Large Carnivore Initiative for Europe
IUCN/SSC SPECIALIST GROUP

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Large carnivores and the EU Nature Restoration Law

The 2024 EU Nature Restoration Law (Regulation 2024/1991, or NRL)[1] offers significant opportunities to further the conservation and restoration of, and coexistence with, large carnivores in Europe. The IUCN/SSC Large Carnivore Initiative for Europe (LCIE)[2] hereby wishes to draw attention to these opportunities.

This note is intended primarily for EU member state authorities responsible for **preparing national restoration plans** under the NRL, as well as for conservation agencies and other stakeholders engaged in the Regulation's implementation. The purpose of this note is to highlight where and how measures relevant to **large carnivores and their habitats** can be meaningfully integrated into restoration planning under the NRL. The note's timing is linked to the current window to include measures relating to large carnivores into national restoration plans, which must be submitted to the European Commission by 1 September 2026.[3]

Ecosystem restoration

In line with global commitments to restore degraded ecosystems as far as possible and as appropriate, the NRL aims for the "long-term and sustained **recovery of biodiverse and resilient ecosystems**" across the territories of the 27 EU member states.[4] To achieve this, the Regulation sets out general obligations regarding the restoration of habitat types and habitats of species, as well as focused obligations regarding the restoration of rivers, forests, pollinators, and agricultural and urban areas. Each member state must identify the concrete restoration measures it needs to take in order to meet these obligations, and incorporate them in the **national restoration plan** it is expected to draw up and implement.[5]

Although its text does not expressly mention large carnivores, the Regulation clearly has the potential to play a meaningful role in pursuing the goal of maintaining and restoring, in coexistence with people, viable populations of **large carnivores** as integral parts of ecosystems and landscapes across Europe.[6] In particular, as discussed below, the NRL calls for additional measures, where needed, to improve the quality and quantity of large carnivore habitats.

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[1] Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on Nature Restoration and Amending Regulation (EU) 2022/869, https://eur-lex.europa.eu/eli/reg/2024/1991/oj/eng.
[2] The LCIE is a thematic specialist group of the IUCN Species Survival Commission; see also https://www.lcie.org.
[3] NRL, Art. 16.
[4] NRL, Art. 1(1).
[5] NRL, Art. 14-17.
[6] This is the LCIE vision as recorded, *inter alia*, in LCIE (2023) *A Manifesto for Large Carnivore Conservation in Europe*, 635253308262465095_LCIE manifesto for large carnivore conservation in Europe 2013.pdf.

Requirements regarding the non-deterioration and restoration of large carnivore habitats already flow from the **Habitats Directive**,[7] particularly from member states' obligations to designate and protect Natura 2000 sites for large carnivores; to afford them (strict) protection across their range; and to maintain their populations in, or restore them to, a favourable conservation status (FCS).[8] The NRL builds on, and will help achieve, these pre-existing commitments.

Compared to the Habitats Directive, the approach of the NRL is more holistic and systemic. The Regulation reflects a broader, ongoing shift of focus in international and European law and policy from species to ecosystems.[9] Habitat types, habitats of species, and populations of species (including large carnivores) are explicitly viewed in the NRL as parts of the dynamic and well-functioning ecosystems for which the Regulation ultimately aims.[10]

Improving large carnivore habitats

As regards the various **legal obligations** set out in the Regulation, several of these are of (potential) relevance to large carnivores, albeit mostly indirectly. For instance, the restoration and re-establishment of a diversity of habitat types under Article 4 could have positive spin-off effects for large carnivores inhabiting or frequenting them.[11] Furthermore, in forest ecosystems, increasing connectivity, tree species and age diversity, and the share of native trees and deadwood, as required under Article 12,[12] can improve their quality as habitat for large carnivores and their prey species.[13]

The NRL's implementation can be expected to increase the potential for positive ecological feedback loops. To illustrate, meeting member states' obligation under Article 10 to restore the abundance and diversity of pollinating insects[14] may benefit brown bears in the process, whereas those pollinators in turn may benefit from the bears' seed-dispersal services.[15]

The most directly relevant obligation is laid down in **Article 4(7)**. This provision requires member states to put in place **habitat restoration measures** for Habitats Directive species when their habitats are not yet of "**sufficient quality**" or "**sufficient quantity**."[16] The scope of this obligation covers all species from Annexes II, IV, and V of the Habitats Directive, and therefore all of the large carnivore species **brown bear** (*Ursus arctos*), **wolverine** (*Gulo gulo*), **Eurasian lynx** (*Lynx lynx*), **Iberian lynx** (*Lynx pardinus*), **grey wolf** (*Canis lupus*), and **golden jackal** (*Canis aureus*).

