ANNEX III

Implementation of Article 12 of Habitats Directive: The wolf example

1. Background - Introduction

The wolf belongs to European native fauna and is an integral part of our biodiversity and natural heritage. As a top predator, it plays an important ecological role, contributing to the health and functioning of ecosystems. In particular it helps to regulate the density of the species it preys on[167] (typically wild ungulates such as roe deer, red deer and wild boar, but also chamois and moose, depending on the area) and improving their health through selective predation. The wolf used to occur all over continental Europe, but it had been exterminated from most regions and countries by the first half of the 20th century.

The 2020 State of Nature report[168], based on data reported by Member States, confirms that wolf populations are generally recovering (stable or increasing) in the EU and are recolonising parts of their historical range, although they have reached a favourable conservation status in some Member States only[169]. The return of the wolf is an major conservation success[170]**,** which has been made possible by legal protection, more favourable public attitudes, as well as the recovery of its prey species (e.g. deer and wild boar) and of forest cover (following rural land abandonment).

At the same time, the return of the wolf to regions where it had been absent for decades or more is a significant challenge for Member States as this species is often associated to several types of conflict and can provoke strong social protests and reactions among concerned rural communities.

Just like other large carnivores, wolves have very large area requirements, with individuals and packs using hundreds of thousands of km^2 for their territories. As a result they occur at very low densities and their populations tend to spread over very large areas, typically across many administrative borders, both within and between countries. From a biological point of view, it is therefore recommended that conservation and management measures are as coordinated and consistent as possible. This highlights the need for cross-border cooperation, for example by applying consistent and coordinated approaches at the level of the wolf population. Further guidance is available in the *Guidelines for population-level management plans of large carnivores in Europe*, developed for the European Commission (Linnell et al, 2008)[171].

The wolf is listed in Annex IV of the Habitats Directive for most Member States and regions and is therefore subject to the strict protection provisions of Article 12 of the Habitats Directive, including the prohibition of all forms of deliberate capture or killing of individuals in the wild.

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167 https://link.springer.com/article/10.1007/s10344-012-0623-5

168 https://www.eea.europa.eu/publications/state-of-nature-in-the-eu-2020

169 Under Article 17 of the Habitats Directive, Romania, Lithuania, Latvia, Estonia and Italy have reported the wolf as being in favourable conservation status in all their biogeographical regions.

170 https://science.sciencemag.org/content/346/6216/1517

171 https://ec.europa.eu/environment/nature/conservation/species/carnivores/promoting_management.htm

For certain Member States and regions the wolf is listed under Annex V, as a species 'whose taking in the wild and exploitation may be subject to management measures'. For most Member States and regions, the wolf is also included in Annex II, as a priority species, requiring the designation of special areas of conservation (SACs) and appropriate conservation measures. Table 1 shows which populations are included in which Annex of Habitat Directive.

TABLE 1. Wolf listing in the Habitats Directive's Annexes

Annex II (need to designate SACs): '* Canis lupus (except the Estonian, Latvian, Lithuanian and Finnish populations, Greek populations north of the 39th parallel and Spanish populations north of the Duero)'
Annex IV (strict protection): 'Canis lupus (except the Estonian, Bulgarian, Latvian, Lithuanian, Polish and Slovak populations, Greek populations north of the 39th parallel, Spanish populations north of the Duero and Finnish populations within the reindeer management area as defined in paragraph 2 of the Finnish Act No 848/90 of 14 September 1990 on reindeer management)'
Annex V (species management is allowed): 'Canis lupus (Spanish populations north of the Duero, Greek populations north of the 39th parallel, Finnish populations within the reindeer management area as defined in paragraph 2 of the Finnish Act No 848/90 of 14 September 1990 on reindeer management, Bulgarian, Latvian, Lithuanian, Estonian, Polish and Slovak populations)'.

As mentioned above, the wolf has not yet achieved a favourable conservation status in many Member States and regions[172].

A study carried out in 2018 for the European Parliament[173] assessed the extinction risk for individual wolf populations on the basis of the IUCN Red List criteria. Out of nine (mainly cross-border) wolf populations, three were assessed as 'least concern', three 'near threatened' and three 'vulnerable'. One wolf population (the Iberian population, Spain-Sierra Morena) has become extinct. The authors of the study also highlighted difficulties in harmonising the results of monitoring data because of differences in monitoring techniques and approaches (different ways or periods for counting), averages vs maximum and minimum population, lack of reporting by some countries despite the species being present, differences in data quality, etc.[174].

Although it appears that several wolf populations are recovering and expanding across Europe, the species still faces various threats and conservation problems, notably poaching (which is often undetected but is likely to account for a very large share of the total mortality). The specific threats and the potential measures to address them are described for each wolf population in a European Commission-funded report *Key actions for Large Carnivore populations in Europe* (Boitani et al, 2015[175]).

2. Legal requirements for the protection of individual wolves

The wolf, wherever it is listed under Annex IV of the Habitats Directive, is strictly protected. Since the Directive's objective is to reach favourable conservation status for the listed species. The protection that Article 12 of the Habitats Directive provides to the

172https://nature-art17.eionet.europa.eu/article17/species/summary/?period=5&group=Mammals&subject=Canis+lupus&region=

173 https://www.europarl.europa.eu/RegData/etudes/STUD/2018/617488/IPOL_STU(2018)617488_EN.pdf

174 The IUCN Red List of Threatened Species 2018: https://www.iucnredlist.org/ja/species/3746/144226239 Other recent data provide slightly different figures than the above study in a few cases for the Iberian, Western-Central Alps and the Karelian populations.

175https://ec.europa.eu/environment/nature/conservation/species/carnivores/pdf/key_actions_large_carnivores_2015.pdf

populations of species listed in this annex has a preventive character, and requires Member States to prevent situations that could negatively impact the species.

The formal transposition of Article 12 into national legislation needs to be complemented by further implementing actions to ensure strict protection based on the specific problems and threats faced by the wolf in a given context. Not only must the actions listed in Article 12 be prohibited, but the authorities must also take all measures necessary to ensure that the prohibitions are not breached in practice. This implies, for example, that the authorities are duty bound to take all measures necessary to prevent the (illegal) killing of wolves, and to protect the areas that serve as resting or reproductive sites, such as their dens and their '*rendezvous sites'*.

According to the Court of Justice of the European Union (CJEU), Article 12(1) of the Habitats Directive 'requires the Member States not only to adopt a comprehensive legislative framework but also to implement concrete and specific protection measures', whereas the provision also presupposes the 'adoption of coherent and coordinated measures of a preventive nature' (CJEU Case C-183/05 of 11 January 2007, Commission of the European Communities v Ireland). This approach has been confirmed by the judgment of the CJEU of 10 October 2019 (preliminary ruling in Case C-674/17): 'In order to comply with that provision, the Member States must not only adopt a comprehensive legislative framework but also implement concrete and specific protection measures. Similarly, the system of strict protection presupposes the adoption of coherent and coordinated measures of a preventive nature. Such a system of strict protection must therefore enable the actual avoidance of deliberate capture or killing in the wild, and of deterioration or destruction of breeding sites or resting places, of the animal species listed in Annex IV(a) to the Habitats Directive'.

One example of an action that effectively enforces the species protection provisions is the setting up of effective anti-poaching teams equipped with anti-poison dogs. Poaching, snares and poison baits are indeed a major threat for wolves in many places. Poisoning is a particularly serious problem because it also affects other species, in particular birds of prey. To deal with this problem, several projects in Southern and Eastern Europe (Spain, Italy, Portugal, Greece, Bulgaria and Romania) financed by the LIFE programme[176] have contributed to establishing specific measures that effectively support the strict species protection regime, e.g. establishing anti-poison dog units, training personnel (park rangers, forest guards, provincial police, veterinarians) and capacity building within public bodies; and awareness-raising activities targeted at livestock breeders, hunters, tourist operators, schoolchildren and the general public.

