **sea trout**, according to ICES Working Group on eels, the German potential rivers and wild populations have not yet been properly evaluated and the status of wild populations is unclear<sup>xiii</sup>. That said, there is some ongoing monitoring of recruitment and stocking in both Mecklenburg-Western Pomerania (since 2002) and Schleswig-Holstein (since 2013), and the latest numbers indicate that parr abundance was higher in 2016 than in 2015. In 2016, 985 000 fry were released.

We have not been able to find any information about recreational sea trout catches, despite the mentioning of a sea trout survey in 2014 in one of the ICES reports, but commercial catches in recent years have been 12–14 tonnes.

## European eel

Catch data for recreational eel fishing is not regularly collected by Germany and are therefore not available for most years. However, survey data for eel in 2012 put Baltic Sea catches at 1.5 tonnes (or 4 034 specimens), with 0.1 tonnes (1 577 specimens) released. In the same year, North Sea recreational catches were estimated to 4 tonnes. This brings total recreational sea catches of eel to 5.5 tonnes. We have not been able to find much information on inland catches. ICES WGEEL (2016) reports that German eel catches overall have gone down with 20–30 %. This was supported by a recent national presentation on German eel fishing in Stockholm<sup>xix</sup>, showing a 36 % reduction from 2005 to 2013 in the combined recreational and commercial catches.

Catch estimates for eel in Mecklenburg-Western Pomerania alone were also provided, including total recreational catches (inland and coastal) of 182 tonnes, as well as commercial catches of, on average, 59 tonnes in 2005–2015. To compare, total eel catch in all sectors in all of Germany 2013 were 511 tonnes but we cannot separate commercial and recreational catch and we don't have more recent data<sup>xx</sup>.

Germany has been carrying out restocking of glass eel and yellow eel (ongrown eel from German "aquaculture") since the 1950s, and releases have been substantial for many years. According to ICES<sup>xix</sup> records of restocking of glass eels in the years 1947-2015, Germany has released a total of 842.8 millions of glass eels, second only to Poland among the 14 countries listed, and accounting for almost 23 % of total glass eel restockings.

Considering that all glass and yellow eels come from the same European eel population, which is classed as Critically Endangered by the IUCN and by HELCOM, restoration and recovery efforts such as releasing eels in combination with a substantial recreational and commercial fishery cannot be seen as sustainable.

# Fisheries control

Germany has several types of inspectors, each with their areas of responsibility: federal inspectors control commercial and recreational fisheries in the EEZ<sup>2</sup>; state inspectors control both commercial and recreational fisheries in freshwater and coastal waters; and finally voluntary inspectors control recreational fisheries only in freshwater and coastal waters. The inspectors do random controls on shore, in harbours and from boats at sea, but they also act on tips from the public.

The control effort is generally higher in inland waters than in the sea, possibly due to differences in ownership – inland waters often belong to angling clubs or private entities. However, control activities on marine recreational fisheries have recently increased due to the introduction of a bag limit for cod. Schleswig-Holstein is planning to recruit additional inspectors, particularly for recreational fisheries control.

If you are caught breaking the fisheries regulations, penalties can be high. Failure to present a valid fishing licence when inspected is taken seriously and may lead to huge fines, up to several thousand Euro, or even two years of prison in serious cases.

There is no information on the number of inspectors and the number of different control agencies and the federal system in Germany makes it quite difficult to compile such data.

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<sup>2</sup>Exclusive Economic Zone

# Denmark

## National Summary

### **Numbers of recreational fishers: ≈ 500 000 in total**

Angling licence: 191 940 in 2016, of which 140 22 annual angling licences.

Recreational licence (including angling): 31 502 in 2016.

### **Effort:**

Angling at sea: about 70 % of total fishing days.

### **Licensing/access:**

Anyone between 18–65 years needs a licence for angling or other recreational fishing in Danish territorial waters. The licence fee is higher for a recreational licence than for an angling licence, but the former is also valid for angling.

### **Main target species:**

Anglers at sea: Sea trout, garfish (*Belone belone*), mullet, cod, salmon and various flatfish species.

Other recreational fisheries target mainly eel and flounder.

### **Catches:**

Cod: 1 272 tonnes in 2015 (7 % of total Baltic catches)

Salmon: 8 000 salmon in 2016 (40 tonnes) (45 % of total Baltic catches)

Eel: 164 tonnes in 2016; 94 % at sea (38 % of total catches in 2016)

### **Rules and regulations:**

#### ***Angling:***

- Daily quotas for cod: 3 or 5 per day, depending on season.
- Minimum landing sizes for many target species.
- Permanent and seasonal closures.
- Local regulations with no take zones for pike and bag limits for sea trout

#### ***Other recreational fishing:***

- No nets closer than 100 metres from low water mark (some exceptions).
- Gear limitations regulating the number of hooks and nets used.
- Minimum landing sizes for a number of species and some mesh size regulations
- Seasonal and permanent area closures, as well as closures around estuaries.
- Gears must be clearly marked and carry flags or buoys for visibility.



# Introduction

Denmark has an extensive coastline for sea and deep sea fishing, as well as many freshwater rivers, streams and lakes. Fishing is possible year-round, from angling in the long summer evenings to winter fishing in lakes and sea. Around 70 % of the angling takes place in marine waters.

More than half a million people engage in recreational fishing activities in Denmark and the industry employs around 2 500 people, creating a turnover of approximately 3 billion Danish Kroner (DKK; equivalent to 400 million EUR)<sup>i</sup>.

Recreational fishers have to follow many of the same regulations as commercial fishermen, regarding minimum size limits and seasonal closures. They are not allowed to sell their catch<sup>ii</sup>.

## Angling

### Numbers

According to a vision for recreational fishing by the Ministry of Environment and Food of Denmark, recreational fishing is an important past time for around 500 000 Danes. In 2016, a total of 191 940 anglers had the compulsory licence issued. Of those, 140 222 were annual angling licences, 21 187 weekly angling licences and 30 531 daily angling licences. In total, the number of licences has remained similar since 2005. However, the short-term licences have become more popular in recent years. An additional 31 502 recreational licences were issued in 2016, which are also valid for angling<sup>iii</sup>. Around 70 % of the angling takes place in marine waters.

### Licensing

A fee-paid state licence is required for recreational fishing in Danish territorial waters<sup>1</sup>, with some exemptions for private land owners fishing in their own waters and for fishing in put-and-take lakes. Anyone between 18–65 years needs a licence for angling. Anyone under or over that age can fish for free. Foreigners are welcome to angle in Denmark, but they have to buy a fishing licence as well. When you are fishing, you should be able to provide your personal licence number as well as means to identify yourself.

