

NOAH – for animal rights

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Mr Virginijus Sinkevičius

European Commissioner for Environment, Oceans and Fisheries

Rue de la Loi /Wetstraat 200

1049 Brussels

Mr Humberto Delgado Rosa

European Commission

Director, Directorate General for Environment, Natural Capital

Avenue de Beaulieu 5, 1160 Brussels, Belgium

Oslo, 7th April 2021

Re: Request to the European Commission to take action concerning population control of wolves in Sweden in winter 2021

Dear Mr Sinkevičius,

Dear Mr Delgado Rosa,

NOAH is a Norwegian civil organization standing for the rights of animals and nature and has membership of over 15 000 people. The wolf management in Norway is directly affected by the decisions made by Swedish authorities and NOAH believes that a change in the Swedish wolf management is essential not only to save the wolf population in Sweden, but also in Norway. It is very disconcerting to see that in recent years the Norwegian authorities have used similar arguments to those made by Swedish authorities to justify extensive population control of wolves, sometimes the arguments are adopted word for word. Therefore, NOAH turns to you with a request to take the next step in the infringement proceedings against Sweden in light of the license hunt of wolves for population control in winter 2021.

The wolf population in Norway is biologically considered as part of the South Scandinavian population that mostly finds itself on the Swedish territory. The Supreme Court of Norway in the case WWF Norway vs. the Ministry of Climate and the Environment recently concluded that wolves in Norway also legally shall be considered as an inseparable part of the South Scandinavian wolf population, and that the Norwegian authorities therefore remain within the bounds of the Bern Convention by keeping the wolf population at a limit of 40-60 wolves, as long as the survival of the South Scandinavian wolf population as a whole is not threatened.¹

NOAH would like to draw the Commission's attention to the fact that the wolf population in Norway is categorized as "critically endangered" (CR) and as "threatened" (EN) in Sweden. The Swedish Red List of Species was updated in 2020, and the Swedish wolf population was uplisted from "vulnerable" (VU) to "threatened" (EN).² This shows that the conservation status of the wolf has worsened in the recent years. It is therefore difficult to understand on what basis Sweden is claiming that the Swedish wolf population (or the wolf population in Scandinavia) has favourable conservation status. At the same time, the quota hunting for population control this winter has resulted in the killing of up to 12% of the Swedish population and can result in the killing of up to 22% of the South Scandinavian wolf population (the license hunt in Norway is still ongoing and will last until 31 May). We believe that this fact gives sufficient ground to proceed with the infringement proceedings against Sweden and the Commission to act without further delay.

NOAH would like to join the Swedish NGOs on their request concerning the infringement proceedings against Sweden that the Commission initiated in 2010. We strongly encourage the Commission not to leave the enforcement of the Habitats Directive (Council Directive 92/43/EEC) in this matter on the shoulders of national NGOs. It is important to recall that court proceedings are very expensive for civil organizations to undertake, considering also that the authorities will adopt new decisions on an annual basis, and most likely before the court proceedings have been finalized (as the court proceedings may stretch over many years). This may drive the costs beyond what the civil organizations are able to bear.

Furthermore, there is ground to believe that relying on national courts only may not inhibit the authorities from adopting new decisions on the culling of wolves on the same legally controversial grounds. The authorities may tinker certain parts of the decision to make the decision look more in line with the regulation, but still continue ignoring the underlying obligations laid down in the Habitats Directive, as interpreted by the EU court and specified in the European Commission Guidelines on the implementation of the Habitats Directive.

NOAH would like to refer to the recent judgment by Luleå Förvaltningsrätten³ that, in our opinion, in certain parts has misapplied the judgment of EU Court of Justice in the Tapiola case⁴ (especially paras. 36-38) and assessed the legality of the decision on the culling of the wolf pack

¹ HR-2021-662-A, <https://www.domstol.no/Enkelt-domstol/hoyesterett/avgjorelser/2021/hoyesterett-sivil/hr-2021-662-a/> (26 March 2021), para. 69. Available only in Norwegian, but NOAH is happy to send an English translation of the judgment on request.

² <https://artfakta.se/naturvard/taxon/canis-lupus-lupus-100024>

³ Judgment of Luleå Administrative Court, No. 2235-20 (15 December 2020)

⁴ C-674/17, Luonnonsuojeluyhdistys Tapiola, <http://curia.europa.eu/juris/liste.jsf?num=C-674/17> (10 October 2019).

Stora Bör in light of the Tapiola judgment in an alarmingly superficial way. A deeper analysis of this judgment is beyond the scope of this letter, but we would like to express our deep concern about the absurd situation where reducing the number of wolves as such has been approved as the legitimate aim, which is then followed by almost automatic discarding of alternative solutions (as such an aim can only be achieved by culling wolves). This means that the condition of alternative measures is effectively rendered meaningless. The above-mentioned judgment of 26 March 2021 of the Supreme Court of Norway is another example of this – in our opinion – legally controversial approach.

In the Annex to this letter, NOAH has provided a more detailed analysis with reference to the latest scientific research to show that the decisions of the Swedish authorities on the license hunt of wolves in Sweden in winter 2021 fail to meet the legal standards set by the EU Court of Justice in the Tapiola judgment and are in breach of the Habitats Directive. **NOAH asks the Commission to look into the issues raised in this analysis and to take the next step in the infringement proceedings without further ado.**

The developments in the coming months and years in this part of Europe will have important consequences for the conservation of wolf in other parts of Europe as well, as this year's wolf culling in Sweden and Norway, if not challenged, might be taken as an example to follow.

Yours Sincerely,



Siri Martinsen
Head of NOAH



Katrin Vels
Legal counsel

ANNEX: NOAH's analysis of compliance of the decisions on license hunting of wolf packs in Sweden in winter 2021 with the Habitats Directive

NOAH's analysis of compliance of the decisions on license hunting of wolf packs in Sweden in winter 2021 with the Habitats Directive

1. The Swedish decisions on the license hunt for wolves in winter 2021

In September 2020, the County Administrative Boards in Sweden adopted the following quota for wolf population control on the basis of Article 16(1)(e) in the Habitats Directive:

- The County Administrative Board in Värmland adopted a quota of 6 wolves (wolf pack Stora Bör).
- The County Administrative Board in Gävleborg adopted a quota of 12 wolves (wolf packs Andån and Ryssjön).
- The County Administrative Board in Västmanland-Örebro adopted a quota of 6 wolves (wolf pack Vidaln).

