

# Recognising the benefits of large carnivore presence in Slovenia: A focus group study

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## Abstract

In recent decades, populations of the brown bear, grey wolf, and Eurasian lynx in Europe have made a significant recovery. This success is largely attributable to effective legislation, an increase in prey species, and the expansion of forested areas. As a result, large carnivores are gradually returning to regions from which they had long been absent. However, the return of these predators also brings challenges for local communities. While much research emphasises conflicts and damages, this study focuses on the often-overlooked positive perspectives held by key stakeholder groups in Slovenia. Through focus group interviews with hunters, farmers, tourism professionals, and artists, the study explores the benefits of large carnivore presence using the framework of Cultural Ecosystem Services (CES), based on the CICES classification. Present research has found that tourism professionals perceive the presence of large carnivores as a key advantage for the development of tourism. For hunters, encounters with these animals provide opportunities to deepen their ecological knowledge, develop tracking skills, and share this expertise with pride within their communities. Some farmers, despite experiencing livestock losses, acknowledge the role of predators in regulating populations of wild herbivores. Artists experience large carnivores as a source of inspiration and as an opportunity to foster better interpersonal relationships and social dialogue. Recognising the benefits and values that different stakeholder groups attribute to large carnivores can support the development of more inclusive conservation strategies, strengthen dialogue with stakeholders, and shift the focus from conflict mitigation toward fostering coexistence.

## Keywords

Large carnivores; coexistence; cultural ecosystem services; benefits.

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## Prepoznavanje koristi prisotnosti velikih zveri v Sloveniji z metodo fokusnih skupin

### Izvleček

V zadnjih desetletjih so si populacije rjavega medveda, volka in evrazijskega risa v Evropi občutno opomogle. Ta uspeh gre pripisati učinkoviti zakonodaji, porastu številčnosti plenskih vrst in povečanju gozdnih površin. Velike zveri se tako ponovno vračajo na območja, kjer so bile dolgo časa odsotne. Vrnitev velikih zveri pa hkrati prinaša tudi izzive za lokalno prebivalstvo. Medtem ko večina dosedanjih raziskav poudarja predvsem konflikte med ljudmi in velikimi zvermi, se pričajoča študija osredotoča na pogosto prezte pozitivne perspektive ključnih deležnikov v Sloveniji. S pomočjo fokusnih skupin z lovci, kmeti, turističnimi delavci in umetniki smo raziskali koristi prisotnosti velikih zveri v okviru kulturnih ekosistemskih storitev, na podlagi mednarodne klasifikacije CICES. Turistični delavci prisotnost velikih zveri vidijo kot ključno prednost za razvoj turizma. Lovcem srečanja z velikimi zvermi omogočajo pridobivanje znanja o ekologiji vrst, razvijanje veščin sledenja, svoje znanje pa pogosto delijo znotraj širše skupnosti. Nekateri kmetje, kljub izgubi pašnih živali, prepoznavajo vlogo plenilcev pri uravnavanju številčnosti prakljarjev v naravi. Umetniki velike zveri doživljajo kot vir navdihja in priložnost za izboljšanje medsebojnih odnosov in družbenega dialoga. Študija razkriva bogato paleto vrednot, ki jih različne deležniške skupine pripisujejo velikim zverem. Razumevanje teh raznolikih perspektiv lahko prispeva k oblikovanju bolj vključujočih naravovarstvenih strategij, krepitevi dialoga z deležniki ter preusmeritvi pozornosti od konflikta k iskanju trajnostnih oblik sobivanja.

### Ključne besede

velike zveri; sobivanje; kulturne ekosystemske storitve, koristi.

## Introduction

Large carnivores are returning to many parts of Europe from which they were previously eradicated due to human persecution. This conservation success story, driven by legal protection, rewilding efforts, and changing socio-political landscapes, is accompanied by growing societal tensions. As people hold divergent views on how large carnivore populations should be managed, their return often leads to polarisation and conflict (Redpath et al., 2017; Lute et al., 2018; Lute et al., 2020). Humans often determine where large carnivores will exist, and our ability to conserve them in the long term will ultimately depend upon our tolerance for their existence (Bruskotter and Wilson, 2014).

Despite the growing attention towards the socio-ecological aspects of human-carnivore relationships in recent decades, the existing literature is skewed and predominantly centred on conflicts rather than on ecosystem services (Rode et al., 2021; Giergiczny et al., 2022; Palacios-Pacheco et al., 2024). Conflicts related to the presence of large carnivores attract media and fuel heated debates, especially in human-dominated landscapes of Europe. Even academic literature is biased towards

investigations of negative economic impacts and public safety issues, while the positive impact of large carnivore presence and broader socio-economic impacts are often underrepresented (Rode et al., 2021). Moreover, recent research highlights that people's tolerance is also shaped by their perception of the benefits these species provide (Bruskotter and Wilson, 2014).

