



**HUMANE SOCIETY  
INTERNATIONAL**  
EUROPE



Mrs. Gratiela-Leocadia Gavrilesco,  
Minister of Environment  
Government of Romania

**RE: The Order to Approve the Level of Intervention for Bears and Wolves Species in the Interest of Health and Safety of the Population and in Order to Prevent Serious Damage**

Brussels, 14<sup>th</sup> July 2017

Dear Mrs. Gavrilesco,

The above-referenced global animal conservation and protection organizations welcome the Ministry of Environment’s initiative to ensure public safety, guard against damage to livestock and agriculture, and to protect large Romanian carnivores in their natural habitat. We take this comment opportunity to support certain elements of the order, as well as to express our concerns and offer recommendations.

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***There are serious threats to the survival of Ursus arctos (habitat destruction, human persecution, global warming, etc) which warrant extreme precaution and a conservative quota***

The order proposes a 140 bear quota for the harvest or capture of brown bears. Any lethal population control, or other methods that may detrimentally impact bear survival, must be treated with utmost precaution given the variety of threats.

Large carnivores must have secure habitats and avoid human persecution. Weaver et al. 1996, Estes et al. 2011, Ripple et al. 2014, Darimont et al. 2015. A brown bear needs large habitat devoid of human conflict in order to search for food, mates, cover and den sites. An ideal brown bear habitat must have adequate food distribution and abundance in order for bears to thrive. Furthermore, another critical threat to bear vitality is the incursion of motorized activity in their habitats. Craighead 2002. The extent to which the proposed 140 bear quota takes into account these types of compounding threats is unclear and further study is required to determine what is sustainable.

Further, many bear researchers have extensively studied climate change scenarios and concluded that climate change will have detrimental effects on bears by further altering the availability of food sources in their habitat. For example, Bojarska and Silva (2012) conducted a seminal worldwide review of bear food selection relative to their geography (latitude, longitude, altitude) and a multitude of environmental variables such as snow depth and duration. They found that “temperature and snow conditions” constituted some of the “most important factors affecting the feeding ecology of the brown bear.” Bojarska and Selva 2012. Their conclusions demonstrate that the Romanian government must treat climate change impacts on brown bears with the utmost gravity:

. . . [I]t may be expected that climate change will greatly affect brown bear food habits through changes in food availability, hibernation patterns, nutritional and energetic demands, and foraging behaviour. Globally increasing temperatures are yielding shorter winters with less snow, especially in northern latitudes and higher elevation areas (Sagarin & Micheli 2001, Wilmers & Post 2006). Early snow melt substantially reduces the amount of late-winter and early-spring carrion, which is vital for bears after hibernation and until other food resources become available (Wilmers & Post 2006). Climate change may affect brown bear feeding habits also through changes in plant distribution and phenology. As a response to warmer temperatures, Rodríguez et al. (2007) documented a long-term decrease in the contribution of boreal and temperate food items in brown bear diet during the hyperphagic season, when brown bears typically consume high amounts of fruit to accumulate fat for winter dormancy and for successful reproduction. Changes in the timing and intensity of fruiting and ripening of fruit and mast, and declines in the availability of high-quality fruits . . . may have important consequences for brown bear population dynamics (Rodríguez et al. 2007). If key brown bear food resources disappear without the corresponding change in the timing of alternative food resources, a serious food bottleneck could develop.

Bojarska and Silva 2012 at 133-4. The best available science is clear: climate change has and will continue to threaten brown bears by detrimentally altering their habitat. We are concerned that the

