# European Management Plan for the Great Cormorant

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EIFAAC EUROPE European Inland Fisheries and Aquaculture Advisory Commission

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## Executive summary

Cormorants have been the subject of intense debate since the 1990s regarding their impact on inland and coastal fisheries in Europe. Their increasing population size and expanding range have resulted in declining fish stocks and loss of aquaculture production in both fresh and coastal waters, leading to economic losses for commercial and recreational fisheries and aquaculture enterprises.

Fish populations in many water bodies are now in poor condition and many stocks are threatened, including fish species of high conservation value. This poor conservation status of many fish populations and biodiversity contrasts with the status of the cormorant population across Europe.

To address the problems caused by the increasing European cormorant population, many mitigation measures have been undertaken at the national level. However, there has been no visible reduction in cormorant population numbers and their distribution across Europe or mitigation of the problems encountered by their increasing presence. The limited fisheries-related outcomes of ongoing national management interventions have highlighted the need for a pan-European management plan, previously raised by the European Parliament.

This European Management Plan for the Great Cormorant (CMP) aims to manage the adverse impacts of an expanding great cormorant population on inland and coastal fish, fisheries and aquaculture across its European distribution range. It provides a balanced, science-based, and inclusive roadmap for managing the complex interactions between cormorants, fisheries, aquaculture and fish conservation in Europe. It is designed to compensate, mitigate and, where possible, eliminate cormorant-fish conflicts. It focusses on the biological dimension of maintaining the great cormorant's favourable conservation status, but recognises also the social and economic dimensions, along with consequences of cormorant-fish-human interactions.

The CMP has an introduction on the biology and development of great cormorants in Europe, a section on impact on fish resources and associated socio-economic impacts, a section on legislative and management issues of relevance and provides a clear structure for its implementation and evaluation.

The CMP involves a series of steps: 1) assessment of the system of cormorant fish interactions, related economics, and the underpinning policy drivers objectives and target end points; 2) formulating management measures; 3) choosing a course of action; 4) implementing management actions, monitoring changes in cormorant, fish, aquaculture and ecosystem characteristics, regionwide cooperation, and compensation for damages to fisheries and aquaculture; and 5) evaluation and adjustment of the endpoints and objectives of the plan into the future.

The CMP provides a process for stakeholder engagement and enables structured decision-making and adaptive management through the Evaluate-Adjust-Adapt processes. The CMP outcomes target a significant decrease in cormorant-related conflicts in Europe, an improved conservation status of fish populations, an improved status of rivers and lakes under the EU Water Framework Directive, and provide a basis for sustainable freshwater aquaculture and inland fisheries business development, and increased food security for Europe.

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# 1. Background

## 1.1 Description of the cormorant population

Two subspecies of great cormorant occur across Europe, the smaller *Phalacrocorax carbo sinensis* inhabits coastal as well as inland waters whereas the other subspecies, the larger *Phalacrocorax carbo carbo* is mainly found around the open coast of Norway, Ireland, British Isles and Iceland. The subspecies *Ph. c. carbo* has maintained a stable population and distribution in recent decades (although declining in Norway), and, as such, does not cause as many conflicts. The subspecies *Ph. c. sinensis* has increased strongly in both numbers and geographical range and caused many conflicts throughout Europe. Thus, when the term cormorant is used in this document, it refers mainly to *Ph. c. sinensis* in mainland Europe and *Ph. c. carbo* in north-western Atlantic coastal countries.

### *1.1.1 Breeding biology*

Cormorants are colonial seabirds that breed in relatively large colonies. They are flexible with regards to where they establish colonies. Cormorants build their nests in trees, shrubs and/or on the ground. They breed directly on the ground on small islands if these are safe against predators (primarily foxes). However, if there are trees and shrubs on the island where they settle, they usually choose to build the nests in them. When cormorants breed by lakes, the nests are often found in trees next to the lakeshore. Colonies can occur in diverse locations, including shipwrecks, electrical transmission towers (decommissioned) and even old light houses. The breeding season extends from March to July. The eggs are white to slightly blue. Cormorants start breeding from ages 2 - 6 years and will usually lay 3 – 5 eggs each year. The cormorants are rather long-lived and can reach ages of 15 - 20 years. The egg incubation period is approximately 30 days. About 7 weeks after hatching, the young are ready to fly. Breeding success depends primarily on food availability and amount of disturbance during the breeding season. In favourable years, ≈2.5 young can be produced per nest but in years with little food as few as 0.5 young are produced per nest. The young will typically leave the nests between late June and the end of July, depending on latitude.

### *1.1.2 Foraging and diet*

Cormorants live almost exclusively on fish. The cormorant's individual food intake fluctuates throughout the season from 200 to 700 g/day, with a mean of 500 g/day. The need is greatest in May-June, when cormorants have young. Cormorants mostly prey on fish species in shallow water areas and rarely at water depths over 20 m. Cormorants usually seek food alone but also forage in groups of up to several hundred in fjords, lakes, rivers and in shallow marine areas. Cormorants are good at locating areas with many fish that are relatively easy to catch, such as in ponds and small open lakes. Cormorants eat most species of fish and primarily those that occur in the largest numbers and are easiest to catch. The cormorant is an efficient underwater hunter that forage in virtually all water bodies, even the smallest fresh (running and still) waters, shallow coasts and brackish habitats in depths up to 30 m. Cormorants also forage in very small water bodies like garden-ponds, small streams of 1-2 m width and even in underground concrete channels. Cormorants can survive on shrimps, sticklebacks and tiny sand goby if other prey is absent, but they can also eat fish of up to 2 kg (±50 cm in length).

### *1.1.3 Migration and overwintering*

Cormorants have breeding colonies in most European countries, but most of the breeding takes place in northern Europe, especially around the Baltic Sea. From late summer to autumn, there is a shift in the distribution of cormorants away from the Baltic/Nordic fjords and

freshwater areas and out to the more open coasts and remote small islands. Around September-October, they begin their autumn migration. Some migrate along the Atlantic coast and others migrate over land (i.e. along rivers). Important wintering areas include The Netherlands, France, southern Germany, Switzerland and northern Italy. Some cormorants choose to stay in northern areas, including the British Isles and the Baltic Sea region in winter, and do well in mild winters. The number of cormorants that overwinter in the north has increased as winters have become milder, linked to increasing air temperatures and less ice-cover.

The population of cormorants in Central and Eastern Europe has also increased in recent decades. Cormorants in this region tend to stay year-round, so they are moving from obligatory migratory birds towards more diverse strategies (including resident birds).

### *1.1.4 Development in Europe*

In Europe, standardized complete surveys have only been conducted a few times. So, for some of the periods the numbers given below are coarse estimates, although consideration should be given to the European Breeding Birds Atlas[1] to show trends in distribution and abundance of cormorants and their breeding status (Figure 1). In the first half of the 20th Century, the cormorant was close to extinction in Europe. In the early 1960s, the northwest European population numbered about 5 000 breeding pairs. In the 1970s, the population began to grow in The Netherlands, Denmark and Sweden, and numbers increased to ≈13 500 pairs in 1981.

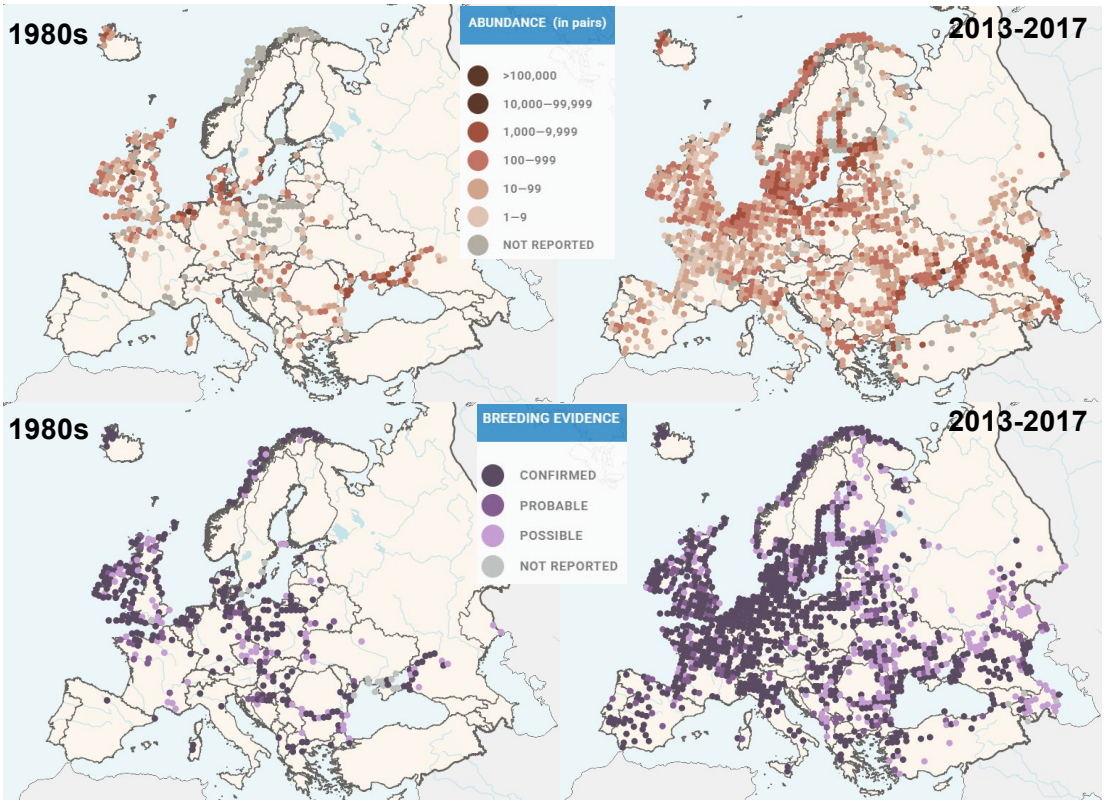


*Figure 1. Abundance (upper panels) and distribution of breeding cormorants in the Western Palearctic in 2012 presented in 50 x 50 km grid cells between the 1980s and 2013-2017. (source: European Breeding Birds Atlas 2 - https://ebba2.info/maps/species/Phalacrocorax-carbo/ebba2/abundance/)*

[1] https://ebba2.info/maps/species/Phalacrocorax-carbo/ebba2/abundance/

The increase in numbers reflects the extent to which humans have managed the spread of the species. Adoption of the EU Birds Directive in 1979 resulted in markedly increased protection of cormorants. Cormorant population abundance and their distribution increased greatly. The implementation of the Birds Directive was not followed by plans for management of the species, and the population of *Ph. c. sinensis* grew rapidly and spread over Europe. The global population in 2014 was estimated to number ≈1 400 000-2 100 000 individuals (Wetlands International 2015). The European population was estimated at 401 000-512 000 pairs, which equated to 803 000-1 020 000 mature individuals (Birdlife International 2015[2]). The total number of breeding pairs in Europe is estimated to have increased since 2014 but has not been counted recently. This 20-fold increase in numbers has coincided with an extension in geographical range, with cormorants moving north, especially along the Baltic coasts of Sweden and Finland, which has seen a build-up of breeding colonies as far north as the Bothnian Bay (Figure 1). However, there have also been marked increases in numbers of (smaller) breeding colonies on the European mainland and British Isles.

The latest coordinated census of all cormorant colonies in Europe was carried out in 2012/2013 and found 370 000 pairs of *Ph. c. sinensis* breeding in the Western Palearctic, which covers Europe (west of the Ural Mountains), North Africa and parts of the Middle East, of which 214 500 pairs bred in the EU Member States. Highest densities of this sub-species were found around the Baltic Sea (167 700 pairs), in The Netherlands (23 600 pairs) and around the Sea of Azov and the western and northern part of the Black Sea (82 000 pairs). Even the best counts (2006, 2012/13) carry considerable uncertainty, both because some colonies may have been overlooked and because some nests inside some of the colonies counted were undetected.

The dynamic nature of the cormorant population, as well as variation in the counting effort from country to country, makes robust estimates of total population size in Europe challenging. The conversion from counted nests/pairs to total number of individuals is not trivial and will vary with population age-structure. This has given rise to much discussion regarding the "true" size of the population, but overall, it is often assumed that each counted nest equates to 4.5 birds in the autumn. Thus, it is estimated that there are currently more than 1.5 million cormorants spending all or most of their time in European waters. The future development of the cormorant population will primarily be determined by a) the food supply; b) opportunities for cormorants to establish new colonies; d) regulatory measures, especially culling of juveniles and adults; e) expansion of the population of white-tailed sea eagles and other predators like foxes and racoons.

## 1.2 Impact of cormorants on aquatic resources

Discussions regarding cormorant predation on wild fish and thus, commercial fishing, recreational fishing, fisheries and fish conservation have been intense for decades and continue, not least due to limited (scientific) documentation. Impact from cormorant predation on wild fish populations is difficult to document/measure, especially in inland waters where fish are not exploited for commercial purposes. Even when studies provide clear results for predation impact on some fish species in one area, these results cannot be readily used or seen as valid for other areas/species. The impact on farmed fish is, on the other hand,

[2] https://datazone.birdlife.org/species/factsheet/great-cormorant-phalacrocorax-carbo

relatively easier to evaluate, as the input (fry/fingerlings, feed), growth and mortality rates, and output (expected harvest without predation) are known.