Wolf conservation/management plans, when established in line with Article 12 and when properly implemented, may constitute an effective framework for the implementation of strict protection provisions for Annex IV wolf populations, building up a comprehensive coexistence system that aims to ensure favourable conservation status while addressing the conflicts with human activities.

Such plans may include actions such as: (i) support for preventive measures (through investment aids, information, training and technical assistance); (ii) compensation of economic damages caused by wolves; (iii) improvement of the monitoring and knowledge base of the concerned wolf population; (iv) monitoring, evaluation and improvement of the efficiency of livestock protection measures; (v) promotion of involvement and dialogue with and among stakeholders (e.g. through dedicated platforms); (vi) improvement of the enforcement efforts to fight the illegal killing of wolves; (vii) habitat protection and improvement of feeding conditions (e.g. if needed, by restoring wild prey populations); (viii) development of eco-tourism opportunities

176 LIFE09 NAT/ES/000533 INNOVATION AGAINST POISON; LIFE Antidoto LIFE07 NAT/IT/000436; LIFE PLUTO LIFE13 NAT/IT/000311; LIFE WOLFALPS LIFE12/NAT/IT/000807; WOLFLIFE (LIFE13 NAT/RO/000205).

associated with wolves; (ix) promotion/marketing of agricultural products originating from wolf areas; and (x) information, education and awareness raising. The plans may also allow relevant authorities to authorise a limited use of lethal control to remove wolf specimens, by applying derogations in accordance with the conditions set out in the Directive. Note, however, that plans adopting an adaptive harvest management (such as those for huntable species in Annex V of the Habitats directive) would not be consistent with the strict protection provisions that apply to Annex IV species.

These plans should be prepared based on the best available information on the species' conservation status and trends as well as on all the relevant threats and pressures. The participation or consultation of all the relevant stakeholders, especially those affected by the species or by the envisaged conservation measures, is crucial for integrating all relevant aspects of the plans and encouraging broad social acceptance.

Example of stakeholder involvement in a management plan

Croatia's 2010-2015 wolf management plan (Croatian Ministry of Culture, 2010), was the result of a two-year process, which involved representatives of all interest groups (relevant ministries, members of the Committee for the monitoring of large carnivore populations, scientists, foresters, non-governmental associations, etc.). The detailed action plan outlines the measures that Croatia should implement to ensure that its wolf population is conserved in the most harmonious possible cohabitation with humans.

Wolf conservation and management plans can therefore provide an appropriate structure to assess and address all the relevant problems and conflicts that threaten wolf populations, with a view to achieving favourable conservation status.

They can therefore also cover issues like wolf hybridisation with dogs, which is reported for all the nine European wolf populations and in 21 European countries[177]. In some locations, this is a major threat for the conservation of the wolf[178] and specific preventive, proactive and reactive actions may be needed to tackle the problem, as indicated in Recommendation No. 173 (2014[179]) adopted under the Bern Convention (Council of Europe, 2014). However, as wolf-dog hybridisation is a complex issue, it is strongly recommended that a well-defined management plan is drafted at national and population levels using the most updated and reliable field, laboratory, and statistical procedures (see box).

Wolf-dog hybrids

Interbreeding between wolves and their domestic form, dogs, has probably occurred repeatedly throughout the history of dog domestication and it is still occurring with varying intensity in several parts of the wolf range. As a type of anthropogenic hybridisation, wolf-dog hybridisation is not a natural evolutionary process where the hybrids should be subject to conservation measures. Rather, as a threat to the genetic integrity of wolf populations, wolf-dog hybridisation is an issue of high conservation concern and should be addressed through appropriate management plans and tools.

In Europe, hybridisation has been detected in several countries, e.g. Norway, Latvia, Estonia, Bulgaria, Italy, Spain, Portugal, Germany, Greece, Slovenia and Serbia. Note, however, that estimations of the introgression of dogs' genes into the wild wolf population are based on diverse

177 Salvatori, V et al (2020) *European agreements for nature conservation need to explicitly address wolf-dog hybridisation.* https://www.sciencedirect.com/science/article/pii/S000632071931674X

178 Salvatori, V et al. (2019).

179 https://rm.coe.int/0900001680746351

approaches and associated experimental protocols. While in several cases, crossbreeding resulted in only one or a few litters of hybrids in restricted areas, in other cases the introgression of dogs' genes into the wild wolf population has been found to be spread across substantial areas, though to different extents (from 5.6% in Galicia, Spain to more than 60% in the province of Grosseto, Italy). Similarly, high rates of introgression have been found in the northern Apennines while only rare hybrid cases have been found in the alpine wolf population (from France to central-eastern Alps). However, the reported hybridisation rate elsewhere stands at about 5-10% (Leonard et al. 2011). Hybridisation mainly occurs between male dogs and female wolves. The opposite can also occur in rare cases. The high number of free-ranging dogs from various areas, especially in Mediterranean regions, offer extensive opportunities for wolf-dog encounters. Knowledge on the ecology of wild-living wolf-dog hybrids is lacking, but there is no evidence that hybrids have reduced individual fitness, dispersal, reproductive success, behavioural modification, or population viability.

Managing wolf-dog hybridisation is a conundrum for governmental authorities as it poses several serious challenges.

a) The taxonomic status of a hybrid

Dogs descend from wolves through domestication, and both belong to the same taxonomic entity, the species *Canis lupus*. Dogs are sometime identified by the subspecies qualifier *Canis lupus familiaris*. There is little doubt that the hybrids maintain the name *Canis lupus*. The legal status of hybrids

b) The legal status of hybrids

Contrary to dogs whose survival is normally dependent on human care and resources, hybrids have an independent and viable life as wild animals. As such, they would be considered by many national legislations to be equal to wild fauna and managed under the same rules. Were hybrids to be considered equal to dogs, they would fall under national laws on domestic animals. In any event, it appears to be useful for wolf-dog hybrids to receive 'the same legal status as wolves from hunters and the public in order to close a potential loophole for the irregular killing of wolves' (Policy Support Statement on hybridisation produced by the Large Carnivore Initiative for Europe and annexed to the *Guidelines for population-level management plans of large carnivores* (Linnell et al., 2008)). Indeed, if hybrids were to be considered legally unprotected by national laws, this could lead to increased accidental killing of wolves, given the difficulty of distinguishing hybrids from genetically 'pure' wolves based only on morphological characteristics. This might involve not only accidental but also intentional killing, as the unprotected status of hybrids might be used as a cover for killing actual wolves. Management authorities are encouraged to ensure that hybrids are clearly and unambiguously covered by their national laws as either wild fauna or domestic animals.

c) Options for management responses

The most appropriate management response will depend on the overall estimated level of introgression and whether the introgression is limited to restricted areas and a few packs or widespread across large areas and/or most of the packs. For instance, limited introgression may not be a serious threat if this has remained stable across generations. Significant and widespread hybridisation (hybrid swarm) may be intractable, even though it may still be desirable to reduce the ongoing and future flow of domestic genes into the wolf population. High but localised prevalence could still be treated with targeted actions to neutralise the reproduction of hybrids (through either physical removal or sterilisation). Although several caveats have been raised on the difficulty and effectiveness of removing hybrids to control low levels of widespread introgression, this intervention is potentially useful when hybridisation is not widespread and its application is supported by applied research, monitoring and an adaptive management framework.

