

# FISKE2020

Towards an Ecosystem-Based Fisheries Management in Sweden



**FISKERIVERKET**  
SWEDISH BOARD  
OF FISHERIES



This publication – FISKE2020 – presented by the Swedish Board of Fisheries (Fiskeriverket), should be viewed as a strategy for bringing ecosystem services in seas and lakes into the spotlight.

FISKE2020 aims to provide a basis for the debate on sustainable fishing. We present a course that is far from easy, but neither is it impossible; and we believe that, within a decade, it can lead to fishing being carried out within the framework provided by a sustainable ecosystem.

The course is presented as a number of objectives to be reached, where the principles for fisheries management are based on wider ecosystem considerations. The objectives that are presented here include all categories of fishing – fishing by the general public, commercial fishing and fishing tourism – as well as aquaculture. The ecosystem plans that form a central part of our suggestions will, in order to be extended beyond fisheries, however, need to be expanded and complemented at a future stage. Within this framework, it is the role of the Government to provide the fishing industries with the necessary conditions for achieving long-term sustainable fishing.

The guidelines we present should be applicable to all seas and lakes as well as water systems. Methods for applying the ideas vary, of course, and the more species there are, and the larger the area is, the more complex management will be. For small lakes and water systems, our guidelines could be grounds for the authorities giving advice to owners of private waters. For the five largest lakes and along our coastline, they form the basis for national administration within the framework of the EU regulatory framework. For the rest of our waters this document is about how Sweden, as a member state of the EU, wants to influence development, and how we want to apply and complement the EU decisions.

## *Target Area 1: Ensuring Functioning Ecosystems and Ecosystem Services.*

### **Objective 1.0 Ensuring functioning ecosystems and ecosystem services.**

*The purpose of ecosystem based fisheries management is to restore and maintain well-functioning ecosystems so that they can supply various kinds of ecosystem services, including sustainable fishing, sustained biodiversity and functioning food webs. This is the overall objective for the fisheries management. The primary management measure used to reach this objective is what we call the  $L_{opt}$ -strategy, which means that the fish is caught only after it has reached optimal length. As a general rule the optimal length means that the fish of that size has reached maturity and have reproduced several times.*

*The general objective of functioning ecosystems and ecosystem services can be broken down into the following long-term biological objectives:*

### **Objective 1.1 Reconstructing the fish stocks.**

*Return the population sizes, size structures, genetic variation and distribution to levels similar to a baseline relevant to the ecosystem.*

### **Objective 1.2 Reconstructing ecosystem functions.**

*Reconstruct and conserve ecosystem structures and functions by, for example, ensuring that predatory fish are present in sufficient quantities so as to have a natural regulatory role on the ecosystem and coordinating fisheries management with the management of top predators (marine mammals and birds), within the framework of ecosystem-based management.*

### **Objective 1.3 Restoring and protecting areas and endangered stocks.**

*Restore and protect important spawning and nursery grounds, and, in some cases, re-establish fish stocks.*

### **Objective 1.4 Changes in fish and fishing conditions are considered.**

*Fisheries management takes into account expected changes in the climate and environment, changing conditions for natural production and varying methods of exploitation.*

### **Objective 1.5 Limiting the spread of alien species.**

*The spread of alien species is restricted wherever possible. One possibility can be to exploit those species.*

### **Objective 1.6 Limiting the environmental impact of fishing.**

*Environmental consequences of fishing with bottom contact and unwanted by-catches are restricted, and sensitive species and habitats are protected.*



## *Target Area 2: Fisheries management*

*This section discusses the management measures that concern all categories of fishing (public fishing, commercial fishing and fishing tourism) and that are required for ensuring functioning ecosystems and ecosystem services.*

Objective 2.1 All fisheries management is based on the  $L_{opt}$ -strategy, to be established in ecosystem plans, that have a greater element of input regulations.

*The  $L_{opt}$ -strategy creates stable stocks whilst still allowing responsible fishing of the fish populations. The strategy requires that year classes are allowed to grow until they reach maximum biomass. This management approach is built on an ecosystem plan, whereby all kinds of extractions are regulated. The concept of input regulation is here regarded in its broadest sense, where it includes all kinds of fishing restrictions for if, where, how and when fishing may or may not take place.*

Objective 2.2 To distribute fishing resources between different categories of fishers, based on socioeconomic criteria.

*Allocation of fishing resources between categories of fishers should be based on socioeconomic criteria. Depending on the fishing methods used, distribution can also take place within a fishing category. In this context, fishing activities are divided up as follows: public fishing, commercial fishing and fishing tourism.*

Objective 2.3 To define water areas where different categories of fishing are given priority as part of the spatial planning.

*Apart from distributing between different types of fishers, non-fishing areas and the protection of spawning and nursery grounds is also important. Spatial planning can provide a good basis for such zoning, along with the forthcoming national law on planning at sea.*

Objective 2.4 To attach a broader environmental assessment to each kind of fishing activity.