Scientific evidence shows that predation from cormorants can have substantial adverse impacts on fish in aquaculture and coastal fishing, and on aquatic biodiversity in conservation areas such as Nature 2000 areas/wetlands. In rivers and streams, even rare visits by cormorants have serious consequences for wild river fish populations, like salmon, marbled trout, grayling, barbel and nase. When it comes to lakes, depletion of fish stocks has been documented from Sweden, Germany, Denmark and the United Kingdom. In coastal (and fjord) waters, there is considerable evidence from the Baltic region that cormorants consume a high proportion of the fish stocks and for some species they eat more than is caught by commercial fisheries. Cod, eel, eelpout, flounder and perch are especially adversely impacted. There is also considerable information about cormorant predation on threatened eel populations, which are the basis for historical important fisheries. Studies show cormorants can eat 40 – 44% of small eels in just one summer in a coastal area.

Inland (freshwater) capture fisheries production in the European area declined from 192 000 tonnes in 1980 to 110 000 tonnes in 2023, a reduction of 43 %. The increase in predation by cormorants cannot be solely blamed for this reduction in freshwater fish production, but has certainly contributed to the decline. The reduced stocks of freshwater fish have caused most EU Member States to introduce catch and release practices and intensive stocking of fish in inland waters for recreational fisheries. Non-EU, eastern European countries have exhibited an increase in inland fisheries production over the same period. These countries have generally less problems with cormorant's predation of fish, as the cormorant population is smaller, not protected, actively managed and huntable.

Freshwater aquaculture production has declined in the European area between 1990 and 2023 from 340 000 tonnes to 300 000 tonnes; a reduction of 14 %. Pond aquaculture in France, Germany, Czechia and Romania saw declines in production, where an increase could have been expected, based on improved aquaculture techniques and management. The reduction in production is partly attributable to the increase in cormorant numbers and related predation on freshwater fishponds. Some 90% of aquaculture production of freshwater fish in Europe takes place in ponds, and cormorants have caused farm closures and reduced profitability in many countries.

Against the backdrop of an increasing cormorant population abundance, is the recognition that many fish and fisheries are declining because of other factors, including fishing pressure, predation pressure from other piscivores, habitat degradation and environmental change. Arguments that fisheries themselves are largely responsible are unsubstantiated, because fishing activities have declined drastically in many areas and fish stocks responded positively until cormorant numbers increased. Fishing is not accountable for the poor state of many fish stocks in inland and coastal waters. Fishing pressure in coastal waters has been reduced tremendously in the last decades, and in inland waters catch and release is practiced by recreational fishers. Moreover, species in inland waters that are not subjected to any fisheries exploitation and where habitat quality is generally improving also show declining stocks. Cormorants appear to be a common denominator in the failure to meet recovery benchmark targets of Good Ecological Status or Potential for fish under the EU Water Framework Directive (2000). This failure affects not only fish but also apex predators like otters and other fish-eating birds (e.g., herons, mergansers, ospreys, kingfishers), the prey base of which has become unstable.

Another aspect that is often overlooked is the transformation of forest ecosystems around dense colonies of cormorants. The deposition of guano can cause up to 90% canopy loss in some riparian areas, with knock-on effects on other aquatic animals such as amphibians, or nutrient enrichment of the associated water bodies disrupting ecological functioning and reducing invertebrate and plant biodiversity.

## 1.3 Socio-economic impact of cormorant predation of fish

The social and economic impact of cormorant predation on recreational fishing and aquaculture facilities is substantial. An ongoing study by EIFAAC, the Federation of European Aquaculture Producers (FEAP) and European Angling Alliance (EAA) estimated that the costs of cormorant predation to aquaculture and fisheries in Europe were more than 350 million euros per year in 2023 and 2024. Government research institutions and ministries from 25 countries contributed so far to the study. More than 250 angling clubs and 118 fish farmers submitted information on cormorant counts, preventive actions taken and damage/losses[3].

**Box 1: Losses to aquaculture farms**. A total of 118 aquaculture farmers from seven EU countries, which produce on average 11 000 tonnes of trout, carps and tench per year, reported for 2023 a combined loss of more than 10 million euros due to fish predation by cormorants. Reported losses per farm ranged from 500 euros to more than one million euros per farm, with a median figure of 30 000 euros per farm. Annual losses to cormorant predation for trout in raceways were around 2%, increasing to 40% of the stock in large-sized pond production systems. The average annual fish losses due to cormorant predation in carp and tench ponds was 19%, ranging between 3% and 70% of the stock.

There are approximately 7 000 freshwater (pond and raceway) aquaculture farms in the EU, with a total annual turnover of around 1 billion euros[4]. The total freshwater aquaculture pond area in the EU is nearly 360 000 hectares. The freshwater fish output from pond production in the EU was around 100 000 tonnes per year in recent years, plus some tens of thousands of tonnes of trout that are mainly produced in raceways.

Annual losses from fish predation by cormorants to pond aquaculture farmers throughout Europe are estimated to be higher than 250 million euros. Recreational fishing clubs reported losses of stocked fish in the order of 100 million euros annually due to cormorant predation. In comparison, heron predation losses to aquaculture and recreational fisheries were estimated at 48 million euros annually.

Reported income losses in pond aquaculture due to predation by cormorants are often the difference between a profitable and loss-making business. Tens of aquaculture farms have closed due to cormorant predation, as farms were no longer economically viable. Moreover, many pond aquaculture farmers, and some cage culture farmers, indicated they were

[3] As more information will be received and analysed in May 2025, the final estimates will differ from those used here.

[4] European Commission: Joint Research Centre, Scientific, Technical and Economic Committee for Fisheries, Guillen, J., Virtanen, J. and Nielsen, R., Economic report on the EU aquaculture (STECF-22-17), Guillen, J.(editor), Virtanen, J.(editor) and Nielsen, R.(editor), Publications Office of the European Union, 2023, https://data.europa.eu/doi/10.2760/51391

disinvesting in aquaculture, as the risks from predation by great cormorants and other protected species (e.g. herons, pygmy cormorants and otters) are too large.

This generally happened after fish farmers tried a wide variety of measures to reduce predation on their fish stocks. It is estimated that employment in freshwater aquaculture in Europe has declined by 20 % in the last 20 years, partly due to increasing cormorant predation and lack of compensation for lost fish. New investments in aquaculture are stalled, causing a further reduction in rural employment opportunities. The European Commission's campaign to promote aquaculture across the region through the "Aquaculture in the EU: We work for you with passion[5]" which aims to bring aquaculture closer to citizens across the continent, with a strong focus on sustainability, food security, and regional development, cannot succeed without addressing the cormorant issue.

Recreational fishing organizations are widely acknowledged as providing stewardship to the nature resources under their management. Many of these organizations reported that river restoration to maintain and rehabilitate aquatic biodiversity is failing because of predation of fish by cormorants. To reintroduce endangered species such as Atlantic salmon and North Sea houting, to support declining stocks of species such as grayling and to sustain angling, many lakes and rivers need restocking, a labour-intensive and expensive process. The level of predation by cormorants has reached the point where fishing organizations can no longer bear the costs of re-stocking. Reduced catches by recreational fishers lead to less participation and income for angling clubs and rural communities, and consequently less expenses and effort towards stewardship of the inland aquatic resources. Loss of members, loss of tourists, reduction in license fee income for recreational and commercial fishing are negative effects associated with the high level of cormorant predation.

The costs for aquaculture businesses and angling clubs to try to reduce predation and mitigate the effects of predation on their fish stocks are high. Costs include scaring and hunting/culling cormorants, costs of covering ponds/water by nets, restocking costs, and volunteer hours for guarding the ponds and rivers, adding millions of euros annually.

Fish farmers reported stress, depression and health problems due to the need to continuously guard their ponds against cormorants and not being allowed to take timely action.

The loss of fish production due to cormorant predation also has an impact on food availability in Europe. A substantial part of the estimated 270 000 tonnes of fish consumed annually by the great cormorant population of more than 1.5 million birds in Europe could have been high quality nutritious food for people. Given that the average fish and seafood consumption per capita in Europe is some 22 kg per year, the cormorant population in Europe consumes as much fish as 12 million people. The total value of fish consumed by the cormorant population in Europe is estimated at more than 1 billion euro per year.

The import of fish and seafood continues to increase in the EU and was around 5.9 million tonnes in 2023[6]. The EU trade balance on these products is negative (approximately 23 billion euro/year). Food sovereignty of Europe is on the political agenda, to reduce dependence on

[5] https://eu-aquaculture.campaign.europa.eu/index_en

[6] European Commission: Directorate-General for Maritime Affairs and Fisheries and EUMOFA, *The EU fish market – 2024 edition*, Publications Office of the European Union, 2024, https://data.europa.eu/doi/10.2771/9420236

food imports, and to improve our food systems. The large cormorant population presents a barrier to increasing aquatic food systems (aquaculture and fisheries) production in freshwater and coastal environments throughout Europe.

Ecosystem services are negatively affected by the growing cormorant population, as aquatic biodiversity and natural recruitment of fish, is compromised. The services provided by aquatic and wetlands ecosystems (including man-made fishpond ecosystems) have been attributed high values. The monetary damage done by cormorants to aquatic ecosystems has not been investigated sufficiently for making an estimate here.

In some countries the value of coastal properties that have been invaded by cormorant colonies have reduced, and traditional nature areas have been closed for recreation because of potential disturbance of cormorant colonies, reducing the value of these areas for recreation and tourism purposes.

## 1.4 Policies and legislation relevant for management

There is a range of international and regional instruments, directives, recommendations, policies and legislation that affect the management and conservation of the great cormorant and the most important of these are discussed below.

### *1.4.1 International instruments*

The **Convention on the Conservation of Migratory Species of Wild Animals (CMS)** of 1979 entered into force in 1983. The CMS (also called Bonn Convention) contains appendices for endangered migratory species (Appendix 1) and migratory species conserved through Agreements (Appendix 2). The great cormorant does not appear in these appendixes.

Nevertheless, the Fourth Conference of the parties (1994) issued Recommendation 4.1 on "Conservation and management of cormorants in the African Eurasian region", which recognized the strong increase in the great cormorant population and requested to maintain a favourable conservation status for this species. The same recommendation requested the members to carry out research on the assessment of damage caused by cormorants to fishers' interests, and on the effectiveness of scaring techniques and the development of other techniques to protect fisheries. However, **this was not implemented**.

The **Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA,** 1995) entered into force in 1999. Not all European countries have ratified this Agreement. The great cormorant (*Ph. c. carbo*) is included in the list of waterbird species to which the Agreement applies. At the 12th Conference of the parties (2017) it was proposed to develop an Action Plan for the Great Cormorant in the African-Eurasian Region, but the parties did not agree to this proposal. In the development of action plans under AEWA species that get priority are listed in Appendix I of the CMS, as threatened species according to the IUCN Red List, and with populations of less than 10 000 individuals. The large population of more than 1.5 million great cormorants would not justify an AEWA action plan.

Under the AEWA the great cormorant (*Ph. c. carbo* and *Ph. c. sinensis*) is listed with a status: Populations numbering more than around 100 000 individuals which could benefit from international cooperation.

### *1.4.2 European instruments*

The **Convention on the Conservation of European Wildlife and Natural Habitats** (Bern Convention, 1979), of the Council of Europe, entered into force in 1982. All members of the Council of Europe have ratified the Bern Convention. It governs the conservation of fauna in Europe, including the great cormorant. Article 2 of the Convention text states: "The Contracting Parties shall take requisite measures to maintain the population of wild flora and fauna at, or adapt it to, a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements and the needs of sub-species, varieties or forms at risk locally."

*Phalacrocorax carbo carbo* and *Ph. c. sinensis* are not included in Appendix II of the Bern Convention concerning special protection of the wild fauna species specified. Therefore, this species is automatically covered under Appendix III. This implies that:

> Article 7.1. Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the protection of the wild fauna species specified in Appendix III.
>
> Article 7.2. Any exploitation of wild fauna specified in Appendix III shall be regulated in order to keep the populations out of danger, taking into account the requirements of Article 2.

The present status of the great cormorant population, and the extensive damage caused by cormorants to economic and recreational interests throughout Europe, demonstrate that Member States have not complied with Article 2 of the Bern Convention for this species.

**The EU Directive on the Conservation of Wild Birds (Birds Directive, 2009)** relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the EU Member States. It covers the protection, management and control of these species, and lays down rules for their exploitation. The Directive covers birds, their eggs, nests and habitats. The current Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, is an amendment of the 1979 Directive 79/409/EEC.

Like the Bern Convention, the Birds Directive requires EU Member States take measures to maintain the population of the species at a level that corresponds to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or to adapt the population of these species to that level (Article 2).

Species listed in Annex I of the Birds Directive are subject to special conservation measures concerning their habitat to ensure their survival and reproduction in their area of distribution (Art. 4: Birds Directive). *Phalacrocorax carbo carbo* and *Ph. c. sinensis* are not listed in Annex I to the Birds Directive. This means the special protection regime does not apply to these species; however, they do fall under the general protection regime provided by the Birds Directive.

This general protection regime can be found in Article 5 (without prejudice to Articles 7 and 9) setting out the required measures to be taken by the Member States:

Article 5: Without prejudice to Articles 7 and 9, Member States shall take the requisite measures to establish a general system of protection for all species of birds referred to in Article 1, prohibiting in particular:

a) deliberate killing or capture by any method;
b) deliberate destruction of, or damage to, their nests and eggs or removal of their nests;
c) taking their eggs in the wild and keeping these eggs even if empty;
d) deliberate disturbance of these birds particularly during the period of breeding and rearing, in so far as disturbance would be significant having regard to the objectives of this Directive;
e) keeping birds of species for which the hunting and capture of which is prohibited.

Article 7 applies to species listed under Annex II to the Directive (species that may be hunted under national legislation). Annex II does not list *Ph. c. carbo* and *Ph. c. sinensis* and therefore does not apply in this case.