The range of management tools is wide, and the usefulness of each tool depends on the objectives. It is strongly recommended to address hybridisation through a dedicated plan at national, or possibly population level, where objectives, protocols and criteria are fully described and justified. A range of preventive, proactive and reactive actions will have to be identified and described. The plan will likely include provisions to:

1) Set up an international collaborative effort involving all genetic laboratories, to agree on a common approach to define thresholds and procedures for identifying hybrids, and to share

allelic frequencies of reference populations.

2) Approve a set of policy guides for studying and monitoring the spread and prevalence of hybridisation and dog genetic introgression into the wolf population.

3) Define areas where different management tools are appropriate depending on levels and patterns of hybrid prevalence, from no intervention to active removal of hybrid individuals. Ultimately, the social context could have a bearing on the management areas and actions selected.

4) Set up emergency teams (and procedures) responsible, where and when necessary, for removing wolf-dog hybrids from the wild or for their capture/sterilisation/release. The Bern Convention Recommendation No. 173 (2014) is fully endorsed by the European Commission and it states, among other things that: 'it is in the interest of effective wolf conservation to ensure that the removal of any detected wolf-dog hybrids is conducted exclusively in a government-controlled manner'. It appears that this can be accomplished only through prohibiting the killing of hybrids under national law only making an exception for governmental agencies or their designated agents. The Recommendation calls on parties to: 'Ensure that the government-controlled removal of wolf-dog hybrids takes place after government officials and/or the bodies entrusted by governments for this purpose and/or researchers have confirmed them as hybrids using genetic and/or morphological features. Removal should only be carried out by bodies entrusted by the competent authorities with such a responsibility, while ensuring that such removal does not undermine the conservation status of wolves'. 'Adopt the necessary measures to prevent wolves from being intentionally or mistakenly killed as wolf-dog hybrids. This is without prejudice to the careful government-controlled removal of detected wolf-dog hybrids from the wild by bodies entrusted with this responsibility by the competent authorities'.

5) Approve a national plan to control free-ranging dogs (feral, stray or owned by people who let them roam freely) and prohibit the keeping of wolves and wolf-dog hybrids as pets. Establish awareness campaigns in support of controlling feral and free-ranging dogs in wolf ranges.

3. Wolf-related conflict

The wolf has historically been associated with several types of socio-economic conflict with humans. In the past such conflicts have led to the extermination or severe reduction of wolf populations in much of its European range. This persecution together with high rates of poaching still persist in many areas. Today the main conflicts are:

- **Depredation of livestock.** Livestock depredations mainly concern sheep. Linnell & Cretois (2018) calculate that during 2012-2016 an average of 19 500 sheep per year were killed by wolves in the EU (note that data was missing for Poland, Romania, Spain, Bulgaria, Austria and parts of Italy). This figure is currently the best available proxy for the predation impact of wolves in the EU.
  While sheep are the main victims of wolf attacks, other types of livestock (goats, cattle, horses) and semi-domestic reindeer are also concerned to a lesser extent. Depredation is extremely variable and largely depends on the type of livestock system, the type of management, and the level of supervision, namely whether livestock are enclosed - especially during the night, or shepherded. For example in France (80 wolf packs), around 11 000 sheep, cattle and goats were preyed upon and compensated in 2019 (Dreal 2019[180]), whereas in Germany (128 wolf packs) the

[180] http://www.auvergne-rhone-alpes.developpement-durable.gouv.fr/IMG/pdf/20200327bilandommages2019_especes.pdf

figure is below 3 000 for 2019 (DBBW 2019[181]) and in Sweden (31 wolf packs) only 161 sheep were preyed upon in 2018 (Viltskadestatistik 2018, SLU[182]).

Linnell & Cretois (2018) highlight the difficulties of gathering consistent and reliable data across Europe on depredation of livestock by wolves. Livestock can die or go missing for a variety of reasons and it is not always possible to link their deaths to large carnivores. The quality of reporting by farmers and livestock managers largely depends on the compensation system. For example, on the level (full or partial) of compensation, on the length and difficulties of the related administrative process, and on whether on-the-spot checks are made to verify if the depredation was actually caused by large carnivores. Wolves may also occasionally attack and kill dogs. For example, in Sweden or Finland when chasing moose with unleashed dogs in wolf territories. The loss of both livestock and dogs clearly has an major emotional impact, in addition to the direct and indirect economic losses. While the overall impact of wolf predation on the livestock sector in the EU is negligible, wolf predation on unprotected grazing sheep could be significant at individual farm-level, and brings an additional pressure and burden to the concerned operators in a sector that is already affected by a range of socio-economic pressures.

- **Perceived risk for people**. Wolves do not see humans as possible prey, but rather as a threat to avoid. While fatal wolf attacks on humans have been reported in the past (often related to specimens with rabies or that had been fed by humans, provoked, injured or trapped), the actual risk of wolf attacks to humans, in current European environmental and social conditions, is considered to be extremely low. (Linnell et al, 2002; Linnell and Alleau, 2016[183]; KORA, 2016; Linnell et al, 2021). Despite this, many people still fear wolves, particularly in the countries and regions recently recolonised by the species or where increasing wolf numbers make them more visible in areas where they were not usually present before. Cases have been reported of wolves approaching people and behaving unusually ("bold" or "fearless" wolves). This has notably occurred when they have become food conditioned or when dogs were present (Reinhardt 2018). As regards wolf-dog hybrids, there is no evidence that they are bolder or more dangerous than wolves but fear of hybrids is also a specific issue in certain areas of Europe. These perceptions and attitudes must be carefully taken into account and seriously addressed. It is useful, but often not sufficient, to support educational activities, to provide correct information and to debunk fake news through fact-checking (as carried out by some local or regional authorities or under LIFE projects). Furthermore, it must be made clear that, in the unlikely case of an objective danger, caused for example by a rabid or aggressive wolf or by a food-conditioned or habituated wolf, the targeted removal of the wolf concerned is fully legitimate under the Habitats Directive (see the paragraph on derogations under Article 16.1 c in chapter 6 below).

- **Impact on game ungulates species**. Wolves and human hunters can sometimes pursue the same quarry i.e. wild ungulates. When large carnivores return, hunters often fear that competition will affect their activities and this may cause a major conflict. The impact of wolf predation on both numbers and behaviour of wild ungulates is quite variable and complex, depending on the species and the local context. In general, wolves remove only a small percentage of wild ungulates each year - much less than hunters - and do not seem to have a negative impact on the

[181] https://www.dbb-wolf.de/Wolfsvorkommen/territorien/karte-der-territorien

182https://www.slu.se/globalassets/ew/org/centrb/vsc/vsc-dokument/vsc-publikationer/rapporter/viltskadestatistikrapporter/viltskadestatistik-2018-1-webb.pdf

[183] "*Despite the need to recognize that the potential for wolf attacks on people is greater than zero […] there are currently >12,000 wolves in Europe and >50,000 wolves in North America, many of which are living in proximity to millions of humans, and yet we only find evidence for a handful of attacks in recent decades*".: Predators_That_Kill_Humans_Myth_Reality_Context_and_the_Politics_of_Wolf_Attacks_on_People https://www.researchgate.net/publication/301267098

current (generally increasing) trends of ungulates populations in Europe[184] (Bassi, E. et al 2020; Gtowaciflski, Z. and Profus, P. 1997). In any event, unlike predation on domestic livestock, predation of a wild, native carnivore on wild ungulates cannot be prevented or mitigated, as it is part of the natural processes that biodiversity policy aims to restore and preserve. This represents a great challenge for European hunters as the return of large carnivores has to be taken into account when planning hunting and setting quotas for wild ungulates. Finally, the contribution of wolves to regulating the densities of ungulates (Ripple, W.J. and Beschta, R.L., 2012) needs to be acknowledged, taking into account the associated benefits, including in terms of reduced damages to forestry and agricultural crops[185].