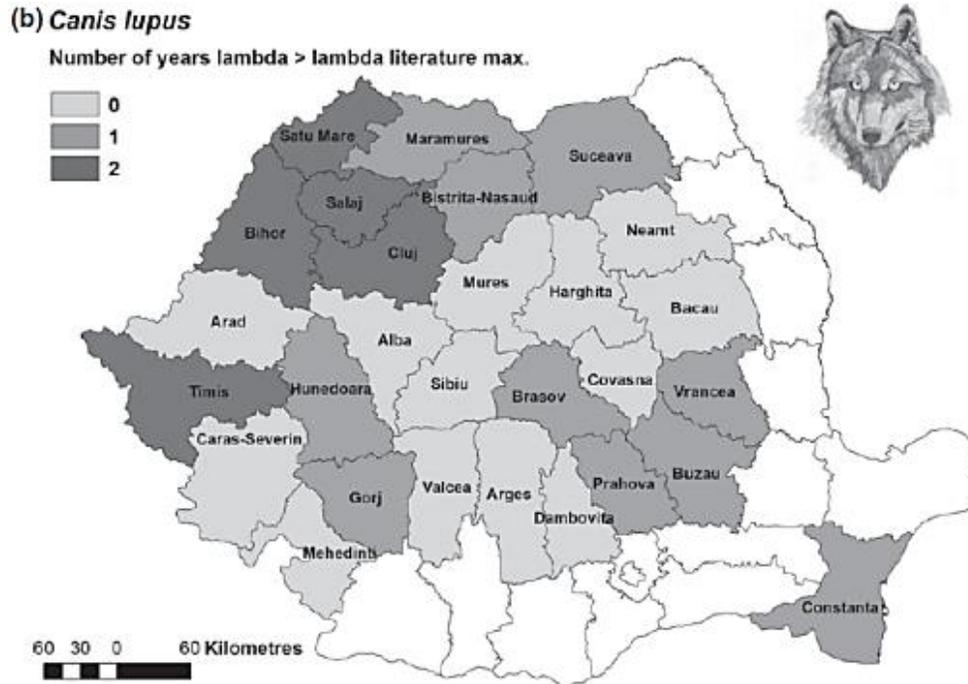
140 bear quota by far exceeds sustainable levels, given these additional compounding threats and absence of accurate population data (see discussion below).

***The population estimates on which the proposed quotas for brown bear and wolf are based are biologically implausible and biased***

A new study by Popescu et al. (2016) evaluated the “biological plausibility” of reported large carnivore population estimates used in setting harvest targets in Romania. By comparing growth rates of well-studied populations elsewhere in Europe to those claimed by wildlife managers in Romania, the researchers found that 22 of 26 counties (84.6%) in Romania that reported brown bear populations had “unrealistically high population growth rates” in at least one year between 2005 and 2012. For wolves, 15 of 30 counties (50%) had estimated growth rates higher than the literature maximum for at least one year. The frequency of over-estimations over the seven year period varied among counties (Figure 1).