**Article 9** allows Member States to derogate (in other words, *to suspend under certain circumstances*) from the basic prohibitions in Articles 5-8 as follows:

1. Member States **may derogate** from the provisions of Articles 5 to 8, where there is **no other satisfactory solution**, for the following reasons:
   a) in the interests of public health and safety, — in the interests of air safety — **to prevent serious damage to crops, livestock, forests, fisheries and water** — for the protection of flora and fauna;
   b) for the purposes of research and teaching, of re-population, of re-introduction and for the breeding necessary for these purposes;
   c) to permit, under strictly supervised conditions and on a selective basis, the capture, keeping or other judicious use of certain birds in small numbers.
2. The derogations referred to in paragraph 1 **must specify:**
   a) the species which are subject to the derogations;
   b) the means, arrangements or methods authorised for capture or killing;
   c) the conditions of risk and the circumstances of time and place under which such derogations may be granted;
   d) the authority empowered to declare that the required conditions obtain and to decide what means, arrangements or methods may be used, within what limits and by whom;
   e) the controls which will be carried out.
3. Each year the Member States shall send a **report to the Commission** on the implementation of paragraphs 1 and 2.
4. On the basis of the information available to it, and in particular the information communicated to it pursuant to paragraph 3, the Commission shall at all times ensure that the consequences of the derogations referred to in paragraph 1 are not incompatible with this Directive. It shall take appropriate steps to this end.

Over the period 2015 – 2023, the great cormorant was the species with the second highest number of derogations under Article 9, after the house sparrow (*Passer domesticus*). In terms of the type of derogations, *Ph. c. carbo* is the species for which most derogations for deliberate killing were made; 86% of the total number of derogations related to the great cormorant. Moreover, 22 EU Member States (23 including the United Kingdom) made derogations for killing cormorants, largely with the purpose of preventing serious damage. The nearly 10 000 derogations made for great cormorants over the period 2015 – 2023 indicate the large problems caused by the species.

The European Commission has repeatedly stated that the tools made available by the current interpretation of Article 9, as laid out in a guidance report from 2013, are sufficient to manage the cormorant population and mitigate the local conflicts. Nevertheless, many of the requests

by fisheries and aquaculture sector stakeholders for permissions for killing, egg oiling or nest destruction of great cormorants do not obtain approval from national environment agencies as their internal policies aim to limit derogations, or approvals are only given after large scale damage has been done. The very different way the Article 9 is used in the different countries gives rise to additional conflicts and cases regarding permission to regulate cormorants often end in national courtrooms.

The **EU Directive on the conservation of natural habitats and of wild fauna and flora (Habitats Directive, 1992)** aims to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States (Council Directive 92/43/EEC). Article 12 [protection of species] of this directive is similar as Article 5 of the Birds Directive.

Article 16 of the Habitats Directive provides the possibility to derogate if "there is no satisfactory alternative, and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range":

a) in the interest of protecting wild fauna and flora and conserving natural habitats;
b) to prevent serious damage, in particular to crops, livestock, forests, fisheries and water and other types of property;
c) in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences;

While great cormorants are not mentioned in the Habitats Directive, derogations should be used when cormorant predation is impacting "natural habitat areas" (Annex I), "species requiring special areas of conservation" (Annex II) and "Strictly protected species" (Annex IV). There are 65 fish species listed under the annexes of the Habitats Directive. Many of these, such as Atlantic salmon, Danube salmon, houting, marbled trout, grayling, barbel and nase, are negatively impacted by predation from cormorants.

The **EU framework for community action in the field of water policy (Water Framework Directive, 2000)** (Directive 2000/60/EC) is also a relevant piece of legislation in relation to the problems caused by great cormorants. The Water Framework Directive requires EU Member States to protect and, where necessary, restore water bodies to reach good status, and to prevent deterioration. Good status means both good chemical and good ecological status. Native fish are foundational to aquatic food web stability and to good ecological status of inland waters. Predation by cormorants significantly impacts the fish fauna, species composition, fish population abundance and changes the age structure in fish communities, as well as the reproductive capacities of protected fish species throughout Europe.

The **European Parliament resolution** of 4 December 2008 on the adoption of a **European Cormorant Management Plan** [aims] to minimise the increasing impact of cormorants on fish stocks, fishing and aquaculture (2008/2177(INI)). In this resolution the European Parliament called (amongst others) on the European Commission to submit a cormorant population management plan in several stages, coordinated at European level and seeking to integrate cormorant populations into the environment as developed and cultivated by man in the long term without jeopardising the objectives of the Wild Birds Directive or Natura 2000 with regards fish species and marine and freshwater ecosystems (paragraph 7).

The **European Parliament resolution** of 12 June 2018 **towards a sustainable and competitive European aquaculture sector: current status and future challenges** (2017/2118(INI)), reiterated "the views it has already expressed in its resolution on the adoption of a European Cormorant Management Plan, and points out that reducing the harm caused by cormorants and other birds of prey to aquaculture farms is a major factor in production costs, and thus for their survival and competitiveness; calls on the Member States to apply the current exceptions in the case of herons and cormorants and to the Commission to review the state of conservation of the otter"(paragraph 90).

The **European Parliament resolution** of 4 October 2022 on **striving for a sustainable and competitive EU aquaculture: the way forward** (2021/2189(INI)) acknowledged that the population of cormorants has seen a massive increase, and that this increase is causing serious damage to many marine sectors, including aquaculture. The resolution "Calls on the Commission to prepare a proposal for an EU great cormorant management plan that could properly and definitively address the problem the aquaculture sector has been facing for many years, based on the best available scientific advice and experiences and practices already tested in Member States; urges that the plan be designed for the effective mitigation and control of their effect on aquaculture farms, with a view to reducing their economic, environmental and social impact on production and biodiversity; highlights that the plan should include a list of eligible measures on preventive coexistence solutions and adequate compensation for losses and measures, financed with EU or national funds; insists that financial support for tailor-made research aimed at finding and testing preventive measures is key, but also for allowing proper monitoring, including recording and analysing the effects of the measures undertaken; calls on the Member States to implement those measures on a local case-by-case basis and report to the Commission every year on the implementation of the plan, including the effectiveness of the measures chosen; calls on the Commission to evaluate the EU great cormorant management plan every five years and report to Parliament; urges the Commission to prepare, as an immediate action, a guidance document on how to apply derogations provided for in Article 9 of the Birds Directive, and to assess the need to modify the current legislation where preventive measures have proven insufficient and the financial and social impact does not allow for coexistence solutions, according to the best scientific advice"(paragraph 56).

In 2022, the **European Inland Fisheries and Aquaculture Advisory Commission** (EIFAAC) issued a Resolution on measures to support the protection of vulnerable and endangered fish species from unsustainable predation from cormorants (EIFAAC/31/2022/3), which inter alia called for the preparation of a European-wide cormorant management plan to harmonize measures and regulations aiming to reduce the damage to fish stocks in Europe.

In addition to the above mentioned international and regional instruments, various European countries have adopted national level measures to reduce the impact of cormorant predation on fish, fisheries and aquaculture (including also the establishment of damage reporting and compensation schemes). These national measures have not been as successful as hoped, due to the migratory nature of the cormorants, where super abundance of the predators results in a "sink-situation" with new birds coming in as the area is "vacant" due to local regulations.

### *1.4.3 Predation risk management*

To prevent cormorant predation on fish and mitigate the consequences of predation, various European countries have applied a range of measures, with limited success.

Preventive measures include UV-resistant netting of hatchery/nursery tanks, raceways and small ponds in aquaculture, as well as netting of small stretches of rivers. Other farms, where ponds are too large to cover with nets, have installed fishing lines across these ponds, with limited success. Many angling clubs have increased their pond depth, introduced more water plants (to reduce fish visibility), floating covers or "fish forests", which provide a shelter against predation. Others have introduced fenced areas in their waters, also covered by nets, with mesh sizes that are too small for cormorants, but large enough for small fish.

Bird scaring devices with predator decoys, sudden noises, kites, balloons, aluminium strips, moving objects and laser lights are used by fish farmers and angling clubs. These are short-term solutions, as birds seem to get used to them. Watch-keeping and chasing cormorants away from ponds and angling areas and stocking are now common practices, but require lots of time from fish farmers and volunteers.

Preventive measures applied under Article 9 (derogations) of the Birds Directive, include culling (shooting), destruction of nests, oiling of eggs and disturbance of nests during breeding season. Due to the application and review processes involved, the approvals for such measures often come too late, when the damage is done.

Frequently applied risk mitigation strategies include an increase in stocking of fry and fingerlings, stocking with larger fish, stocking in spring instead of autumn, or just stop stocking and maintain a fish density that is very low, making a water area less attractive for cormorants.

Aquaculture crop insurance, including cover of damage caused by predators, is available in most European countries. Many marine cage culture operations are insured. However, the insurance premiums are often too high for freshwater pond farmers. Aquaculture crop insurance premium subsidies are not provided by European governments.

Financial compensation for damage caused by cormorants to fish stocks in aquaculture exists in a few European countries, such as Belgium, Czechia, Latvia, Slovakia, and some regions in Germany. However, the compensation paid is partial and some countries that paid compensation in the past no longer do so. There is no financial compensation for angling clubs for lost fish due to predation by cormorants. In a few countries some limited compensation was paid in the past to commercial (inland) fisheries, but this seems to have stopped. A few angling clubs involved in aquatic biodiversity protection have received financial support for preventive measures such as netting and construction of fish forests/shelters. The existing financial compensation and prevention systems for predation of fish by cormorants are few, inadequate in scope and insufficient in terms of funds available.

## 1.5 Management issues

Interactions between birds and fish/fisheries have long been prevalent within both marine and freshwater ecosystems (see Annex 2). In recent years, however, there has been increasing concern and accountability of the impact of expanding populations of fish-eating birds on wild fish populations and aquaculture enterprises. This has led to growing concerns about, on the one hand conservation of birds and on the other hand sustainability of fisheries resources for both commercial and recreational exploitation and aquaculture development, alongside protection of native aquatic biodiversity.

The conflicts between humans and cormorants primarily arise from competition for the same resources, but the conservation of fish populations has become increasingly important,

especially as many fish stocks have declined and even non-fished populations have become vulnerable. The effects of predation are amplified in areas where fish stocks are already under pressure from deteriorating habitats. Conflicts involving cormorants have been studied in detail in Europe through the EU REDCAFE/INTERCAFE COST Action projects[7] and FRAP[8], but also at a national level, where multiple scientific projects have sought to resolve or mitigate the conflicts. Summaries of these conflicts and actions are highlighted below.

***Coastal and lake fisheries***: Cormorants are directly catching fish in nets, removing valuable catch, damaging other (large) fish and nets. The solutions have been to use of cover-nets in pound net fisheries and regulating/killing cormorants in proximity of the nets. Cover nets have been of limited effect because cormorants learn to swim under the nets (the same way as fish enter), plus the nets are expensive and laborious to use. The conflict has moved towards a general decrease in coastal fish that fishers believe is mainly caused by predation.

***Aquaculture***: Modern, recirculation aquaculture systems (RAS) can be protected by nets, strings or by moving indoors, but traditional pond-aquaculture remains open to cormorants and the problem cannot be solved by covering ponds with nets as cormorants learn to walk in under the nets. The same is true for the many put and take lakes/ponds, where cormorants can cause great damage to the stocked fish by eating the smaller individuals and injuring the large fish. Aquaculture producers that use cages in coastal areas, lakes and reservoirs, have often covered their cages with nets against fish escapes and cormorants. However, at maintenance and harvest times many cage fish farmers encounter predation by groups of cormorants.

***Recreational fishing***: When cormorants forage in rivers, the main "sportfish" are often eaten in very high numbers, leaving rivers with very little fish to catch. Grayling and salmonid (trout and salmon) populations can be diminished, even when only relatively few birds have been hunting. In many rivers, the total biomass of fish has dropped from around 150 kg/ha to 10-15 kg/ha. This means that fishing in such "fish-empty" rivers is no longer attractive and feels ethically wrong. Even a few cormorants can eat a substantial part of the total fish stock. Management measures include to stock more and larger fish and to organize "hunting/scaring patrols" along rivers. In lakes, the situation is less pronounced, but cormorants have been shown to remove a high proportion of large perch, mid-sized pike, trout and zander in lakes in Denmark and Sweden, making recreational fishing less attractive.

***Conservation***: Some species that used to be very abundant, like the grayling, salmon and eel, are now in a very bad status, with a general negative trend and some local populations extinct. When investigating the causes, cormorant predation remains a tangible root problem. Thus, species of freshwater fish protected under the Habitats Directive are under increasing pressure from cormorant predation and so far, management options have been very limited. Further, many species are now vulnerable and contributing to many water bodies failing good ecological status or potential under the Water Framework Directive.

[7] http://cormorants.freehostia.com/

[8] Behrens et al 2008; Managing international 'problem' species: why pan-European cormorant management is so difficult. Environmental Conservation 35, 55-63.

Although the most frequently reported problems with cormorants are related to fisheries, guano (faeces) produced by birds at breeding and roosting sites is known to eventually kill trees — which, when alive, may have commercial or amenity value. Guano production can also alter the local fauna and floral communities, which can have conservation consequences for some rare or localised plant and animal species, especially amphibians and other bird species dependent of fish for food. In some places the presence of relatively large aggregations of cormorants in colonies or roosts, and the associated noise and smell are degrading the local land/waterscapes.