To fill this gap, our investigation engaged with diverse stakeholder groups to reflect upon benefits and opportunities arising from the presence of large carnivores. We can expect that different groups of people will have different views on these benefits, and it is important to communicate these diverse local perspectives around the presence of large carnivores in shared landscapes (Linnell and Immerzeel, 2023). Broad, generalised messaging often fails—or even backfires—when it clashes with group-specific norms and values (Toomey et al., 2023). Therefore, we looked into benefits as seen by four stakeholder groups: farmers, hunters, tourism professionals, and artists. These groups were chosen based on their distinct relationships with large carnivores, which we expected would reveal a diverse range of practical and symbolic benefits associated with carnivore presence.

To investigate the benefits provided by large carnivore presence in Slovenia, we have used the Cultural ecosystem services (CES) framework provided by the International Classification of Ecosystem Services (CICES), which offers several categories and supports a comprehensive capture of benefits (Danék et al., 2023). CES are primarily regarded as "the physical settings, locations or situations that give rise to changes in the physical or mental states of people, and whose character is fundamentally dependent on living processes" (Haines-Young and Potschin, 2013). They are somewhat unique as these are regarded as entirely linked to human societies and to a human 'appreciation' of biodiversity (Horgan et al., 2021). Although often intangible and hard to measure (Slovák et al., 2023), there has been a growing recognition of the value of cultural services in driving actions and determining the success or failure of conservation programs (Horgan et al., 2021).

We have used the focus group method, which has proven effective for exploring CES, to gather in-depth insights from the selected stakeholders (Slovák et al., 2023). In this article, we present the benefits of large carnivore presence as perceived by each stakeholder group investigated. Our findings underscore the importance of recognising a broader set of motivations behind tolerance and conservation support. Identified benefits can help to support the development of more targeted communication strategies that foster coexistence and broaden public support for conservation.

## Materials and Methods

### Conceptual framing

To frame the identified benefits provided by large carnivores, we used the CICES framework (Haines-Young and Potschin, 2018) as it offers several categories and supports a comprehensive capture of benefits from large sets of qualitative data (Danék et al., 2023). Moreover, CICES also allows translation between different ecosystem service classification systems, such as those used by the Millennium Ecosystem Assessment (MA) and The Economics of Ecosystems and Biodiversity (TEEB). 11 categories from CICES version 4.3 were used: experiential use, physical use, scientific, educational, heritage/cultural, aesthetic, entertainment, symbolic, sacred and/or religious, existence and bequest (Table 1).

### Data collection

In this study, we employed the focus group methodology, augmented with a structured protocol designed to elucidate benefits in the frame of CES as a potent tool for uncovering the positive facets of large carnivore coexistence. Unlike quantitatively driven surveys, this approach allows for a nuanced exploration of the values and relationships between local communities and their ecosystems.

In the first phase, we prepared a protocol for conducting focus groups to identify and document the range of different CES provided by large carnivores (Table S1). We modelled our approach after the elicitation method for nonmaterial values described by Gould et al. (2014), which combines various qualitative data collection techniques. In the protocol, we defined themes based on the classes of the CES outline in the CICES. A set of questions was developed to encourage participants in all focus groups to express their opinions, feelings, and values, covering 11 classes of CES presented in Table 1. Based on their responses, we asked additional customised sub-questions during the interviews. We did not use the term "cultural ecosystem services" during the interviews. Instead, we addressed questions related to the topics associated with large carnivores: personal experiences with large carnivores, benefits, and disservices of large carnivores for people, ecotourism, recreation and hunting, spiritual, artistic value, heritage, local and traditional knowledge, educational value, and intergenerational value. To stimulate the sharing of thoughts and feelings, we also showed participants 14 photographs of large carnivores in different situations (in their natural habitat, causing damage, interacting with people). We designed the protocol to obtain as many diverse benefits of large carnivores and their significance for the participants themselves and the society they live in as possible. We encouraged interaction among participants and a free flow of thoughts while also allowing for real-time clarification of the researcher's understanding.

In the next phase, we defined stakeholder groups that we wanted to interview. Following Litosseliti's (2003) guideline that focus groups typically include 4 to 6 participants to ensure diverse perspectives without limiting individual contributions, our focus groups were composed of participants from the same interest groups who shared relevant experiences with the studied topic. Stakeholders associated with large carnivores are usually individuals

influenced by their presence, individuals who can influence their population or have other interests in large carnivores and their populations (Linnell, 2013; Grossmann et al., 2020). We have chosen four stakeholder groups: farmers (beekeepers, livestock breeders from large carnivore area), hunters from two hunting families active in the large carnivore area and involved in bear viewing activities, tourism professionals engaged in wildlife tourism and artists. Artists participated in a lynx-themed art residency organised by the LIFE Lynx project (LIFE16 NAT/SI/000634), where they engaged with lynx conservation topics through presentations and field trips, and created lynx-related artworks during the residency. Farmers were selected because of the impacts large carnivore presence has on their livelihoods, hunters are an important stakeholder group because they can influence large carnivore populations, while tourism professionals and artists were selected due to their interest in large carnivore populations. We initially contacted stakeholders based on our previous cooperation with them through other projects related to large carnivores in Slovenia. After that, we followed a snowballing process to identify additional relevant people for our focus group interviews.