On the request of the Swedish Hunters Association, the quota was extended by another 4 wolves in the Andån pack.

These decisions were preceded by a decision by the Swedish Environmental Protection Agency of 16 June 2020 on the delegation of powers to the regional authorities (County Administrative Boards) to adopt decisions on license hunting of wolves.⁵

The license hunt ended on 15 February 2021 and resulted in the death of **28 wolves** (four wolf packs).⁶ This makes around 12% of the Swedish population. Together with the very high quota of 45 wolves of the Norwegian license hunt of wolves in winter and spring 2021,⁷ the number of killed wolves for population control can reach up to 22% of the total South Scandinavian population.

According to the decisions, the main purpose of the license hunt of wolves is to regulate density of wolves in order to limit socio-economic and psychological impacts, and thereby increase tolerance for wolves and create trust and confidence in wolf management. In this regard, it is

⁵ Beslut om att överlämna möjligheten att fatta beslut om licensjakt på varg till länsstyrelserna, 17.06.2020, NV-02807-20. The Swedish Environmental Protection Agency issued guidelines on the use of the delegated powers as an annex to the decision (Naturvårdsverkets vägledning i samband med beslut om att överlåta möjligheten att fatta beslut om licensjakt på varg 2021 till länsstyrelserna), <https://www.lansstyrelsen.se/download/18.52ea1660172a20ba65c5345/1592394403353/Bilaga-1-Vagledning-till-beslutet-om-overlatelse-att-besluta-om-licensjakt.pdf>

⁶ <https://www.naturvardsverket.se/Var-natur/Jakt/Jakt-pa-rovdjur/Varg/Licensjakt-varg-2021/>

⁷ According to the latest report of 23 March 2021, 24 wolves have been killed in Norway in the period 1 October 2020 – 15 March 2021. https://rovdatab.no/Portals/Rovdata/Dokumenter/Rapporter/Forel%C3%B8pige%20ulverrapporter/Ulv-Forelop%20StatusRapp%203-2021-PW_EM-210319b.pdf?ver=Pjn1Dli4CtlseNFBMBulhg%3d%3d

mentioned that the density of wolves should not increase faster than what is acceptable for coexistence with humans.

Other justifications given in the decisions are as follows:

- to limit socio-economic consequences such as predation pressure on ungulates and the risk of damage to domestic animals;
- to ensure meaningful moose hunt (to be defined by moose hunters);
- to reduce risk of attacks on hunting dogs;
- to give confidence to local people that the situation is “controlled” and to ensure them that they can influence the situation;
- to reduce concentration in the wolf territories in order to create room for new wolf establishments with a potentially higher genetic value and thus benefit the otherwise poor genetic variation of the population.

The County Administrative Boards have considered hunting entire family groups as the preferred option to hunting individual wolves. They argue that in this way the wolves who rapidly re-establish the area will not be able to have cubs that year, and more elk calves will survive until next autumn. Therefore, one decisive criterion for choosing which wolf packs shall be killed is how long they have been in the area. This means that the most stable wolf packs are picked out for licence hunting.

What is most alarming with these justifications is that they are not backed up by any concrete data, and the extent of damage is not quantified. The justifications for culling are worded in a very general, repetitive and vague language. The only more concrete scientific basis is provided on the moose management by referring to Wikenros et al. (2019). However, the decision fails to provide a specified reference to this source. NOAH has identified a research paper by Wikenros et al. that was published in 2015.⁸ However, the conclusions given in that study do not support the claims made in the decision. In the study, it is concluded that “*the moose harvest in wolf territories either remained higher (10-year areas) or were similar (5+5 year areas) than in control areas*”.

NOAH would like to challenge the legality of justifying the culling decisions by considerations such as damages to domestic animals (the decision addresses more generally the negative effects on the opportunities for domestic animal husbandry, risk of inconveniences and additional work for the animal owner), decreased harvest of moose for hunters and increased risk of attacks on hunting dogs as the basis for license hunting under Article 16(1)(e). The EU Court of Justice has been clear in the Tapiola judgment that those objectives that fall under derogations based on Article 16(1)(a) to (d) cannot be confused with the objective of the derogation based on Article 16(1)(e). In other words, this derogation ground is not a catch-all clause and “*can only serve as a basis for the grant of a derogation in cases where the latter provisions [Article 16(1)(a) to (d) - NOAH] are not relevant*”.⁹

⁸ Wikenros C, Sand H, Bergström R, Liberg O, Chapron G (2015) Response of Moose Hunters to Predation following Wolf Return in Sweden. PLoS ONE 10(4): e0119957.

⁹ C-674/17, para. 37.

2. The decisions fail to show that license hunting has the desired effects

According to the EU Court of Justice it is up to the national authorities to provide solid data that *“hunting for population management purposes is actually capable of reducing illegal hunting to such an extent that it would have a net positive effect on the conservation status of the wolf population”*.¹⁰

The Swedish authorities argue that *“Not using the opportunity for license hunting ... when the wolf population has a favorable conservation status while the county is above its administrative target means a greater risk of negative impact on favorable conservation status than a carefully controlled license hunt does.”* Firstly, a greater risk of negative impact on favourable conservation status (FCS) and a net positive effect on the conservation status of the wolf population are two different things. Neither have the authorities provided any solid data proving that not conducting license hunting will lead to a greater risk of negative impact on FCS. The decisions bear no sign of an attempt to quantify the potential effects – it remains unclear how the number of wolves who were killed as a result of legal hunting is lower than the number of wolves killed as a result of illegal hunting if the license hunting had not taken place; neither is it shown how the negative impact of license hunting on FCS is lesser than that from poaching. Liberg et al. have concluded in 2020 that *“disappearance rate in the Swedish wolf population has increased during the recent years and together with legal culling now has halted population growth”*.¹¹

NOAH would like to refer to the position statement by Large Carnivore Initiative for Europe (LCIE) on the 2010 Swedish wolf hunt of December 2010:¹²

“... we consider it important to document that such a hunt actually increases rural acceptance for wolf presence and reduces conflicts (be they material, economic or social).» (NOAH's emphasis)

NOAH cannot see that such effects have been documented in the decisions. One of the decisions mentions *“increased involvement in predator inventory”* as a positive effect of license hunting of wolves. There is no mention of by whom or to what extent, or why this fact at all is relevant when assessing the effects of legal hunting as opposed to poaching. In the other decision, the lower number of received calls complaining about wolves is mentioned as proof of good effect of license hunting. But again – it is not clarified in the decision how this fact is relevant to poaching. In addition, reduction in complaints could as well be achieved by other means, such as information distribution and education. However, this is not addressed in the decisions.