- **Conflicts about values (competing visions of European landscapes)**. Conflicts associated with wolves are not always about the direct economic impact on some rural stakeholders. Wolves are strongly symbolic for a number of wider issues, and conflicts often reflect deeper social divides (e.g. between rural and urban areas, between modern and traditional values, or between different social and economic classes) (Linnell, 2013). Wolves often trigger a fundamental debate about the future direction of European landscapes (Linnell, 2014) between different segments of society with opposing points of view and visions on how wildlife and landscapes should be preserved, used or managed[186]. This explains why there is rarely a clear relationship between the extent of the direct economic impact of large carnivores and the level of social conflict that this generates (Linnell and Cretois, 2018).

4. Measures to improve the coexistence of humans and wolves

Since the adoption of the Habitats Directive, the Commission has promoted the coexistence approach, which aims to restore the favourable conservation status of large carnivore populations, while addressing and reducing the conflicts with legitimate human activities, with a view to sharing multi-functional landscapes. The LIFE programme has financed over 40 projects linked to wolf conservation and coexistence, which have helped find and testing good practices to achieve these objectives[187].

Many coexistence examples and case studies have been identified by the *EU Platform on coexistence between people and large carnivores* - a group of organisations representing different interests groups that have agreed a joint mission to promote coexistence solutions[188]. Such cases studies are classified under five categories: (1) providing advice/awareness raising; (2) providing practical support; (3) understanding viewpoints; (4) innovative financing; and (5) monitoring[189] (EU LC Platform, 2019).

184 See, as an example, ungulates hunting bags in recent years in France. http://www.oncfs.gouv.fr/Tableaux-de-chasse-ru599/-Grands-ongules-Tableaux-de-chasse-nationaux-news467

185 See also Carpio et al (2020) *Wild ungulate overabundance in Europe: contexts, causes, monitoring and management recommendations.*

186 For example the conflicts among the views of traditional production landscapes, heritage landscapes, recreational landscapes, nature conservation landscapes or multi-functional landscapes. Or the conflicts and tensions related to the shift from declining, traditional (and rural) lifestyles to modern (and urban) lifestyles.
https://ec.europa.eu/environment/nature/conservation/species/carnivores/pdf/task_4_conflict_coexistence.pdf
https://www.lcie.org/Blog/ArtMID/6987/ArticleID/65/The-symbolic-wolf-Competing-visions-of-the-European-landscapes

187 https://ec.europa.eu/environment/nature/conservation/species/carnivores/promoting_best_practices.htm

188 https://ec.europa.eu/environment/nature/conservation/species/carnivores/coexistence_platform.htm

189 https://ec.europa.eu/environment/nature/conservation/species/carnivores/case_studies.htm

A 2018 study requested by the European Parliament[190] presented recommendations and examples of practical coexistence measures in several Member States for wolves and other large carnivores.

At European level, there is therefore a wide basis for sharing knowledge and valuable experiences. The most common approaches to reducing conflict are described below.

- ***Compensatory payments***

A frequent approach to reducing the economic impact of wolf damages and increasing tolerance for the protected species, are compensatory payments, which are used in many EU countries. Compensatory payments can often be an appropriate measure, but eligibility rules should be clearly defined and various factors considered. This includes checking if the livestock losses are actually due to predation by wolves, and ensuring that the compensation is fair and paid to the eligible recipient promptly.

In many countries, farmers complain that it is complicated and expensive to receive compensation, or that payments are late or insufficient. Compensation payments are usually funded by national or regional governments in accordance with the relevant EU State aid rules[191] (which allow for 100% compensation of both direct and indirect costs). Damage compensation payments alone are not always enough to address coexistence problems, as they will not reduce depredations or other conflicts. Moreover, compensation payments are often not sustainable in the long term unless they are appropriately combined with other measures.

- ***Prevention measures and technical assistance***

Prevention measures are a fundamental component of a comprehensive coexistence system. Experience gained (e.g. from LIFE projects and rural development programmes) shows the importance and effectiveness of various livestock protection measures, such as different types of fencing, shepherding, livestock guarding dogs, night-time gathering of livestock, and visual or acoustic deterrent devices (Fernández-Gil, et al 2018, see also Carnivore Damage Prevention News (CDP news, 2018)). In particular, the presence of shepherds can make livestock protection measures considerably more effective and is in itself a deterrent against predation. A report developed by the EU large carnivore platform demonstrates successful experiences and good practices (Hovardas et al, 2017). Prevention measures need to be tailor-made and adjusted to specific regional characteristics (including type of livestock, herd size, topography etc.).

The effectiveness of these measures depends strongly on their proper implementation by the relevant operators and on the availability of sufficient resources and technical advice to support their deployment on the ground (e.g. van Eeden et al. 2018). No single measure can be 100% successful, but adequate technical solutions (often used in combination) can significantly reduce livestock losses to predators. The relevant authorities and stakeholders need to carefully design the prevention measures so that they are suitable for different situations. They must also implement them properly (including maintenance), monitor their effectiveness and make any necessary adjustments. Training, information, follow-up and technical assistance for the operators concerned are key and should be allocated adequate public support, including to maintain the prevention systems and handle the additional workload.

- ***Information, advice, awareness raising***

Providing factual information on wolves and on how to minimise impacts can be a useful conflict mitigation measure (EU LC Platform, 2019). For example the Carnivore Damage Prevention News newsletter[192], which has been supported through different LIFE projects,

190 https://www.europarl.europa.eu/RegData/etudes/STUD/2018/596844/IPOL_STU(2018)596844_EN.pdf

191https://ec.europa.eu/environment/nature/conservation/species/carnivores/pdf/Briefing%20note%20state%20aid_EU%20Platform.pdf

192 http://www.protectiondestroupeaux.ch/en/cdpnews/

helps spread information on livestock protection in the EU and internationally. The Italian website 'Protect your livestock' (Proteggi il tuo bestiame, 2019) provides detailed advice on measures to protect livestock as well as the different funding schemes available in the Italian regions. The website of the Spanish Ministry for Ecological Transition provides a catalogue of good preventive measures that can avoid or minimise interactions between protected species and agricultural and livestock farms[193].

Another example of this approach, specifically targeted to the hunting community, is provided by the LIFE Wolfalps project, whose activities include sharing data and information on the population dynamics of the wild ungulates species in the Alps and on the effects of the wolf return on its preys and on hunting activities[194]. A broader approach is provided by the Contact Office 'Wolves in Saxony' (Kontaktbüro Wölfe in Sachsen, 2019) and the Wolf Competence Centre in Saxony-Anhalt, where several staff members are available on site to provide education materials, organise excursions and address peoples' questions and concerns.

- ***Monitoring***

Monitoring large carnivore populations is crucial to provide accurate information, understand the population dynamics needed to guarantee their survival, adapt management practices to changing situations and fulfil obligations under the Habitats Directive. It is also a very demanding exercise as it is conducted over a large geographical area, often crossing international borders, and because of the low densities and elusive behaviour of large carnivores (LCIE Policy Support Statement annexed to Linnell et al. 2008). All management decisions (including those on derogations) should be based on solid data on the concerned wolf population. Monitoring should also cover the implementation of all prevention measures (their uptake, results, efficiency), and the identification of the livestock predator to distinguish between wolves and dogs (f. e. Echegaray and Vilà, 2010; Sundqvist et al., 2008) and to gauge whether adjustments or improvements to the system are needed.