An angling licence can currently be purchased for 1 year (185 DKK), 1 week (130 DKK) or 1 day (40 DKK)<sup>iv</sup>. The angling licence is always personal and gives the holder the right to use rod and reel, hook, line and sinker. Holders of an angling licence may also fish in the territorial seas.

Fishing rights in natural lakes and streams are nearly always private and will require permission from the owner and often an additional fishing permit. Fishing rights in private waters are often let to local angling clubs, which issue day or week-long fishing permits.

### Fishing gears

Angling is defined as fishing with light, hand-held tackle, mainly rod and reel. In sea angling, spinning, fly fishing and trolling are most popular.

### Target species

Sea trout is perhaps the most popular target species in the angling community, but anglers also target garfish (*Belone belone*), mullet, cod, salmon and various flatfish species. They also catch whitefish, pike, pikeperch, perch, brown trout and grayling, but primarily in freshwater.

### Regulations

In general, there are no limits for angling but in certain coastal areas there is a restriction for trolling, limiting fishing to max two rods per person.

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<sup>1</sup><http://eng.lbst.dk/fisheries/recreational-fisheries/#c16086>

Since 1 January 2017, recreational cod catches are restricted to 5 cod per day and fisher, and in February and March further reduced to 3 cod per day due to the cod spawning period. This applies to all recreational fisheries.

There are Minimum Size Limits for many of the species targeted in recreational fisheries: all the flatfishes (23–26 cm), hake, sea trout (40 cm), salmon (60 cm), European whitefish (34/36 cm), whiting, haddock (27 cm in the Baltic Sea), cod (35 cm), saithe (30 cm in the Baltic Sea), perch (20 cm), pike (60 cm) and eel (40 cm).

A few Baltic species have other protective measures in place, such as seasonal or permanent closures. For example, sea trout and salmon (countrywide closure from 16 November to 15 January), European whitefish (countrywide closure from 1 November to 31 January) and pike (countrywide closure from 1 April to 15 May) are subject to area and/or seasonal closures. The above species as well as lobster are also subject to local closures. In addition, there are conservation zones – a radius of 500 metres – around estuaries of rivers and smaller waterways flowing into the sea aimed at protecting migrating spawners<sup>v</sup>.

Fish shorter than the minimum size limit, or caught during a closed season, must be returned to the water immediately, regardless of whether it is alive, hurt or dead. If alive, it should be released as carefully as possible to increase the chances of survival. The EU discard ban does not apply to recreational catches.

## Other recreational fisheries

### Numbers

In 2016, 31 502 recreational licences were issued. The numbers of recreational licences (also valid for angling) have been fairly stable since 2005<sup>iii</sup>.

### Licensing

A fee-paid state licence is required for recreational fishing with passive gears in Danish territorial waters; the fee is slightly higher than for angling. However, the holder of a recreational licence can also engage in angling. Holders of an official recreational fishing licence may fish free of charge in the territorial seas.

A licence is always needed for recreational fishing with passive gears, regardless of age. Persons under 12 years are not allowed to engage in recreational fishing with passive gears. The purchases of fishing licences in 2016 were estimated to bring in 41 million DKK to the State; money that will be used to fund fish stock conservation.

### Fishing gears

Other recreational fisheries in Denmark use mainly gillnets and fyke nets, but you are allowed to use hook and line, nets, fish traps and fishing pods. Subject to a written application, you can also use something called a shrimp trap pole. With an angling licence, you may also engage in underwater harpoon fishing or spear fishing.

### Target species

Primarily eel (fyke nets) and flounder (gillnets).

### Regulations

Recreational fishers using passive gears have to follow many of the same regulations as commercial fishermen, regarding minimum size limits and seasonal closures. The catch cannot be sold.

For recreational fisheries using passive gears, there are limits on the number of gears that can be used. The passive gear licence allows the use of up to six of the following gears at any time: hook and line with a maximum of 100 hooks, nets (gillnets), traps (fyke nets) and pots, but never more than three nets at any one time with a maximum total length of 135 metres.

All recreational gears must be clearly marked with a yellow tag carrying the owners name and address, as well as the licence number (“fritidsfiskernummeret”). The gear must also carry flags, light reflectors or buoys, making them clearly visible to other water users.

Generally, nets may not be used closer to land than 100 metres from the low water mark, in order to protect migrating salmon and trout, but there are some local exceptions. In some parts of the country, fish traps have to be fitted with grids or selection panels in order to protect birds and marine mammals, mainly otter (*Lutra lutra*).

There are seasonal closures of certain fisheries, when some gears cannot be used. For example, fish traps are forbidden at sea from 10 May to 31 July, long lines are forbidden from 1 May to 30 September and recreational nets with mesh sizes between 50–65 mm are forbidden from 1 July to 15 November.

Everywhere in Denmark, estuaries of rivers and smaller waterways flowing into the sea are closed to fisheries in a 500 metre radius, in order to protect migrating fish species and secure spawning. Locally, the radius may be larger than 500 metres. In larger estuaries, the protection is in place all year around, but if smaller than 2 metres it is a seasonal closure from 16 September to 15 March.

Minimum size limits and other area closures also apply – see section under Angling.

With an angling licence, you may also engage in underwater harpoon fishing or spear fishing. Light can be used in underwater fishing, as long as the following rules are applied<sup>vi</sup>:

- You can target any free-swimming fish over 45 cm and flatfish over 35 cm, except for pike, conger eel, salmon and European eel.
- Fish smaller than the minimum size limit and/or caught during a closed season shall be released as soon as possible, whether alive, injured or dead (as for angling).
- Like other recreational fisheries, spearfishing is prohibited within a 500 metre radius of an estuary.

## Monitoring

Estimates of recreational catches are gained through regular surveys, usually a combined approach targeting different subgroups.

In 2009, an interview survey was carried out by DTU Aqua in cooperation with Statistic Denmark. In the survey, recreational fishing was separated into 1) anglers (with rod and reel) and 2) passive gear fishing (fyke nets and gillnets). The survey in 2009 indicated that 23 % and 28 % respectively of all anglers and passive gear fishermen fished without licence, although with a lower effort than fishermen with an annual licence.