2.1. License hunting is mainly aimed at creating trust and confidence in wolf management

According to the decisions, acceptance for wolves is first and foremost achieved by creating confidence and trust in the wolf management. This is arguably achieved by allowing population

¹⁰ C-674/17, para. 45.

¹¹ Liberg, O., Suutarinen, J., Åkesson, M., Andrén, H., Wabakken, P., Wikenros, C., & Sand, H. (2020). Poaching-related disappearance rate of wolves in Sweden was positively related to population size and negatively to legal culling. *Biological Conservation*, 243, 108456.

¹² <http://jandarp.se/wp-content/uploads/2017/07/LCIE-Statement.pdf>

control once the population has reached FCS. This means that the decisions on culling of wolves aim to satisfy the “expectation” of the local people that wolves shall be hunted as soon as the wolf population is over 300 animals. The authorities argue that culling is necessary to avoid dissatisfaction with the wolf management if that “expectation” is not met.

Firstly, NOAH cannot see that delivering on this “expectation” of population control will have the assumed effect. The claim that population control creates trust in management and thereby prevents poaching seems circular and begging the question. The authorities have “approved” this expectation of population control in the wolf management plans, and in this way, ruled out or at least considerably downgraded other alternative solutions. It is stated in the decision:

“A well-established management plan that clearly and predictably states the circumstances in which license hunting and other management measures are applied can be considered a measure that promotes coexistence only if those measures are actually implemented according to the plan.”

“The result of management authorities not being able to follow the management plans is that trust in the administration is damaged. It is also a prerequisite for the legitimacy of the regional administration that the objectives set are pursued to the extent that Swedish legislation allows when the wolf population has achieved favorable conservation status, M2015/1573/Nm”.

NOAH believes that such an approach upholds and lays the ground for conflict over wolf management. Linnell has warned against resorting to legal hunting as soon as the population reaches a certain number of animals. He states that *“it is not clear if hunting in such situations may not ultimately be detrimental to the recovery of small carnivore populations by reinforcing intolerance towards population growth”*.¹³

Secondly, this argumentation effectively amounts to setting a maximum limit (“hard ceiling”) to the wolf population. This is not in line with the Habitats Directive. Furthermore, by creating an expectation of population control as soon as the wolf population has reached the FCS (reference value for FCS) is tantamount to making lethal control as the normal and general practice.

NOAH also feels compelled to point out the dangerous pitfalls of such an approach – according to the logic of the Swedish authorities legal killing is necessitated by the phenomenon of poaching, that is by the need to decrease it. If one follows this line of thought to its logical end, then this would mean that as long as poaching occurs, legal killing should be made available. In this way, the authorities indirectly encourage poaching. Therefore, such a general assumption should at least be backed up by more concrete data and scientific evidence.

Thirdly, it is evident from the decisions that the authorities lack a broader understanding of the different causes of conflict; the sole focus is on creating trust towards wolf management by allowing population control. This assumption overlooks the many other reasons why some parts of the population feel distrust towards authorities, reasons that have little or nothing to do with

¹³ Linnell, J. D. C. (2013). From conflict to coexistence: insights from multi-disciplinary research into the relationships between people, large carnivores and institutions. *Istituto di Ecologia Applicata, Rome*. Available online at: https://ciepub.nina.no/pdf/634994155738977342_Task%20%20Conflict_coexistence_FINAL_DEF.pdf

the wolf.¹⁴ An analysis conducted by Skogen and Krange in Norway (2020) concluded that *“Analyses show that acceptance [for illegal killing of wolves - NOAH] joins a broader pattern of controversies in Norwegian society, expressed by phenomena such as xenophobia, skepticism of anthropogenic climate change, anti-elitism and low confidence in institutions working to preserve Norwegian nature. Being a hunter or having wolves in the neighborhood matters less.”*¹⁵ NOAH argues that similar considerations apply to Sweden, as the relevant historical and cultural context is shared by both countries.

Thirdly, it is perplexing that the authorities put so much focus on creating trust in the eyes of those parts of the society who are against the wolves and totally ignore those who feel that wolves are an enrichment and who find it frustrating that wolves are culled. In this way, the authorities might actually be flaring up the conflict and exacerbate the problem of distrust towards wolf management.

In conclusion, claiming that shooting wolves will create trust in the authorities and thereby prevent/reduce poaching is overly simplistic and substantively unfounded. The management approach adopted by Swedish authorities is also counterproductive to creating and increasing public acceptance of wolves and of wolf management that is not based on culling.

2.2. Preserving stable wolf packs is important to reduce the potential for conflicts

The decisions argue that culling entire families of wolves is preferred to culling individual wolves in order to prevent reproduction in the following spring and to generally reduce the wolf density in the area. The decisions aim at reducing density of wolves in areas where the wolf packs have been present over several years. The decision goes as far as to state that *“A relatively rapid re-occupation of territories in the core area is what can be expected, and should rather be a sign that the quota for license hunting has been too low than that hunting has not had an effect on the density of wolf territories. Failure to permit license hunting can also have an effect on the density so that the wolf density in the territory can increase further”*.

This shows a worrisome lack of knowledge about biology of wolves, especially the dynamics of self-regulation and the territorial behaviour of wolves. The authorities are aware that the areas will be rapidly re-occupied by wolves. But instead of questioning the purposefulness of killing the wolf packs because of rapid re-occupation, the authorities use this fact to argue that a greater number of wolves (from surrounding wolf territories) should be killed. This line of thinking goes clearly against the wording and the aims of the Habitats Directive.