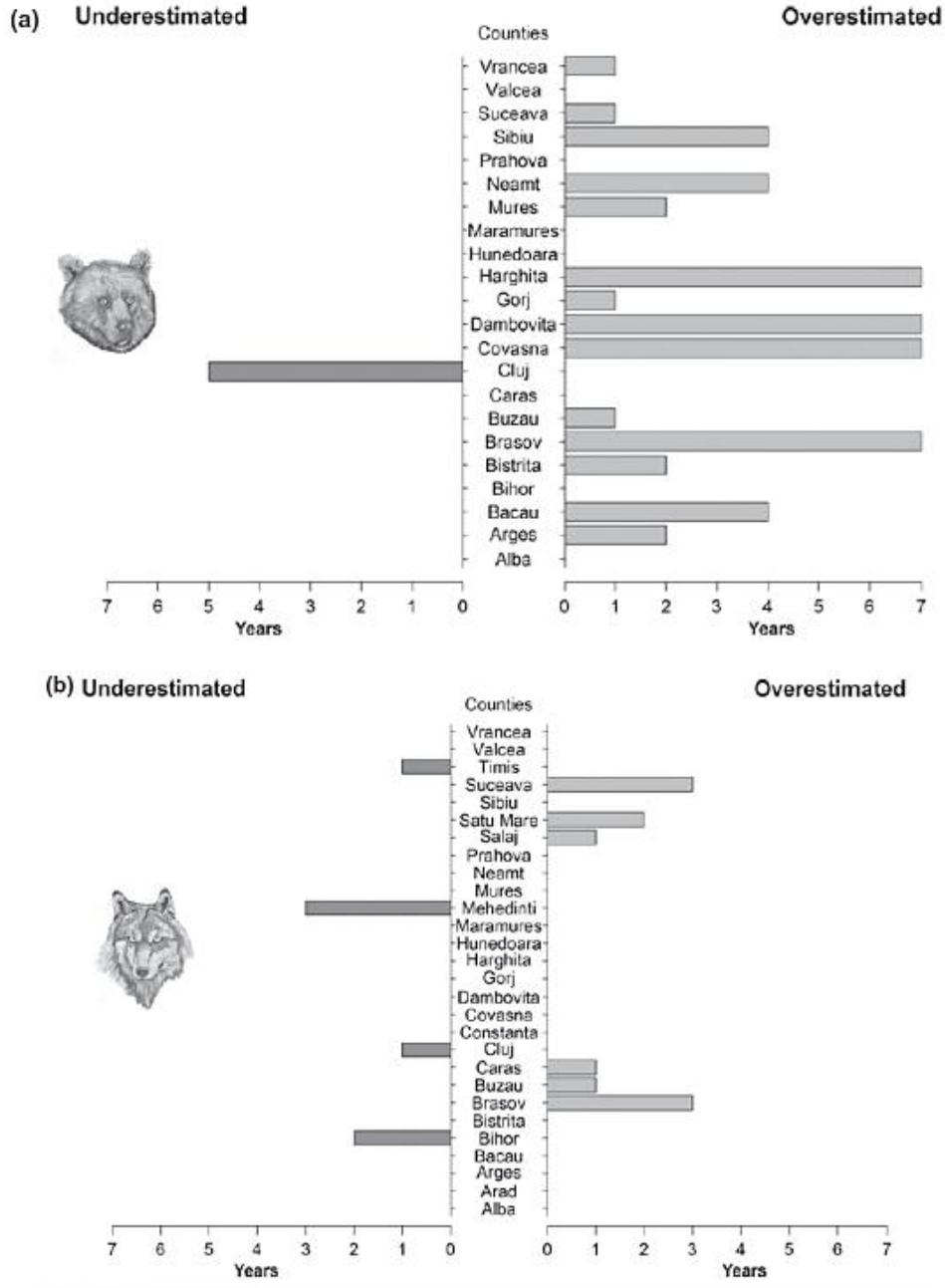
**Figure 1.** From Popescu et al. 2016. Number of years that estimated growth rates exceeded maximum growth rates of other European populations.





Furthermore, Popescu et al. (2016) found that the estimated population trajectories based on these unrealistic growth rates caused an overestimation of the size of bear populations in 32% of cases (Figure 2). Also, for bears, the researchers found a positive correlation between the size of the population over-estimate and the number of bears hunted (in other words, the larger the over-estimate, the more bears were hunted). The authors concluded that Romania’s “management systems have lacked biological realism” and called on the need for “reassessing credibility of management systems that are subject both to data limitations and incentives for biased approaches to management.”

**Figure 2.** From Popescu et al. 2016. Number of years, out of seven, where population sizes were overestimated compared to population trajectories from other well-studied European populations.



Regarding bias, Popescu et al. (2016) point out that, in Romania, “Public and private game managers are the beneficiaries of much of the revenue generated by hunting activities.” Furthermore, “hunting targets are set based on rough abundance estimates derived from a mixture of track data, sightings at feeding stations and expert opinion, without incorporating uncertainty” and there is “limited monitoring.” Population estimates for bears, which provide wildlife managers with the greatest source of revenue (~3500 EUR for trophies <350 CIC points and ~6000 EUR for trophies >350 CIC points), were most exaggerated, and those counties with the highest bear hunting levels had most biologically implausible population estimates. Popescu et al. (2016) state that this suggests that “incentives other than carnivore ecology and demography might drive

reported population estimates” and that, indeed, management decisions are partly driven by economic incentives rather than species biology. Popescu et al. (2016) state, “When managers that benefit from hunting are responsible for reporting abundances, there is a clear need for independent assessments of the veracity, and biological plausibility of the abundance estimates.”