Focus groups were conducted between October and December 2019. They lasted between 2 and 4 hours and took place in the local setting of the focus groups: for farmers at the tourist farm, for hunters at the hunting lodge, for artists at the place of their art residency and for tourism professionals at the tourism centre. Altogether, we interviewed 29 participants (five farmers, eight hunters, nine tourism workers and seven artists). Each focus group was internally homogeneous in terms of participants' professional or interest background, consisting exclusively of farmers, hunters, tourism professionals, or artists. Group sizes were intentionally kept small to facilitate open discussion and ensure that diverse individual perspectives could be expressed. The final number of participants in each group was also influenced by participants' availability and willingness to engage in the study.

Sessions were led by a facilitator who used a semi-structured interview approach that relies on participants' responses (Gould et al., 2014; Table S1). The aim for the discussions was that they were enjoyable, without participants feeling pressured to speak or seek consensus, but rather to feel encouraged to express different viewpoints. The focus groups were recorded on a voice recorder (dictaphone) with the consent of the stakeholders.

## Data analysis and interpretation

Digital recordings were manually transcribed for analysis. From each transcript, we extracted statements (sentences or coherent sequences of sentences) related to the CES of large carnivores and entered them into a spreadsheet. Each statement was placed in its own row, and the speakers of the statements remained anonymous. For each recorded statement, we also noted the corresponding stakeholder group (farmers, hunters, tourism professionals, or artists). We collected all statements reflecting participants' subjective attitudes or personal experiences regarding large carnivores, whether positive or negative. We assigned nominal variables to each analysed statement: the type of large carnivore the statement referred to (bear, wolf, lynx, or all three large carnivores) and one of the 11 classes of CES according to CICES (experiential use, physical use, scientific, educational, heritage-cultural, entertainment, aesthetic, symbolic, sacred and/or religious, existence, and bequest). The category "other" was used when we were unable to fit the statement into the existing categories. Many times, statements were difficult to categorise within the CICES framework, and the categorisation process is subjective. For that reason, the statements were reviewed by two researchers to minimise the degree of subjectivity.

Next, the collected statements were categorised according to the framework proposed by Rode et al. (2021), which defines specific large carnivore-related impacts within three overarching categories: economic impacts, health and well-being impacts, and social and cultural impacts. Each of these categories includes both positive and negative impacts. Following this structure, we assigned each statement in our dataset to the appropriate positive impact category, enabling us to identify and extract statements referring specifically to the positive contributions, benefits, and cultural ecosystem services associated with the presence of large carnivores.

## Results

In all focus groups combined, we identified a total of 476 statements that discuss the positive contributions or benefits of large carnivores for individuals and society. The number of statements related to a specific class of CES for each interest group is presented in Fig. 1. Most statements were classified as having experiential or educational value.

Table 1. Categories of CES from CICES version 4.3 and their descriptions were adapted to the purpose of the present research.

Tabela 1. Kategorije kulturnih ekosistemskih storitev glede na CICES različico 4.3 in njihovi opisi prilagojeni glede na namen te raziskave.

Class	Description and example of goods or benefits
Experiential use	In situ, large carnivore watching and recreation are in the area of large carnivore presence.
Physical use	Hunting of large carnivores.
Scientific	Large carnivores are a subject matter for research both on location and via other media, and knowledge about large carnivores and their habitat is important.
Educational	Large carnivores are a subject matter of education, both on location and via other media, and they provide skills and knowledge about large carnivore management and their habitat.
Heritage, cultural	Large carnivore resonance in culture or heritage, history, local identity, historic records of a place, and preserved cultural heritage.
Aesthetic	Large carnivores and their environment are a source of artistic inspiration and representation, aesthetic experiences, appreciation of the beauty of large carnivores, and a sense of place.
Entertainment	Ex situ experience large carnivores and their environment via different media.
Symbolic	Symbolic meaning of large carnivores, large carnivores as emblems, signifiers.
Sacred and/or religious	Large carnivores as a spiritual or ritual identity, holy places, and sacred animals.
Existence	Non-utilitarian qualities of the presence of large carnivores, such as the enjoyment/philosophical perspective provided by the knowledge of their existence.
Bequest	Moral/ethical perspective or belief regarding large carnivores, willingness to preserve large carnivore and their environment for the experience and use of future generations.

