

## IMPACT OF WILDLIFE ON THE AQUACULTURE PRODUCTION

### Background

The populations of some protected animal species have been steadily increasing in European rural inland and coastal landscapes for the last decades well beyond historical recorded levels. This has been positive with respect to the protection of those species but is having collateral consequences creating intense losses on aquaculture farmed stocks and serious impoverishment on natural fish communities. Though protected by EU legislation, those species could be described as having an invasive impact in certain European regions or even on pan-European scale, causing significant economic damage to aquaculture production (both direct and indirect) and decrease of biodiversity, among others. Their predatory or destructive activities pose a high risk to the viability of the freshwater and marine aquaculture sectors, ecosystem services and preservation of biodiversity provided by ponds, lakes, coastal lagoons, and also for rural livelihoods<sup>1</sup>.

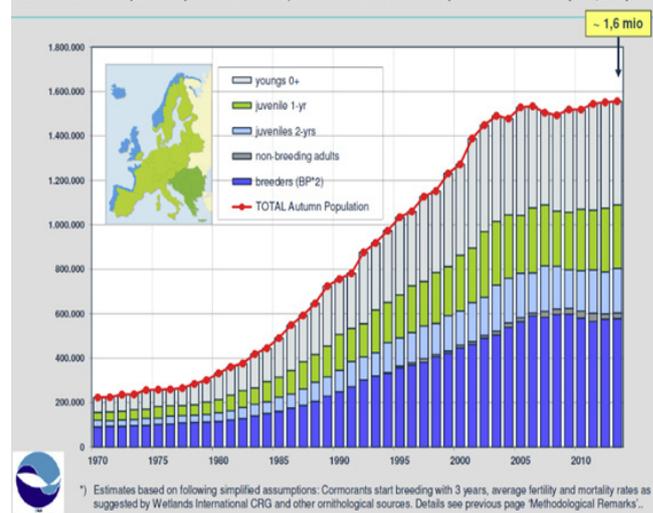
The predatory effect of Great cormorant (*Phalacrocorax carbo*) on a pan-European scale for the last 40-50 years is one of the most impacting examples of the undesired effects of long-lasting species protection across the European Union. The aquaculture and fishing sectors, as well as wild open water systems (rivers, lakes and wetlands), have been suffering damage because of these birds. The Great cormorant populations as a whole have increased in this period significantly, reaching an estimate of more than about 2 million individuals. This population daily consumes more than 1,000 tons of fish<sup>2</sup>. The booming population of cormorants is suspected to be a key driver behind the current failure of the measures for the recovery of the stock of European eel<sup>3</sup>.

Even though derogation mechanisms legally exist on EU level for some of these species, and accepted management plans also in some EU member states, going through all the necessary administrative burdens, misunderstanding, misuses, fixed quotas and restrictions in space and time demanded by the local/regional/state nature protection authorities, make them mostly unefficient to preserve aquaculture production on viable way. Some of these species, although abundant or even overpopulated in some countries, are highly protected under the Directives with no further exception.

- 1 Link to Factsheet on Ecosystem services
- 2 European Parliament forum: "Cormorant: management needed across the borders"
- 3 Council Regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel."

### A5-2. Estimate Total Cormorant Population in Core Europe - 1970 -2014

Total Cormorant Population (Carbo + Sinensis, Breeders + Non-Breeders) - Estimate F. Kohl (ÖKF/EAA)\*



Although the compensation mechanisms can not always provide fully appropriate solutions from sustainability point of view, these are not even existing at all in more member states..



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### Wild species involved

- The species concerned are generally protected under EU Bird Directive (2009/147/EC) and Habitat Directive (92/43/EC), implemented by the EU member states through national legislation.
- They are abundant, even overpopulated and attaining a character of invasiveness in certain European regions.

Species Common Name ( <i>Latin</i> )	Protection Status in the EU <sup>1</sup>
Great cormorant ( <i>Phalacrocorax carbo</i> )	EU Bird Directive (Protected by Article 1 as generally protected wild bird)
Pygmy cormorant ( <i>Microcarbo pygmaeus</i> )	EU Bird Directive (Annex I)
European otter ( <i>Lutra lutra</i> )	EU Habitat Directive (Annex II, IV)
European beaver ( <i>Castor fiber</i> )	EU Habitat Directive (Annex II, IV, V)
Great white/grey heron ( <i>Ardea alba/A. cinerea</i> )	EU Bird Directive (Annex I/generally protected wild bird)
Grey seal ( <i>Halichoerus grypus</i> )	EU Habitat Directive (Annex II, V)
Harbour seal ( <i>Phoca vitulina</i> )	EU Habitat Directive (Annex II, V)
Goosander ( <i>Mergus merganser</i> )	EU Bird Directive (Annex II Part B)
Black-headed gull ( <i>Larus ridibundus</i> ) and great black-headed gull ( <i>Larus marinus</i> )	EU Bird Directive (Annex II Part B)

<sup>1</sup> EU Habitat directive, Annex II – species under NATURA 2000  
 EU Habitat directive, Annex IV – strict protection species  
 EU Habitat directive, Annex V – possible management measures  
 EU Bird directive, Annex I – special conservation measures  
 EU Bird directive, Annex II, Part B – species huntable in some member states



### Undesired impacts of wildlife on aquaculture

- Direct financial losses on commercially raised fish for human consumption and loss of yield from the consumption of juveniles.
- Indirect financial losses (through stress, low welfare, lower weight gain, etc) on commercially farmed fish because of wounding, harming and lowering production efficiency.
- Loss of farmed fish genetic breeding material (gene pool, aquatic genetic resources, etc.) attained over decades of patient selection.
- Damage to fish farming structures (ponds, net-pens, gears, dams, dikes, etc) causing the escapement of fish, threats to properties and workers safety, and threatening the existence of waterbodies with historical and cultural values.
- Transmission of parasites, fish notifiable diseases and invasive alien species
- Additional Eutrophication of specific water areas through phosphorous and nitrogen-loaded bird faeces and the regurgitation of pellets.
- Decline of biodiversity (namely eels, rheophilous fish, birds, amphibians and molluscs) and other negative impacts on aquatic ecosystems (incl. NATURA 2000 sites).

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### Proposals for action

- Reevaluate the carrying capacity of the network both artificial and natural habitats of these protected species are indispensable to be reviewed regionally from ecological, economic, and social aspects.
- More effective and flexible management. The control measures for wild species control should be applied systematically in all EU member states with overpopulation or a high abundance of the affected protected species.
- Facilitate an area-wide derogation system without further administrative burdens.
- The cost of the control mechanisms should be financed through environmental protection and EU Rural development funds through national budgets in all concerned EU Member states. Compensation for the damages on fish stocks and farming structures, especially on man made facilities, should be financed through EMFAF<sup>1</sup> or national budgets, but preferably through the financial mechanisms designated for the protection and restoration of the environment according to the rule that whoever protects then pays.

<sup>1</sup> Regulation (EU) 2021/1139 of the European Parliament and of the Council of 7 July 2021 establishing the European Maritime, Fisheries and Aquaculture Fund and amending Regulation (EU) 2017/1004.



- Increase support to scientific and technical research and innovation on the improvement of effective protection measures, new technologies for automatic monitoring and early damage prevention.
- Sharing of good practices. An overview of international experiences on efficient wild species control should be carried out. Practices on derogation systems, regulation mechanisms and compensation schemes should be shared between EU Member states. The EU Aquaculture Assistance Mechanism<sup>1</sup> could play a leading role on it.

<sup>1</sup> EC Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030