In conclusion, Popescu et al. (2016) infer that Romania’s large carnivore management system is “poorly supported by the population data reported by game managers and that current hunting decisions are often based on biologically unrealistic population data.” Furthermore, in Romania “reported populations for *U. arctos*, but not *C. lupus* and *L. lynx*, are overly optimistic, and consequently, setting hunting quotas based on these estimates could lead to long-term population impacts.” Therefore, if the proposed management quota of 140 bears and 97 wolves was determined using the inflated population estimates, it cannot be sustainable and must be dramatically reduced.

Further, data contained in Popescu et al. (2016) (Appendix S2), from the Romanian Ministry of Environment, show that in 2011 (the most recent year reported), the Transylvania region alone contained about 58.8% of the total estimated number of bears in the country (5,423 of 9,220) (Table 1). Popescu et al. (2016) consider these estimates to be biased over-estimates that are not based on science (Figure 3). Furthermore, based on these data, 64.2% of the annual brown bear hunting quota in 2011 (224 of 349) was allocated to counties in the Transylvania region. Finally, 74.9% of brown bears legally hunted in Romania in 2011 (182 of 243) were hunted in the Transylvania region.

**Table 1:** Brown bear population size, hunting quotas, and number hunted legally in the counties in the Transylvania region of Romania. Data from Popescu et al. (2016), Appendix S2.

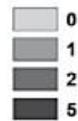
County	Population Size	Hunting Quota	Number Hunted Legally
Salaj	-	-	-
B.-Nasaud	448	21	13
Cluj	97	3	1
Mures	545	38	32
Harghita	1289	49	48
Hunedoara	386	12	5
Alba	200	3	0
Sibiu	450	20	15
Brasov	941	41	31
Covasna	1067	37	37
<b>Totals</b>	<b>5423</b>	<b>224</b>	<b>182</b>

**Figure 3.** Top map is of Romania, showing Transylvania region. Bottom map is from Popescu et al. 2016, showing number of years that estimated growth rates exceeded maximum growth rates of other European populations.



(a) *Ursus arctos*

Number of years lambda > lambda literature max.



Dorresteijn et al. (2014) studied human-brown bear coexistence in Transylvania, Romania. The researchers found that “bears and humans coexisted relatively peacefully despite occasional conflicts.” Key to this coexistence were: 1) availability of forest blocks that are connected to bear populations in the Carpathian Mountains; 2) use of traditional livestock management to minimize damage from bears; and 3) some tolerance of shepherds to occasional conflict with bears.

Dorresteijn et al. found that bear activity was not related to human settlements and compensation for livestock losses did not influence people's attitudes toward bears.

It is apparent from these studies that human-bear conflict is low in the region of Romania where hunting levels, and supposedly bear populations, are highest. Clearly the claims that hunting is needed to address human-bear conflict in this region is false.

***Several traits particular to the social structure and life cycle of brown bears and wolves make them especially sensitive to hunting and lethal population control mortality***

Both brown bears and wolves are a large-bodied carnivores only sparsely populated across vast areas; they invest in few offspring; they provide extended parental care to their young; and social stability promotes their resiliency. See, e.g., Weaver et al. 1996, Wielgus et al. 2013, Creel et al. 2015, Wallach et al. 2015. Human persecution affects their social structure (Darimont et al. 2009, Wielgus et al. 2013, Bryan et al. 2014, Wallach et al. 2015) and harms their persistence (Wielgus et al. 2013, Zedrosser et al. 2013, Darimont et al. 2015). The consequence of these characteristics is that the effect of human persecution on brown bears and wolves is "super additive," meaning that hunting kills result in mortality exceeding the simple 1:1 ratio and generates pressures on the population that far exceed what would occur in nature (Wielgus et al. 2013, Darimont et al. 2015, Gosselin et al. 2015).

In brown bears, hunting and lethal population control has direct effects on population growth rates because of increased mortality, but also has devastating indirect effects such as disrupting the sex and age structure of a population (Wielgus et al. 2013, Gosselin et al. 2015). Gosselin et al. state: "In species with sexually selected infanticide ("SSI"), hunting may decrease juvenile survival by increasing male turnover." Studies show that hunting mortality, specifically, can harm social organization of species, because it promotes male turnover and thus increases sexually selected infanticide upon cubs of deceased males. Gosselin et al. 2015, at 1.