The authorities have further justified the culling by the “benefit” of creating room for new wolf establishments with a potentially higher genetic value. This approach is not in line with biologically sound management. Success of immigration of wolves from Finnish/Karelian wolf population remains uncertain and letting the wolf population in Sweden to grow is the most effective and certain measure to alleviate the problem of inbreeding. NOAH is also aware that

¹⁴ Kaltenborn, B. P., & Brainerd, S. M. (2016). Can poaching inadvertently contribute to increased public acceptance of wolves in Scandinavia?. *European Journal of Wildlife Research*, 62(2), 179-188.

¹⁵ Krange, O., & Skogen, K. (2020) Loven øst for Glomma. The law east of Glomma. Support for illegal killing of wolves as an expression of political resistance. *Norsk sosiologisk tidsskrift*, 4(03), 165-180.

the Commission has been critical towards such arguments made by the Swedish authorities in previous years.

NOAH would also like to refer to research by Suutarinen and Kojola on predictors of wolf poaching that shows that stable wolf packs are actually conducive to reducing conflicts due to their more predictable behaviour:¹⁶

“Securing the survival of breeding adults could also increase local acceptance in the long run, as wolves learn to avoid human settlements as they become familiar with their territory (Kojola et al., 2016). In addition, pack dissolution reduces a pack’s hunting success (Sand et al., 2006) and can increase damage to domestic animals (Wielgus & Peebles, 2014; Fernández-Gil et al., 2016).”

Another study has found that the social disturbance that will occur as a result of removal entire wolf packs can lead to an increase in the number of packs in the area, and thereby increase density of wolves instead of decreasing it.¹⁷

Neither is there any evidence provided in the decisions that license hunting creates or improves tolerance for wolves. Scientists have found that the opposite is true:¹⁸

«Our results provided evidence that illegal killing can be the most influential mortality factor, even in a wolf population that is simultaneously controlled through regulated harvest. ... Legal permits may release the pressure of illegal killing in the short term but do not necessarily improve the tolerance for wolves. The poaching of large carnivores is more strongly influenced by social factors, such as peer group norms and impending sanctions on killing, than threats to livelihoods (Treves and Bruskotter, 2014). Legal hunting alone can be an ineffective tool for the conservation and management of large carnivores, especially if there is a lack of quantitative knowledge about poaching and its relation to legal hunting.”

2.3. Allowing license hunting of wolves can actually increase poaching

A Finnish study from 2018 has warned against straightforward interpretations according to which opening for legal hunting of wolves reduces poaching, and show that the opposite might be true instead:¹⁹

“An increased total legal bag increased the likelihood of poaching, which indicates that swift changes in wolf hunting might result in higher poaching rates. The effect was unclear due to outliers, but should not be totally neglected. An increased poaching rate due to an increased total legal bag could also be a type of hyper-aware response to the indirect message taken from the increased total legal bag – that the wolf population requires greater harvest. To track

¹⁶ Suutarinen, J., & Kojola, I. (2018). One way or another: predictors of wolf poaching in a legally harvested wolf population. *Animal Conservation*, 21(5), 414-422.

¹⁷ Fernández-Gil, A., Naves, J., Ordiz, A., Quevedo, M., Revilla, E., & Delibes, M. (2016). Conflict misleads large carnivore management and conservation: brown bears and wolves in Spain. *PLoS One*, 11(3), e0151541.

¹⁸ Suutarinen, J., & Kojola, I. (2017). Poaching regulates the legally hunted wolf population in Finland. *Biological Conservation*, 215, 11-18.

¹⁹ Suutarinen, J., & Kojola, I. (2018). One way or another: predictors of wolf poaching in a legally harvested wolf population. *Animal Conservation*, 21(5), 414-422.

the consequences of management changes in depth, wolf management requires multidisciplinary inspection (Treves et al., 2017) and straightforward interpretations that granting legal hunting of wolves reduces poaching should be done with caution.”

A rise in poaching after allowing legal hunting of wolves has been shown to occur in the recent study by Santiago-Ávila et al. This is called facilitated poaching:²⁰

«... would-be poachers respond to the policy changes as a signal to increase their activities, possibly associated with cognitive processes relating to values (e.g., lower value of wolves in the eyes of would-be poachers), social norms (e.g., greater acceptability of poaching, or less enforcement against poaching), or perceived control (e.g., would-be poachers perceive themselves helping authorities to kill wolves). This hypothesis is supported by four quantitative surveys of residents of Wisconsin from 2001 to 2013 and two qualitative focus groups from 2011 to 2012, which revealed increased inclinations to poach after Wisconsin wolf policies liberalized killing (...)”.

A recent study published in the Biology Conservation argues that there is a correlation between increase in the legal hunting and decrease in the illegal hunting.²¹ It is not, however, certain whether this correlation is causal or incidental. There is another study published in 2020 where the case is made for the latter to be true, that is – the decrease in the proportion of illegal hunting was not due to assumed socio-economic (perceptual) effects that the legal hunting had, but due to the fact that there were less wolves to be poached as a considerable proportion of the population was killed as a result of legal hunting.²² Liberg et al. also conclude that “legal culling is an unlikely option in the near future for Swedish wolf management where instead the population is likely regulated by poaching”.²³

NOAH is alarmed by how the Swedish authorities have misused the science-based approach – the authorities have selected out certain statements that seem to be fitting to their decision on culling but ignored clear and solid scientific evidence that speaks against it. The decisions fail to provide any rigorous scientific data to support the claim that culling reduces poaching. In any case, the precautionary principle requires that in case of doubt the authorities should abstain from causing irreversible damage to biodiversity.

²⁰ Santiago-Ávila, F. J., Chappell, R. J., & Treves, A. (2020). Liberalizing the killing of endangered wolves was associated with more disappearances of collared individuals in Wisconsin, USA. *Scientific reports*, 10(1), 1-14.

²¹ Liberg, O., Suutarinen, J., Åkesson, M., Andrén, H., Wabakken, P., Wikenros, C., & Sand, H. (2020). Poaching-related disappearance rate of wolves in Sweden was positively related to population size and negatively to legal culling. *Biological Conservation*, 243, 108456.