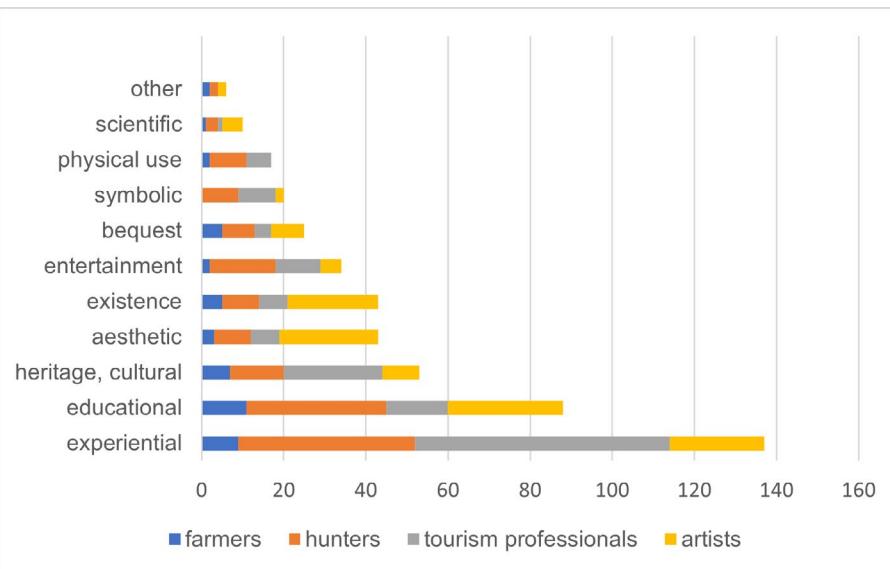


Figure 1. The number of statements related to a specific class of CES for each interest group.

Slika 1. Število izjav v posamezni kategoriji kulturnih ekosistemskih storitev za vsako interesno skupino.

Table 2 displays various keywords and terms that we identified in the statements from focus groups. We do not evaluate them by importance, as it is impossible to do so solely based on the transcript analysis. Keywords from CES classes are listed below in order to reflect the number of statements we have placed in each class. There were no statements within the sacred/religious class; therefore, only 10 CES classes are shown. Class Other was established for statements that couldn't be attributed to any of the CES classes.

Below, we present all CICES categories, listed in order based on the number of statements attributed to each category (Fig. 1). For each CICES category, we provide narrative examples drawn from stakeholder group discussions.

## Experiential values

The experiential class of Cultural Ecosystem Services (CES) encompasses non-intrusive, sensory and emotional engagements with land- and seascapes, such as wildlife observation, that provide personal enrichment and enjoyment (Czúcz et al., 2018). Respondents most often mention direct observations of animals, but also express enjoyment

when encountering their signs of presence, or because of the mere awareness of the existence of these animals.

Among focus group participants, especially tourism professionals and hunters, watching/encountering large carnivores and related activities are a benefit. Observing the animals in the sense of organised guiding mainly referred to bears. Participants noted that this tourism, in turn, stimulates the local economy, with ancillary benefits to hospitality, retail, and other service sectors: "Those who come to see the bears also go to restaurants, accommodation providers, shops and other tourist attractions." They recognise the value of bears and, to a lesser extent, the value of wolves and lynx in increasing the attractiveness of the local area and transforming previously overlooked areas into destinations with distinctive appeal: "What was previously 'no name' has now become 'The land of bears'". Hunters within our focus group highlighted the economic benefits of wildlife tourism, particularly bear watching, which they increasingly view as an important supplementary source of income alongside traditional hunting activities. As one participant noted: "We didn't hunt in the summer, because photographic tourism is our main source of income." Beside direct observation, the benefits of the sole presence of large carnivores in the

Table 2. Generated keywords and terms mentioned during focus groups, classified for different CES classes.

Tabela 2. Ključne besede in izrazi, omenjeni med fokusnimi skupinami, razvrščeni po različnih razredih kulturnih ekosistemskih storitev.

Class	Keywords and terms
Experiential	encounters with large carnivores, photo hunt, photo tourism, socialising, tourism, watching animals
Educational	Bear-friendly label, best practice farm, better coexistence, interpretation centre, interpretation, learning for life, learning through the media, museum, natural science centre, natural science day in school, nature trail, self-upbringing/ education, tourism, understanding nature
Heritage, cultural	cultural landscape, folk tradition, hunting tradition, interpretation of cultural heritage, literature, metaphors, monuments, proper names, toponyms, tourism, tradition of coexistence, traditional methods of protection against damage
Aesthetic	aesthetic experiences, beauty, creation, imagination, inspiration, photos, the spirit of space
Existence	autochthony, diversity, inspiration and ideas, interest, part of the culture and system, rejection to shoot, respect, tolerance, understanding nature
Bequest	economic benefit, emotional and social enrichment, ethics and morals, national interest, organisations for the conservation and growth of the population, population management, species conservation projects
Symbolic	authenticity, autochthony, coat-of-arms, logos, metaphors, personification of species, proverbs, recognisability, symbol of preserved nature
Physical use	hunting equipment, hunting tourism, hunting, population management, sale of (bear) meat and fur, stuffed animals, trophies
Scientific	better coexistence and management, lynx reintroduction, photo traps, recording tracks, research, technology development, telemetry collars
Other	agreement, balance, partnership