Considering that a very common conflict across Europe is the disagreement on the size and status of carnivore populations, the involvement of stakeholders – including hunters - in monitoring can have benefits not only in terms of increasing the number of people collecting data but also improving stakeholder relations and reducing conflicts.

Solid monitoring data are necessary for taking appropriate decisions on wolf conservation and management. Therefore, investing in an adequate monitoring system that can provide accurate and up-to-date knowledge of the wolf population in the area concerned is of key importance. The French monitoring system can be considered as a good example[195].

Examples of stakeholder involvement in monitoring:

A Commission-supported pilot action in Slovakia involved a wide range of stakeholders (environmentalists, foresters, protected area staff and hunters) in a science-based wolf census. They were responsible for collecting wolf scats and urine samples from a study area. Their involvement, along with the use of high tech analysis, has led to greater agreement on the local wolf population's size (Rigg et al, 2014).

Another example is the Large Carnivore Observer Network in Finland - a group of approximately 2 100 active volunteers nominated by local Game Management Associations. This network of trained observers, mainly local hunters, is responsible for verifying the observations of large carnivore tracks and other signs, reported by the public. These volunteers will record the

193 https://www.miteco.gob.es/es/biodiversidad/temas/conservacion-de-especies/especies-silvestres/ce-silvestres-interacciones.aspx

194 http://ex.lifewolfalps.eu/wp-content/uploads/2014/05/LWA_brochure-E3_168x240_5mm-abbondanzaBassa.pdf

195 https://www.loupfrance.fr/suivi-du-loup/situation-du-loup-en-france/

observation data in a national database 'TASSU' ('paw' in Finnish), which is maintained by Luke (Natural Resources Institute Finland). This database is used e.g. to generate national and regional-level population estimates for large carnivores and is used by game management officials and game wardens. The network, the database and their governance are constantly developing and adjusting to help build mutual trust and cooperation between different institutions and stakeholders' groups in sharing, using and accessing the data on such sensitive species. For example, the LIFE BOREALWOLF project running from 2019 to 2025 aims to strengthen the Large Carnivore Observer Network by providing further education to its current volunteers and recruiting new ones that are non-hunters.

Similarly, Sweden and Norway have set up Skandobs - the Scandinavian tracking system for large carnivores for lynx, wolverines, brown bears and wolves. Anyone can register their observations of tracks, signs or sightings of large carnivores in Scandinavia into this database. Increased reporting of observations will help increase knowledge about the occurrence and distribution of these species. Observations registered in the database are available to all system users. Observations can also be shared using the Skandobs App (users can download Skandobs-Touch from the App Store or Google play to report predators or tracks while out in the field). The database is updated every 15 minutes. It is managed by Rovdata, an independent part of the Norwegian Institute for Nature Research (NINA).

- ***Dialogue with and involvement of stakeholders***

Acknowledging the cultural and social nature of conflict over wolves, participatory processes are seen as having significant conflict mitigation potential, particularly by increasing trust between stakeholders (Young et al. 2016). The *EU Platform on coexistence between people and large carnivores* is an example of such an approach (see Case Study 9 in Annex IV of the guidelines). Such approaches are also used at regional and national level. Many Member States have set up national platforms. Through a pilot project, the EU institutions are also supporting the setting up of regional platforms in Italy, Romania, Spain, France, Germany and Sweden (Regional LC Platforms, 2019). The LIFE EUROLARGECARNIVORES project (2019), also supports collaboration and information sharing between major carnivore hotspots in Europe.

Another positive example of stakeholder engagement is the Grupo Campo Grande (GCG). This is a Spanish nationwide think tank composed of people from different backgrounds and organisations involved in the conflict between extensive stock-raising and the Iberian wolf. The group was created by Fundación Entretantos in 2016, as part of a social mediation initiative focused on addressing the conflict surrounding the coexistence of Iberian wolves and extensive stock-raising. The participants have signed a joint declaration and are working together to encourage others to follow their approach (GCG, 2018).

- ***Lethal control/culling of wolves***

Historically, lethal control/culling of wolves has been widely used to get rid of wolves and of any associated impacts and conflicts they create. Such practices have caused the eradication of wolves from most of their original European range. Nowadays, certain methods and levels of lethal control are still used by several European countries who claim that their intention is to prevent or reduce livestock losses and to improve human tolerance for the wolf, including some Member States where the species is listed under Annex IV of the Directive (strict protection regime).

Nevertheless, under the current policy and related legislation, the conflicts associated with the conservation of wolves and other protected large carnivores in Europe's multi-functional landscapes cannot be addressed only or mainly through culling/lethal control. The use of derogations to authorise lethal control is a possible and legitimate tool and Member States may consider using it to complement the other conflict management measures mentioned above, respecting all the conditions listed in Article 16(1) of the Habitats Directive (see paragraph 5).

There seems to be no solid evidence on the effectiveness of the use of lethal control to reduce livestock predation. According to certain studies, lethal control/culling seems to be less effective than livestock protection measures (van Eeden et al, 2018, Santiago-Avila et al, 2018) and it might actually lead to an increase in livestock predation and conflicts (Wielgus and Peebles, 2014; Fernández-Gil et al., 2016), possibly because of the disruption of the wolf pack structures caused by culling.

In addition, using lethal control/culling of a protected species, unlike the previously mentioned non-lethal measures, is a controversial tool among conservation professionals (Lute et al 2018) and is increasingly challenged by large parts of society[196]. Given this, as well as empirical evidence, it is unclear whether wolf culling leads to an increase or a decrease in social conflict.

In conclusion, non-lethal measures, including livestock management and protection measures appear more effective, more sustainable, less likely to be legally challenged and more acceptable (by most people) for reducing livestock predation risks and conflicts.

Competent authorities in the Member States should take all these elements into account when deciding on and implementing their management measures.

Comprehensive wolf conservation/management plans

The best approach for Member States would be to combine several of the above-mentioned measures to support the right level of coexistence, and tailor them to the local situation. Their comprehensive and consistent wolf conservation and management plans should also make use of all the available tools and funding sources. These plans (ideally cross-border plans for those neighbouring Member States sharing the same wolf population (Linnell et al., 2008)) would address all the relevant threats, conflicts, opportunities and needs related to the wolf in the concerned Member State. This would be the best way to achieve and maintain a favourable conservation status for the wolf across its natural range, while providing for the necessary management flexibility, within the limits set by the Directive, and maintaining or improving public acceptance of the wolf (the 'societal carrying capacity').

5. Funding for coexistence measures

Support to help resolve conflicts associated with wolf conservation can be granted from EU funds, in particular the LIFE programme and the European Agricultural Fund for Rural Development (EAFRD) and from national funds (State aids).

- **The LIFE programme**, on the basis of annual competitive calls for proposals, can finance demonstration activities and testing of innovative solutions for: livestock protection measures; assessment of the predation risk; establishment of damage compensation schemes; and training of local rangers and veterinarians on methodologies to assess livestock damage. LIFE can also finance targeted communication and information activities aimed at resolving human–wolf conflicts. Note that LIFE does not fund recurring management.