The quality (and quantity) of habitat is deemed "sufficient" when it "allows the **ecological requirements** of a species to be met at any stage of its biological cycle so that it is maintaining itself on a long-term basis as a viable component of its habitat in its natural range, contributing to reaching

[7] Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora.
[8] For a recent overview of these obligations, see A. Trouwborst (2025) 'Large Carnivores and the EU Habitats Directive – Legal Obligations to Restore and Coexist' (30) *Carnivore Damage Prevention News* 9-15, cdpnews.net/?pdf_track=TDqNL5qOeFJ.
[9] See also A. Trouwborst (2025) 'Rewilding and the EU Nature Restoration Law: Plotting the Course of Ecosystem Restoration in Europe' 22(3) *Journal for European Environmental and Planning Law* 364-384, https://brill.com/view/journals/jeep/22/3/article-p364_007.xml.
[10] See the NRL's definition of "ecosystem" in Art. 3(1).
[11] NRL, Art. 4(1) and (4).
[12] NRL, Art. 12(3).
[13] E.g., K. Schmidt et al. (2023) 'Effect of Microhabitat Characteristics for Predicting Habitat Suitability for a Stalking Large Carnivore – the Eurasian Lynx in Middle Europe' 26(6) *Animal Conservation* 851-864.
[14] NRL, Art. 10(1).
[15] See, e.g., A. García-Rodríguez et al. (2025) 'The Role of the Brown Bear *Ursus arctos* as a Legitimate Megafaunal Seed Disperser' 11 *Scientific Reports* 1281.
[16] NRL, Art. 4(7).

or maintaining **favourable conservation status**" as defined under the Habitats Directive.[17] There is thus an explicit link with the familiar FCS concept.[18] It should be noted with regard to the above definition that for large carnivores, breeding habitat requirements are often stricter than what is required for their mere presence.[19]

Restoration measures: from connectivity to coexistence

Article 4(7) itself mentions, in a non-exhaustive manner, measures to re-establish habitat and to enhance connectivity. Examples of potentially suitable restoration measures are also offered in Annex VII of the Regulation. These include the following two, which may be relevant to large carnivores, depending on the circumstances:

- "Allow ecosystems to develop their own natural dynamics for example by abandoning harvesting and promoting naturalness and wilderness."[20]

- "Improve connectivity across habitats to enable the development of populations of species, and to allow for sufficient individual or genetic exchange ..."[21]

The first of these is linked, among other things, to the commitment of member states under the current EU Biodiversity Strategy to place at least 10% of EU territory under "strict protection," including "all remaining primary and old-growth forests," as recalled in the preamble of the NRL.[22] Such strict protection "does not necessarily mean the area is not accessible to humans, but leaves **natural processes** essentially undisturbed."[23] In such areas, the ecological functions of large carnivores are likely to become more pronounced than in other European landscapes, many of which are quite heavily human-dominated.[24]

This relates to the second measure from Annex II cited above, which is also expressly mentioned in Article 4(7), namely, improving connectivity. Reducing habitat fragmentation and maintaining or restoring **large-scale functional connectivity** across European landscapes is crucial for the prospects of large carnivore populations. Concrete ways to pursue this include building green bridges, granting additional protection to existing corridors, and landscape planning using sensitivity maps to better avoid adverse effects from transport and energy infrastructure, urban sprawl, military activities, and other developments. Incidentally, such connectivity measures under the NRL will also help to meet the aims of the EU Green Infrastructure Strategy[25] and the goal of achieving an enlarged and *interconnected* European protected area network by 2030.[26]

