

The Iberian wolf and its conservation

Attitudes and social perceptions
south of Douro River, Portugal

Report 2019-2024



CRIA

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TABLE OF CONTENTS

Executive summary	6
1. Introduction	8
1.1 Theoretical framework	8
1.2 Objectives	9
1.3 Ethical standards	10
1.4 Social attitude and key topics	11
2. Study area	11
2.1 Selection of geographical areas	13
2.2 Socio-ecological context	13
3. Methodology	15
3.1 Profiles of interviewees	15
3.2 Methodology and Planning	16
3.3 Interview script	17
3.4 Interviews	18
3.5 Transcription and data analyses	20
4. Results	21
4.1 The Iberian Wolf	23
4.1.1 Description of the Iberian wolf – values and emotions	23
4.1.2 Knowledge about the Iberian wolf	27
4.1.3 Belief in wolf releases	32
4.1.4 Damage, protection of livestock and opinion about compensation	33
4.1.5 Attitudes towards wolves	41
4.2 Roe deer	53
4.2.1 Perceptions about roe deer: advantages and disadvantages	54
4.2.2 Perceptions of roe deer repopulation actions	57
4.3 Rewilding Portugal and WolFlux	58
4.3.1 Knowledge and opinions about Rewilding Portugal	58
4.3.2 Nature and wolf tourism	59
4.3.3 LIFE WolFlux Project: knowledge and opinions	60

5. Discussion	61
5.1 Tolerance towards wolf - target groups	52
5.2 Tolerance towards wolf – target areas	67
5.3 Attitude towards roe deer: implications for project actions	67
5.4 Knowledge and beliefs about the wolf – inputs for a communication strategy	68
5.5 The belief in wolf releases	68
6. Summary of practical recommendations	70
6.1 About relationships with stakeholders and ways to improve tolerance towards wolves	70
6.2 About target areas for project actions	71
6.3. About communication and media	71
6.4. About increasing social knowledge in the project area	71
7. Conclusions	72
7.1 Synergies with other project actions	72
7.2 Comments about the methodology	72
7.3 Contribution of the main results	73
References	76

EXECUTIVE SUMMARY

This report compiles the results of actions A.7 and D.4 of the project LIFE WolFlux. It aims to describe the social attitudes of local actors about key issues related to wolf presence, to address the complexity of the relationship of humans and the species, local knowledge, emotions, beliefs and specific issues such as compensation payments for wolf damage. To identify social barriers to wolves in the area of the project, we conducted semi-structured interviews with key actors in the local communities in 20 parishes, using a non-random approach. A key actor is considered in this study as one who influences management of the selected areas in a way that can affect the wolf. Livestock breeders, hunting managers, local authorities, conservation practitioners and nature activity promoters were personally interviewed in two phases: from August to November 2019 (n=117) and from March 2023 to March 2024 (n=97). Practices were also observed and informal conversations registered.

To analyse key actors' discourses and positioning towards wolf presence and the factors associated with them, content analysis, the creation of indexes of attitude, intolerance and fear, and statistical Mann-Whitney-U test and Spearman correlation coefficient were used. Attitudes and knowledge towards roe deer, protected areas and nature conservation projects were also analysed. Results show that practically half of the interviewees consider that it is possible for the wolf to live in the region provided certain conditions are met, like paying compensation for damage or providing habitat and food for the species. This emphasises the need to improve the compensation scheme and revise the present system that raises several criticisms.

Although local actors seem tolerant to coexistence, less than half of them could not point any advantage to the presence of the predator. Only few mentioned attracting tourism. Local knowledge about the wolf includes recognition of the predator's role in ungulate control and association to a more balanced ecosystem. Consolidating and expanding this knowledge in local communities, as well as improving the percentage of actors claiming not knowing anything about the species can be the focus of a positive and inclusive communication about wolves.

A quarter of the key actors interviewed are considerably intolerant towards wolf presence, and the responses to the intrusive character of this species tend to be "keep it apart" in the hills (free), in enclosures or away from the region. Four main areas where intolerance was stronger or more prevalent were set as priority for project actions. Although no association between intolerance and the occurrence of illegalities was found, there were over 20 interviewees that mentioned knowing illegal activities of poison, shooting or use of snares in their parishes or neighbouring ones (13 parishes in total), which were also considered for project surveillance actions.