- **The EAFRD,** can provide support for preventive measures, such as purchasing protective fences or guard dogs (which, as non-productive investments, can be financed up to 100%). Additional labour costs for farmers to check and maintain or move the protective fence, and feed and veterinary costs for the guard dogs may be

196 Opinion polls conducted by Savanta ComRes in 2020 in six Member States show that most people are against killing wolves even when they attack farm animals.
https://www.eurogroupforanimals.org/news/new-poll-shows-eu-citizens-stand-wolves

covered by agri-environment-climate payments. The EAFRD is used in several Member States (e.g. Greece, Bulgaria, Slovenia, Italy and France) to fund livestock protection measures, such as additional costs for shepherding, fencing and guard dogs. The *EU Platform on coexistence between people and large carnivores* (see below) prepared an overview of where rural development programmes (RDP) are currently used and where they could be used in future (Marsden et al 2016)[197]. The future common agricultural policy might also support preventive measures and shepherding systems through the new eco-schemes[198].

- **The ERDF Interreg instrument**, can support projects aiming to improve cross-border cooperation on conservation and management of large carnivores, for example in relation to habitat connectivity, knowledge transfer, livestock damage prevention and other coexistence measures[199].

- **National funding (State aid)**, can provide support, up to a rate of 100%, for preventive measures; for restoring destroyed agricultural potential, such as replacing livestock killed by wolves; for compensation of damages caused by wolves, such as killed animals and material damage to the farm assets or veterinary costs and costs related to the search for missing animals[200].

A comprehensive approach to funding and supporting measures to reduce wolf-related conflicts is needed within a Member State, (and ideally across the borders of Member States sharing the same wolf population).

Member States should reflect the main conservation and conflict issues with wolves in their priority action frameworks (PAFs), identifying the associated priorities and financial needs and laying out how they plan to fulfil them. The updated PAF format[201] includes a section (E.3.2.) specifically on priority measures and their associated costs, for prevention, mitigation or compensation of damages caused by species protected under the EU Birds and Habitats Directives.

In addition, a number of more innovative ways to finance and support coexistence have been used across Europe.

Examples of innovative financing

An original and successful example of innovative funding for coexistence is the Swedish initiative 'conservation performance payments' for the wolverine. It entails payments that are linked to the successful reproduction of the wolverine rather than compensation for the loss of reindeer. Payments are based on the number of documented wolverine reproductions in the respective district, regardless of predation levels. Growth in the wolverine population was observed 5 years after the programme was put in place. The number of registered reproductions increased from 57 in 2002 to 125 in 2012, with the population expanding into previously unoccupied areas (Persson, 2015).

Another successful innovative financing system is the Golden Eagle scheme to reward the Sami Reindeer herding community in Finnish Lapland for the successful establishment of Golden Eagle

197https://ec.europa.eu/environment/nature/conservation/species/carnivores/case_studies_sub_rural_development_programmes.htm

198 https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/factsheet-agri-practices-under-ecoscheme_en.pdf

199 See for example the project "Carnivora Dinarica" between Slovenia and Croatia: https://www.carnivoradinarica.eu/en/. Further info on Interreg projects on biodiversity: https://ec.europa.eu/environment/nature/natura2000/financing/docs/Interreg%20Natura2000.pdf

200https://ec.europa.eu/environment/nature/conservation/species/carnivores/pdf/Briefing%20note%20state%20aid_EU%20Platform.pdf

201 https://ec.europa.eu/environment/nature/natura2000/financing/docs/PAF%20format%20EN.docx

nests and territories (European Commission, 2017). Since the Finnish government introduced the scheme in 1998, herders' attitudes towards Golden Eagles are reported to have changed dramatically with the species now being seen as a resource rather than a pest.

Income and employment opportunities generated by nature-based eco-tourism may also help improve acceptance of wolves and their coexistence with the concerned rural communities. In Spain, the region northwest of Zamora (namely 'Sierra de la Culebra') has become an important area for wolf-watching tourism, which is a significant economic asset, attracting thousands of visitors each year. For such tourism initiatives, care must be taken not to hinder wolf conservation (e.g. avoiding disturbance and denning sites). The impact on other stakeholder groups should also be considered (e.g. not attracting large carnivores to areas with livestock or contributing to a situation where large carnivores associate humans with food).

A different type of opportunity has been developed in Italy, Piedmont (under the LIFE WOLFALPS project). A local label ('Terre di lupi'= 'Land of wolves') has been created and several initiatives have been introduced to promote cheese and other products produced by farmers who are concerned by the presence of wolves and implement prevention measures to ensure coexistence.

The 2020 winner of the Natura 2000 award in the category 'socio-economic benefits' was the project 'Pro-Biodiversidad: shepherds as biodiversity conservators in Natura 2000'. It demonstrated how farmers and conservationists can work together so that nature conservation produces resources and benefits, and not problems, for local communities. Much of the Picos de Europa mountain range suffers economically from rural abandonment, loss of pastures, loss of food sources for scavengers, and risk of fire. The Fundación para la Conservación del Quebrantahuesos decided to tackle this problem by creating a special certification brand, Pro-Biodiversidad (Pro-Biodiversity), to support the extensive sheep sector, halt rural abandonment and improve conditions for biodiversity. Through this scheme, a higher price is paid for sheep meat produced by farmers who coexist with wolves.

6. Article 16: derogations to the strict protection of wolf populations in Annex IV

As a general rule, all the wolf populations listed in the Annex IV of the Habitats Directive are strictly protected and the individuals may not be deliberately captured, killed or disturbed in their natural range. In addition, breeding and resting places may not be deteriorated or destroyed. This protection applies both within and outside the Natura 2000 sites.

Nevertheless, in certain exceptional circumstances, it may be justified to allow the capture or killing of some individual wolves. For example, to prevent significant livestock predation, or to radio-collar wolves for research, monitoring and management purposes or to remove food-conditioned or bold and potentially dangerous individuals.

Article 16 of the Habitats Directive provides for the necessary flexibility to address the above situations by allowing Member States to adopt derogations to the general provisions of strict protection and carry out the above-mentioned activities (the following paragraphs should be read along with part III of the document).

Preconditions for granting a derogation

Article 16 sets three preconditions, all of which must be met before granting a derogation. The competent national authorities need to demonstrate:

- the occurrence of one (or more) of the reasons listed in Article 16(1) (a)-(e) backed up by sufficient evidence;
- the lack of a satisfactory alternative (i.e. whether the problem can be solved in a way that does not involve a derogation, namely by using non-lethal tools);

- the absence of detrimental effects of the derogation on the maintenance of the populations of the species concerned at a favourable conservation status in their natural range.

The application of these requirements is illustrated here for the case of the wolf. It is important to recall that it is for the relevant national authorities to implement these provisions by properly justifying and demonstrating that all the conditions under Article 16(1) are fulfilled. Similarly, it is primarily for the national judicial authorities to verify and ensure compliance with the requirements in a particular context and in specific cases.

1) <u>Demonstration of one or more of the reasons listed in Article 16(1) (a)-(e)</u>

These reasons listed in Article 16(1) are:

(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 of primary importance for the environment'.

(d) 'for the purpose of research and education, of repopulating and re-introducing these species and for the breeding operations necessary for these purposes, including the artificial propagation of plants'.

(e) 'to allow, under strictly supervised conditions, on a selective basis and to a limited extent, the taking or keeping of certain specimens of the species listed in Annex IV in limited numbers specified by the competent national authorities'.

Examples of derogation justifications for wolves:

- **Justification (a)** is likely to be rarely used. It might be invoked in a case where for example an endangered wildlife prey species is threatened by wolf predation. Nevertheless, it has to be recalled that predation of a native species by another native species is a natural process and an integral part of ecosystem functioning. Furthermore, before considering any derogation, the other threats or limiting factors for the prey species should be identified and effectively addressed (e.g. habitat deterioration, human disturbance, overhunting, competition by domestic species etc.).