Another survey consisting of two sets of interviews in July 2011 and January 2012 was conducted in order to estimate the Danish recreational catches of cod, eel and sea trout in 2011. Recreational fishing was separated into anglers (with rod and reel) and passive gear fishing (fyke nets and gillnets). In 2011, a total of 157 762 anglers and 33 911 passive gear fishers had the annual licence required for marine recreational fishing issued.

More current monitoring consists of interview surveys (phone and internet-based) of two subsets of people: (1) those who have been issued a recreational fishing licence (the “licence list survey”) and (2) a subsample of the Danish population (the “omnibus survey”). The “licence list survey” targeted those with a valid annual fishing licence, not including tourists and those fishing without a licence. The “omnibus survey” was intended to estimate the number and effort of fishers who fished without a valid licence. In this survey, no questions related to harvest were asked. Since 2013, the annual licence list recall survey is webbased only, with no results for the group that did not respond, and estimates should therefore be interpreted with some caution.

A third group – a reference panel consisting of 75 fishers – provide data on the average size of eel, cod and sea trout. The recreational catches of these species are then estimated relative to the commercial catches. Data is available on cod and eel catches since 2009 and for sea trout since 2010. Data on shark catches was collected for the first time in 2014, with only two respondents claiming to have caught them.

Recreational cod catch data (numbers and weight) from 2009 to 2015 are available (ICES WGBFAS, 2016), making it the third longest available time-series in the Baltic Sea. Catches of salmon and sea trout are not properly monitored, but some estimated catch numbers exist, collected mainly through the webbased licence list survey.

## Recreational catches and known/potential impacts

Marine recreational fishing is a popular outdoor leisure activity – more than 70 % of Danish anglers fish in marine waters – and yet, the impact on the targeted stocks is often unidentified.

Anglers tend to target sea trout, garfish (*Belone belone*), mullet, cod, salmon and various flatfish species. Passive gears are used by other recreational fishers to catch eel and flounder.

Bluefin tuna has started showing up in Danish waters again and has created a debate about possibilities to catch them, but any targeted fishery is strictly prohibited as Denmark does not have a quota.

### Baltic cod

A number of surveys have been carried out in order to estimate the recreational catches of cod and data is available from 2009 to 2015<sup>vii</sup>. An interview survey in 2009, estimated cod catches to be around 20 tonnes caught in fyke nets (mainly August–October), 212 tonnes in the gillnet fishery (mainly February–April), and almost 900 tonnes by anglers (the highest catches from the Sound) – a total catch of 1 132 tonnes.

A survey carried out in 2011/2012, showed cod catches to be close to 1 300 tonnes. This survey indicated that approximately 4.5 % of the total cod catch in Danish waters (commercial landings plus recreational harvest) was taken in the recreational fishery. There were large differences between different areas, and Kattegat and the Sound had by far the largest share of the total yield (51 % and 34 %, respectively).

Another survey in 2014/2015, showed cod catches to be around 1 272 tonnes (2015), with 1 222 710 specimens released. In the Danish response to HELCOM in 2016, the annual cod catch was reported to be 1 231–1 666 tonnes (mostly angling). The commercial catch (eastern and western stocks combined) in 2016 was 16 275 tonnes, resulting in recreational catches at 7 % of the total catch.

According to the recent European Parliament report<sup>viii</sup>, Baltic recreational cod catches in 2015 were 1 290 tonnes, with 8 716 tonnes taken in the commercial fishery, resulting in 13 % of the total catch.

### Salmon and sea trout

Recreational catches of salmon and sea trout are mainly taken by anglers, and trolling is the most common method. In 2016, total Danish catches were 17 684 salmons, with recreational catches estimated to 8 000 salmons ( $\approx$  40 tonnes) and commercial catches at 9 684 salmons (51.1 tonnes). Recreational catches were then around 45 % of the total and almost equal in terms of management of salmon populations to commercial catches<sup>ix</sup>.

According to the recent European Parliament report, the Baltic recreational salmon catches were 12 000 salmons, compared to 18 000 salmons in the commercial fishery, comprising 40 % of the total catches.

In 2015, recreational Baltic salmon catches were estimated to be 10 562 specimens, with another 5 963 specimens released<sup>x, 2</sup>. These figures are based on a voluntary survey and are not likely to be overestimates. In the same ICES WGRFS report from 2016, Baltic salmon catches are said to be around 3 000 individual salmon per year<sup>3</sup>, including recreational fishing with longlines.

Since 2010, catch estimates for **sea trout** also exist. The 2011/2012 survey included an estimate of 400 tonnes of sea trout (including freshwater catches), mainly caught by anglers. This accounts for 88 % of the total harvest.

### European eel

Recreational eel catches are also estimated since 2009. According to the 2009 survey, close to a 100 tonnes of eel were caught in fyke nets. It was assumed that eel harvested by anglers was insignificant. In 2010, 116 tonnes of eel was caught – which amounted to 22 % of total catches.

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<sup>2</sup>The figures for harvest and release of salmon are based on only 37 and 9 respondents respectively. ICES WGRFS (2016). Table A3.1, page 34.

<sup>3</sup>This other estimate for salmon catches is supposedly based on surveys of catches during major Baltic trolling competitions in 2014–2015. ICES WGRFS, 2016.

In the Danish response to HELCOM in 2016, the annual eel catch was reported to be 80–116 tonnes (mostly taken in passive gear), which is around 20 % of the total yield (468 tonnes). In the ICES WGRFS (2016), the catch for 2015 is estimated to 71.2 tonnes, with 28 867 individuals released.

The report for the European Parliament includes catch data for eel both in the Baltic and the other sea areas. Baltic recreational catches were 73 tonnes, with commercial catches at 267 tonnes, resulting in a recreational catch at 21 % of the total Baltic catch. However, since all European eel comes from the same population, it is relevant to look at total catches in all sea areas, which would be 121 tonnes recreational catch and 304 tonnes commercial catch, resulting in a total catch of 425 tonnes, of which 28 % were recreational.

The recreational catch of eel in Denmark is substantial. In 2016, the total recreational catch of eel was 164 tonnes (94 % in marine waters) and the commercial catch was 264 tonnes (95 % in marine waters), resulting in a recreational catch at 38 % of total catches. With the European eel population listed as endangered by IUCN and HELCOM, this cannot be considered sustainable<sup>xi</sup>.

## Fisheries control

The Danish Agrifish Agency under the Ministry of Environment and Food of Denmark is responsible for control and enforcement in both commercial and recreational fisheries.