area was recognised as well: "An Englishman once told me that they don't need to see the bear, just show them a footprint. You must tell a story. And then you win." Others described deep emotional and even spiritual connections formed through rare, unpredictable wildlife encounters: "Even though you know they are there, you cannot predict the meeting. And that's always a fantastic moment because it's unexpected." Some statements reflect the awe-inspiring nature of large carnivores, suggesting that their presence limits human overuse of natural areas: "If it weren't for the large carnivores in our forests, people would walk all over these areas, everywhere". Finally, the bear also emerged as a socialising factor for locals and tourists alike, bringing people together through shared experiences like group hikes due to safety concerns: "The bear has become a socialising moment, because those of us who are regular hikers don't go alone, we go together."

## Educational values

Educational class refers to the contributions of living systems to education, training, and the development of skills and knowledge (Potschin and Haines-Young, 2018). Large carnivores, as keystone species, offer powerful opportunities for learning. Their presence can serve as a focal point for understanding ecological relationships, the importance of biodiversity, and the interconnectedness of natural systems.

In our study, hunters most frequently highlighted the educational value of large carnivores. They described a deep observational engagement with these animals, often inspired by admiration for their behaviour and hunting abilities: "I have seen wolves chasing a deer, how they ambush it. A couple of them go ahead, some are behind... how they intercept it. I analysed how they caught a deer." Some are challenged by their secretive nature: "To see a lynx, you had to be able to move properly, know the location, its specific behaviour." Through these encounters, they learn about their basic ecology, gain tracking skills and recognise their value for obtaining a healthy forest ecosystem. They want to pass on their knowledge and respectful attitude to the younger generation by designing nature education visitor centres and trails. Additionally, they work with older members of the community through creative programs such as art workshops: "We talk while we create, we bring books about nature, and we try to eradicate stereotypes about the wolf in the minds of the older people who have formed stereotypes about the wolf."

Though more reserved in their expressions, farmers show their understanding of natural processes and predator-prey relationships. They recognised the role of large carnivores in maintaining a healthy forest ecosystem: "If large carnivores were not in our environment, we would be worse off as far as fields are concerned. The wolf and the bear are also scavengers, and they also maintain the deer."

Artists conveyed additional, more indirect educational values, as people gain awareness and interconnectedness of nature and their own behaviour and develop ethical values and empathy: "The presence of large carnivores can also build a relationship with our fellow man. Just as we behave towards animals, we can behave towards humans." Their presence provoked reflection on human actions: »We can slaughter an animal and it's OK. If a wolf eats the animal, it is horrible. The outcome is the same."

Although tourism professionals discussed educational value to a lesser extent, they recognise the opportunity of their presence for interpretation and interpretation of nature in different ways. They offer guided tours where they teach visitors about the biology of large carnivores and the nature of the area through interpretation and the search for animal tracks, often including cultural heritage in the interpretation.

## Heritage, cultural values

Heritage/cultural class refers to elements of nature that hold cultural or historical significance, helping people identify with the history or culture of where they live or come from (Potschin and Haines-Young, 2018).

Among all stakeholder groups, tourism professionals most strongly emphasised the cultural importance of large carnivores. For them, these animals are integral to the region's identity: "Bears and other large carnivores are part of our culture, part of our system. If they disappeared now, we would become very poor and empty". Several participants reflected on historical practices like shepherding and protection of livestock, underscoring the effort required in preventing conflicts with large carnivores and preserving traditional ways of life: "In our youth, there were no sheep slaughtered by wolves ... No livestock was left outside, there was always a shepherd present, and there were a couple of hundred sheep in the flock." Hunters expressed sense of pride in local efforts to live harmoniously with large carnivores: "Large carnivores give a good picture of Slovenia ... In the museum in Paris, our place was presented as

an example of good practice of coexistence between bears and humans." Same sense of pride is mentioned by artists, seeing the presence of large carnivores as a conservation success: "For us, the presence of large carnivores means the conservation of the species and an opportunity to show that coexistence is possible, which is also of interest to other countries". Farmers mostly mentioned different surnames, names of villages that are derived from animal names or associated with large carnivores, reflecting a long-standing cultural imprint of large carnivores on everyday life.

### **Aesthetic value**

Aesthetic classes are elements of nature that enable aesthetic experiences and are appreciated for their beauty, which can become a source of artistic inspiration (Potschin and Haines-Young, 2018).