Among variables significantly associated with intolerance and attitude score in all key actors, we highlight the belief in wolf releases — a rumour mentioned by around 40% of the interviewees that needs to be jointly addressed by different entities on the ground with respect to dialogue with local populations. Knowing people that have sustained wolf damage was also a significant factor related to attitude and intolerance, underlying the cohesion of rural communities and among peers, and how the 'word of mouth' is trusted in these contexts. Involving actors in the design and implementation of actions is fundamental for delivering a transparent image of conservation and to build trust.

Fear of the wolf was also a significant variable associated with attitude. An index of fear assessed that 45% of local actors expressed some kind of concern and that the species is considered dangerous for humans. An experience of observing a wolf in the wild and in a positive context could make a difference to reduce fear. The actors interviewed hold a multiple and complex view of wolves, not necessarily polarised into negative or positive extremes, but a mix of both: the transgressor and the intelligent being. Communication might not be efficient if it is only focused on the fragile character of a threatened species. It should also integrate the 'old wolf' as a cultural emblem.

An additional but important result of this action was using a mixed methodology and a transdisciplinary approach, having the Rewilding Portugal team involved in the first survey. Accessing local voices first hand allows a better knowledge of the social reality of the area and an understanding of the complexity of power dynamics. Analyses of attitudes concerning human-wolf relations benefit from both quantitative and qualitative approaches that help to describe a wider ethnoecological portrait.

Efficient and long-lasting solutions are needed to improve wolf conservation and coexistence with humans in European contexts. Articulation between European policies (Agriculture and Environment) is critical, as is cooperation between organisations and collaboration with social scientists.

1. INTRODUCTION

The LIFE WolFlux (LIFE17 NAT/PT/554) project aimed to promote the socio-ecological conditions needed to support a viable Iberian wolf (*Canis lupus signatus*) population south of Douro River. The project included several actions to reduce the main threats to the species and increase tolerance towards wolves. In order to better understand the social reality of the project area and potential social barriers, a first social survey was carried out (Action A.7) in 2019, directed to local key actors, identifying them within the community, getting to know their perceptions and attitudes about the wolf and their opinion about conservation projects and willingness to collaborate.

After the social survey in 2019 (Action A.7), a follow-up was conducted in 2023/24 (Action D.4) to explore possible changes in perceptions and opinions about wolves. Both surveys were scientifically supervised by CRIA and conducted by a mixed team.

1.1 THEORETICAL FRAMEWORK

- Summarily, the social surveys followed the following principles:
- Social sciences play an important role in nature conservation (Bennett et al., 2017; Brosius, 2006; Mascia et al., 2003; Orlove and Brush, 1996; Sandbrook et al., 2013);
- Interdisciplinary approaches bring benefits to complex issues such as wolf coexistence, namely the use of mixed methods;
- Anthropology has analytical tools and established knowledge that can explain, understand and contextualise certain positions and opinions;
- An anthropological approach allows us to know positions and reasons behind them, which is difficult to do through a quantitative methodology. It allows us to describe how the social context and environment is built, represented and claimed;
- Knowledge of local actors, particularly those that are not formally organised, is important for understanding rural reality and interactions with wild predators;
- The participation of local populations in conservation programs is essential for bringing decision-makers and citizen involvement closer together;
- Mixed methods of Social Sciences and Human Dimensions of Wildlife Management (Decker et al., 2012) allow to better understand local acceptance of wildlife with an in-depth approach, with the main aim of improving the management of specific species and natural resources, and was considered to be more adequate to our social context and interviewees;
- The use of a Likert index of attitude towards wolves in the project area, similar to previous surveys in central and northern areas, allows a comparison overtime.

1.2 Objectives

Action A.7 aimed to analyse the social attitudes of the local population about key issues related to wolf presence, answering specific questions about social perceptions. Specifically, the main objectives of this study were: (i) to identify relevant stakeholders and target areas for the development of project actions, particularly areas where social conflict could represent a threat to wolves; (ii) to describe attitudes concerning human-wildlife relation; (iii) to define a set of recommendations that allow to inform practical conservation actions (particularly actions C.3. Setting-up specific teams to protect wolf habitat and help stakeholders in conflicts with wolf and C.4. Increasing wild prey availability for wolves), as well as communication and engagement actions with local stakeholders (actions E.2., E.3 and E.8)¹.

The recommendations derived from this action could also be useful for the competent institutions to support decision making regarding wolf conservation. Complementarily, the results obtained could serve as a reference for future research and monitoring.