The conflicts involving fish protection and cormorants have been intense in most member states and across the rest of Europe for decades and remain that way despite many protective and responsive measures, including culling (according to Birds Directive Article 9-derogations). There are few well-documented examples of successful attempts to reduce avian predation pressure. Since completion of the EU-funded REDCAFE and INTERCAFE COST-Action projects (2008), conflicts have further escalated and new documentation of damage to wild fish populations has been published, thereby changing the nature of the conflicts, at least partly from commercial and recreational fisheries perspectives, to species conservation, i.e. balancing the need of how best to meet conservation requirements for species regarded as being in conflict. The existing tools to mitigate conflicts (i.e. INTERCAFE TOOLBOX) have not been effective or not used enough to reduce the level of conflicts.

A recent EIFAAC survey (2024), with responses from 26 European countries, revealed a continued high level of conflict between cormorants and biodiversity conservation, recreational fisheries, commercial fisheries and aquaculture[9]. The number of conflicts between cormorants and recreational fisheries and biodiversity conservation have increased rapidly. Seventy percent of the respondents were of the opinion that a European-wide cormorant management plan is needed to control the increasing cormorant population.

[9] FAO. 2024. *Report of the workshop on management advice for reducing the impact of cormorant predation on fish and fisheries – Pula, Croatia, 8 October 2024* - EIFAAC Occasional Paper, No. 56. Rome. https://doi.org/10.4060/cd3713en

# 2. Plan principles, overall goal and specific objectives

## 2.1 Overall goal

The overall goal of the European Management Plan for the Great Cormorant is:

"***To manage the adverse impacts of an expanding great cormorant population on inland and coastal fish, fisheries and aquaculture across its European distribution range***."

## 2.2 Guiding principles

The management plan is guided by the following principles.

| | |
|---|---|
| **Sustainability** | Ensure the long-term coexistence of cormorants, fish populations, and human livelihoods by maintaining an ecological balance and economic viability of fisheries and aquaculture. |
| **Evidence-based management** | Base decisions on robust scientific data, including population dynamics, migration patterns, ecological and socio-economic data and information. |
| **Adaptive management** | Use flexible and dynamic approaches to address evolving challenges, incorporating regular monitoring and stakeholder feedback. |
| **Collaboration and coordination** | Promote cooperation and continuous dialogue among European countries, bird, fisheries and conservation organizations and other stakeholders. |
| **Compliance with policies and legal frameworks** | Align management actions with EU directives (e.g. Birds Directive, Habitats Directive, Water Framework Directive), international treaties (e.g. Bern Convention) and national legislation and policies of European countries. |
| **Minimization of conflicts** | Balance the needs of fisheries, aquaculture, biodiversity conservation including of birds, and societal interests to reduce conflicts between stakeholders. |
| **Ethical considerations** | Apply management measures with low adverse animal welfare impacts. |
| **Precautionary approach** | Address potential risks proactively, ensuring that management measures do not cause unintended ecological or economic harm. |
| **Environmental stewardship** | Conduct management interventions in a responsible manner with care for the environment and in accordance with all key stakeholder interests. |

## 2.3 Objectives

The objectives of the plan are:

1. Reduce cormorant abundance in Europe to a level where their predation no longer has substantive, measurable, negative impacts on wild inland and coastal fish populations, aquatic biodiversity or aquaculture enterprises, whilst maintaining the great cormorant's favourable conservation status.
2. Protect vulnerable fish species against predation by cormorants, contributing to achievement of EU Water Framework Directive, Habitats Directive, Birds Directive and the Bern Convention targets.
3. Contribute to the long-term viability of inland and coastal recreational and commercial fisheries and aquaculture enterprises in Europe, and the implementation of European and national food security and rural development policies and strategies.
4. Update and develop methods for reducing cormorant numbers and distribution to support sustainable fisheries whilst maintaining the conservation status of cormorants.
5. Maintain up-to-date status and trend data on cormorants (breeding and overwintering), inland fish population abundance and distribution, and information about the ecological, economic and social impacts of cormorants.
6. Promote cross-border collaboration and harmonisation of monitoring, management, policy and legal frameworks.
7. Provide a central, open-access, fully moderated platform for engagement with all key stakeholders.

# 3. An adaptive European Management Plan for the Great Cormorant

## 3.1 Management planning framework

The European Management Plan for the Great Cormorant (CMP) is adaptive and involves a series of steps: 1) assessment of the system of cormorant fish interactions, related economics, and the underpinning policy drivers objectives and target end points; 2) formulating management measures and 3) choosing a course of action; 4) implementing management actions, monitoring changes in cormorant, fish, aquaculture and ecosystem characteristics, regionwide cooperation, and compensation for damages to fisheries and aquaculture; and 5) evaluation and adjustment of endpoints and goals of the plan into the future. Explicit specifications and documentation are required at each step, supported by stakeholder participation and consultation.

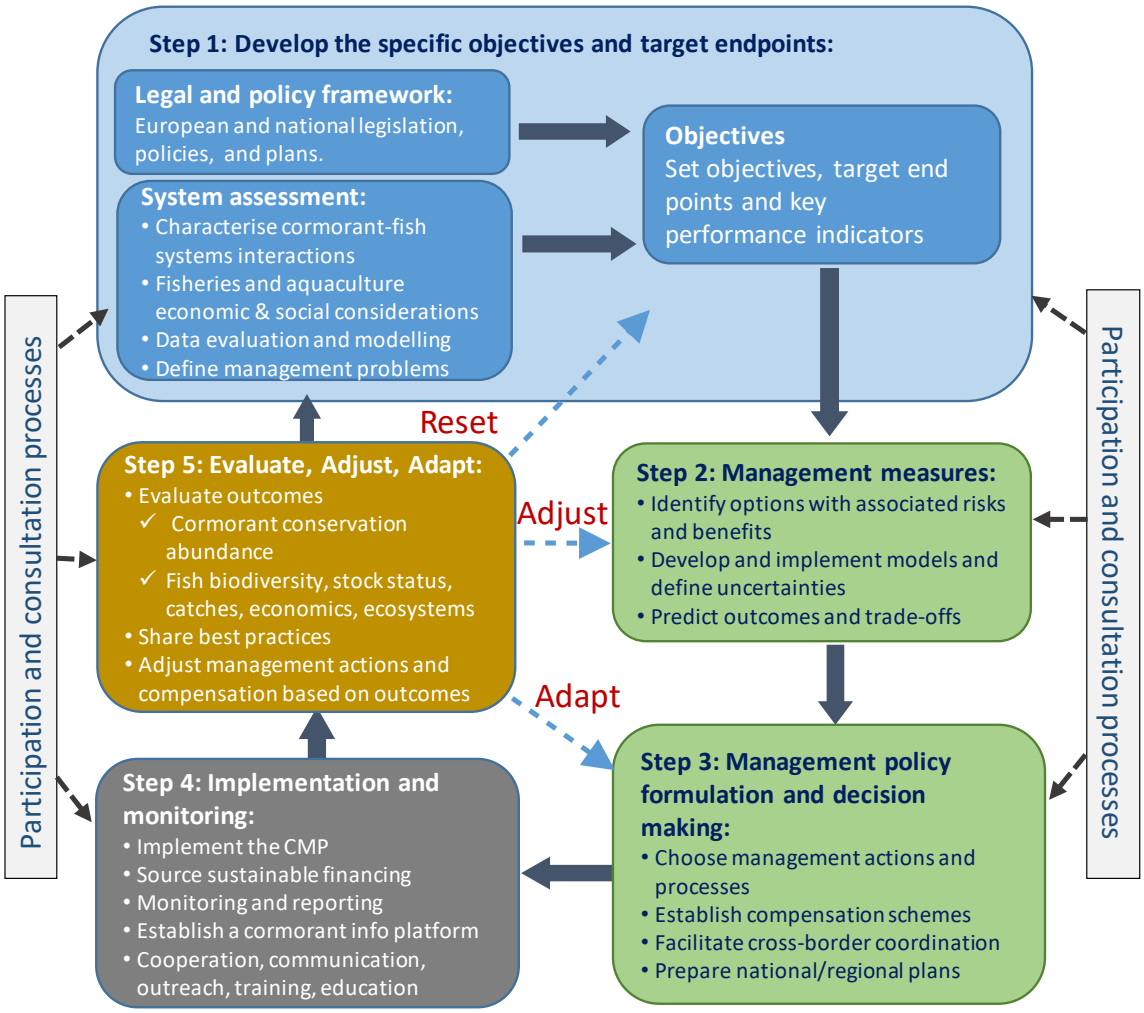


*Figure 2. Framework for the European Management Plan for the Great Cormorant*

The plan provides a process to quantify the problems, stakeholder motives and desires, goals and objectives, and enables structured decision-making and adaptive management through the Evaluate-Adjust-Adapt-processes.

## 3.2 Step 1: Develop the specific objectives and target endpoints of the management plan

### *3.2.1 Characterise cormorant, fisheries and aquaculture systems*

The first step in the plan is to formally characterise cormorant-fish systems interactions and define the management problems and conflicts. Sufficient information exists to define and quantify these problems. Data collection methods, data evaluation and modelling processes should be agreed on by the key stakeholders and, where necessary, approved by the Cormorant Management Advisory Group (see Annex 4).

The following actions are needed to reinforce the information and account for changing conditions as the CMP is enacted.

- Establish and operate an open-access, **pan-European system for monitoring** and updating cormorant population trends in distribution and abundance, breeding sites, and migration routes, and factors contributing to their range expansion.
- **Standardise data collection and monitoring protocols** for cormorants and fish cross European countries and agencies for consistency and comparability.
- **Review the status and trends in fish populations across Europe** related to achieving WFD and HD objectives in the face of cormorant predation.
- **Develop scientifically informed cormorant population thresholds** to prevent overpopulation, mitigate negative impacts and implement targeted, humane population control methods where necessary, such as habitat modification, non-lethal deterrents, or regulated culling (in compliance with legal protections).
- Ensure that cormorant management **measures do not negatively impact** other species or habitats.
- Continue data collection and **monitoring of the ecological, economic and social impact**s of cormorant predation on fish stocks in inland and coastal waters and fish farms.
- **Establish a central database** of cormorant numbers, breeding colonies, population dynamics, migratory patterns and predation impacts.

### *3.2.2 Setting objectives*

The objectives for the plan, already defined in Section 2.4, must be aligned to quantitative target end points for the size of the cormorant population. There is a need to **define reference and end points for the size and distribution of the European cormorant population** that maintains the species' favourable conservation status, but also aligns with favourable conservation status of fish species across Europe, improved stock status and viable fish farming enterprises (see Section 3.3). These end points will be developed by the Cormorant Management Advisory Group and reviewed and endorsed by European countries [including at the European Commission level].

### *3.2.3 Legal and policy framework*

The distribution and abundance of the great cormorants in Europe are largely regulated under the EU Birds Directive and national wildlife protection legislation. Where conflicts arise, people can request to control population size through lethal measures, generally targeting the adult birds or eggs on nests (oiling). These requests are evaluated, approved or denied, by environment ministries or agencies. In EU Member States, environment ministries submit annual approvals given as derogations under Article 9 to the EU DG Environment.

Whilst many derogations related to culling of cormorants (see chapter 1.4.2) are granted annually, the actual number of birds culled is unknown and likely to be considerably fewer than permitted.

Local lethal control measures have so far been inadequate to reduce the impact of cormorant depredation at a European level. There is a clear need to reassess the status of cormorants under the Birds Directive and align national and regional policies and management measures within Europe to ensure the consistency and effectiveness. Such a re-assessment should occur at the first evaluation (mid-term review) of the implementation of the European Management Plan for the Great Cormorant.

In the meantime, management options for consideration are:

- Introduce fast-track, standardized applications and approvals for lethal control under Article 9;
- Propose a change in the protection status of the great cormorant under the Bern Convention from a non-named species in Appendix III to a species listed as an exception (similarly as for instance the house sparrow, jackdaw, rook and great black-backed gull);

Depending on the mid-term evaluation, and the achievements obtained, the preparation of a great cormorant International Single Species Action Plan under the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) could also be considered, expanding the scope of this management plan. It should be recognized that the preparation of an Action Plan for the Great Cormorant in the African-Eurasian region was proposed before, but did not get the endorsement of the AEWA Meeting of the Parties.

## 3.3 Step 2: Determine management measures

An array of management tools has already been developed to address the cormorant fish conflict. These are described in detail in the INTERCAFE Toolbox. They cover both non-lethal and lethal control measures. The main non-lethal measures include use of visual and acoustic deterrents, barriers, and habitat modification; promoting fish refuges (e.g. submerged structures) to shelter vulnerable species, and support for stocking programmes for at-risk fish populations, where ecologically appropriate.

Lethal control of the cormorant population is generally used under a licensing/permit system in high-conflict areas under strict ecological justification and in line with local management plans. As such, lethal control tends to be a local or national measure and there has been a lack of coordinated control to reduce the overpopulation of cormorants across Europe. Furthermore, as not all European countries control their cormorant populations these can act as reservoirs to replenish reduced bird abundance in countries that do attempt to control the population. Consequently, lethal control measures have, to date, failed to deliver their desired endpoint of proportional decrease in cormorant numbers across their European range.

To meet the desired objectives to reduce cormorant abundance to sustainable levels across its European range, this step identifies innovative and sustainable methods, with associated risks and benefits, for managing long-term sustainability of the great cormorant population and minimizing the negative impacts of cormorants on fish stocks, aquaculture, aquatic biodiversity and ecosystem health.