*Another criterion for allocation between different kinds of fishing should be the environmental effect in its broadest sense. This can be done in the form of an environmental impact assessment.*

Objective 2.5 To fully integrate the Common Fisheries Policy into the Maritime policy and to clearly formulate and prioritise its objectives.

*The objectives of the CFP need to be clearly formulated and a hierarchy of priority should be found for ecological/biological, social and economic objectives.*

Objective 2.6 Establishing credible fisheries management amongst the general public and interest groups.

*One basic requirement for successful fisheries management is that rules and decisions have good credibility in the eyes of the general public and interest groups in the fishing sector.*

### *Target Area 3: Public Fishing*

Objective 3.1 Widespread public fishing with social and recreation significance.

*Fishing is of great social and recreational value in addition to its role in personal consumption. This value needs to be considered in fisheries management.*

Objective 3.2 Limiting public fishing based not only on allowed gear but also on catch limitations.

*It is currently the responsibility of Parliament/the Government to allocate fishing resources between public and commercial fishing. This is done through limiting the amount of fishing gear that the general public may use. Fishing could be further limited on the grounds of fishery conservation.*

Objective 3.3 Increasing the demands on fishers.

*To increase the level of knowledge amongst those fishing in their leisure time, easy-to-understand information should be distributed. In addition to this, there is an increasing need for clearer legislation. A general fishery conservation fee should be introduced to cover some of the costs of conservation of fish stocks, management and data collection.*

Objective 3.4 Improving opportunities for public fishing through central and local government commitment.

*Public fishing is seen as an essential part of outdoor recreation. Municipal or state-controlled waters with attractive fishing should be made available to the public.*

## *Target Area 4: Commercial Fishing*

Objective 4.1 Regulating commercial fisheries with an increasing element of input regulations, such as gear restrictions and that all catches are landed.

*To ensure functioning ecosystems it is vital to adapt the size of the fishing fleet to the fish stocks. An important step towards that objective is to have a system of fisheries management where the fishing capacity and effort is regulated according to the possible extraction from the fish stocks. Furthermore, a transition from landings-based to catch-based management is an important way of minimising the amount of fish that is discarded.*

Objective 4.2 Making access to fishing resources rights based, primarily by means of a system of individual transferable rights.

*Through rights based management systems the incentives that are necessary to establish long term well-functioning ecosystems, are created. To clarify the conditions that apply for exploiting the fish resources, a contract should be written between the managing authority and the users in which the terms for the fishing are clearly stated.*

Objective 4.3 For fishing firms to cover their own costs.

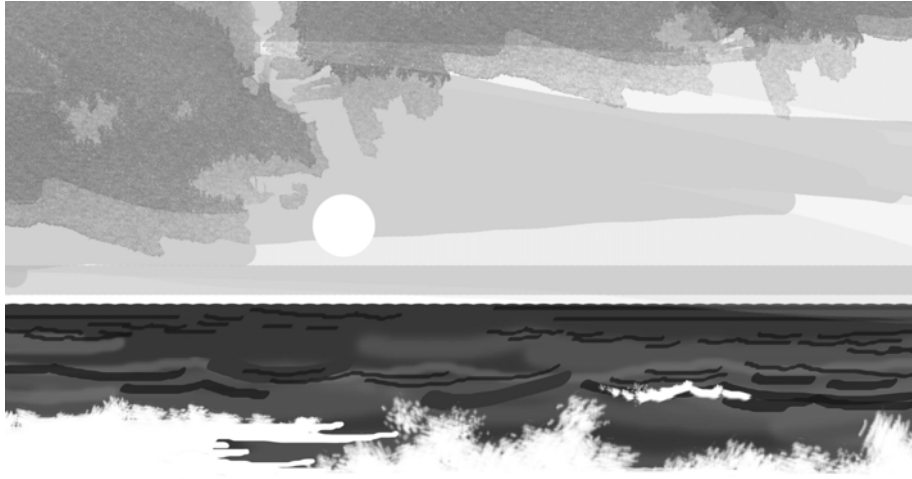
*Instead of defining objectives of profitable fishing companies, two other objectives are given here; namely, that no capacity-enhancing subsidies are provided, and that fishing firms should contribute to the management and control costs.*

Objective 4.4 For fishing companies to bear part of the management and control costs.

*If a fee is charged when vessel permits or special permits are issued, some of the profits from the fishing industry can be used for the management and control activities that are needed for ensuring functioning ecosystems. Such a model also requires that management is carried out in a cost-effective way and that measures are implemented for reducing administrative costs for the fishing companies.*

Objective 4.5 To effectively monitor fisheries at minimum cost and to effectively prevent and follow-up infringements.

*Consumers demand that fish and fish products on the market can be traceable to its origin. In this context, it is important to have effective monitoring. It is also essential that the control activities are adapted to future technical developments at the same time as ceasing with control activities that are unnecessary for achieving the desired results.*



## *Target Area 5: Fishing Tourism*

Objective 5.1 Making fishing tourism an established rural industry. Apart from specialised businesses, there should also be companies aiming for a local/regional market.