- **Justification (b)** In the case of wolves, derogations used by the Member States often aim to prevent serious damage to livestock. This provision aims to avoid serious damages, and therefore it does not require the damage to have occurred. However, the likelihood of serious damage, beyond normal business risk, needs to be demonstrated and there must also be enough evidence to justify that any lethal control method used under the derogation is effective, proportionate and sustainable in preventing or limiting the serious damage. This justification could be used to remove wolves that are likely to cause high levels of depredation on livestock despite the adequate implementation of appropriate prevention measures (such as wolf-proof electric fences and livestock guarding dogs).

- **Justification (c)** on public health and safety, or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment, may for example justify the use of aversive methods to harass or remove food-conditioned, habituated or bold wolves that consistently approach humans, or other individuals or wolf packs that demonstrate unwanted and dangerous behaviour.

Examples of measures in the interest of public health and safety:

The German Dokumentations und Beratungsstelle des Bundes zum Thema Wolf (DBBW) has approved guidelines to help national managing authorities deal with bold or unusually behaving wolves (Reinhardt et al, 2018). As a first step, these guidelines help authorities to understand whether a wolf really is behaving unusually. Then, if a wolf does appear to be attracted by people or dogs, a gradual approach is recommended depending on the seriousness of the incidents recorded, starting with removal of attractants (e.g. food) and aversive conditioning, and escalating up to (lethal or non-lethal) removal of the wolf in the most serious cases.

The scientific experts from the LCIE (Large Carnivore Initiative for Europe: a specialist group of the IUCN's Species Survival Commission) have produced a policy statement on the management of bold wolves along similar lines which describes recommended measures for different types of wolf behaviour, as well as research priorities (LCIE, 2019).

Assessment of wolf behaviour and of the risk it may pose for human safety with recommendations for action (LCIE, 2019)

Behaviour	**Assessment**	**Recommendation for action**
Wolf passes close to settlements in the dark.	Not dangerous.	No need for action.
Wolf moves within sighting distance of settlements/scattered houses during daylight	Not dangerous.	No need for action.
Wolf does not run away immediately when seeing vehicles or humans. Stops and observes.	Not dangerous.	No need for action.
Wolf is seen over several days <30m from inhabited houses (multiple events over a long time period).	Demands attention. Possible problem of strong habituation or positive conditioning.	Analyse situation. Search for attractants and remove them if found. Consider aversive conditioning.
Wolf repeatedly allows people to approach it within 30m.	Demands attention. Indicates strong habituation. Possible problem of positive conditioning.	Analyse situation. Consider aversive conditioning.
Wolf repeatedly approaches people by itself closer than 30m. Seems to be interested in people.	Demands attention/critical situation. Positive conditioning and strong habituation may lead to an increasingly bold behaviour. Risk of injury.	Consider aversive conditioning. Remove the wolf if appropriate aversive conditioning is not successful or practical.
Wolf attacks or injures a human without being provoked.	Dangerous.	Removal.

- **Justification (d)** related to research, education, repopulation, and reintroduction might be used, for example, for allowing the temporary capture of wolves to fit them with radio collars for research or monitoring purposes or for conservation translocation purposes.

Example of wolf trapping for research and monitoring

In 2018, through an exchange of letters, the Commission agreed with the German authorities that Regulation 3254/91 on leg-hold traps can under certain conditions be interpreted in a way that excludes *soft-catch traps* from the scope of the prohibition of that Regulation. These soft-catch traps have rubber-padded jaws (instead of steel teeth) in order to minimise the risk of animals being injured when trapped. They are considered the best available means to catch wolves alive for monitoring and research purposes as they have a greater success rate and a lower probability of causing injury.

The Commission considers that, if soft-catch traps prove to be necessary for scientific research or monitoring aimed at improving the conservation status of the relevant species, it would run counter to the conservation objective of Regulation 3254/91 to include such traps within the scope of the prohibition of the Regulation. Consequently, the use of soft-catch traps could be envisaged for conservation purpose only, provided that: (i) there is no satisfactory alternative; (ii) there is no negative impact on the favourable conservation status of the species; and (iii) all precautions are taken not to harm the animal and to reduce its stress to a minimum.

Practically, such soft-catch traps should be equipped with a transmitter informing the responsible authorities immediately when an animal is caught. Once informed, the responsible authorities should intervene within 30 minutes so that the stress period for the animal is reduced as much as possible and self-inflicted damage is avoided. The animal must be anesthetised by a professional veterinarian, equipped with a transmitter and then immediately released into the wild.

Derogations under Article 16.1.(e), as explained in Chapter 3.2.1, may exceptionally be used to allow the taking or keeping of certain specimens of wolves, subject to several additional strict conditions that must be respected. The CJEU has confirmed, in Case C-674/17, that the concept of 'taking' must be understood as including both the capture and killing of specimens[202].

The objective of a derogation based on Article 16(1)(e) cannot, in principle, be confused with the objective of a derogation based on Article 16(1)(a) to (d) of the Directive in that the former can only serve as a basis for granting a derogation if the latter is not relevant[203]. If the aim of the derogation falls under any of the indents (a) to (d) of Article 16, the derogations must be based on one (or several) of those indents. There needs to be transparency in the derogations and the reasons for using them. For example, if the main purpose is to prevent serious damage to livestock/property, then indent (b) should be used. If a habituated wolf is acting dangerously, indent (c) is to be used. Indent (e) is therefore not a catch-all provision to be used for any type of killing.

As for any derogation under Article 16, national decisions authorising killing on the basis of (e) should be granted for exceptional, specific and clear aims, consistent with the Directive objectives (Article 2) and adequately justified.

In Case C-674/17, the CJEU accepted that combating the illegal hunting (poaching) of wolves could in principle be an aim to be pursued by a derogation issued under Article 16(1)(e), provided that it contributes to maintaining or restoring a favourable conservation status for the species concerned in its natural range. In this case, the

202 Paragraph 32.

203 See paragraph 37 of C-674/17: 'Consequently, the objective of a derogation based on Article 16(1)(e) of the Habitats Directive cannot, in principle, be confused with the objectives of the derogations based on Article 16(1)(a) to (d) of that directive, with the result that the former provision can only serve as a basis for the grant of a derogation in cases where the latter provisions are not relevant'.

national permitting authority must justify the derogation with rigorous scientific evidence, including with comparative elements on the consequences of such derogation on the conservation status of the species. If the aim of the derogation is to combat poaching, the authority has to also take into account the most recent estimations on the level of poaching and the mortality based on all the derogations granted. Such derogations granted for combating poaching should therefore be capable of reducing the poaching mortality of the concerned population to such an extent that it would have an overall net positive effect on the size of the wolf population.

Furthermore, derogations based on Article 16(1)(e), as compared with those referred to in Article 16(1)(a) to (d), must satisfy additional restrictive conditions. The use of this derogation is permitted under strictly supervised conditions, with clear authorisations related to places, times and quantities and requiring strict territorial, temporal and personal controls to ensure an efficient enforcement. Additionally, it must only be carried out selectively, to a limited extent and should concern a limited numbers of specimens.

On selectivity, the derogation must concern specimens which are determined in the most specific and appropriate way possible, in light of the objective pursued by the derogation. Therefore, as it was underlined by the CJEU in Case C-674/17, it may be necessary to determine not only the species which is the subject of the derogation or the types or groups of specimens, but also the individually identified specimens[204].