²² Santiago-Ávila, F. J., Chappell, R. J., & Treves, A. (2020). Liberalizing the killing of endangered wolves was associated with more disappearances of collared individuals in Wisconsin, USA. *Scientific reports*, 10(1), 1-14.

²³ Liberg, O., Suutarinen, J., Åkesson, M., Andrén, H., Wabakken, P., Wikenros, C., & Sand, H. (2020). Poaching-related disappearance rate of wolves in Sweden was positively related to population size and negatively to legal culling. *Biological Conservation*, 243, 108456.

3. The decisions lack a clear and sufficient statement of reasons as to the absence of satisfactory alternatives

The Swedish authorities fail to show that they have considered and actively pursued other non-lethal measures to curtail illegal hunting of wolves and to create acceptance of and tolerance for wolves, as the Habitats Directive requires. The decision refers to license hunting as a complementary management measure. However, as shown above this is the main measure in the current Swedish wolf management. The decision states that *“a negative development in attitudes needs to be slowed down and stopped before a positive development can be expected”*. What this exactly means and how the negative and positive developments relate to (or are exclusive of) each other, remains unclear.

The decision is explicit that the purpose of the authorities is to lower the density of the wolf population in certain areas, and therefore the license hunting is the only appropriate measure. NOAH argues that the purpose of the exception cannot be having less wolves as such – obviously, it is impossible to find alternatives to such a purpose. NOAH finds that this kind of approach goes against the wording and the spirit of the Habitats Directive and defies the underlying system of protection set up in the Directive.

The authorities state that it is very difficult to distinguish the effects of different measures, and that parallel measures may be relevant, but that license hunting cannot be replaced by other measures. Alarming, the measures of information and education about wolves and about the need to protect the species are not even mentioned in the decisions. If the aim is - as it should be - to develop positive attitudes towards wolves, it is incomprehensible that information and education as relevant measures are not even mentioned.

The Swedish Environmental Protection Agency has stated in its report from 2015²⁴ that the effect of information and education on human attitudes towards large carnivores is considered to be unclear and difficult to evaluate. It is also stated that there are no studies of the effect of exposure to large carnivores' habitats by people who experience fear towards these animals. This is simply not true, and these statements are not backed up by scientific research. A study by Johansson et al. (2017) concludes:²⁵

“The quantitative analyses revealed that participants who found the information credible reported a significant increase in social trust and a decrease in vulnerability and fear. The qualitative analyses pointed to the importance of information content and metacommunication, for example, nonverbal cues. It is proposed that, among participants who find the information credible, information meetings may change the appraisal of wolves and brown bears, and therefore they might prove useful as an intervention to address fear of these animals.”

²⁴ Analys och redovisning av hur socioekonomin påverkas av en vargpopulation som har gynnsam bevarandestatus i Sverige, Skrivelse regeringsuppdrag att utreda gynnsam bevarandestatus för varg (M2015/1573/Nm), NV-02945-15, 30.11.2015, <https://www.naturvardsverket.se/upload/miljoarbete-i-samhallet/miljoarbete-i-sverige/regeringsuppdrag/2015/ru-bevarandestatus-varg/analys-och-redovisning-av-hur-socioekonomin-paverkas-av-en-vargpopulation-som-har-gynnsam-bevarandestatus-i-sverige.pdf>

²⁵ Johansson, M., Frank, J., Støen, O. G., & Flykt, A. (2017). An evaluation of information meetings as a tool for addressing fear of large carnivores. *Society & Natural Resources*, 30(3), 281-298.

NOAH would like to refer to another research published in 2020 by Straka et al. where the results of the study showed that *“educating the public was preferred in any scenario; irrespective of the severity of the human-wildlife conflict”* and that the focus should be on *“promoting education programs that foster co-existence with wolves”*.²⁶

It is therefore clear that the Agency’s position is not supported by later scientific research, and the decisions on culling of wolves should at least have shown how these measures have been implemented, and not been effective enough to create tolerance for large carnivores. NOAH is concerned that the decisions give expression to a general policy adopted by the Swedish authorities where legal culling is both the aim and the main measure, and considering other alternative measures, such as education and information, is lacking.

4. The Swedish wolf population does not have favourable conservation status

NOAH understands that there are disagreements among scientists on the question of whether the Swedish wolf population has FCS. However, there are two important facts that cannot be disputed and that support the assessment that the wolf population does not have FCS.

4.1. The South Scandinavian wolf population continues to suffer from heavy inbreeding

According to the recent data of the Norwegian Ministry of Climate and the Environment, the average coefficient of the South Scandinavian wolf population is 0,24.²⁷ This is unacceptably high. Chapron has suggested in his clarification of the concept of FCS to the Swedish government:²⁸

«... wolves in Sweden can never be said to have achieved FCS as long as their inbreeding coefficient remain > 0.2 and substantial number of immigrant wolves is required to reduce the inbreeding coefficient. This implies that even if a connectivity of 1 migrant / generation would be achieved today, the wolf population would still not qualify for FCS.»

With regard to the genetic situation of the South Scandinavian wolf population, we would like to cite excerpts from two studies:

*"Our results indicate that criteria for long-term genetic viability are not met for the current Fennoscandian wolf population. In order to meet such criteria, local population sizes as well as migration rates between subpopulations need to increase."*²⁹ (Laikre et al., 2016)

²⁶ Tanja M. Straka, Kelly K. Miller & Maarten H. Jacobs (2020) Understanding the acceptability of wolf management actions: roles of cognition and emotion, *Human Dimensions of Wildlife*, 25:1, 33-46.

²⁷ See *The decision on the complaints to the decision on the quota and area for licence hunt of wolves inside the wolf zone in 2021*, 21 December 2020.

<https://www.fylkesmannen.no/contentassets/38616db8140044debee1c55fac92c456/kld-21122020---avgjorelse-klagesak-lisensfelling-av-ulv-innenfor-ulvesonen-2021.pdf>

²⁸ <http://www.naturvardsverket.se/upload/miljoarbete-i-samhallet/miljoarbete-i-sverige/regeringsuppdrag/2015/ru-bevarandestatus-varg/Regeringsuppdrag-Bilagor-GYBS.pdf>

²⁹ Laikre et al., Metapopulation effective size and conservation genetic goals for the Fennoscandian wolf (*Canis lupus*) population, *Heredity* (2016) 117 Official journal of the Genetics Society, 279–289.