The following options will be considered:

- The **status quo/do nothing option.** This option will lead to continued and further increasing large impacts on the viability of fisheries and aquaculture throughout Europe, failure to meet WFD targets, further endangering conservation of fish and other aquatic species and ultimately result in a decline in cormorant and other fish-eating bird populations coupled with a demise of other fish-eating predators.
- Develop **national and/or region-specific strategies** that recognise varying levels of cormorant population density, habitat type, and human interventions across Europe and implement adaptive management techniques that allow for adjustments in intervention measures based on new data, research findings, and evolving cormorant and fish population dynamics.
- Develop and promote **non-lethal deterrent methods** to prevent or reduce predation rates. Support **stocking programmes** for at-risk fish populations, should also be considered where ecologically appropriate. This could build on the **INTERCAFE Toolbox**, but it should be recognised many of the methods have inherent problems with application (see Annex 3), and do not address the underlying problem of reducing predation pressure across the European landscape.
- Systematic **lethal control** to reduce the European cormorant population numbers to a manageable level, and protect fish populations to attain favourable conservation status, and water bodies to achieve good ecological status or potential. This will require coordinated culling and egg oiling in all countries, including with countries that currently are not controlling cormorant numbers and are acting as reservoirs of cormorant replenishment.
- **Establish spatial management** to reduce cormorant predation impact on fish, by assigning "no-cormorant-zones" for fish and "no-regulation-zones" for cormorants. As such, there will be a need to develop **zonal management plans** where lethal control is tied to documented impact, especially in high-conflict areas.

Throughout the formulation of management options, attention is paid to ensure compliance with the EU Directives and national laws and regulations.

## 3.4 Step 3: Management policy formulation and decision making

### *3.4.1 Choose management actions and processes, including monitoring and evaluation plans*

The following actions are recommended to achieve a balance between pan-European conservation of cormorants, and the use and protection of fish populations, fisheries and aquaculture interests.

- The CMAG will review information on cormorant-fish systems interactions and define the management problems and conflicts.
- Develop and use models to predict outcomes and trade-offs and define uncertainties with actions proposed.
- The CMAG will advise on a target population of breeding pairs of cormorants within the European distribution range – 150 000 breeding pairs is the recommended target population size.
- The CMAG will propose management measures to be used to reach the goal - e.g.:
  - Immediate and continuous: support non-lethal methods of deterrents, barriers, habitat modifications and fish stocking.
  - Short term: coordinated culling of 150 000 adult cormorants/year.

- Long term: oiling of 50% of the eggs annually.

- With this goal, a marked recovery of river fish (e.g. grayling, trout, salmon, eel) as well as a reduction in losses at aquaculture ponds should be attained. If not, the target must be adjusted following review of cormorant abundance and status of fish populations and impacts at aquaculture units, after an initial interim period of three years and every three years thereafter.
- The measures will be applied in accordance with Article 9 derogation practices, the application of which needs fast-tracking and standardising, because when damages are evident action should be taken immediately to avoid further damages.
- Establish an effective system for damage reporting, assessment and compensation for fisheries and aquaculture facilities affected by cormorant predation. The procedure for determining compensation payments including damage reporting, criteria for payment, and payment for damages, needs to be standardised across all European countries.
- CMAG will use a monitoring programme on indicator fish populations (bi-annually linked to reporting for HD conservation status and WFD environmental status) and on cormorant population development and conservation status (once every three years).
- Based on this CMP, each European country will prepare and submit a 5-year national plan of management measures and monitoring to the CMAG, which will produce the regional overview of actions.

### *3.4.2 Facilitate cross-border coordination and decision making*

One of the barriers to effective management of the migrating and expanding cormorant populations is the limited cross border coordination of management interventions. Each country operates on its own management activities. Some countries do not use Article 9 derogations to reduce the cormorant population size and other countries that suffer most from cormorant predation cannot manage effectively a transboundary, shared population of birds. Consequently, much of the effort by individual countries or regions is ineffective at the pan European level, as it is not addressing the cause - the ever-expanding cormorant population.

To overcome this lack of coordination between countries and authorities the following mechanisms are proposed:

- **Adoption of the European Cormorant Management Plan** by the European Commission, European Parliament and the European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC). The latter is important for ensuring coordination and joint implementation of the CMP with non-EU countries in Europe.
- **Facilitate coordination between countries** to share responsibility for data collection, monitoring, management, control and evaluation. This will require a structure in which the CMAG and a secretariat have major roles to play (see also Section 3.5.4 and Annex 4.

## 3.5 Step 4: Implementation and monitoring

### *3.5.1 Implementation of the European Management Plan for the Great Cormorant*

The implementation of the CMP will start with its adoption by the European Commission.

A provisional framework for implementation of the CMP is as follows:

| *Year* | *Key milestones* |
|---|---|
| 2025 | European Commission and national governments adopt the CMP. |
| 2026 | Establish the Cormorant Management Advisory Group (CMAG) with agreement of the EC and with representatives from the European countries and other key stakeholders. |
| 2026 | European Inland Fisheries and Aquaculture Advisory Commission (EIFAAC) adopts the CMP, increasing its application to non-EU countries in Europe. |
| 2026 | Set-up of the Secretariat and a Compliance Committee with clear terms of reference. |
| 2026 | Official start of implementation of the CMP, and development of national level management plans (as required). |
| 2027 - 2030 | Annual reporting by countries to the Secretariat. |
| 2030 | Mid-term (review) evaluation by the EC and reporting to the European Parliament. |

Following implementation, the plan, will be evaluated and adapted every 5 years, based on review outcomes, new research findings and ecological shifts (e.g. climate change effects on fish migration and bird distribution).

**CMP MANAGEMENT STRUCTURE**

Implementation of the European Management Plan for the Great Cormorant (CMP) would include the following structure, which is largely similar to the structure used by most Regional Fisheries Management Organizations (RFMOs):

a) Cormorant Management Advisory Group – supporting assessment/research and data collection
b) Compliance Committee – monitoring compliance with the implementation of the Plan.
c) Secretariat – coordinating, facilitating and reporting on the implementation of activities in support of the Plan.

Further details on the management structure is provided in Section 3.4.5, and the draft Terms of Reference of each entity are provided in Annex 4.

European countries report activities and outcomes to the Secretariat annually. The Secretariat reports annually to the European Commission and EIFAAC, after review by the Compliance Committee. The EC reports annually to the European Parliament, as requested by the latter.

The proposed structure for CMP implementation, monitoring and reporting is presented in Figure3.

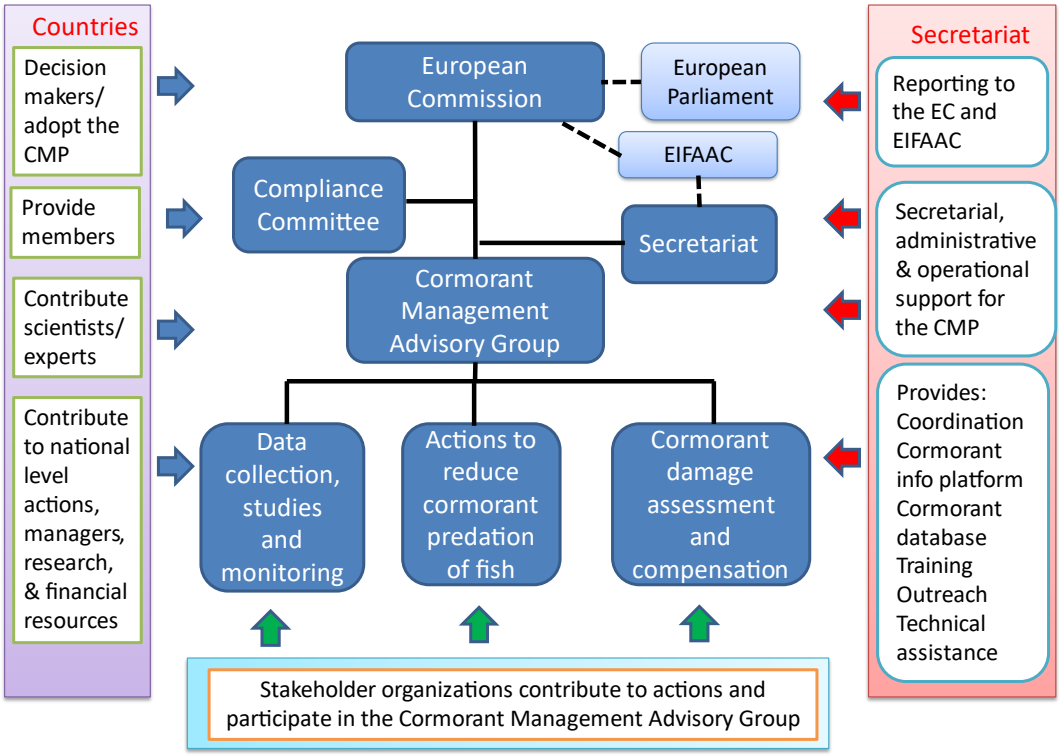


*Figure 3: Framework for CMP implementation*

### *3.5.2 Financing the implementation of the CMP*

Sustainable financing is fundamental to successful implementation of the management plan. Without funding from the EC, national budgets, EU LIFE, Horizon Europe and possibly the European Maritime, Fisheries and Aquaculture Fund this plan cannot be implemented.

The funds will be required for:

- Develop, promote and implement conflict prevention and mitigation measures, including **non-lethal deterrents**, **predation thresholds** and **fish stock resilience**;
- Establish and operationalize damage/loss reporting systems, damage assessment and **compensation schemes** for affected fisheries and aquaculture entrepreneurs;
- Establish and operate **joint data collection and monitoring initiatives**, reporting and dissemination;
- Establish and maintain a Secretariat that will provide for a **Cormorant Management Platform,** including a data hub, coordinate actions between countries, support awareness raising and capacity building, and reporting to the EC and EIFAAC.
- Facilitate meetings of the **Cormorant Management Advisory Group** (CMAG) and the Compliance Committee (CC).
- Technical support to European countries for developing national plans, capacity building, awareness raising and legislation review and amendment (as required).

**Co-financing** from individual European countries is required to enact local measures for mitigating and compensating damages caused by cormorants along with central financing by the EC.

The costs of the secretariat work (salaries and running costs) and meetings of the CMAG and CC should be covered directly by the EC. The more substantial costs for the field measures (shooting and oiling), monitoring (cormorants and fish) and compensation payment for damages caused by cormorants should be covered nationally, including through European Maritime, Fisheries and Aquaculture Fund (EMFAF). Additional EC contribution to these measures may also be required.

Shooting of adult cormorants already takes place in most countries and is mainly carried out by volunteers, so the extra costs will mainly be on monitoring and egg-oiling. Fish monitoring in rivers and lakes is taking place under the Water Framework and Habitats Directives, usually on a six-year cycle, although routine monitoring of fish populations occurs in most countries on a more regular basis. Efforts must be made to adjust monitoring needs for the CMP, including establishing index rivers and or vulnerable fish populations for more intensive annual monitoring. This would need some changes to be operational, but if infrastructure and expertise is present, this should not introduce higher costs. The oiling of eggs will be quite labour intensive for short periods every spring; the main effort will likely be higher for countries around the Baltic, with most nests to oil. Nevertheless, these countries are also the ones likely to benefit the most from a reduction in cormorant predation.

### *3.5.3 Monitoring and data hub*

An open-access, pan-European system for data storage and for monitoring cormorant population trends, breeding sites, and migration routes is required to support the implementation of the CMP. This can be used to develop scientifically informed population thresholds to prevent overpopulation, mitigate negative impacts and implement effective population control methods, such as habitat modification, non-lethal deterrents, or regulated culling.

Each year national reports will be submitted to the CMAG to prepare a European overview of the numbers of birds culled and the number of eggs oiled.

### *3.5.4 Cooperation and participation*

It is recognised that the great cormorant is a highly mobile species, therefore management requires collaboration between European countries to address the migratory nature of cormorants and their shared impacts. Actions that are needed to redress the balance of cormorant and fish population needs, must involve all countries and key stakeholders working in harmony to attain the same desired end points. To achieve this, the establishment of a Cormorant Management Advisory Committee (CMAG) is needed. The CMAG will include managers, scientists, and other key stakeholders (e.g. representatives of bird conservation, aquaculture, recreational fisheries, commercial fisheries, biodiversity conservation and other organizations). The involvement of these stakeholder organizations and institutions in the data collection and monitoring, management actions, and damage assessments is critical to the success of the CMP.

To oversee compliance with the plan and implementation of the agreed actions, a Compliance Committee (CC) will be required, consisting of representatives of the European countries. The structure and terms of reference of the committees are described in Annex 4.

Embedded within this international cooperation is the need to develop mechanisms for sharing successful strategies and lessons learned among European countries. This can be achieved by establishing a **Cormorant Information Platform** (like the IUCN Wetlands

International Cormorant Research Group platform[10]), which will be actively maintained and updated by the secretariat. The platform will be used to share up-to-date information on cormorant distribution and abundance, fish population monitoring results, discussions and decisions on policies/legislation and appropriate training materials.

#### *3.5.5 Public awareness, communication and education*

Informing the public about interactions between fisheries and cormorant ecology, the need for management, the rationale behind specific measures is important. Local communities' involvement in decision-making processes to foster ownership and compliance with the plan is key. A communication strategy will be developed, and **public information campaigns will be carried out on a regular basis** to improve awareness of the complexity of the conflict.

Legitimate and inclusive stakeholder engagement is fundamental to the plan and must consider the motives and drivers of the main stakeholder groups. Whilst conservation of biodiversity, in line with European biodiversity targets, is central to the plan, due consideration must also be given to wider environmental protection, economic development, food security and livelihoods objectives.

Stakeholders will become literate in all aspects of the cormorant fish conflicts, issues and potential solutions in the CMP through training and communication. Information will be balanced and clear to ensure consensus and avoid misinterpretation.