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[17] NRL, Art. 3(9) and (10).
[18] For guidance on how to determine FCS for large carnivores, see J.D.C. Linnell & L. Boitani (2025) *Developing Methodology for Setting Favourable Reference Values for Large Carnivores in Europe*, report for European Commission by LCIE & Istituto di Ecologia Applicata, https://lciepub.nina.no/pdf/639002817772101056_FRV%20REPORT%20FINAL.pdf. For a discussion of the FCS concept in light of the most recent case law of the EU Court of Justice, see A. Trouwborst (2026) 'Favourable Conservation Status: EU Court Clarifies Crucial Yardstick for Wildlife Preservation and Restoration in Wave of Wolf Cases' *Review of European, Comparative & International Environmental Law* (in press).
[19] E.g., N. Fernández & F. Palomares (2000) 'The Selection of Breeding Dens by the Endangered Iberian Lynx (*Lynx pardinus*): Implications for Its Conservation' 94(1) *Biological Conservation* 51-61.
[20] NRL, Annex VII, par. 23.
[21] NRL, Annex VII, par. 22.
[22] NRL, Preamble, par. 10.
[23] European Commission (2020) *EU Biodiversity Strategy for 2030*, COM(2020)380, p. 4 (emphasis added).
[24] See, e.g., D.P.J. Kuijper et al. (2024) 'Wolves Recolonize Novel Ecosystems Leading to Novel Interactions' 61(5) *Journal of Applied Ecology* 906-921.
[25] European Commission (2013) *Green Infrastructure (GI) – Enhancing Europe's Natural Capital*, COM(2013)249.
[26] European Commission (2020) *EU Biodiversity Strategy for 2030*, COM(2020)380.

Moreover, measures to implement Article 4(7) clearly include ***any* measure which would appear to be needed or suitable for improving large carnivore habitats** to a sufficient quality and/or quantity, in light of the best available evidence and the circumstances involved.

Examples are measures to (i) ensure the presence of sufficient **wild prey** populations, for instance through adaptation of hunting practices or reintroduction or reinforcement of prey species,[27] as appropriate, (ii) reduce mortality in **traffic**,[28] (iii) minimize the presence of **free-ranging dogs**, to prevent competition, disease transmission, and wolf-dog hybridization,[29] (iv) reduce **disturbance** effects from tourism and other human activities, particularly around den sites,[30] and to (v) improve **waste** management and reduce the proportion of human-provided food in large carnivore diets.[31]

Importantly, because large carnivore habitats in European landscapes overlap significantly with human land uses and activities, measures that reduce human-carnivore conflicts and improve **coexistence** – for instance, in relation to agriculture, pastoralism, hunting, and human safety – can also be construed as restoration measures in terms of Article 4(7).[32] By enhancing the 'social carrying capacity' of large carnivore habitats – and thus reducing the likelihood of carnivores being killed there, either legally or illegally – such measures have the potential to increase both the quality and quantity of habitats.[33]

National restoration plans

Anchoring such large carnivore habitat restoration measures in national restoration plans can help member states to (demonstrate that they) meet their commitments under the NRL, including the obligation of result in Article 4(17) to "ensure... an **increasing trend** towards the sufficient quality and quantity" of the habitats of species listed under the Habitats Directive.[34] Sensibly, where sufficient levels have been achieved, member states must ensure that habitats do not deteriorate again.[35]

Given the deadline of 1 September 2026, **now is the time** for member state authorities (where they have not already done so) to include habitat improvement measures for large carnivore in their draft national restoration plans – and for other stakeholders, as appropriate, to encourage them to do so.

This will help to ensure that measures supporting large carnivores are an integral part of member states' ecosystem restoration efforts under the NRL.