"Finally, the high rate of congenital anomalies that Scandinavian wolves suffer ... is a manifestation of poor population health that would be mitigated by larger population size and increased immigration, insomuch as they would mitigate the genetic deterioration that is almost certainly the cause of many of these anomalies. For this reason, instituting a public harvest of wolves designed to limit abundance at this time is almost certainly inconsistent with the conservation goal of a healthy wolf population, insomuch as limiting abundance would exacerbate genetic deterioration, at least until the time when rates of natural immigration are great enough to support the population's genetic health and the conservation status is favourable."³⁰ (Raikkönen et al., 2013)

A study published in 2018 further underlined the extreme rate of inbreeding in the Scandinavian wolf population.³¹ The new method used in that study to measure inbreeding (whole genome sequencing) showed that Scandinavian wolves are on average even more inbred than thought before, when looking only at genealogy of the population. The study showed that some immigrants from the Russian-Karelian population were also suffering from inbreeding:

«Inbreeding (mating between relatives) is a major concern for conservation as it decreases individual fitness and can increase the risk of population extinction ... Small populations are particularly vulnerable to extinction due to demographic stochasticity, reduced genetic variation and inbreeding depression. ... The demonstration of inbreeding and relatedness among immigrants has important implications for population viability and the design of management programmes. In the case of the Scandinavian wolf population, having inbred and related immigrants means that animals are on average more inbred than it appears based on pedigree information alone ... This emphasizes the importance of immigration into the population to limit inbreeding and inbreeding depression. It also highlights the importance of taking the genetic status (that is, the degree of inbreeding and relatedness arising from a finite population size and population fragmentation) of a larger metapopulation into account.»

The Swedish authorities claim that the high inbreeding coefficient is compensated by regular immigration of wolves from the Russian/Karelian wolf populations. There is, however, no proof in the culling decisions that this immigration rate is upheld. In the "Evaluation of the sub-goals in the plan for genetic amplification of wolves 2016–2020"³² (2019) subgoal 3 reads as follows:

"At least two unrelated Finnish-Russian immigrant wolves survive and reproduce during the five-year period. The survival of the pups to reproductive age is at least as good as the Scandinavian puppies."

The evaluation states that "Assessment regarding second sub-objective 3 is still too early to make and will therefore be made at a later stage". The decisions do not provide any clear answers on this point either, but indicate that the subgoal is not achieved at the time of making the decisions. It is written in the decision that "that the genetic variation in the population is

³⁰ Raikkönen J, Vucetich JA, Vucetich LM, Peterson RO, Nelson MP (2013) What the Inbred Scandinavian Wolf Population Tells Us about the Nature of Conservation. PLoS ONE 8(6): e67218.

³¹ Kardos, M., Åkesson, M., Fountain, T., Flagstad, Ø., Liberg, O., Olason, P., ... & Ellegren, H. (2018). Genomic consequences of intensive inbreeding in an isolated wolf population. *Nature ecology & evolution*, 2(1), 124.

³² "Utvärdering av delmålen i plan för genetisk förstärkning av varg 2016–2020", <http://www.naturvardsverket.se/Om-Naturvardsverket/Publikationer/ISBN/6900/978-91-620-6927-8/>

currently stable and is expected to decline if now established F1 immigrant wolves succeed in reproducing” and that “puppies have also been born from the genetically important wolf bitch in Tiveden”. NOAH would like to point out that no reproduction of the offspring of the Tiveden wolf had yet happened at the time of the decisions. It also remains unclear how the requirement of “at least two wolves unrelated Finnish-Russian immigrant wolves” is fulfilled, even if had been confirmed that the Tiveden wolf had produced offspring. NOAH has received confirmation from the Swedish Environmental Protection Agency on 16 February 2021 via e-mail that subgoal 3 has not been achieved until now.

This fact undermines the Swedish authorities’ possibility to rely on the transboundary population approach, that is accounting for wolf populations in Finland and Russia when assessing the status of the wolf population in Sweden. Although sporadic immigration from the Finnish-Russian population occurs, the southern Scandinavian wolf population should be considered as isolated for management purposes.³³ We would like to emphasize that the EU Court in the Tapiola judgment as a rule excluded the possibility to account for wolf populations located in third countries (countries that are not Member States of the EU). This means that wolf populations found in Russia and Norway cannot be taken into account when assessing the population status. The Norwegian authorities have officially stated in their respective culling decisions that Norway is not bound by the strict protection regime of the Habitats Directive which further supports this conclusion.³⁴ The Swedish authorities have therefore no ground to argue that as long as the wolf population in Sweden remains at 300 wolves after the culling, the population has FCS. The wolf population in Sweden needs to be much bigger than 300 wolves in order to meet the criteria for FCS. This has been pointed out by scientists before.³⁵

4.2. The wolf populations in Norway and Sweden are listed as “critically endangered” and “endangered” respectively

The Swedish Red List of Species 2020 uplisted the wolf from “vulnerable” (VU) to “endangered” (EN), and this uplisting was done despite the fact that there has been some immigration from the Russian/Karelian wolf population:³⁶

“Wolves have a great ability to adapt to widely differing environments, but are dependent on a relatively rich fauna, preferably with elements of larger prey such as moose, reindeer and deer. As the wolf cannot be seen as relatively common in the region (Red-listed in both Norway and Finland), the red-listing category does not change as a result of some immigration. The number of reproductive individuals is estimated at 210 (166-273). In the winter of 2018/2019, 38 family groups were found in Scandinavia. This means a total of approximately 380 wolf individuals (300-494 95% CI), of which 300 (237-390) in Sweden. Of these, about 70% are sexually mature, ie

³³ Andersen, R., Linnell, J. D. C., Brainerd, S. & Hustad, H. (red.). 2003. Large predators and human communities in Norway. A guide to coexistence for the 21st century - NINA Temahefte 25. 48 pp. Available online at: https://www.nina.no/archive/nina/PppBasePdf/temahefte/25_eng.pdf.

³⁴ C-674/17, para. 60.