### 3.6 Step 5: Evaluate, Adjust, Adapt

Continuous monitoring and data collection on the status and distribution of the cormorant population and its impacts, and keeping track of management actions and results will allow evaluation of the CMP. Information on fish biodiversity, fish stock status, catches, economics, ecosystems and fish farming enterprises is also essential for the evaluation and adaptation of the CMP. It is essential that environmental changes and non-target effects are tracked. Information should include feedback from stakeholders and field operators.

The European Parliament requested the EC to evaluate the CMP implementation every 5 years.

Information collated during the first 5-year period will be analysed against the current situation (2025) to:

- Evaluate whether the management actions are achieving desired outcomes;
- Predict outcomes of different management actions;
- Integrate new scientific research, technologies and or policy updates;
- Identify unintended consequences including ecosystem changes and proliferation of pest species;
- Re-define management objectives and targets based on the updated information.

Where necessary, management actions will be adjusted in the following ways.

- ***Modify control techniques:*** if a method (scaring, exclusion, culling and egg oiling) is ineffective or causing unintended harm, switch to alternative methods.
- ***Optimize resource allocation***: redirect efforts to the most affected areas or most effective actions.

[10] http://cormorants.freehostia.com/

- ***Increase or decrease intervention intensity:*** if the cormorant population abundance falls below the threshold that threatens their conservation status, any actions should be suspended until such time as the numbers recover; where cormorant numbers are increasing rapidly, efforts will be intensified.
- ***Introduce new technologies:*** use innovations such as drones to increase capacity to count birds and nests, to oil eggs in remote nests and in tree-based colonies, or use drones to scare birds.
- ***Compensation:*** Adjust compensation levels based on CMP outcomes, preventive measures taken, and social and economic performance of the affected aquaculture and fisheries enterprises and angling clubs. Re-allocate void compensation money to support the CMP.

The adjustment of actions may require an update of the objectives and key performance indicators (KPIs), including:

- Revising goals if needed - e.g. shift from long-term suppression to targeted control to maintain equitable balance of bird and fish populations;
- Define new success metrics based on updated knowledge;
- Adjust timelines and expectations based on the outcomes.

It is also necessary to communicate new findings to policymakers, managers, and the public. It may be needed to adapt engagement strategies to increase compliance and participation.

There is also a need to incorporate lessons learned and plan for future adaptation by documenting successes, failures and best practices and develop contingency plans for unforeseen challenges (e.g. climate change impacts, other piscivorous species). This requires the need to maintain flexibility in decision-making to adapt quickly to emerging threats.

# 4. Logical framework approach

The European Great Cormorant Management Plan needs clear priority actions and a timeframe for implementation of these actions. Table 1 gives an overview of actions that should be targeted in the short to medium term to manage the adverse impacts of an expanding great cormorant population on inland and coastal fish, fisheries and aquaculture across its European distribution range.

Implementation of the actions will largely depend on availability of funding.

The CMP is deliberately not a blue-print plan, but guides coordinated action throughout Europe. It is designed to enable change in policies, legislation and cormorant management approaches in line with achieving the joint objectives. The outcomes of actions will be reviewed every 5 years and adaptation of the CMP and associated management measures is foreseen.

The budget required for implementation of the CMP will be prepared at a later stage in the drafting process, based on agreed structure and actions. Key elements to ensure successful implementation of the CMP will be:

- Allocation of adequate financial resources from the EU, country environmental budgets and other internal and external sources.
- Availability and motivation of personnel, including support from bird and fisheries agencies, NGOs and CSOs.
- Necessary logistical resources and equipment available to facilitate management the cormorant population, fund mitigation measures and cover appropriate compensation.

*Table 1. Implementation activities, priorities and timeframe for delivery of the cormorant management plan*

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| **Step 1: Develop the specific objectives and target endpoints of the management plan** | | | | | |
| ***Characterise cormorant, fisheries and aquaculture systems*** | | | | | |
| 1) Establish and operate a standardised pan-European **system for monitoring cormorant population trends** and breeding sites. | 1, 4, 5 | Triennial | • Triennial monitoring of breeding and overwintering cormorant population abundance and distribution in European countries.<br>• Monitoring of cormorant breeding success at nesting sites in protected areas.<br>• Regular assessment of conservation status of biodiversity and habitat quality affected by cormorant presence and management.<br>• Empirical information on economic impacts of cormorants on fisheries and other ecosystems services in freshwater and coastal water bodies.<br>• Updated studies on economic and livelihoods impact of cormorants at fish farms. | • Regular updates of status and trends in cormorant population distribution and abundance, including breeding and overwintering population sizes.<br>• Open access European monitoring information system updated on biennial basis.<br>• Review of the cormorant population distribution and abundance in Europe. | • National bird monitoring organisations, CSOs, NGOs and volunteers.<br>• Fisheries and environment agencies and fisheries organisations in each country<br>• CMAG |
| 2) **Establish standardise data collection and monitoring protocols** for assessing status of fish populations cross European countries in line with HD and WFD needs. | 5, 6 | Triennial. Minimum compliance with HD and WFD reporting | | | |
| **3)** Conduct studies and report on **ecological and economic impacts of cormorant predation** on fish populations, freshwater and coastal ecosystems, and fish farms. | 4, 5, 6 | Initially to establish reference state and periodically to assess impact of measures | | | |
| ***Setting objectives*** | | | | | |
| **4)** Agree on the **objectives for the Cormorant Management Plan**. | 1, 2, 3 | Year 0 | • Objectives agreed by CMAG<br>• Predictive modelling tools developed, maintained and results communicated. | • Objectives and KPIs of the CMP agreed.<br>• Local, national and regional cormorant population thresholds | • EC, EP, EIFAAC, CMAG, Compliance Committee |
| **5) Develop scientifically informed population thresholds** to | 1, 2, 4, 5, 6 | Year 0 | | | |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| prevent overpopulation of cormorants and mitigate negative impacts | | | • Evaluation of actions on cormorant distribution and population size through coordinated monitoring and modelling.<br>• Established regional population abundance thresholds to maintain cormorant conservation status across its distribution range. | established and agreed by key stakeholders. | • National agencies. |
| **6)** Establish **key performance indicators (KPIs)** to measure the success of management actions, such as changes in cormorant populations and fish stock recovery. | 1, 2, 5, 6 | Year 0 | | | |
| ***Legal and policy framework*** | | | | | |
| 7) Introduce **fast-track standardized applications and approvals** for lethal control of cormorants under Article 9 [derogations] of the EU Birds Directive. | 1, 3 | Years 1-2 | • Fast track systems developed and applied by most European countries.<br>• Report of the legal review published. | • Annual country reports indicate the average time between application and approval.<br>• An increase in the number of article 9 derogations.<br>• Legal advice shared online | • National environment agencies<br>• CMAG<br>• DG Environment<br>• Stakeholder organizations<br>• EC<br>• Bern Convention Secretariat |
| 8) **Legal review** of the options for re-evaluating the status of the great cormorant under the Bern Convention. | 1, 2, 3, 6, 7 | Year 1 | | | |
| **Step 2: Determine management measures** | | | | | |
| 9) **Mitigation measures**: Explore innovative and sustainable methods for managing | 1, 2, 3 | Years 0-5 | • Updated studies on the ecological damage to wild fish stocks, including | • Scientific monitoring programme in place to determine and agree | • Relevant monitoring and |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| cormorant populations and mitigating their impacts. | | | virtual population analysis and fish population modelling, and assessment of well-being of fish species of conservation importance.<br>• Empirical information on economic impacts of cormorants on fisheries and other ecosystems services in freshwater and coastal water bodies.<br>• Updated studies on economic and livelihoods impact of predation by cormorants at aquaculture enterprises.<br>• Updated and promoted INTERCAFE Toolbox for non-lethal deterrents to reduce depredation by cormorants on wild fish stocks and at aquaculture facilities, with indicators of likely success and options, including use of multiple deterrents to improve likelihood of success.<br>• Thresholds of cormorant population abundance at local and region scales established where lethal control becomes a justifiable option.<br>• High conflict areas selected where zonal management could be applied.<br>• Zonal management plans developed. | on acceptable levels of cormorant depredation.<br>• Ecological and impact data updated and made available online.<br>• Population monitoring data published, and data incorporated into predictive models.<br>• Updated INTERCAFE cormorant mitigation and population management toolbox published online.<br>• Zonal management plans available online. | research organisations.<br>• CMAG and Compliance Committee.<br>• Relevant national authorities.<br>• National environment agencies<br>• Stakeholder organizations |
| 10) **Non-lethal deterrents to protect fish and fisheries**: Determine non-lethal deterrent methods, such as nets, acoustic devices and visual deterrents, to safeguard fish stocks and keep cormorants away from sensitive areas. | 1, 2, 3, 4, 6 | Year 0 | | | |
| 11) **Non-lethal deterrents to protect aquaculture**: Determine non-lethal deterrent methods, such as nets and acoustic devices, to reduce economic losses in aquaculture. | 1, 2, 3,4, 6 | Year 0 | | | |
| 12) **Systematic lethal control measures:** Establish clear criteria for when and where lethal control (such as culling) can be used. | 1, 2, 3, 6 | Years 1-5 | | | |
| 13) **Spatial management**: Establish spatial management, including zonal management plans, to increase effectiveness of management actions in high-conflict areas | 1, 2, 3, 4 | Years 3-5 | | | |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| **Step 3: Management policy formulation and decision making** | | | | | |
| **14) European management plan for the great cormorant:** Finalize and agree on the actions and KPIs of the plan. | all | Year 0-1 | • Pan-European adaptive management plan for cormorants agreed along with its goal, objectives and key actions and KPIs.<br>• 'Best practice' guidelines for organisation of coordinated control of cormorant numbers at regional and national levels established.<br>• Clear criteria established for when and where lethal control (such as culling) can be employed, under what conditions permits can be granted, and how this aligns with EU and national legislation.<br>• Guidelines to facilitate Article 9 derogations under the Birds Directive available and linked to requirements to control cormorant depredation pressures.<br>• Damage assessment method developed and agreed.<br>• Damage compensation system established, based on best practices and lessons learnt from other bird damage compensation systems used for agriculture.<br>• Relevant authorities (national or regional) responsible for | • Management Plan agreed by the EC and EIFAAC and published.<br>• Thresholds for lethal control established and agreed.<br>• Population target confirmed and communicated to relevant national authorities.<br>• Number of derogations submitted.<br>• National / regional management plans published and shared.<br>• National/local management plans produced including development of activities benefitting local communities.<br>• Funds made available for research and monitoring programmes and for damage compensation.<br>• Damage compensation system for cormorant damage to aquaculture and fisheries enterprises established in most countries.<br>• Communication and data platform established. | • EC<br>• EP<br>• EIFAAC<br>• Relevant monitoring and research organisations.<br>• National environment agencies<br>• CMAG and Compliance Committee.<br>• Relevant national authorities, CSOs, NGOs in dealing with wildlife and cormorant issues.<br>• Secretariat |
| 15) **National plans:** Develop national or region-specific plans that recognise varying levels of cormorant population density, habitat type, and human interventions across Europe. | 1, 2, 5, 6, 7 | Years 0-2 | | | |
| 16) Evaluate efficacy of lethal **control measures** such as oiling eggs or regulated culling (in compliance with legal protections). | 1, 2, 3 | Years 1-5 | | | |
| 17) **Derogations:** Use the derogations system under the Birds Directive to report on controlled culling in areas where cormorants cause serious damage. | 1, 2, 3, 6 | Continuous | | | |
| 18) **Compensation system:** Establish an effective system for damage reporting, assessment and compensation for predation by cormorants. | 2, 3, 6, 7 | Years 0-2 | | | |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| 19) **Assign responsibilities** to authorities and organizations at national level for implementation of management plan and support targeted activities. | 6, 7 | Years 1-2 | implementation and enforcement engaged.<br>• Existing structures/capacity or new structures in place.<br>• Appropriate funding secured and dispersed to appropriate research and monitoring programmes.<br>• Platform for communication and feedback established and operational under guidance of CMAG and the Secretariat. | | |
| 20) **EU and national funding:** Ensure financial resources available to implement the CMP, including funding from the European Union and European countries. | all | Continuous | | | |
| 21) **Promote dialogue:** Create platforms for dialogue among fishermen, conservationists, and policymakers to build trust and consensus. | 5, 6, 7 | Years 0-3<br>Continuous | | | |
| **Step 4: Implementation and monitoring** | | | | | |
| 22) **Protect fish and fisheries using non-lethal deterrents**: Implement non-lethal deterrent methods, such as nets, acoustic devices and visual deterrents, to safeguard fish stocks and aquaculture facilities and keep cormorants away from sensitive areas. | 1, 2, 3, 4, 6 | | • Cormorant depredation rates reduced to socially, ecologically, economically and environmentally acceptable levels by regulated intervention mechanisms.<br>• Population monitoring to ensure population size remains within established threshold for several consecutive years, and the CMAG | • Population monitoring data published, and data incorporated in predictive models.<br>• Annual reporting and publication of data.<br>• Review of status of cormorant under Birds Directive and Bern Convention. | • Monitoring and research organisations.<br>• CMAG and Compliance Committee.<br>• Secretariat |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| 23) **Habitat modification**: Implement habitat modifications where necessary to reduce conflicts with fisheries and aquaculture. | 1, 2, 3, 6 | Years 5-10 | agrees to take necessary action where appropriate.<br>• Coordination to ensure cormorant management does not compromise protection of key biodiversity areas and protects conservation species, including fish.<br>• Countries support and actively facilitate rehabilitation of key habitats for fish.<br>• Dispersion of damage compensation funds to offset economic losses to fisheries and aquaculture enterprises. | • Countries support and actively facilitate the rehabilitation of fish habitats.<br>• Annual report on damages and payouts of compensation funds. | • National authorities. |
| 24) **Restore habitats:** Rehabilitate ecosystems affected by cormorant colonies, such as areas of deforestation or soil degradation. | 1, 2, 3, 6 | Years 5-10 | | | |
| 25) **Control measures:** Implement targeted population control methods where necessary, such as oiling eggs or culling. | 1, 2, 3, 6 | Continuous | | | |
| 26) **Compensation mechanisms:** Implement equitable damage compensation schemes for fisheries and aquaculture enterprises affected by cormorant predation across countries. | 1, 2, 3, 6 | Years 0-3 | | | |
| **Cooperation and participation** | | | | | |
| 27) **Cross-border coordination:** Facilitate collaboration between European countries to address the migratory nature of | 5, 6, 7 | Years 2-5 | • A Cormorant Management Advisory Group (CMAG) and Compliance Committee (CC) established, along | • European Cormorant Management Advisory Group and | • CMAG and Compliance Committee. |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| cormorants and their shared impacts. | | | with review and feedback system at the regional level.<br>• European countries and stakeholder representatives participate actively in research and monitoring activities.<br>• Authorities (national or regional) responsible for CMP implementation and enforcement within each country share data and information at regional level with the CMAG, CC and secretariat.<br>• High reporting level of annual culling and egg-oiling statistics by the European countries to the EC.<br>• Wise use and 'best practices' for the control of cormorants at national and local levels promoted. | Compliance Committee formally established.<br>• Annual meeting reports of the CMAG and CC.<br>• Monitoring data published and reported to relevant authorities and organisations.<br>• Publication of article 9 derogation statistics, with the number of culled cormorants.<br>• Best practices shared and dialogue between stakeholders active. | • Monitoring and research organisations.<br>• National authorities, CSOs, and NGOs.<br>• Secretariat |
| 28) **Cormorant Information Platform:** Establish a centralized database to share cormorant population data, fishery impact reports, and best management practices between European countries, agencies and other stakeholders. | 5, 6, 7 | Years 2, continuous. | | | |
| 29) **Share best practices**: Develop mechanisms for sharing successful strategies and lessons learned among European countries. | 4, 5, 6, 7 | Years 3-5, continuous. | | | |
| **Public awareness, communication and education** | | | | | |
| 30) **Awareness campaigns:** Conduct awareness campaigns to inform the public about cormorant conservation, cormorant impact on biodiversity, and the costs to fisheries and aquaculture. | 4, 5, 6, 7 | Years 2-5 - ongoing | • A communication strategy on the CMP developed and implemented.<br>• Awareness campaigns and knowledge systems implemented and freely available.<br>• Stakeholders and communities actively engaged in CMP development, implementation and evaluation. | • CMP communication strategy available online.<br>• Statistics on stakeholder engagement in the CMP development and implementation compiled by the CMAG.<br>• Publication of guidelines, training programmes and local codes of conduct. | • CMAG<br>• Secretariat<br>• Monitoring and research organisations.<br>• National authorities, CSOs, and NGOs. |
| 31) **Stakeholder involvement:** Engage stakeholders, including fisheries and aquaculture organizations, conservation | 4, 5, 6, 7 | Ongoing | | | |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| organizations, managers and policymakers, in the development and implementation of management measures. | | | • Educational programmes designed and presented periodically in European countries and online. | • Education programmes developed and available nationally and online in various languages. | |
| 32) **Educational programmes:** Enhance understanding and education about cormorants, fish and their role in the environment, economy and food security to gain broader public support for management actions. | 6, 7 | Years 2-5 - ongoing | | | |
| **Step 5: Evaluate, Adjust, Adapt** | | | | | |
| 33) **Evaluate & Adjust:** review outcomes of measures and adjust CMP actions based on new data, research findings, and evolving cormorant-fish population dynamics. | all | Year-5 | • European countries and key stakeholders participated in the CMP evaluation.<br>• CMP evaluated along with its goal, objectives, key actions and KPIs.<br>• CMP adaptations or adjustments proposed based on the evaluation recommendations, new data, research findings, and evolving cormorant and fish population dynamics. | • Reports of the compliance committee.<br>• Annual reports from the Secretariat through the EC to the EP and to EIFAAC.<br>• CMP evaluation report published and submitted to the EP.<br>• Proposals for adjustment and adaptation of the CMP submitted to the EC, EIFAAC and European Countries.<br>• CMP amendments take in consideration relevant changes in | • EC<br>• EP<br>• EIFAAC<br>• CMAG and Compliance Committee.<br>• Relevant national authorities.<br>• Secretariat |
| 34) **Evaluate breeding sites:** Key cormorant breeding sites are protected and managed. | 1, 2, 3, 5 | year-5 | | | |
| 35) **Evaluate biodiversity and habitat outcomes**: Cormorant management measures have | 1, 2, 5 | Year-5 | | | |