In wolves, selective removal such as in lethal population control can lead to loss of key breeding individuals, pack disruption and other indirect effects. Wolves are particularly susceptible to social disruption from individual mortality because their complex social structure affects many aspects of wolf population dynamics. Further, killing wolves may have detrimental effects on the fitness of individuals, change packs' evolutionary potential, and increase the risk for population extinction (Bryan et al. 2014, p. 8). Bryan et al. (2014) further noted "Hunting can decrease pack size, which results in altered predation patterns, increased time spent defending kill sites from scavengers and may lead to increased conflict with humans and livestock (Hayes et al. 2000; Wydeven et al. 2004; Zimmerman 2014)."

Therefore, while we strongly welcome the Ministry's continued restriction on the hunting of bears and wolves and the requirement that lethal take is carried out only by "specialized technical staff" (Article 3(4)), our concerns about the detrimental impact to the social structure and life cycle of bears and wolves remain. Therefore it is critical that Ministry re-evaluate the 140 bear and 97 wolf quota in order to ensure it is sufficiently conservative and comports with the latest accurate population data.

***Co-adaptation and co-existence with Romania's large carnivores are key to the safety of the human population, livestock, and agriculture***

Our recommendation is that the Order should strongly urge for co-adaptation and coexistence with Romania's large carnivores, such as bears and wolves. Co-adaptation and coexistence must happen, if carnivores are to persist; that means that humans must be willing to share habitat and tolerate the small level of risk they pose ( Dubois et al. 2017; Carter and Linnell 2016; Chapron, Guillaume et al. 2016; ). Humans must curb their own "hyperpredation" of other species and their habitats (Darimont et al. 2015, Chapron and López-Bao 2016).

In 2015, a group of academics, industry representatives, and nongovernmental organizations from five continents met for a 2-day workshop to develop the first international principles for ethical decision making in wildlife control. The conclusions of this group were published and are as summarized as follows:

"They determined that efforts to control wildlife should begin wherever possible by altering the human practices that cause human-wildlife conflict and by developing a culture of coexistence; be justified by evidence that significant harms are being caused to people, property, livelihoods, ecosystems, and/or other animals; have measurable outcome-based objectives that are clear, achievable, monitored, and adaptive; predictably minimize animal welfare harms to the fewest number of animals; be informed by community values as well as scientific, technical, and practical information; be integrated into plans for systematic long-term management; and be based on the specifics of the situation rather than negative labels (pest, overabundant) applied to the target species. We recommend that these principles guide development of international, national, and local standards and control decisions and implementation." (Dubois et al. 2017)

It is unclear from the language of the Order what, if any, non-lethal mitigation will be required prior to resorting to either lethal take or capture of the bears or wolves. We call on the Ministry to add to the Order language requiring that non-lethal mitigation techniques are first exhausted prior to lethal take or capture of the animals. A short discussion of such techniques is included below.

For example, conflict is especially common between livestock owners and wolves. In these extremely rare circumstances, a variety of non-lethal methods such as range riders (individuals that supervise the herd), electric fencing, fladry (a line of rope mounted along the top of a fence, from which are suspended strips of fabric or colored flags) and sanitary carcass removal, are available. We believe that efforts to educate and assist affected livestock owners can be more effective at reducing human-wildlife conflict in the long term than lethal wildlife controls.

In the case of bears, some effective non-lethal mitigation techniques include electric fencing of beehives and calving areas, carcass collection and disposal programs, bear-proof garbage disposal facilities, and regulations for carrying pepper spray and properly securing remains of hunter-killed animals.

In fact, we note that the efficiency of lethal methods aimed at managing populations have never been proven. Treves et al. (2016) asserted that lethal methods are often implemented without first considering experimental evidence of their effectiveness in mitigating predation-related threats or avoiding ecological degradation. This study recommended that “policy makers suspend predator control efforts that lack evidence for functional effectiveness and that scientists focus on stringent standards of evidence in tests of predator control.”

It is absolutely critical that co-adaptation and coexistence measures are given first priority, before resorting to lethal take and capture of bears and wolves.