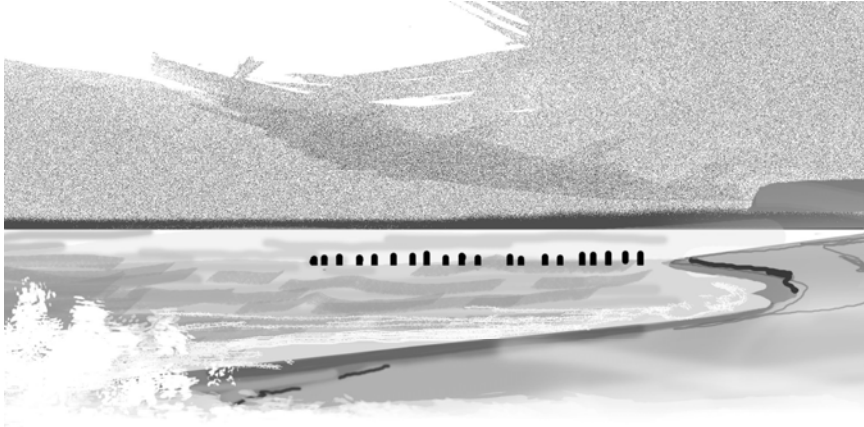
*This objective is based on the fact that the main portion of fishing tourism operations are aimed at a regional market, and that fishing is mainly carried out in privately owned waters. Especially emphasised is the importance of a broader base for the fishing tourism industry.*

Objective 5.2 Using management measures for making fish available of a quality that satisfies the requirements of businesses based on recreational fishing.

*Currently, fishing tourism operations are found mainly within fishing management areas or in private waters. Only a few companies offer opportunities for the public to fish in the sea or in the five largest lakes.*

Objective 5.3 Developing marketing and sales organisation for the fishing tourism industry.

*In addition to measures that can be implemented by the authorities, such as deciding on fishing regulations, or by agreements between fishing tourism businesses and the owners of fishing waters, the industry itself needs to organise its activities in a clearer way; it could, for example, develop a marketing and sales organisation.*



## *Target Area 6: Aquaculture*

Objective 6.1 To develop environmentally-friendly aquaculture and increase production from organic/environmentally certified facilities.

*The responsibility for the aquaculture industry should be taken at the authority level. A national strategy needs to be established for providing better conditions for aquaculture in Sweden to be able to grow within ecologically sustainable boundaries.*

Objective 6.2 To ensure good health status of fish and not allow alien species or genetically modified fish to reduce biological diversity.

*Two essential elements to environmentally-friendly aquaculture are (1) retaining fish in a good state of health, and (2) that alien species or genetically modified fish are kept in such a way that they do not cause loss of biological diversity.*

Objective 6.3 To develop mussel farming.

*We would like to pay special consideration to mussel farming and, in this context, draw attention to the fact that, apart from the production of food, mussel farming can also be seen as an environmental measure designed to reduce eutrophication.*

## *Target Area 7: The Processing of Fish*

Objective 7.1 To develop fish processing as a complement to the fishing and aquaculture sectors alongside the specialised processing industry.

*The future development of the processing companies that are mainly concentrated to the west coast depends greatly on international competition. Alongside these companies, we can see an opportunity whereby processing can become an important complement to fishing and aquaculture businesses. The increased availability of large fish as a result of the suggested management model (Target Area 1) should benefit these companies.*





## *Target Area 8: Consumption and Trade*

Objective 8.1 For all fish that is consumed to come from stocks that are fished sustainably.

*This objective is ambitious because most of the fish that we will be eating in 2020 will come from outside the EU. The aim should be seen from the perspective that all fish caught in EU waters or by EU vessels should come from sustainable fished stocks. Fish products that do not meet the requirements must instead be certified in some way.*

Objective 8.2 Increasing consumption of sustainable fish caught and landed locally.

*It is not necessarily true that consuming fish caught locally is always better than the alternatives from an environmental perspective. At the same time, consumers have a strong desire to purchase fish that is caught locally with a good conscience. It should therefore be one of the objectives of fisheries management for such consumption to be able to increase.*

Objective 8.3 Access for consumers to safe and healthy food from the sea and lakes.

*In some parts of the Baltic Sea, dioxin levels in Baltic salmon and herring exceed EU limits. Sweden and Finland have been granted an exception from EU regulations, meaning that salmon, herring, lamprey, trout, charr and vendace may be sold on the Swedish and Finnish markets despite the fact that levels of dioxin and dioxin-like compounds can exceed limits.*

Objective 8.4 Ensuring that consumers are well informed.

*If consumers had a better knowledge about fish stocks and fisheries, this would likely improve the possibility to achieve the other objectives concerning consumption.*