Regarding 'limited numbers', this number will depend in each case on the population level (number of individuals), its conservation status and its biological characteristics. The 'limited numbers' will need to be established on the basis of rigorous scientific data of geographical, climatic, environmental and biological factors as well as those on reproduction rates and total annual mortality due to natural causes. The number must be clearly mentioned in the derogation decisions.

2) Absence of a satisfactory alternative

The second precondition is that 'there is no satisfactory alternative'. This implies that preventive and non-lethal methods should always be considered the first option (derogation is the last resort). The alternatives will depend on the context and the specific objectives of the derogation being considered and they should take into account the best knowledge and experiences available for each situation.

For example, in the case of livestock damages, before authorising derogations, it is necessary to prioritise non-lethal alternatives and to correctly implement appropriate and reasonable preventive measures in order to reduce depredation risks, such as supervision by shepherds, the use of livestock guarding dogs, the protection of livestock by fences or alternative management of livestock (e.g. calving/lambing control). Only when such alternative actions have been implemented and have proved to be ineffective or only partly effective, or when this kind of alternative actions cannot be implemented for the specific case, may the derogations be authorised to resolve the (residual) problem.

In case of bold and/or unusually behaving wolves, or food-conditioned wolves, the removal of the specific causes (e.g. food attractants due to poorly managed waste) and aversive conditioning should be the first responses to consider, in order to scare them away and try to change their behaviour, discouraging them from approaching people (through e.g. several types of deterrents and non-lethal tools) (Reinhardt et al, 2018). When such alternative solutions have been considered and have proved not to be satisfactory, or feasible in the specific case, a derogation may be granted.

204 Case C-674/17, paragraph 73.

On the above-mentioned derogations aiming to reduce poaching, the CJEU (in Case C-674/17, paragraphs 48, 49, 50) has clarified that the mere existence of an illegal activity such as poaching or difficulties associated with its monitoring cannot be sufficient to exempt a Member State from its obligation to ensure the safeguarding of species protected under Annex IV to the Habitats Directive. On the contrary, in such a situation, a Member State must give priority to strict and effective control of that illegal activity and implement methods that respect the prohibitions laid down in Articles 12 to 14 and Article 15(a) and (b) of the Directive. To support their case for a derogation, a Member State should provide a clear and sufficient statement of reasons for the absence of a satisfactory alternative to achieving the objectives, referring to the absence of any other satisfactory solution or to relevant technical, legal and scientific reports.

3) Maintenance of the population at a favourable conservation status

The third precondition is the assurance 'that the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range'.

According to Article 1(i) of the Habitats Directive, 'conservation status of a species' means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory of the Member States. The conservation status of a species is favourable when (i) the population 'is maintaining itself on a long-term basis as a viable component of its natural habitats', (ii) 'the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future' and (iii) 'there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis'. Further information can be found in the guidelines on reporting under Article 17 of the Habitats Directive.

The fulfilment of this condition (i.e. that the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range) requires an assessment of the possible effect of the derogation on both the population concerned and on the species' conservation status within the territory of the Member State.

The decisions on the use of derogations and the assessment of the possible effects of the derogations on the conservation status of the population concerned must be based on an accurate knowledge of the concerned wolf population and of its trends. The additional and cumulative effects of the derogations should also be properly assessed taking into account any other direct or indirect negative impacts from human activities (including incidental and illegal killing). This is necessary to ensure that the decision is not detrimental to the population's conservation status.

In Case C-674/17 (paragraph 57-61), the CJEU has underlined that a derogation under Article 16(1) must be based on criteria that ensure the long-term preservation of the dynamics and social stability of the species in question. The cumulative demographic and geographic impacts from all derogations on the concerned population should therefore be properly assessed, in combination with any other natural or human-induced mortality.

The assessment is to be made 'at both local level and at the level of the territory of the concerned Member State or, where applicable, at the level of the biogeographical region in question where the borders of that Member State straddle several biogeographical regions, or if the natural range of the species so requires and to the extent possible, at cross-border level'. However, this should not take account of 'the part of the natural range of the population in question extending to certain parts of the territory of a third country which is not bound by an obligation of strict protection of species of interest for the European Union'.

In Case C-342/05, the CJEU held that derogations affecting populations whose conservation status is unfavourable may be permissible 'by way of exception' in cases 'where it is duly established that they are not such as to worsen the unfavourable conservation status of those populations or to prevent their restoration at a favourable conservation status'. The Court concluded that 'it is possible that the killing of a limited number of specimens may have no effect on the objective envisaged in Article 16(1) of the Habitats Directive, which consists in maintaining the wolf population at a favourable conservation status in its natural range. Such a derogation would therefore be neutral for the species concerned.'

Such an approach has been confirmed by the CJEU in Case C-674/17 (paragraphs 66-69), with an additional reference to the precautionary principle: 'as regards the effect of an unfavourable conservation status of a species on the possibility of authorising derogations under Article 16(1) of the Habitats Directive, the Court has already held that the granting of such derogations remains possible by way of exception where it is duly established that they are not such as to worsen the unfavourable conservation status of those populations or to prevent their restoration at a favourable conservation status'. However, 'if, after examining the best scientific data available, significant doubt remains as to whether or not a derogation will be detrimental to the maintenance or restoration of populations of an endangered species at a favourable conservation status, the Member State must refrain from granting or implementing that derogation'.

Derogations for killing very few specimens may therefore be granted on a case-by-case basis, even if the conservation status of the species is not (yet) favourable, provided that the derogation is neutral in terms of the species' conservation status, meaning that it does not jeopardise the achievement of the objective of restoring and maintaining the wolf population at a favourable conservation status in its natural range. A derogation may therefore not have an overall negative net impact on the population dynamics, the natural range, the population structure and health (including on genetic aspects), or the connectivity needs of the concerned wolf population.

Consequently, the less favourable the conservation status and trends, the less likely that this third precondition can be fulfilled and that the granting of derogations would be justified, apart from under the most exceptional circumstances. The conservation status and trends of the species (at biogeographic and population level), based on accurate knowledge and data, is therefore a key aspect to assess the fulfilment of the third precondition.

Derogations and the role of favourable conservation status and species plans

An appropriate and comprehensive conservation and management plan for the wolf can provide a good overall framework for implementing all the necessary tools and measures, including the possible use of derogations. Where such plans are properly implemented, with demonstrated results on favourable conservation status, Article 16 of the Habitats Directive allows for the required flexibility through the use of derogations.

Derogations to the strict protection of wolves can be better justified if a comprehensive set of appropriate, effective and verifiable measures are established and properly implemented in a Member State to ensure effective protection and to achieve or maintain the favourable conservation status for the species.

This would be the case if:

- There is an appropriate conservation and recovery plan for the wolf, which is fully and correctly implemented and well monitored, aiming to ensure a favourable conservation status and to address socio-economic conflicts.
- The plan is based on the best available scientific data and on a solid system for monitoring the wolf population.

- All the necessary prevention and compensation measures are implemented.
- Appropriate measures are implemented to effectively fight poaching (such as criminalisation, enforcement and awareness raising) and to address any other human-caused mortality factors (such as road kills).
- All the other threats to wolf conservation in the concerned area are successfully addressed (e.g. hybridisation).
- The other causes of mortality of grazing livestock (e.g. free-ranging dogs) are properly addressed.
- The objectives and conditions for the derogations are clearly established and justified with sufficient scientific evidence. It is proven that no satisfactory alternatives are available and that the lethal method used in the derogation is the only way of preventing or limiting the serious damage or in achieving the other objectives of the derogations, in line with the relevant legislation. Derogations are assessed and decided on a case-by-case basis.
- The envisaged derogation is not detrimental to the population's conservation status at both local population level and across the species natural range.