³⁵ Laikre, L., Olsson, F., Jansson, E., Hössjer, O., & Ryman, N. (2016). Metapopulation effective size and conservation genetic goals for the Fennoscandian wolf (*Canis lupus*) population. *Heredity*, 117(4), 279-289.

³⁶ <https://artfakta.se/naturvard/taxon/canis-lupus-lupus-100024>

about 213 individuals in Sweden. The population is increasing. The Scandinavian population has grown since 1993 from about 30 individuals to just over three hundred in the winter of 2017-18, however, the population was slightly higher around 2015. The reason for the decrease in recent years is mainly hunting and increased illegal hunting. Depending on which of the estimated values are used, the assessment varies from Vulnerable (VU) to Endangered (EN). Based on the most probable values, the subspecies falls into the category Endangered. The number of individuals is judged to be lower than the limit value for Endangered (EN) according to the D criterion. (D).” (NOAH’s emphasis)

The European Commission has expressed in its guidance document on assessment and reporting under the Habitats Directive (2006) that a population in the red list category “endangered” will normally not have FCS. This is supported by Linnell et al. (2008).³⁷ NOAH would like to draw attention to the fact that the Swedish wolf population was categorized as endangered also in the Swedish Red List of Species in 2010. This clearly indicates that a worsening and not an improvement of the conservation status of the wolf in Sweden has occurred in the last years. In any case, if there is disagreement on the conservation status, the precautionary principle requires that the decision takes account of the worst-case scenario.³⁸

In addition, the decisions ignore the fact that protecting stable wolf packs is important for the long-term survival and viability of the wolf population. It is not possible to build up a viable wolf population based solely on "genetically important" individuals. The wolf is a social animal, which means that the population is viable when the social structures in the population are strong.³⁹ Shooting entire wolf packs is directly counterproductive to maintaining long-term viability and genetic diversity in the wolf population.

Wolves are highly social and intelligent animals, which means that the stability of the wolf pack is important for teaching offspring to chase natural prey and stay away from human infrastructures. Sustained shooting of wolf packs can lead to social and physiological changes but it can also lead to changes in reproductive structure and breeding strategy, and accelerate loss of genetic diversity:⁴⁰ *«(...) the higher progesterone we detected in female tundra-taiga wolves compared with forest wolves is consistent with increased reproductive activity because of social disruption as well as established numeric responses of wolves to high mortality rates (...) The potential physiological effects of substantial, human-caused mortality suggest that hunting could be causing changes in reproductive structure and breeding strategy, as well as imposing chronic stress. Though increased reproduction might be viewed as a positive response of wolves to population reductions, the implications on lifetime reproductive output and generational survival of offspring as compared with undisturbed populations are unknown. However, a predicted outcome of such population disturbances is the loss of genetic diversity that can lead to a decrease in individual fitness and evolutionary potential, as well as an*

³⁷ Linnell, J., Salvatori, V., & Boitani, L. (2008). Guidelines for population level management plans for large carnivores in Europe. *A Large Carnivore Initiative for Europe report prepared for the European Commission (contract 070501/2005/424162/MAR/B2)*, 83.

³⁸ Communication from the Commission on the precautionary principle, COM/2000/0001 final

³⁹ C-674/17, paras. 57 and 72.

⁴⁰ Bryan, H. M., Smits, J. E., Koren, L., Paquet, P. C., Wynne-Edwards, K. E., & Musiani, M. (2015). Heavily hunted wolves have higher stress and reproductive steroids than wolves with lower hunting pressure. *Functional Ecology*, 29(3), 347-356.

increased risk of population extinction (Frankham, D. & A. 2002; Leonard, Vila & Wayne 2005). Indeed, elevated stress and reproductive hormones in hair or feathers have been associated negatively with fitness (Koren et al. 2011) and proxies of fitness (Macbeth et al. 2012; Bryan et al. 2013b). Moreover, chronic stress may have evolutionary consequences for wolf populations via epigenetic, intergenerational changes (McGowan & Szyf 2010; Cao-Lei et al. 2014).»
(NOAH's emphasis)

The County Administrative Board in Gävleborg also permitted to kill F2 individuals. This decision was contrary to the guidelines by the Swedish Environmental Protection Agency where F2 individuals were expressly excluded from the hunt.

5. How many wolves should make up the South Scandinavian population?

Lastly, NOAH would also like to draw your attention to the fact that the current FCS criteria “300 wolves + 1-2 immigrants every 5 years” applied by Sweden is not based on any ecological assessments. We refer in this respect to the letter sent by a number of scientists to the Swedish authorities in June 2013 where they argue that the FRP (favourable reference population) should be set on the basis of “social carrying capacity”, and that this should be at 270 wolves (later adjusted to 300 wolves).⁴¹ It is not clear why this particular number has been presented considering that at the same time Sweden is capable of tolerating nearly 3000 bears on its territory. NOAH believes that social carrying capacity is something that needs to be worked on and can be changed over time, with correct planning and systematic focus on non-lethal measures such as education of the public of the necessity to preserve biodiversity and protect large carnivores as keystone species. According to our understanding, this is also the intention of the Bern Convention and of the Habitats Directive. Social carrying capacity should not be a ground for determining what constitutes population health. Neither should it be used as a basis for setting conservation goals.⁴² A good example in this respect is the Polish study that uses ecological carrying capacity to determine the FRP values for wolves.⁴³

NOAH believes that FCS of the Swedish wolf population should be based on ecological carrying capacity instead of social carrying capacity or risk of extinction. A study on potentially suitable wolf habitats on the Scandinavian peninsula has been conducted in 2003 but probably for political reasons the results of this study have never been taken in use.⁴⁴ According to this study, there is suitable habitat for 408 reproductive units of wolves (reproductive pairs or wolf packs) in Sweden and 288 reproductive units of wolves in Norway. According to data published on 2 June 2020, there were 34 wolf packs in Sweden and 8 wolf packs in Norway.⁴⁵

⁴¹ Not available online. NOAH can send the document to the EU Commission on request.