An annual report summarising the results of the control effort for both commercial and recreational fisheries is available on the Ministry website<sup>xii</sup>. According to the report for 2016, there are two focus areas for control of recreational fisheries: the gear used and the people fishing.

In 2016, the Danish Agrifish Agency used drones to assist the control of recreational fishing. The trial showed that a flyover over shallow areas and closed/protected areas provides a good overview of the fishing activities. It was especially useful for shallow water areas, which may be challenging to inspect by boat. The drones provide information that then informs decisions about future control efforts, such as indications that further control efforts are needed. The use of drones will be further developed in 2017.

The Danish Ministry has set out to improve and increase control of recreational fisheries – an initiative linked to the 2014 package supporting further development of the Danish recreational sector. However, there was no nationwide inspection campaign targeting recreational fishing during 2016, only the regularly planned controls based on an underlying risk assessment.

The number of controls in the recreational fishery with passive gears increased by 3 % from 1 990 in 2015 to 2 056 in 2016, but were fewer than in 2014. During the controls, 6 322 fishing gears were inspected – an increase of 1 % compared to 2015. In addition, 1 600 inspections of fishing licences were carried out – an increase of 68 licences, or 4 % compared to 2015.

In that same year, 2 970 inspections of fishing licences for angling were carried out – a 13 % decrease compared to 2015. In 2016, 190 987 sportfishing licences were issued, the vast majority of which were annual licences. The inspection rate is therefore around 1.5 %. It is not clear from the report how the inspections of licences were carried out, whether it was in the field or by other means.

The report also does not detail how many of the inspections were carried out in the sea or fresh water respectively. However, 463 freshwater inspections focused on controlling fish passages, restocking and electric fishing were carried out; 49 inspected restocking efforts (↓ 16 compared to 2015) and 15 electrical fishing (↑ 10 since 2015).

The summary of violations in the report does not include a lack of a valid fishing licence; it also does not specify whether the violation was carried out in the other recreational fisheries or angling, which would have been really useful from a management perspective.

In 2016, a total of 538 violations were registered and 1 609 gears were apprehended, of which 38 % gillnets, 39 % fish traps and 23 % other gears. From this it can be deduced that a majority of the violations filed were in the other recreational fisheries. The most common reason for gear apprehensions was a lack of tags showing who it belonged to. Gear violations have decreased significantly since 2014 (1 609 impounded compared to 2 365 in 2014), but the Danish Agrifish Agency still considers the level of illegal gear to be high.

Overall, gear related violations, such as tagging, number of gears and illegal gears, dominated at 69 %. Compared to 2015, there was a shift from violations related to illegal gear to instances of fishing in closed areas or placing nets too close to the shore (< 100 metres).

Of the controlled angling licences, 108 people had not purchased a licence – 3.6 % of those inspected, a decrease from 5.7 %

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<sup>ii</sup>Pawson, M.G., Glenn, H. & G. Padda (2008). The definition of marine recreational fishing in Europe. *Marine Policy* 32 (2008): 339–350.

<sup>iii</sup>Tabel 60 - Fisketegn 1 Udstedte fisketegn efter type og område. Annual statistics over the issued angling and recreational fishing licences from 2005-2016. Ministry of Environment and Food of Denmark. [http://lbst.dk/fileadmin/user\\_upload/NaturErhverv/Filer/Fiskeri/Kort\\_statistik/Statistik2/Tabel60\\_Udstedte\\_fisketegn\\_efter\\_type\\_og\\_omraade.pdf](http://lbst.dk/fileadmin/user_upload/NaturErhverv/Filer/Fiskeri/Kort_statistik/Statistik2/Tabel60_Udstedte_fisketegn_efter_type_og_omraade.pdf)

<sup>iv</sup>Guide to angling licences. Ministry of Environment and Food of Denmark. [http://lbst.dk/fileadmin/user\\_upload/NaturErhverv/Filer/Fiskeri/Lyst-fritidsfiskeri/Orientering\\_om\\_fisketegn\\_andre\\_sprog/Vejledning\\_Engelsk.pdf](http://lbst.dk/fileadmin/user_upload/NaturErhverv/Filer/Fiskeri/Lyst-fritidsfiskeri/Orientering_om_fisketegn_andre_sprog/Vejledning_Engelsk.pdf)

<sup>v</sup>Regler for lyst- og fritidsfiskeri. <http://lbst.dk/fiskeri/lyst-og-fritidsfiskeri/regler-for-lyst-og-fritidsfiskeri/>

<sup>vi</sup><http://www.sportsdykning.dk/page.php?id=26&page=750>

<sup>vii</sup>ICES WGBFAS (2016).

<sup>viii</sup>Hyder, K., Radford, Z., Prellezo, R., Weltersbach, M.S., Lewin, W.C., Zarauz, L., Ferter, K., Ruiz, J., Townhill, B., Mugerza, E. & H.V. Strehlow (2017). Research for PECH Committee – Marine recreational and semi-subsistence fishing - its value and its impact on fish stocks, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

<sup>ix</sup>ICES WGBAST (2017).

<sup>x</sup>ICES WGRFS (2016). Table A3.1, page 34.

<sup>xi</sup>[http://lfst.dk/fileadmin/user\\_upload/NaturErhverv/Filer/Tvaergaende/Kontrol/Kontrol-fiskeri/2017-03-29-Fiskerikontrol2016.pdf](http://lfst.dk/fileadmin/user_upload/NaturErhverv/Filer/Tvaergaende/Kontrol/Kontrol-fiskeri/2017-03-29-Fiskerikontrol2016.pdf)

<sup>xii</sup>WGEEL Country Reports 2016/2017, [http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2017/WGEEL/WGEEL\\_CRs\\_2017.pdf](http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2017/WGEEL/WGEEL_CRs_2017.pdf)

## National Summary

### **Numbers of recreational fishers: ≈ 1.4 million**

Effort: 10.3 million fishing days

3.4 million fishing days at sea (both east & west coast).

10.1 million fishing occasions with handheld gear (angling); > 90 % of effort.

1.1 million fishing occasions with passive gears (< 10 %).

### **Licensing/access:**

Recreational fishing does not require a licence and fishing with hand held gears is free all around the Baltic coast and in the five largest lakes. It is also free to use a limited number of passive gears in the same areas. Special permits may be required in private waters.

### **Main target species:**

Pike, perch, trout and herring.