| Goal / Action | Objectives addressed | Timeframe | Outputs | Indicators | Responsibility |
|---|---|---|---|---|---|
| positive biodiversity and habitat outcomes. | | | • Status of cormorant breeding sites, aquatic biodiversity and fish habitat outcomes evaluated.<br>• CMP adapted to changes in the European policy and legislative framework.<br>• European countries evaluate the outcomes of the CMP at national level and adjust their national plans and management actions. | the European policy and legislative environment.<br>• Reports of national level evaluations of national and regional cormorant management plans and damage compensation schemes. | |
| 36) **Adapt to changes in the management environment**: Coordinate with EU Natura 2000 sites, WFD and HD programmes and other relevant policies and programmes to ensure that cormorant management contributes to the protection of biodiversity. | all | Year-5 | | | |
| 37) **Harmonize policies and legislation:** Align the CMP with other regional policies and legislative changes within Europe (such as the Bern Convention, Birds Directive, HD, and WFD) and national policies to ensure consistent and effective management measures. | 4, 6, 7 | Year 5 | | | |

## Annex 1: Acronyms and abbreviations

| | |
|---|---|
| **AEWA** | Agreement on the Conservation of African-Eurasian Migratory Waterbirds |
| **CMP** | Cormorant Management Plan |
| **CMS** | Convention on the Conservation of Migratory Species of Wild Animals |
| **CMAG** | Cormorant Management Advisory Group |
| **CORMAN** | EU Project: Sustainable Management of Cormorant Populations https://tinyurl.com/y7vpcy6p http://cormorants.freehostia.com/ |
| **CSO** | Civil Society Organization |
| **EAA** | European Angling Alliance |
| **EBBA** | European Breeding Birds Atlas |
| **EC** | European Commission |
| **EIFAAC** | European Inland Fisheries and Aquaculture Advisory Commission |
| **EMFAF** | European Maritime, Fisheries and Aquaculture Fund |
| **EP** | European Parliament |
| **EU** | European Union |
| **FAO** | Food and Agriculture Organization of the United Nations |
| **FEAP** | Federation of European Aquaculture Producers |
| **FRAP** | Development of a procedural framework for action plans to reconcile the conflict between large vertebrate conservation and the use of biological resources: fisheries and fish-eating vertebrates as a model case. https://www.ufz.de/index.php?en=36309 |
| **HD** | Habitats Directive (EU Directive on the conservation of natural habitats and of wild fauna and flora) |
| **INTERCAFE** | EU COST Action Project: Interdisciplinary Initiative to Reduce pan-European Cormorant-Fisheries Conflicts. https://www.ceh.ac.uk/our-science/projects/intercafe#:~:text=The%20main%20objective%20of%20INTERCAFE,Europe%20and%20to%20deliver%20a (http://cormorants.freehostia.com/) |
| **INTERCAFE TOOLBOX** | Russell, I., Broughton, B., Keller, T. & Carss, D.N. (2012). The INTERCAFE Cormorant Management Toolbox: methods for reducing cormorant problems at European fisheries. INTERCAFE COST Action 635 Final Report III (ISBN 978-1-906698-09-6). |
| **IUCN** | International Union for Nature Conservation |
| **MS** | Member State |
| **NGO** | Non-Government Organization |
| **REDCAFE** | EU FP5 Concerted Action Project: Reducing the conflict between cormorants and fisheries on a pan-European scale https://www.ceh.ac.uk/our-science/projects/intercafe-information#:~:text=REDCAFE,European%20Union's%20Framework%20Five%20Programme. |
| **WFD** | Water Framework Directive (EU framework for community action in the field of water policy) |

## Annex 2: Timeline of interventions on the cormorant-fish conflict

| Year | Event | Responsible / Reference |
|---|---|---|
| 1979 | Birds Directive | European Commission |
| 1994 | Development of an Action Plan for the Great Cormorant in the African-Eurasian Region.<br>Recommendation 04.01. ADOPTED | UNEP/CMS<br>https://www.cms.int/en/meeting/fourth-meeting-conference-parties-cms |
| 1994/95 | EU Directives on the protection of cormorants and herons ;MEP question & COM answer, | https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:1995:024:FULL |
| 1996 | Cormorants And Human Interests Workshop towards an International Conservation and Management Plan for the Great Cormorant (*Phalacrocorax carbo*) | van Dam C. & Asbirk S. (Eds.). 1997 - National Reference Centre for Nature Management, Wageningen, The Netherlands. 152 pp. |
| 1996 | Demonstration in Strasbourg 5-10,000 people. Le Monde « Les pêcheurs déclarent la guerre aux cormorans sur les bords du Rhin » | Fishing and aquaculture interests |
| 1997 | Development of an Action Plan for the Great Cormorant in the African-Eurasian Region.<br>Denmark and the Netherlands declared they were willing to take the initiative for the preparation of an action plan for the Great Cormorant ADOPTED | UNEP/CMS<br>https://www.cms.int/en/document/development-action-plan-great-cormorant-african-eurasian-region |
| 1997 | Opinion of the Committee of the Regions on 'The immediate measures which need to be taken to counter the damage caused by cormorants in the European regions' | Committee of the Regions<br>https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:51997IR0028&from=FR |
| 1997 | Removal of cormorant from Annex I | EU-Commission |
| 2001 | REDCAFE: EU FP5 Concerted Action Project: Reducing the conflict between cormorants and fisheries on a pan-European scale. | DG Environment<br>https://www.ceh.ac.uk/our-science/projects/intercafe-information#:~:text=REDCAFE,European%20Union's%20Framework%20Five%20Programme |
| 2001 | 3 to 6 April 2001: International Symposium on Interaction between fish and birds: implications for management. | Organized by the Hull International Fisheries Institute, University of Hull, in collaboration with EIFAC.<br>Cowx I.G. (2003) *Interactions between Birds and Fish: Implications for Management*. Oxford: Fishing News Books Blackwell Science, 374 pp. |
| 2002 | GRAND CORMORAN conference 12-13 March | France |
| 2002 | Cormorant event/meeting | Hunting Intergroup<br>EU-Parliament |
| 2003 | A statement on cormorants | EU Council of Ministers (fisheries), |
| 2003 | INTERCAFE -project EU COST Action Project: Interdisciplinary Initiative to | https://www.ceh.ac.uk/our-science/projects/intercafe#:~:text=The% |

| | | |
|---|---|---|
| | Reduce pan-European Cormorant-Fisheries Conflicts.<br>INTERCAFE - Interdisciplinary Initiative to Reduce pan-European Cormorant-Fishery Conflicts, (2004-2008, 60 partners, 2012). European Science Foundation/EU RTD Framework Programme, COST Action (635). | 20main%20objective%20of%20INTERCAFE,Europe%20and%20to%20deliver%20a<br>(http://cormorants.freehostia.com/ |
| 2003 | FRAP project: Development of a Procedural Framework for Action Plans to Reconcile Conflicts between Large Vertebrate Conservation and the Use of Biological Resources: Fisheries and Fish-eating Vertebrates as a Model Case | DG-Research<br>https://www.ufz.de/index.php?en=36309 |
| 2004 | "Review of international policy and practice for the management of native species conflicts" | DG-Environment |
| 2007 | Cormorant event, 23 May | Hunting Intergroup<br>EU-Parliament |
| 2007 | EIFAC Workshop on European Cormorant Management Plan. Bonn, Germany, 20-21 November, 2007 | EIFAC Occasional Paper No. 41. https://www.fao.org/4/i0210e/i0210e00.htm |
| 2008 | European Parliament resolution of 4 December 2008 on the adoption of a European Cormorant Management Plan to minimise the increasing impact of cormorants on fish stocks, fishing and aquaculture (2008/2177(INI)) | EU-Parliament: EUR-Lex - 52008IP0583 - EN - EUR-Lex |
| 2008 | Resolution on a Pan-European management plan for the control of cormorants – 2 July | ACFA |
| 2008 | Kindermann report adopted 4 December | EU-Parliament |
| 2009 | 17-18 January Cormorant count | Wetlands Cormorant Research Group |
| 2009 | Follow-up to the European Parliament resolution on the adoption of a European Cormorant Management Plan to minimise the increasing impact of cormorants on fish stocks, fishing and aquaculture | EU-Commission |
| 2009 | Cormorant seminar – Commission and stakeholders, 31 March | EU-Commission |
| 2009 | Speech by Commissioner Joe Borg at the Fisheries Council, Luxembourg, 23 June | Commissioner Joe Borg |
| 2009 | EU-guide for use of §9-derogation (final version in 2010) | EU-Commission |
| 2010 | CORMAN: EU project “Sustainable Management of Cormorant Populations” (2011-2014) | Consortium Partnership Aarhus University – DCE Danish Centre for Environment and Energy with UK Centre for Ecology & Hydrology. https://tinyurl.com/y7vpcy6p |
| 2011 | France presented a note demanding that the Commission establish a management plan for cormorant populations | France<br>http://register.consilium.europa.eu/pdf/en/11/st11/st11532.en11.pdf |