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[27] E.g., rabbit restoration measures have been instrumental in Iberian lynx recovery: F. Palomares et al. (2010) 'Assessment of the Conservation Efforts to Prevent Extinction of the Iberian Lynx' 25 *Conservation Biology* 4-8.
[28] E.g., M.R. Recio et al. (2018) 'Integrated Spatially-Explicit Models Predict Pervasive Risks to Recolonizing Wolves in Scandinavia from Human-Driven Mortality' 226 *Biological Conservation* 111-119.
[29] E.g., V. Donfrancesco et al. (2019) 'Unravelling the Scientific Debate on How to Address Wolf-Dog Hybridization in Europe' (7) *Frontiers in Ecology & Evolution* 175.
[30] See, e.g., J.E. Swenson et al. (1997) 'Winter Den Abandonment by Brown Bears *Ursus arctos*: Causes and Consequences' 3(1) *Wildlife Biology* 35-38.
[31] See also LCIE (2018) 'The Use of Artificial Feeding as a Management Tool for Large Carnivore Populations and Their Prey, with a Particular Emphasis on the Brown Bear' *Policy Support Statement*, https://lciepub.nina.no/pdf/636747692823493450_PPS_artifical_feeding.pdf.
[32] See also J.D.C. Linnell et al. (2025) *Conceptualising Coexistence with Large Carnivores in Europe*, report for European Commission by LCIE & Istituto di Ecologia Applicata, a86b304d-d6bc-49c2-a18d-2c25652cfa43_en.
[33] See, e.g., P. Sunde et al. (2021) 'Where Have All the Young Wolves Gone? Traffic and Cryptic Mortality Create a Wolf Population Sink in Denmark and Northernmost Germany' 14(5) *Conservation Letters* e12812.
[34] NRL, Art. 4(17).
[35] NRL, Art. 4(11).

Nature Restoration Law – selected provisions of relevance to large carnivores:[36]

Article 1(1):
This Regulation lays down rules to contribute to:
(a) the long-term and sustained recovery of **biodiverse and resilient ecosystems** across the Member States' land ... areas through the restoration of degraded ecosystems; ...
(d) meeting the Union's international commitments.

Article 3(1):
'**ecosystem**' means a dynamic complex of plant, animal, fungi and microorganism communities and their non-living environment, interacting as a functional unit, and **includes** habitat types, **habitats of species** and **species populations**

Article 3(2):
'**habitat** of a species' means habitat of a species as defined in Article 1, point (f), of Directive 92/43/EEC' [which reads:] 'an environment defined by specific abiotic and biotic factors, in which the species lives at any stage of its biological cycle'

Article 3(3):
'**restoration**' means the process of actively or passively assisting the recovery of an ecosystem in order to improve its structure and functions, with the aim of conserving or enhancing biodiversity and ecosystem resilience, through ... improving a habitat of a species to sufficient quality and quantity ...

Article 3(9):
'**sufficient quality** of habitat' means the quality of a habitat of a species which allows the ecological requirements of a species to be met at any stage of its biological cycle so that it is maintaining itself on a long-term basis as a viable component of its habitat in its natural range, contributing to reaching or maintaining favourable conservation status for a species listed in Annex II, IV or V to Directive 92/43/EEC …

Article 3(10):
'**sufficient quantity** of habitat' means the quantity of a habitat of a species which allows the ecological requirements of a species to be met at any stage of its biological cycle so that it is maintaining itself on a long-term basis as a viable component of its habitat in its natural range, contributing to reaching or maintaining favourable conservation status for a species listed in Annex II, IV or V to Directive 92/43/EEC …

Article 4(7):
Member States shall **put in place restoration measures** for the ... **habitats** of the **species listed in Annexes II, IV and V** to Directive 92/43/EEC ... that are ... necessary to improve the quality and quantity of those habitats, including by re-establishing them, and to enhance connectivity, until **sufficient quality and quantity** of those habitats is achieved.

Article 4(11):
Member States shall put in place measures which shall aim to ensure that the areas that are subject to restoration measures in accordance with [paragraph 7] show a ... **continuous improvement of the quality** of the habitats of the species referred to in paragraph 7, until the sufficient quality of those habitats is reached. Without prejudice to Directive 92/43/EEC, Member States shall put in place measures which shall aim to ensure that areas in which good condition has been reached, and in which the sufficient quality of the habitats of the species has been reached, do **not significantly deteriorate**.

Article 4(17)(b):
Member States shall **ensure that there is ... an increasing trend towards the sufficient quality and quantity of the ... habitats** of the species listed in Annexes II, IV and V to Directive 92/43/EEC ...

[36] Emphasis added in provisions below.