### **Catches:**

Cod: 190 tonnes in 2016 (3.2 % of total Baltic catches)

Salmon: 134.4 tonnes in 2016, of which 1 603 salmons (or 16.4 tonnes) at sea (around 24 % of total catches and 7.2 % of total Baltic catches)

Eel: no recreational fishery allowed; exemptions above 3 hydropower turbines

### **Rules and regulations:**

#### **Angling:**

- Daily quotas for cod and pike, as well as salmon and sea trout in some areas.
- Minimum sizes limits for pike, pikeperch, grayling, salmon, trout and cod. For brown trout also maximum size limits.
- When trolling in the Baltic Sea, salmon with an intact adipose fin has to be released.
- Protected areas and seasonal closures.
- No angling for eel is allowed.

#### **Other recreational fishing:**

- Numbers of nets, pots and hooks are restricted in public waters.
- Nets can be up to 180 metres.
- Minimum and sometimes maximum size limits for a number of species
- Mesh size rules for nets.
- Protected areas and seasonal closures, as well as depth limitations around estuaries.
- Passive gears must be clearly marked with "F" and for visibility.

# Introduction

Recreational fishing is a major leisure activity in Sweden. Sweden has over 1.4 million recreational fishers, of which less than a third are women. The vast majority engage in angling, with fewer recreational fishers using passive gears, and not only do they fish in Sweden but many travel to fish elsewhere. You do not need a licence for recreational fishing in Sweden – the national legislation contains a fundamental right to fish.

In 2016, recreational fishers spent 10.3 million days fishing, of which 3.4 million days were on the coast or at sea<sup>i</sup>. Of the 11.2 million occasions of gear use, less than 10 % were use of passive gears (10.1 million occasions for handheld gear and 1.1 million for gears such as nets and pots).

Recreational fishing mainly takes place inland, in rivers and lakes – around 67 %. However, of the total amount of fish landed in 2015, 43 % was caught at sea and around 34 % of the total was taken with passive gears. The total catch was significantly higher, but over 1/3 was released again.

Recreational fishing is also a source of jobs and income for businesses: in 2016 recreational fishers spent 6.2 billion SEK<sup>ii</sup>.

## Angling

### Numbers

Sweden has over 1.4 million recreational fishers. The vast majority are anglers (more than 90 % of the effort is with handheld gear) and the majority are men (1 million).

### Licensing

You do not need a licence to carry out recreational fishing in Sweden. The national fisheries legislation contains the fundamental regulations about the right to fish. For fishing with handheld gears, the rules apply to Swedes and foreigners alike.

Angling is free, except in Marine Protected Areas (MPAs) and in private waters, where fishing permits are likely to be sold.

### Gear/fishing methods

Anglers in Sweden mainly use rods and reels, and angling has increased relative to recreational fishing with passive gear. In addition, the equipment for rod fishing has become more efficient.

Of the 11.2 million occasions of gear use, handheld gears (angling) were used on 10.1 million occasions – more than 90 %.

### Target species

The recreational fisheries target mainly pike, whitefish, perch, pikeperch, sea trout, salmon, cod, herring, flounder, plaice and turbot. The most important species caught in the Baltic Sea are perch, pike, trout, whitefish and herring.

### Regulations

The regulation of recreational fisheries is covered by the national fisheries legislation, governing who, where, when and how people are allowed to fish. Regulations are subject to change if the status of a fish population changes.

The regulations primarily cover the sea and the five great lakes, as well as the river mouths and the rivers up to the first migration barrier. Some regulations regarding the protection of species and prohibited fishing methods apply throughout. In addition to national regulations, local fishing and management organisations may stipulate more restrictive fishing regulations in rivers and in the lakes.

The main types of regulations are catch/bag limits, minimum size limits, closed areas and seasons and gear regulations.



For some species, catch limits apply: pike 3/day (not Bothnian Bay); salmon & sea trout 2/day in Kattegat; in Baltic rivers 1/fisherman/day. From 2017, recreational catches of cod will be restricted in order to strengthen the protection of the western stock: 3 cod/person and day during the spawning period, and a maximum of 5 cod/person and day during the rest of the year.

When fishing with handheld gear (angling) in coastal areas, minimum size limits and some maximum size limits apply: pikeperch, grayling, salmon, trout, pike, cod and several flatfish (for specific size limits, see Other recreational fisheries). These may be stricter in some areas, such as protected areas, so it is important to check the local regulations. Fish covered by size limitations can only be kept if they are above/within the limits.

A “discard obligation” applies – regardless of whether the fish is dead, hurt or alive, it has to be returned to sea swiftly and carefully if it:

- is caught at a time when fishing for the species is prohibited;
- is caught in gear or by methods not permitted for the species; or
- is below the minimum size limit for the species.

In addition, in the trolling fishery any salmon with an intact adipose fin has to be released.

Since 2013, national regulations for salmon fisheries, including Swedish off-shore trolling fisheries, have been strengthened in order to protect wild salmon populations. In rivers with wild salmon in Gulf of Bothnia, angling for salmon is forbidden from 1 September until 31 December, and in some rivers it is also forbidden between 1 May and 18 June. To protect populations of brown trout, a range of management measures are used: minimum size limits (50 cm, except for parts of the Bothnian Sea where it is 40 cm), maximum size limits, closed seasons and areas along the Baltic Sea coast. Along the Baltic coast, the catch limit is set to 2 trout per day and angler<sup>1</sup>. It is prohibited to fish for sheatfish and sturgeon, as well as fish on the Swedish protected species list.

Some wild fish populations are also protected through regulations for farming, releasing and moving fish. A permit from the regional administration (the Country Administrative Board) is always required for releasing fish, in order to control the spread of unsuitable species or varieties, as well as the spread of diseases.

## Other recreational fisheries

### Numbers

Of the 1.4 million people engaging in recreational fishing in Sweden, a minority are using passive gears. The long-term trends show that other recreational fishing using passive gears is decreasing relative to angling.

### Licensing

You do not need a licence to carry out recreational fishing in Sweden. The national fisheries legislation contains the fundamental regulations about the right to fish. However, other recreational fishing outside of private waters is only permitted for permanent residents of Sweden.

For use of gillnets or other passive gears in private waters, you need a permit from the water owner. The water owner may use the waters freely<sup>2</sup>, angling or fishing with passive gears without any reporting requirement or catch limits.

### Gear/fishing methods

The main gears used in these other recreational fisheries are gillnets, fyke nets and pots (mostly crayfish). Fishing with passive gears has decreased, whereas fishing with rods and reels has become more common. Of the 11.2 million occasions of recreational gear use, nets, pots and similar gear were used on 1.1 million occasions – less than 10 %<sup>1</sup>.