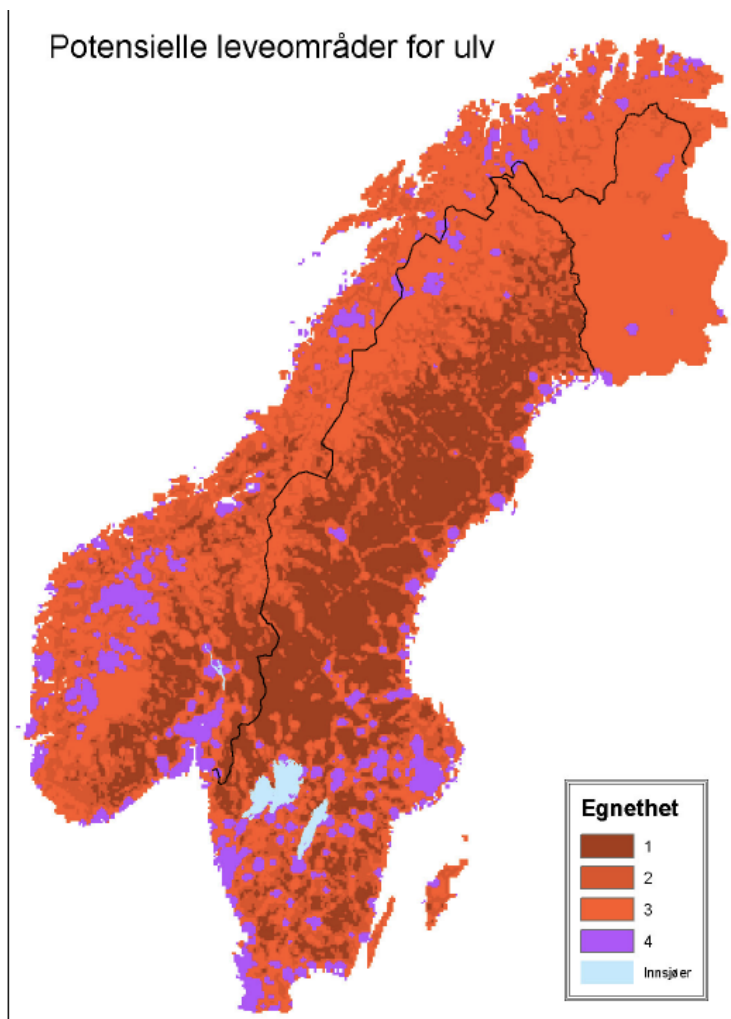
⁴² Rääkkönen, J., Vucetich, J. A., Vucetich, L. M., Peterson, R. O., & Nelson, M. P. (2013). What the inbred Scandinavian wolf population tells us about the nature of conservation. *PLoS One*, 8(6), e67218. Chapron. 2015. Operationalizing Favourable Conservation Status. *Report to Swedish Environmental Protection Agency*.

⁴³ Jędrzejewski, W., Jędrzejewska, B., Zawadzka, B., Borowik, T., Nowak, S., & Mysłajek, R. W. (2008). Habitat suitability model for Polish wolves based on long-term national census. *Animal Conservation*, 11(5), 377-390.

⁴⁴ Fagrappport, N. I. N. A. Potensielle leveområder for store rovdyr i Skandinavia: GIS-analyser på et økoregionalt nivå (2003). Available online at: <https://www.nina.no/archive/nina/PPPBasePdf/fagrappport/064.pdf>

⁴⁵ <https://rovdata.no/Nyheter/Nyhetsartikkel/ArticleId/4991/Oppsving-for-ulven-i-Skandinavia.aspx>

Please find below two excerpts from the report “Potensielle leveområder for store rovdyr i Skandinavia: GIS-analyser på et økoregionalt nivå» (2003) attached as Appendixes 1 and 2 to this analysis.



Appendix 1: Potential wolf habitats in Scandinavia where number 1 (brown) denotes areas of highest suitability for wolf habitat and number 4 (violet) denotes areas of least suitability for wolf habitat (excerpt from page 16 of the report)

Tabell 6. Grove estimater av antall reproduktive enheter (individuelle voksne hunndyr for bjørn, jerv og gaupe, flokker for ulv) som den Skandinaviske halvøya potensielt kan inneholde. Tallene er basert på estimerte tettheter fra felt. - Rough estimates of the number of reproductive units (individual females for wolverines, lynx and bears, and packs for wolves) for which there is room within suitable habitat on the Scandinavian peninsula. (Swenson et al. 1994, Linnell et al. 2001, Löfstrand 2000, Landa & Andersen upublisert, Landa et al. 1998, Johansson 2002, Wabakken et al. 2002).

| Art Species | Region Region | Areal (km ²) Area | Potensiell tetthet (reproduktive hunndyr pr 1000 km ²) Potential densities for reproducti- ve units | Potensielt antall Potential number |
|----------------|-------------------|-------------------------------------|--|---------------------------------------|
| Bjørn | Norge/Norway | 306101 | 1 - 3 | 306 - 918 |
| Bear | Sverige/Sweden | 405283 | 1 - 3 | 405 - 1215 |
| | Lappland/Lappland | 97024 | 1 - 3 | 97 - 291 |
| | Totalt/Total | 808408 | 1 - 3 | 808 - 2424 |
| Ulv | Norge/Norway | 287562 | 1 | 288 |
| Wolf | Sverige/Sweden | 408330 | 1 | 408 |
| | Lappland/Lappland | 96693 | 1 | 97 |
| | Totalt/Total | 792585 | 1 | 793 |
| Gaupe | Norge/Norway | 314029 | 1 - 3 | 314 - 942 |
| Lynx | Sverige/Sweden | 445136 | 1 - 3 | 445 - 1335 |
| | Lappland/Lappland | 98260 | 1 - 3 | 98 - 205 |
| | Totalt/Total | 857425 | 1 - 3 | 857 - 2572 |
| Jerv | Norge/Norway | 179888 | 1 - 3 | 180 - 540 |
| Wolverine | Sverige/Sweden | 149809 | 1 - 3 | 150 - 449 |
| | Lappland/Lappland | 83010 | 1 - 3 | 83 - 249 |
| | Totalt/Total | 412707 | 1 - 3 | 413 - 1238 |

Appendix 2: Table of rough estimates of the number of reproductive units (individual females for wolverines, lynx and bears, and packs for wolves) for which there is room within suitable habitat on the Scandinavian peninsula (excerpt from page 12 of the report)