***Specific Comments on the Articles of the Proposed Order:***

<b>Text of Proposed Order</b>	<b>Animal Protection NGO Comments</b>
<p><u>Article 1</u> - (1) This Order regulates the conditions for the implementation of the derogations from the strictly protected species status, established under the current national environmental legislation, for wolf and bear species, provided that there is no acceptable alternative and that the derogating measures are not to the detriment of maintaining populations of those species in a favorable conservation status in their natural habitat, only in the following situations:</p> <p>A) to prevent the occurrence of significant damages, especially on agricultural crops, domestic animals and to prevent damage to other goods;</p> <p>B) in the interests of public health and safety.</p>	<p>We welcome reference to “provided that there is no acceptable alternative...” and encourage the interpretation of this text to mean that non-lethal management practices must be exhausted prior to lethal take or capture of the animals (with the exception of imminent threat to life).</p> <p>However, we are concerned that sections (A) and (B) are broadly worded such that minor infractions could unjustifiably result in lethal take or capture.</p> <p>We therefore recommend the following text:</p> <p><u>Article 1</u> - (1) This Order regulates the conditions for the implementation of the derogations from the strictly protected species status, established under the current national environmental legislation, for wolf and bear species, provided <b>that co-adaptation and co-existence measures are implemented</b>, there is no acceptable alternative, and that the derogating measures are not to the detriment of maintaining populations of those species in a favorable conservation status in their natural habitat, only in the following situations:</p> <p>A) to prevent the occurrence of significant damages, especially on agricultural crops, domestic animals and to prevent damage to other goods, <b>only when non-lethal mitigation is first exhausted OR a threat of substantial harm is imminent;</b></p>

Text of Proposed Order	Animal Protection NGO Comments
	<p>B) in the interests of public health and safety, <b>only when non-lethal mitigation is first exhausted or a threat of bodily harm is imminent.</b></p>
<p>(2) The measures regulated in order to solve the situations provided in par. (1) is to harvest as well as capture, holding and transport for the purpose of relocation of bear or wolf specimens at any stage of their biological cycle.</p>	<p>Please note our previous comments that lethal take or capture can at times exacerbate the problem of conflict. We also recommend this change:</p> <p>(2) The measures regulated in order to solve the situations provided in par. (1) is <b>to utilize non-lethal mitigation techniques, and once proven unsuccessful or significant threat to life of property is imminent, to</b> harvest as well as capture, holding and transport for the purpose of relocation of bear or wolf specimens at any stage of their biological cycle.</p>
<p><u>Art. 2</u> - (1) In order to achieve the objectives set in art. 1 par. (1), the maximum number of derogations applicable at national level in 2017 for the species Bear and Wolves is hereby approved as follows:  A) bear (<i>Ursus arctos</i>) - 140 specimens;  B) wolf (<i>Canis lupus</i>) - 97 specimens;  (2) The specimens of the bear and wolf species referred to in paragraph (1) shall remain at the disposal of the central public authority for environmental protection, for the situations provided in art. 1.</p>	<p>We call on the Ministry to evaluate whether the proposed quotas of 140 and 97 individuals is sustainable provided that population data is inflated (see discussion above). By no means should the quota be increased for the brown bear as has been called for by hunting interests. We also strongly support keeping all bear or wolf parts with the central public authority, but think clarity should be provided ensuring that commercial use of the parts is prohibited.</p> <p>We recommend to modify the language as follows:</p> <p><u>Art. 2</u> - (1) In order to achieve the objectives set in art. 1 par. (1), the maximum number of derogations applicable at national level in 2017 for the species Bear and Wolves is hereby approved as follows:  A) bear (<i>Ursus arctos</i>) – <b>to be determined on a case-by-case basis to ensure sustainability, but not to exceed 140 specimens</b>  B) wolf (<i>Canis lupus</i>) - <b>to be determined on a case-by-case basis to ensure sustainability, but not to exceed 97 specimens;</b>  (2) The specimens of the bear and wolf species referred to in paragraph (1) shall remain at the disposal of the central public authority for</p>