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<sup>1</sup>An overview of all the regulations applying to recreational fisheries can be found at: <http://www.svenskafiskeregler.se/Sv/Pages/default.aspx>

<sup>2</sup>Enskild fiskerätt

## Target species

The most important species caught in the Baltic Sea are perch, pike, trout and herring.

## Regulations

Regarding where to fish, the regulations differentiate between public waters and private waters. In principle, all waters > 300 metres from shore (or shore of larger island) and > 3 metres depth are public waters. Except for waters that are a part of private property, waters along the coastline and in the great lakes Vänern, Vättern, Hjälmaren and Storsjön are primarily public. Narrow and enclosed bays are considered private waters if it is less than 1 kilometre across between the outermost points on either side of the bay.

In public waters, the Government has restricted the use of certain gears and the number of nets (max. 180 metres), pots, and hooks on longlines (max. 100 hooks) that can be used is limited<sup>3</sup>. These restrictions do not, however, apply to those fishing in private waters.

In the Gulf of Bothnia, passive gears are not allowed in river mouths and waters less than 3 metres deep – to protect sea trout, salmon, whitefish and eel<sup>iii</sup>. The use of drift nets is prohibited throughout the Baltic Sea. Fishing for salmon and trout with long lines or anchored lines and driftnets is prohibited within the coastal waters of the Bothnian Sea and the Bothnian Bay.

Mesh size rules<sup>iv</sup> applies to recreational fishing using nets. In the Baltic Sea, nets used for flatfish species must have a mesh size of 110 mm diagonally, or more. The same mesh size applies to cod and whiting, whereas the required mesh size for salmon and trout is 157 mm (diagonally; Baltic Sea areas 22, 24–31).

For coastal recreational fisheries, minimum size limits (from nose tip to fin tip) apply to a number of species, such as pikeperch (40 cm), grayling (30 cm), salmon (60 cm), sea trout (40 cm area 29, north of lat. 60 00 N; 50 cm rest of Baltic), cod (38 cm), flounder and other flatfish species (21–30 cm depending on species). For other species, both minimum and maximum size limits apply, such as pike (min 40–max 75 cm).

There are also a number of protected areas or seasons to protect spawning and migration for different species. These closures vary from one area to the next, but there are widespread seasonal closures for salmon and trout, as well as for flounder and turbot. Seasonal closures for whitefish, pike, perch and other species are used along the Swedish Baltic coast. In addition, there are protected areas for cod and haddock in Kattegat and Skagerrak. In the Stockholm archipelago there are also a number of no take zones.

There is a raft of rules regarding labelling and marking of gears used by recreational fishers<sup>v</sup> in the sea. In summary, gears should be labelled in such a way that it is clear who they belong to and all gears used for recreational purposes should also be labelled F for “fritidsfiskare”. When in the water, passive gears should be marked in a way that ensures visibility – the marker required varies with the type of passive gear used.

Since 2011, selling catches from the sea is prohibited, unless you are a licensed professional fisher.

## Monitoring and reporting

Sweden sends out annual questionnaires (three times a year) to monitor recreational fisheries. The questionnaires are sent to around 10 000 randomly selected citizens between 16–80 years. The results used to be reported every fourth year, but since 2014 it is done annually. The national questionnaire provides information on recreational fishing on both national and regional scale. To get more detailed statistics from specific areas or fisheries, the national survey is supplemented by other recreational fisheries surveys.

Salmon estimates are based on regional surveys from coastal and offshore areas. In 2015, the trolling fishery was surveyed, using a combination of on-site and online catch reports. Recreational fishing with trap nets was also surveyed in 2015, including a total census of gear. New studies are planned for 2019 (trolling) and 2020 (trap nets). Recreational catches in the rivers are also surveyed every year. Statistics regarding the fisheries in the rivers supplied by private water owners is used.

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<sup>3</sup>An overview of all the regulations applying to recreational fisheries can be found at: <http://www.svenskafiskeregler.se/Sv/Pages/default.aspx>

The national surveys are supported by a regional study on cod (tour boat fishing) that has been done for the last six years in the Sound (SD 23) between Sweden and Denmark (2011–2016) and continued in 2017. This is the most important area in Swedish waters for recreational cod fishing. In 2014, on-board observers collected biological data and information about the number of angling trips and the number of anglers on-board charter vessels was collected from Harbour Masters Offices. However, these regional studies cover only charter boats in Subdivision 23, not private boats or shore fishing, and therefore do not provide a full picture of catches or any information on the rest of the Swedish coastal waters.

From 1 January 2017 a new survey of marine recreational fisheries is being carried out to better estimate effort and catches in Sweden, focusing particularly on cod catches. The survey targets fishing trips carried out by residents and non-residents in Sweden in the Sound and southern Baltic Sea (ICES SD 23 & 24), with separate sampling of tour boats (on-board) and private boats (on-shore). Additional information on shore fishing is also collected to inform future surveys.

## Recreational catches and potential impacts

The total recreational landings in 2016 were estimated to 10 330 tonnes, of which 43 % were taken at sea. Anglers kept 6 841 tonnes of their catch and passive gears accounted for 3 488 tonnes (around 34 %).

For perch, pike and pikeperch, 90–95 % of total catches are recreational. For trout 80 % of catches are recreational, for whitefish 65 % and for salmon around 20 %. Brown trout is one of the most well-liked fish species in Sweden and is primarily taken in the recreational fishery.

### Baltic cod

Cod is also targeted in the recreational fisheries. The key area for angling is The Sound between Sweden and Denmark. Most of the estimated 190 tonnes (2016)<sup>ii</sup> is caught here.

A report from ICES WGBFAS<sup>vi</sup> includes catch estimates from 2015 based on the tour boat survey in that year of 214.6 tonnes, and according to ICES WGRFS<sup>ii</sup> average recreational catches for 2013–2015 are 250 tonnes. This can be compared to commercial catches of cod in the Baltic Sea – both eastern and western stock – 5 739 tonnes.

### Salmon and sea trout

A significant portion of the wild salmon in the Baltic Sea area originates from rivers located in Sweden (75 %). There is also very substantial restocking taking place, as compensation for hydropower developments. In 2013, Sweden banned commercial salmon off-shore fishing in the Main Basin, resulting in a shift to coastal and river-based fishing only.