In this context, artists most vividly expressed the aesthetic and inspirational power of these animals: "Large carnivores are an immense source of ideas and inspiration for creation, for enriching life, including spiritual life. They do not have a concrete impact on us, but an indirect one. It is almost impossible to live without it." Hunters described visual encounters with large carnivores as special, unique, unforgettable aesthetic experiences that have an enduring value in shaping personal memories and contributing to the overall aesthetic appreciation of nature: "I saw lynx when it was just walking along nicely in the shade. It was a full moon... It was a picture you never forget." Even farmers acknowledged their beauty, but with a sense of caution due to the potential impacts on their livelihoods: "A picture of a wolf and her cubs is beautiful, idyllic, cute, as long as they are in their natural habitat, as long as they are not under my feet, or doing harm."

### **Existence value**

The existence value refers to the intrinsic worth of these species simply by virtue of their presence in nature— independent of any direct human use (Potschin and Haines-Young, 2018). Mostly the value was recognised by artists, who emphasised that the mere presence of large carnivores contributes to overall diversity: "Our country is more colourful, more diverse and more fulfilled because of the large carnivores". This value was also clearly articulated by hunters who emphasized the importance of large carnivores simply being part of the landscape, regardless of

direct human benefit: "Every animal, every individual has its function in nature." Participants from various interest groups expressed their deep appreciation for the untamed nature of large carnivores, reminding us that some things in nature still operate beyond our influence." The wolf pack expresses something primal, wild; they have a life of their own".

### **Bequest value**

Bequest value expresses the willingness of individuals to preserve animals and ecosystems to ensure that future generations can also enjoy and benefit from the resource (Potschin and Haines-Young, 2018). The desire to conserve large carnivore populations for present and future generations was highlighted in all focus groups.

Artists expressed their concern for the potential ecological consequences of the absence of large carnivores: "The absence of large carnivores would be the bleakest prognosis for life because if it started with the umbrella species, it could lead to the decline of bees, and that is the worst stage of the apocalypse, affecting all of us, even if we don't have a personal connection to these animals or their habitats." Participants of the focus groups advocate for the conservation of the population on ethical and moral grounds, as well as the economic benefits that large carnivores bring to the area through tourism and other activities. They oppose unplanned and inappropriate culling and stress that the long-term conservation of large carnivores also requires appropriate management in several areas. Hunters and farmers are mentioning appropriate management in terms of population size: "The aim is to conserve large carnivores, but only in certain numbers." Farmers specifically acknowledged their interconnection with nature, and the well-being of the environment: "Farmers are connected to nature, and we do not want to kill or destroy a population", they believe large carnivores belong to Slovenia: "Large carnivores are autochthonous to Slovenia and should therefore be preserved, while foreign species that lack natural predators (e.g., jackals) should not be introduced."

### **Entertainment**

Entertainment class includes characteristics or qualities of species or ecosystems that provide material or subject matter that can be communicated to others via different media. (e.g. films or books) (Potschin and Haines-Young, 2018). Several statements recall childhood memories that

involve stories and folklore from that time, including fairy tales and folktales like Red Riding Hood and popular movies.

In modern times, social media has changed the way the public receives and transmits news, where sensationalistic reports receive a higher number of shares than reports presenting facts more objectively, which can generate unwarranted fear and prejudice against predators (Nanni et al., 2020). Some participants in our focus groups mention that large carnivores are a useful topic for sensationalist media and are used to further polarise society: "I would add that this is a media campaign. These are presentations of catastrophic situations as if politics is bloodthirsty. Before it was migrants, they needed this victim."

## Symbolic

Symbolic class includes elements of nature that hold symbolic meaning, help shape a sense of place, and serve as emblems of identity, character, or meaning (Potschin and Haines-Young, 2018).

Participants' statements reflect a complex and diverse set of symbolic values associated with large carnivores, ranging from their role in local identity and authenticity to their portrayal in stories: "Large carnivores are part of the authenticity of these places." The presence of a bear in the municipal emblem signifies its significance as a symbol of the area's identity and values.

Participants also projected human-like qualities onto these species. One hunter regards bears "as another human being"; this suggests a deep connection and perhaps a sense of kinship with bears. Another statement portrayed the wolf as "professors who study and observe humans", adding depth to their symbolism, while the lynx is portrayed as "a princely figure" because of its unique behaviours, such as covering its prey with leaves: "The lynx is a prince to me because it covers its prey with leaves and returns to eat". For tourism professionals' large carnivores are not only subjects of ecological interest, but integral to their personal identity: "For me as interpreter of nature, my personal life would change a lot in the absence of large carnivores, because I don't know what I would be looking at in the puddles, whose footprints I would be following..."

## Physical use

Physical use of large carnivores refers mainly to hunting and related activities; therefore, it was mostly recognised

by hunters: "Deer hunting or wolf hunting is indeed hunting. It takes hours and hours. Yes, I hunt. That is why I am a hunter. I hunt."

## Scientific value

The scientific class includes elements of living systems that enable scientific investigation or the creation of traditional ecological knowledge. Focus group respondents recognised the importance of scientists and experts researching these animals, especially for better coexistence and management: "When defining the acceptable number of large carnivores in Slovenia, the experts must take into account the results of technology (cameras, collars), where and how many animals are currently present."