Text of Proposed Order	Animal Protection NGO Comments
	environmental protection, for the situations provided in art. 1, <b>but commercial use is prohibited.</b>
<p><u>Article 3</u> - Article 3 - (1) The specimens of the bear and wolf species referred to in art. 2 may be harvested by "lying in wait" or may be captured for relocation.</p> <p>(2) The harvesting or capture of specimens of bear and wolf specimens under par. (1) may be carried out only with the consent of the central public authority for environmental protection through the Biodiversity Directorate on the basis of the following documents:</p>	<p>Although we are not sure about the exact translation of "la pândă", we presume lethal take is what the article refers to.</p> <p>We again reiterate that lethal take and capture may exacerbate the conflict problems. For example, if re-located many animals may simply return to their original habitat (meanwhile leaving a gap that can be filled by a greater number of conflict wolves or bears), and many animals may not survive following relocation.</p>
<p>A) a point of view of a committee made up of representatives of the territorial environmental protection agencies and of the county commissariats of the National Environmental Guard, appointed by decision of the head of the territorial structure;</p>	<p>Recommended language:</p> <p>A) a point of view of a committee made up of representatives of the territorial environmental protection agencies, <del>and of the county commissariats of the National Environmental Guard</del>, appointed by decision of the head of the territorial structure, <b>and experts on the species biology and/or conflict mitigation techniques;</b></p>
<p>B) minutes drawn up according to Government Decision no. 1679/2008 on the way of granting the damages provided by the Hunting and Game Protection Act no. 407/2006, as well as the obligations of the managers of the hunting funds and the owners of agricultural, forestry and domestic crops for the prevention of damages;</p> <p>C) the opinion of the administrator / custodian of the protected natural area, as the case may be;</p>	
<p>(3) The specimens harvested under these conditions shall be deducted from the total number of specimens provided to art. 2.</p>	
<p>(4) The harvesting or capture of specimens of bear and wolf specimens under para. (2) can only be performed with specialized</p>	<p>We strongly welcome this text and believe that trophy hunters should not be involved in the mitigation of conflict animals. In past cases</p>

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<p>technical staff after they have been monitored and identified.</p> <p>(5) The harvested specimens shall remain in the patrimony of the hunting fund manager, without being estranged.</p>	<p>where this was permitted, for example in the United States, it left room for extreme abuse whereby the lethal take quota was monopolized by the hunters and operated much like a trophy hunting quota (far beyond necessitated lethal take).</p> <p>Lethal take and capture should not be monetized, by selling the chance to kill or capture the animals to hunters.</p> <p>Recommended changes:</p> <p>(4) The harvesting or capture of specimens of bear and wolf specimens under para. (2) can only be performed <b>by</b> <del>with</del> specialized technical staff after they have been monitored and identified. <b>Lethal take and capture shall not be monetized.</b></p> <p>(5) The harvested specimens shall remain in the patrimony of the hunting fund manager, without being estranged <b>and are prohibited from entering commerce.</b></p>
<p><u>Article 4</u> - (1) Managers of hunting funds who have taken or captured a specimen under the derogation established by this Order are obliged to send to the territorial public authority for environmental protection from the territorial administrative area where the harvesting took place, a report on To the action, within 30 days from the date of harvesting. The model of the report is set out in Annex no. 1.</p> <p>(2) The report provided in paragraph (1) shall be accompanied by supporting documents, according to the reason for the derogation.</p> <p>(3) The managers of the hunting funds who have taken a copy under the derogation established by the present order have the obligation to collect biological samples for genetic analyzes from the harvested specimens and to submit them to the scientific authority CITES - National</p>	

Text of Proposed Order	Animal Protection NGO Comments
Institute of Forestry Development in Forestry Marin Drăcea - Braşov. (4) The territorial public authority for environmental protection shall send to the National Environmental Protection Agency within 45 days from the date of application of the derogation a report on its results based on the data provided in paragraph (1).	
<u>Art. 5</u> - Annex no. 1 is an integral part of this order.	
<u>Article 6</u> - This Order shall be published in the Official Gazette of Romania, Part I.	

Yours sincerely,



Dr. Joanna Swabe  
 Senior Director of Public Affairs  
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