The total salmon catch in 2016 was estimated to 529.4 tonnes or 80 044 salmon<sup>vii</sup>. The total commercial catch was 395 tonnes, or 60 740 salmon, of which 212 tonnes (30 915 salmon) were caught in sea and coastal fisheries and 182 tonnes (29 825 salmon) in river fisheries.

In the recreational fisheries, a total of 134.4 tonnes were taken. About 10 % was caught at sea –16.4 tonnes or 1 603 salmon – and the vast majority (90 %) in the rivers: almost 17 701 salmon, or 118 tonnes. Of the total river catch, 58 % was caught rod fishing, 24 % in broodstock fisheries in reared rivers and 18 % in various types of net fishing. Swedish salmon anglers increasingly practise catch & release and in 2016 an additional 2 600 salmon taken in rivers were released back. In addition, there are estimated unreported catches to a total of 13 621 salmon in 2016 (SD32).

Of 207 **sea trout** rivers in the Main Basin, 200 have wild sea trout populations, and of the 56 rivers in the Gulf of Bothnia with sea trout populations, 28 have wild and 28 have mixed populations. The status of sea trout populations in Swedish rivers is considered to be uncertain, but in the Gulf of Bothnia, recruitment is relatively good. Populations are affected by human activities, such as over-exploitation, damming, dredging, pollution and siltation of rivers. In order to improve the situation for weak sea trout stocks in SD 31, a number of new restrictions have been implemented in recent years.

Catches have declined considerably since the late 1970s and remains low, indicating very large overall reductions in population size. In 2016, however, the angling catch of wild sea trout in rivers in SD 31 increased. According to ICES WGBAST, the commercial catch in 2016 was 12 tonnes – 10 tonnes of which was taken in the Gulf of Bothnia. The estimated recreational catch was 22.1 tonnes, with 21.7 tonnes from Gulf of Bothnia. Commercial catches were from coastal fisheries, whereas recreational catches were river-based.

Overall, the estimated recreational salmon catches in Sweden are around 20 % of total catches, whether in tonnes or numbers. Of the Baltic catches at sea and along the coast, recreational catches make up 7.2 %. Recreational fisheries will potentially have an impact, particularly on local salmon populations, but overall commercial fisheries are more significant. For sea trout the situation is reversed, with recreational catches at least almost double the commercial catches. However, we do not have access to sufficient information to judge whether this is affecting vulnerable populations or not.

## European eel

Without restocking, eel would most likely be rare in Swedish waters today. In order to protect European eel and follow EU regulations, fishing restrictions have been implemented affecting both the commercial and the recreational fisheries.

Since 1 May 2007, it is prohibited to target eel in Sweden. Professional fishers can apply for a special permit to fish for eel, if they can prove a historical right, but generally any eels caught must be carefully released again. In freshwater, some areas have been exempt from the ban and recreational fishing for eel is allowed (3 rivers with hydropower installations). These areas are judged to provide next to no possibility for eels to survive migration due to the barriers downstream. Eels caught in these areas cannot be sold, unless the fisher has a special permit. In addition, eel fishing on the Swedish west coast was closed completely in 2012.

In a recent evaluation of the effectiveness of Swedish eel management<sup>viii</sup>, average annual eel catches since the implementation of the management plan in 2009 have been 270 tonnes for the Baltic Sea and around 100 tonnes for inland waters (data for inland waters are much more uncertain). According to the Swedish Country Report to ICES WGEEL 2016/2017<sup>ix</sup>, the total commercial catches in 2016 were 278 tonnes (including 185 tonnes of marine catches)<sup>x</sup>.

Despite the management efforts since 2009, the amount of adult eels escaping has decreased by about 10 %. This is largely a consequence of less restocking in the early 2000s. That said, the current level of protection is far below the targets of the EU Eel Regulation and the Swedish Eel Management Plan, especially in inland waters and along the Baltic coast.

Recreational fishing for eel was banned already in 2007, and the effects of Swedish recreational fishing on eel today is negligible to non-existent. Commercial catches are not.

## Fisheries control

The Swedish Agency for Marine and Water Management (SWAM) is ultimately responsible for fisheries control in Sweden. Together with the regional authorities (County Administrative Boards), the Coast Guard and the sea police, SWAM manages the control of recreational fisheries along the Swedish coast and the five big lakes (Vänern, Vättern, Mälaren, Hjälmaren and Storsjön). Who carries out the actual inspections in the field varies.

The regional authorities have a key role, as between them they are able to cover the whole country, and they also have a responsibility for conservation and management of fish stocks and their habitats. They employ inspectors and train them. Each year, they will report back to SWAM on inspections and other control and enforcement efforts.

There are also volunteer inspectors, with limited powers. They can only police the area for which they are designated and must always contact the police if they spot any irregularities, illegal gears or similar. Volunteer inspectors must take a course to be licensed.

# References

- <sup>i</sup>Recreational fishing in Sweden 2016. Statistiska meddelanden JO 57 SM 1801, Statistics Sweden, 26 January 2018. ISSN 1654-417X Serie JO – Jordbruk, skogsbruk och fiske.
- <sup>ii</sup>ICES WGRFS, 2017.
- <sup>iii</sup>Information about Coastal recreational fisheries in the Baltic Sea countries. FISH-PRO II, HELCOM FISH 6-2017. 21.04.2017.
- <sup>iv</sup><https://www.havochvatten.se/hav/fiske--fritid/sport--och-fritidsfiske/fiskeregler/minimimatt-maskstorlekar-for-fangst.html#Rubrik>
- <sup>v</sup><https://www.havochvatten.se/hav/fiske--fritid/sport--och-fritidsfiske/fiskeregler/markning-och-utmarkning-av-fiskeredskap---regler.html>
- <sup>vi</sup>ICES WGBFAS, 2016.
- <sup>vii</sup>ICES WGBAST, 2017.
- <sup>viii</sup>Dekker, W., Wickström, H. and N.B. Sjöberg (2016). Utvärdering av den svenska ålförvaltningen. Aqua reports 2016:11. Department of Aquatic Resources, Swedish University of Agricultural Sciences.
- <sup>ix</sup>ICES WGEEL Country Reports 2016/2017.
- <sup>x</sup><https://www.havochvatten.se/hav/samordning--fakta/data--statistik/fangststatistik-yrkesfisket.html>

# Recommendations

In order to better consider recreational fisheries in the overall management of the Baltic Sea fish stocks, and in efforts to mitigate the environmental effects of fishing activities, we have to find ways to improve both monitoring and data collection.