## Other

Some statements could not be classified into any of the classes, but nevertheless, they express the important opportunities offered by the presence of large carnivores, mostly related to recognising and respecting diverse perspectives and opportunities for mutual agreements and partnerships. An artist shared the following statement, reflecting the viewpoints of people directly affected by large carnivore presence: "Personally, I think there are too many large carnivores in many areas of Slovenia. Farmers say that three wolf packs would be enough for Slovenia, and around 200–500 bears at most. That's the number, according to those who live with nature, that would be sustainable for a small country like Slovenia."

## Discussion

Public attitude studies in Slovenia indicate that people generally support the conservation of large carnivores (Majić Skrbinšek et al., 2019; Bele et al., 2022; Krofel et al., 2025), with the presence of bears perceived as beneficial for local communities (Kavčič and Majić Skrbinšek, 2023). However, the fact that humans were once able to significantly reduce or eliminate carnivore populations suggests that successful conservation requires a deeper understanding of the factors driving human tolerance towards these species (Bruskotter and Wilson, 2014). Previous studies have identified knowledge of species biology and behaviour as a key determinant of attitudes and conservation beliefs

(Majić Skrbinšek et al., 2019; Oražem et al., 2019; Oražem et al., 2021). In addition, tolerance towards large carnivores is also influenced by people's perception of the benefits these species provide (Slagle et al., 2013; Bruskotter and Wilson, 2014). Bruskotter and Wilson (2014) argue that communication should not only address risks but also highlight benefits and provide guidance for mitigating potential conflicts. Marino et al. (2020) found a significant positive relationship between perceptions of intangible benefits and tolerance towards bears and wolves, suggesting that enhancing recognition of these intangible benefits could serve as an important management tool to foster tolerance. A recent review of the academic literature identified a clear research gap regarding the positive, especially non-material, impacts of large carnivores (Rode et al., 2021). Our study sought to address this gap by applying the cultural ecosystem services framework to identify and explore the benefits associated with large carnivore presence in Slovenia. Through focus groups conducted with four stakeholder groups, farmers, hunters, tourism professionals and artists, we provide insights into both the evident and less obvious benefits linked to large carnivores.

Tourism professionals emphasised both economic and cultural benefits of large carnivores. This is reflected in the way large carnivores are used to design tourism programmes, while cultural heritage arising from the long tradition of coexistence is used as part of storytelling. They also noted that the presence of these animals stimulates the local economy and supports a wide range of businesses, generating indirect but meaningful economic benefits across the community. However, the value of large carnivores extends beyond economics. For some tourism professionals, these animals have become a defining element of personal identity, contributing directly to their well-being and sense of purpose. As Buijs et al. (2020) note, happiness generated through the positive emotions induced by wildlife encounters can foster greater empathy and increase tolerance toward controversial species like large carnivores. Marino et al. (2020) similarly reported that perceptions of benefits, combined with exposure to positive meaningful experiences, like unexpected encounters that elicit positive emotions, can enhance tolerance towards bears and wolves in the Abruzzo region in Italy. They suggest that organised wildlife viewing could generate similar emotional benefits across the wider community. Likewise, Oražem et al. (2022) highlighted that direct experiences with animals serve as effective precursors of positive attitudes.

While our study did not directly assess tourists' emotional responses, the insights from tourism professionals suggest that positive emotional connections with large carnivores—whether experienced by visitors engaged in wildlife tourism or by professionals themselves—represent a potential for promoting tolerance. These could be extended to the wider community through organised nature treks (Marino et al., 2020) or educational encounters in informal learning settings, like zoos (Oražem et al., 2022).

Hunters offered a different perspective grounded in personal experience, ecological knowledge, and their role in wildlife management. They expressed deep interest in the biology and behaviour of large carnivores. Particularly captivated by the animals' secretive nature, they are challenged to gain the ability to track or hunt them. They most often encounter large carnivores in the wild, and their encounters are described as unique, special, and unforgettable. These immersive experiences with wildlife may contribute to long-term well-being (Buijs et al., 2020). Slovenian hunters are often involved in wildlife monitoring; they provide hunting bag data and collect biological samples. Their voluntary engagement in wildlife management suggests that such activities may be emotionally rewarding and reinforce stewardship practices (Buijs et al., 2020). Their statements show that they are feeling proud of their contributions; similar narratives were collected in other participatory processes where hunters wanted to be respected as legitimate managers and stewards of their land (Salvatori et al., 2021). Hunters also play an active role in community education, engaging with children and the elderly, organising guided walks, and designing educational trails and visitor centres. They often express pride in local efforts to live harmoniously with large carnivores, which is recognised internationally. Some mentioned the economic benefits of bear watching, saying that a bear is worth more alive than dead. In certain instances, they adapted hunting practices to accommodate photo tourism by avoiding hunting in specific areas.