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| 2013 | Between Fisheries and Bird Conservation: The Cormorant Conflict Report to European Parliament Directorate General for Internal Policies Policy Department B: Structural and Cohesion Policies, Fisheries | Cowx I.G. 2013 https://www.europarl.europa.eu/RegData/etudes/note/join/2013/495845/IPOL-PECH_NT(2013)495845_EN.pdf |
| 2013 | EU guide for applying great cormorant derogations under article 9 of the birds directive 2009/147/EC. | European Commission: Directorate-General for Environment and N2K Group EEIG, *Great cormorant – Applying derogations under article 9 of the birds directive 2009/147/EC*, Publications Office,2013, https://data.europa.eu/doi/10.2779/56719 |
| 2016 | Answer on cormorant plan given by Mr Vella on behalf of the Commission: | EU-Commission https://www.europarl.europa.eu/doceo/document/E-8-2016-004736-ASW_EN.html |
| 2018 | European Parliament resolution of 12 June 2018 on towards a sustainable and competitive European aquaculture sector: current status and future challenges (2017/2118(INI)) | EU-Parliament: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=oj:JOC_2020_028_R_0004 |
| 2021 | Commissioner Sinkevičius' answer on the European great cormorant population | EU-Commission https://www.europarl.europa.eu/doceo/document/E-9-2021-001534-ASW_EN.html |
| 2022 | European Parliament resolution of 4 October 2022 on striving for a sustainable and competitive EU aquaculture: the way forward (2021/2189(INI)) | EU-Parliament: https://www.europarl.europa.eu/doceo/document/TA-9-2022-0334_EN.html |
| 2022 | EIFAAC Resolution EIFAAC/31/2022/3 "On the protection of vulnerable and endangered fish species from unsustainable predation from cormorants" including the need for a CMP | FAO/EIFAAC https://openknowledge.fao.org/handle/20.500.14283/cd2886en |
| 2024 | FAO-European Commission Trust Fund project on 'Developing Europe-wide management advice to protect vulnerable and endangered fish species from unsustainable predation by cormorants" (GCP/RER/069/EC). | DG Mare/EIFAAC European Maritime, Fisheries and Aquaculture Fund (EMFAF) financed within its work programme for 2024–2025. Projects - Ongoing projects \| EIFAAC \| FAO |
| 2024 | ProtectFish EU Horizon Project: Researching management solutions for fish, birds and people. | DG Research https://protectfish.eu/ |
| 2024 | EIFAAC Workshop on management advice for reducing the impact of cormorant predation on fish and fisheries. Pula, Croatia, 8 October 2024 | EIFAAC: https://openknowledge.fao.org/items/9a7bd657-f7a4-4c86-a372-bfdf55f726ba |
| 2024 | BSAC Workshop on predators in the Baltic (seals, cormorants) second edition, Helsinki, Finland, 30 October 2024 | BSAC: https://www.bsac.dk/wp-content/uploads/2024/06/BSACworksh |

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| | | oponpredators_Helsinki_30102024_final-report.pdf |
| 2025 | NSAC/BSAC Workshop on predators (seals & cormorants) – Lulea, Sweden, 20 March 2025 | NSAC/BSAC: https://www.nsrac.org/projects/nsac-bsac-workshop-on-predators-seals-cormorants-20-march-2025-lulea-sweden/ |
| 2025 | Stakeholder consultation on the draft European cormorant management plan, Rome, virtual, 25 April 2025 | EIFAAC https://www.fao.org/fishery/en/meeting/41503 |

## Annex 3: Overview of measures to reduce impact of cormorants on fisheries and aquaculture

| Measure and objective | Efficacy and acceptability |
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| **Lethal measures to reduce cormorant numbers directly** | |
| • Active removal of adult breeding birds or overwintering birds from the population.<br>• Shooting at site-specific or local levels under Article 9 derogation.<br>• Coordinated culling for population control at a national level at a national level. | • Response to localised culling short-lived and bird numbers recover to pre-treatment levels over a period of a few weeks.<br>• Shooting adults also helps reduce cormorant predation pressure through harassment of remaining birds.<br>• To be effective in the longer term, culling needs to be repeated at frequent intervals and coordinated across European distribution range.<br>• Culling birds at roosts near aquaculture ponds or on the ponds is likely to create only short-term respite and push birds into other areas where they might become a problem.<br>• Local reductions on the non-breeding grounds have marginal impact at a continental scale, and the problem will recur in the next season when new wintering birds appear. |
| **Reducing reproductive success** | |
| • Egg destruction, for example, by oiling [*spraying eggs with inert mineral or vegetable oil*] and egg pricking. | • Benefits of egg oiling over destroying eggs is cormorants continue to incubate the eggs and are less likely to attempt to re-nest.<br>• Reduces the number of hatchlings.<br>• Takes minimum of two years before there is noticeable reduction in number.<br>• Expensive and time consuming to carry out and difficult to access many roosts, especially in trees. Drones can improve effectiveness. |
| • Destruction of nests and breeding habitat. | • Nests or trees used for nesting can be removed or physically broken up with the hope that adult birds will either leave the area, or fail to rebuild or re-nest successfully that season.<br>• Nest destruction is labour intensive, although can be practical on smaller colony sites.<br>• Requires more than one visit per colony as birds are known to re-nest and lay additional eggs if nests and eggs are destroyed (time consuming).<br>• Constrained by factors such as adverse environmental or amenity impacts and influenced by the availability of alternative roosting sites. |

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| **Scaring cormorants away from fisheries or aquaculture units** | |
| • Auditory deterrents: automatic exploders, pop-up scarecrows with exploders, pyrotechnics, alarm or distress calls.<br>• Visual deterrents: laser guns, reflecting tapes, eyespot balloons, scarecrows, lights, water spray devices.<br>• Aerial harassment with ultralight aircraft, radio-controlled model airplanes; ground harassment with vehicle patrols.<br>• Chemical [conditioned taste aversion] deterrents. | • Can discourage cormorants from using specific sites.<br>• For harassment to be effective, a variety of techniques should be used in combination, and the location and combination of devices should be changed frequently for best results.<br>• Roost dispersal may move predating birds from the target area but pass on the problem to other fisheries and aquaculture units.<br>• Measures only have an effective range up to 200 m so of little use on river systems or larger sites.<br>• Cormorants learn quickly and these methods often do not deter the birds for extended periods of time.<br>• Use of scaring devices may be constrained where there are risks of disturbing other wildlife or human habituation. |
| **Exclusion techniques** | |
| • Netting enclosures using nets, wires, floating plastic balls.<br>• Facility design and construction. | • Nets provide a physical barrier and are effective if the edges of the nets extend to the ground surrounding the pond.<br>• Difficult to implement over large pond areas and rivers.<br>• Costs may be prohibitive for large ponds.<br>• Overhead wire systems function by making it difficult for cormorants to land on, and take off from, ponds. Although these systems are effective at preventing large flocks from landing, individual birds often learn to fly between the lines, or land on levies and walk into the pond despite the wires.<br>• Success of both wire systems and floating ropes depends on the availability of alternative foraging areas nearby.<br>• Construction of pond margins and bottom profile, location of fingerling ponds, and feeding techniques may lessen damage marginally. |
| **Habitat modification techniques to reduce availability of fish to cormorants** | |
| • Elimination of resting or roosting places.<br>• Elimination of nests.<br>• Improving habitat quality for fish.<br>• Construction of artificial fish refuges. | • Fish refuges can reduce fish losses, foraging efficiency of cormorants and incidence of damage to fish.<br>• Practical constraints regarding the use of refuge structures in rivers and larger still-waters |

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| | (especially those that are also used for water sports).<br>• Causes obstructions and snagging to anglers but also increases flooding risk in large rivers. |
| **Fish stock management techniques to reduce availability of fish to cormorants** | |
| • Increase the size of individuals stocked, regulation of stocking density.<br>• Alter stocking strategy [timing of stocking, frequency and location of stocking].<br>• Use of buffer species to divert cormorants from predating on valuable species. | • Reduces depredation on small-sized individuals but can increase scarring and wounding of larger individuals.<br>• Not always feasible because of availability of stock.<br>• Increases cost of stocking. |
| **No control** | |
| • Allows for a natural balance in species interrelationships to become established. | • Cormorant population will continue to expand and exacerbate conflict.<br>• Outcry from stakeholders and businesses affected by cormorant predation.<br>• May not be acceptable where survival of endangered fish and other aquatic species are at risk. |

Table adapted from Cowx 2013[11].

[11] Cowx, I.G. (2013). Between Fisheries and Bird Conservation: The Cormorant Conflict https://www.europarl.europa.eu/RegData/etudes/note/join/2013/495845/IPOL-PECH_NT(2013)495845_EN.pdf

## Annex 4: Cormorant management planning framework

***Cormorant Management Advisory Group (CMAG)***

1. The Cormorant Management Advisory group (CMAG) will be responsible for providing scientific, ecological, social and economic advice relating to the management of cormorants in Europe, as well as support the implementation of the adaptive (multiannual) European Management Plan for the Great Cormorant.

2. The CMAG Terms of Reference are to:

a) Develop standardized methods and guidelines to assist European countries in their data collection and reporting in relation to the implementation of the CMP;
b) Collect and assess information provided by European countries, relevant organizations, institutions or programmes on cormorant management efforts, and other data relevant to measuring the impact of the cormorants on aquatic biodiversity, fisheries and aquaculture;
c) Assess the status and trends of the great cormorant population, ecosystems and fisheries-related human components, using the appropriate indicators and in relation to agreed management, biological, and/or conservation reference points;
d) Provide independent advice on a technical and scientific basis to facilitate the adoption and implementation of measures concerning the sustainable management of great cormorants and the assessment of biological, ecological, social and economic implications under different management scenarios;
e) Report annually, through the secretariat, to the European Commission and EIFAAC on recommendations concerning conservation, management and research on cormorants, including consensus, majority and minority views.

3. Composition of the CMAG

The CMAG will be composed of scientists officially nominated by the European, and observers from international and European stakeholder organizations.

Each European country shall have the right to appoint a representative and an alternate, if needed, both with suitable scientific qualifications, who may be accompanied by experts and advisers.

Members and the Secretariat may invite experts, in their individual capacity, to enhance and broaden the expertise of the CMAG.

The European countries and observers shall finance the participation of their representatives, alternates, experts and advisers to the CMAG meetings.

***Compliance Committee***

1. The Compliance Committee (CC) will be responsible for reviewing the individual compliance by European countries with the European Management Plan for the Great Cormorant, and its agreed management measures.

2. The Compliance Committee Terms of Reference are:

a) assess, based on all available information, compliance by European countries, and relevant institutions with the measures of the CMP;
b) request clarifications and express concern to European countries and relevant institutions in cases of non-compliance with the agreed measures in the CMP;
c) submit, through the secretariat, to the attention of the European Commission cases in which countries and relevant institutions are not compliant with the agreed measures of the plan, cases in which activities undermine the effectiveness of the CMP;
d) provide additional information, as it considers appropriate or as may be requested by the European Commission and EIFAAC, relating to the implementation and compliance with measures in the CMP;
e) monitor and evaluate the CMP, and formally propose adaptations to the CMP for consideration by the European Commission and EIFAAC;
f) provide independent institutional and legal advice and submit bi-annual reports to the Commission to facilitate the adoption of adaptations to the CMP.

3. Composition of the Compliance Committee

The Compliance Committee shall be composed of one representative and one alternate of each European country.

The European countries shall finance the participation of their representatives and/or alternates to the Compliance Committee meetings.

***Secretariat***

1. The Secretariat will be responsible for the official communications related to the implementation, review, evaluation and adaptation of the European Management Plan for the Great Cormorant, coordination with countries, international and regional stakeholders, and reporting to the European Commission and EIFAAC.

2. The Secretariat Terms of Reference are:
a) receive and transmit the official communications regarding the CMP;
b) maintain contacts with government officials, international and regional organizations concerned with the conservation and management of cormorants and fish and other aquatic species that are impacted by cormorant predations, to facilitate consultation and cooperation on all matters pertaining to the objectives of the CMP,
c) facilitate the preparation and implementation of the CMP, prepare budgets and ensure timely reporting to the European Commission and EIFAAC;
d) participate in the formulation of proposals regarding the budget, the CMP and related activities;
e) stimulate interest among European countries and potential donors in the implementation of the CMP and in possible financing or in implementing cooperative projects and complementary activities;
f) promote, facilitate, and monitor the development and maintain the Cormorant Information Platform and regional databases on ecological, social and economic information related to the population of cormorants and impacts on fish, fisheries and aquaculture;

g) coordinate and technically support the research, awareness raising and capacity building programmes in support of implementation of the CMP, when required;
h) organize meetings of the CMAG and Compliance Committee and other related ad hoc meetings;
i) prepare, or arrange for the preparation of, background documents and papers and report annually on the implementation of the CMP to the European Commission and EIFAAC, and arrange for the subsequent publication of the annual reports;
j) perform any other function, as may be required by the European Commission and/or EIFAAC.

3. The Secretariat shall be composed of:
    1. An Executive Secretary – responsible for implementation of policies and activities related to the CMP and reporting to the European Commission and EIFAAC.
    2. A Research and Capacity building officer – responsible for database maintenance and management and facilitation of research, awareness raising and capacity building on the CMP.
    3. An administrative assistant – responsible for administrative and operational support related to implementation of the CMP.