The characteristics of the recreational sector makes this more challenging than for the commercial sector, but nevertheless there are a range of actions to consider linked to different management measures, such as licensing, catch reporting and landing obligations. Recognising the large national differences, there is still a case for increased harmonisation in this area, aiming to ensure that data collected are comparable and provides an overall picture of the extent and potential impact of recreational fisheries.

## The possibilities offered by licensing

CCB is generally supportive of the use of licences throughout the recreational fishing sector. Licensing is already widely used in the region, but could be used much more creatively. Not only does the use of licences for both angling and other recreational fisheries provide data on the number of fishermen in each sub-sector, but it presents an opportunity for further actions, some of which are already being used by some countries.

- If you have licensing, a system for the reporting of catches is easier to set up, whether mandatory or voluntary.
- Licences provide you with a clear number of fishermen, which makes it possible to account for the socio-economic interests and “value” of this sector.
- Training requirements, among other things emphasising best practices and options to minimise the environmental effects, can be linked to receiving a licence – this is put into practice in Germany and Poland, where passing an exam is mandatory.
- Through licensing, fees that contribute to covering the costs of the management system, and importantly control measures, can be taken out.

## Catch reporting

Introducing catch reporting to the recreational fishing sector would provide some of the much needed data for better monitoring of recreational fisheries. Reporting of catches would also provide feedback on other management measures, and information on changes in behaviours as well as trends. A catch reporting system could be introduced in a tiered manner, beginning with “other recreational fisheries” using passive gears and commercial angling operators. Modern tools such as reporting via smart phones have already been developed and should be made available as minimum standards throughout the Baltic region

We would like to put forward the following options for consideration:

- Mandatory catch reporting for recreational fisheries using passive gears.
- Daily catch and effort (number of people fishing) reporting from commercial operators of recreational angling trips.
- Mandatory catch reporting from fishing operations/private waters open to the public through the purchase of fishing permits.
- In the case of open access to coastal waters for angling, regular catch reporting should also be required from land-based fishing

We also support the following suggestions made by ICES:

- recreational catches of commercial species such as cod and salmon should be included in the stock assessment if there are indications that they are substantial
- all eel fisheries should be closed, including the recreational fisheries, until the population has shown strong signs of improvement.
- catch data should be collected for all segments of the recreational fishery (e.g. shore, private boat, and charter boat fishing), at a temporal and spatial resolution matching the variability of the data and the stock assessment needs

## Effort and catch regulation

In terms of managing the recreational sector by regulating the effort and ultimately the catch, local considerations have to be made based on the importance of the two sub-sectors. However, limiting recreational fisheries using quantity-catching gears, will generally be more important. That said, several countries reported to HELCOM FISH-PRO II in the questionnaire on recreational fisheries that there is an increasing trend for angling and sport fishing, while other recreational fisheries are slowly declining.

A range of different tools are already being used by the Baltic states, such as licensing, restrictions in the types and numbers of gears, seasonal and spatial closures, minimum/maximum size limits, and catch limits. It simply does not make sense that large numbers of quantity-catching gears are used without proper monitoring of the use and its effects. Much can be done to improve and harmonize these existing regulations in the region, and learn from best practices, for example:

- Introduce daily bag limits for each target species, reflecting the state of the stocks
- Harmonise limits on the length of and number of nets and other gears allowed per licence
- Provide anglers with possibilities for catch and release

## Other useful regulations

Some other measures are also used in the regulation of recreational fisheries, which merits wider consideration. The most important ones are closed areas and seasons, mainly to protect spawning fish populations, and fish size limits (both minimum and maximum sizes). Some countries also regulate the mesh sizes in passive gear, as well as the depth where the gears can be deployed.

It is our view that all of the above measures are useful and should be employed more widely, perhaps in dialog with the local stakeholders through FLAGs, as the local variations in terms of fish stocks, ecosystem composition and species differences mean that it is not possible to apply the same rules across the region. This variation unfortunately makes the monitoring and control of these regulations more difficult.

- The following applications should be considered:
- Closed seasons to protect spawning must be tailored to the specific stocks and the local/regional spawning times, but should apply equally to the recreational and the commercial fisheries.
- Closed areas are used for a range of reasons and therefore may differ in terms of user groups (zonation) and gear restrictions, depending on the reason for the closure.
- Where appropriate, minimum or maximum size limits should be applied. For some stocks a combination of both would be the best option. In some cases, the minimum limit should perhaps be higher than for the commercial fisheries, but in general it is preferable if the limit(s) for a species is the same across the region and based on scientific advice.
- Mesh size regulations can be used more widely to minimize unwanted catch, but also to reinforce existing minimum or maximum size limits.
- For stocks under regional management, such as cod, salmon, herring and flatfish, the same restrictions should apply to the recreational fisheries as to the commercial sector.

## Controlling net fisheries and minimizing ghost fishing

As stated above, the passive quantity-catching gears are a particular problem, as the gears often result in unwanted catches and result in problems with catches of species under limitations or that are threatened e.g. targeting perch with nets but catching also sea trout.

Many of these gears are also lost or forgotten, creating ghost net fisheries that continue to affect stocks for years and have a potential impact on other species such as birds. This has been investigated lately, particularly in the southern Baltic Sea region, but more needs to be done to minimize the number of ghost nets littering our sea and the numbers lost in the recreational fisheries are largely unknown.

A recent study in the United Kingdom suggests that the fishing industry is responsible for a large proportion of the marine litter along the UK shores<sup>1</sup>. It is not unlikely that the situation is the same in the Baltic Sea

region and, considering a widespread use of commercial style gears in some countries, perhaps with substantial additions compared to the UK. Sales of net gears used in recreational fishing indicate that is the case. Nets for recreational fishing are cheap and annual sales substantial – where are all these nets? Some will have been lost or even discarded at sea.

Through licensing specifications or sales restrictions it may be possible to limit the number of nets owned and used in recreational fishing. Mandatory labelling or tagging of gear and an obligation to report lost gear are other options.

## References

<sup>1</sup>Unger, A., and N. Harrison (2016). Fisheries as a source of marine debris on beaches. *Marine Pollution Bulletin* (107): 52–58. [http://ec.europa.eu/environment/integration/research/newsalert/pdf/fisheries\\_rubbish\\_disposal\\_reduce\\_plastic\\_waste\\_473na3\\_en.pdf](http://ec.europa.eu/environment/integration/research/newsalert/pdf/fisheries_rubbish_disposal_reduce_plastic_waste_473na3_en.pdf)





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