In contrast to hunters and tourism professionals, farmers offered a more cautious and critical view, shaped by the direct impacts of large carnivore presence. Farmers found it hardest to articulate the benefits associated with large carnivores, as their experiences are often shaped by livestock losses and threats to livelihoods. For farmers, large carnivores are not only an economic threat but also a challenge to values closely tied to their way of life (Larsson et al., 2022). Research among Slovenian vocational students revealed that those in agricultural programmes held

more negative attitudes and had less knowledge about large carnivores compared to their peers in environmental and veterinary programmes, highlighting the influence of early informal learning experiences on attitude formation (Oražem and Tomažič, 2018). Nevertheless, even farmers in our focus group showed their understanding of natural processes and predator-prey relations, but they believe that wolves have an important ecological role and regulate prey populations. This aligns with findings from Sweden, where farmers cited wolves' regulatory role in prey populations as a rationale for their conservation (Karlsson and Sjöström, 2008). Despite concerns, farmers in our study expressed a strong connection to nature and emphasised the need to balance conservation goals with viable farming. They supported keeping carnivore numbers at "reasonable" levels, as defined by experts, that would still allow sustainable livestock production. This perspective reflects the findings of Piscopo et al. (2021), who stressed that successful coexistence depends on collaboration between scientists, farmers, and policymakers.

Stakeholders most directly affected by large carnivores, like farmers and hunters, tend to hold the most negative attitudes (Dressel et al., 2014; Franchini et al., 2021). Considering that negative perceptions often outweigh positive ones in shaping attitudes (Kansky et al., 2014), we cannot expect communication alone to change their views. However, engagement with these groups remains essential, as it can help anticipate potential areas of social conflict over species protection (Lischka et al., 2019). It is essential to approach communication strategies with stakeholder groups like farmers and hunters with sensitivity and a recognition of the complexities involved. Acknowledging the additional efforts these stakeholders have made to protect their livelihoods (farmers) or to contribute to large carnivore research (hunters) can foster a more constructive dialogue and minimise tensions.

Together, the perspectives of tourism professionals, hunters, and farmers illustrate the wide range of tangible and intangible benefits and challenges associated with large carnivores. A group of artists offered a distinct viewpoint, describing these animals as a source of inspiration and appreciating their aesthetic value. They also conveyed additional, less obvious benefits, believing that the presence of large carnivores teaches us about respect and patience, enables us to build a better relationship with other people and promotes mutual understanding. Large-carnivore conflicts may, in fact, represent an opportunity for wider social

learning and for improved stakeholder relationships (Hovardas, 2020), leading to better mutual understanding and collaboration among stakeholders. Participatory processes over large carnivore management are being used increasingly to share different views and increase knowledge of other points of view and recognition of the legitimacy of stakeholder positions (Salvatori et al., 2021).

To promote coexistence between large carnivores and humans in Europe, greater attention must be paid to understanding how specific stakeholder groups perceive not only the detrimental but also the beneficial aspects of living alongside these species (Marino et al., 2020; Palacios-Pacheco et al., 2024). Recognising and highlighting the benefits of local practices aimed at fostering coexistence may help reduce conflict (Salvatori et al., 2021; Pettersson et al., 2022). Emerging communication models should focus on creating spaces for dialogue and debate, engaging emotions, and embracing diverse perspectives (Toomey, 2023). Additionally, promoting direct experiences, such as observing animals (Oražem et al., 2021, 2022), as well as increasing positive experiences and implementing damage prevention measures (Marino et al., 2020), can help shift attitudes. Communication strategies should also place greater emphasis on the benefits large carnivores provide (Bruskotter and Wilson, 2014; Rode et al., 2021). Integrating these stakeholder perspectives into policy design could support more inclusive and adaptive management strategies, tailored to the diverse values and experiences across affected communities. Within this study, we applied the cultural ecosystem services lens to identify a wide range of benefits, as perceived by key stakeholder groups in Slovenia. Our findings contribute to the growing recognition that intangible benefits are important drivers of tolerance towards large carnivores and should be more prominently integrated into conservation strategies.

## Conclusions

Our engagement with stakeholders through focused dialogue sessions facilitated the discovery of diverse benefits and a multitude of values associated with large carnivores, each varying across stakeholder groups. Recognising and understanding different social groups' values and attitudes relating to wildlife is important for fostering trust and facilitating fruitful dialogue and communication. Our study provides insights that illuminate the origins of both opposition

and agreement concerning large carnivore management, making one step forward in navigating the complex world of the plurality of values.

## Supplementary Materials

Table S1. Interview protocol

## Author Contributions

Conceptualisation, I.K. and A.M.S.; methodology, I.K. and A.M.S.; formal analysis, M.D. and I.K.; investigation, I.K., M.D. and A. M. S.; writing—original draft preparation, I.K.; writing—review and editing, I.K., M.D., A.M.S. All authors have read and agreed to the published version of the manuscript.

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## Conflicts of Interest

The authors declare no conflict of interest.

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