To meet these objectives, the following questions were outlined:

- What is the role of the wolf and the roe deer (*Capreolus capreolus*) in the local socio-economic context?
- What beliefs, feelings and local knowledge about the wolf is part of the current local cultural system?
- What is the knowledge about the wolf and the advantages recognised to its presence?
- What are the social attitudes of key actors towards the presence of wolves?
- What are the main factors associated with negative attitudes towards the occurrence of wolves?
- What are the practices of livestock farmers, the context, and the challenges encountered when protecting domestic animals?
- What are the attitudes of key actors regarding roe deer presence and their knowledge of its role as a natural prey for wolves?
- What is the perception of key actors regarding Rewilding Portugal and WolFlux project's measures?

The 2023/24 survey was part of Action D.4 (Monitoring the socio-economic impact of the project), Task 1 (Social Impact) of the WolFlux project:

This task aims to understand the changes in the perceptions of the key actors in relation to the project, once the actions proposed by the project have been implemented. The *human dimension* study carried out in Action A.7 will be repeated and the results will be used to evaluate the success of the project and contribute to its improvement.

¹ <https://rewilding-portugal.com/pt/life-wolflux/>

In addition to this assessment of the measures implemented in the context of the project, the results of this survey also aim to inform and update Rewilding Portugal on the ‘social atmosphere’ surrounding the wolf, its wild prey (roe deer and wild boar) and the project, through key actors.

Our final aim was to define a set of recommendations for articulation with the LIFE project's programme of actions, in particular stakeholder involvement and communication. The recommendations could also be useful to support the decision and action of the public administration in relation to wolf conservation. In addition, the results could continue to be a reference base for future research on attitudes, monitoring and evaluation of the wolf conservation process in Portugal.

1.3 Ethical standards

The methodology used drew upon semi-structured interviews, informal conversations and direct observation, which imply processing information related to personal opinions, cultural beliefs, tacit and explicit knowledge, social practices, and personal or group experiences. Therefore, this study was conducted with the needed ethical standards associated with such information and type of work, as developed by anthropological professional associations. Ethical issues are particularly relevant in three phases: collection of information, preservation and protection of data, and dissemination of results. Hence, the following standards were followed in the different phases of this study, in line with the ethical principles for social science research:

- Interviewees were always provided with information about the present study as associated to project LIFE WolFlux, its aims and methodology;
- The interlocutors always consented to participate in the interviews and observations made. No data were collected without previous informed consent, even if informally and orally;
- The anonymity of all interviewees and interlocutors will always be guaranteed in all the reports, publications, conferences or scientific meetings where the data collected can possibly be used;
- All sensitive data collected will be preserved and protected, particularly on illegal wolf mortality, both during the fieldwork phase and in the future;
- All researchers and technicians involved in this study have committed to act in conformity with these ethical standards and signed a confidentiality agreement. This guarantees the confidentiality of all the field notes, recordings and other primary data collected, as well as the identity of the interviewees and interlocutors.

The results of this study were included in LIFE project reports and also used for scientific publications, master's and PhD projects and presentations in scientific and non-scientific events, always meeting the ethical standards mentioned above. Part of the results were presented in a seminar of CRIA – Centre for Research in Anthropology, the XV Congress of SECCEM in Cordoba (2021), and the 18th International Society of Ethnobiology (ISE) Congress (2024).

1.4 Social attitude and key topics

The concept of attitude and other essential topics, such as local knowledge, perception, positioning, the social context of the study and others were defined and developed in previous works.

We considered attitude as a complex concept which encompasses perceptions, beliefs, feelings and opinion for individual analysis, among others. Practices and human behaviour and intentions towards predators were gathered indirectly from some open questions and informal discourses around the themes of the interview. It is known from previous studies that information about individual predispositions can be effectively gathered without direct questions. On the other hand, there is not always a direct relationship between attitude and human practices (e.g., Lopes-Fernandes, 2018).

Besides attitude, this study has also worked with other concepts such as:

- Local knowledge: which comes from the experience with wolves or that is shared through oral communication. Can be considered as “traditional ecological knowledge” (e.g., Brush, 1993; Ellen et al., 2000; Maffi, 2001) mixed with contemporary sources of information, such as television programs or projects workshops, since knowledge is generated continuously (Frazão-Moreira et al., 2009; Ingold, 2003);
- Management of species and territories: uses and practices associated with predators in general and related to the expectations towards the presence of the Iberian wolf in the territory. It is assumed that it is not possible to separate knowledge, experience, convictions and *praxis* (e.g., Ingold, 1992; Toledo, 2001);
- Position towards wolf presence: combination of elements made by the combination of affective (values and emotions towards the species) and pragmatic components (assessment and concrete expectations of cost-benefits);
- Local contexts: combination of historical elements and characterisation of main economic activities, as well as the relations with local and national institutions which could directly or indirectly affect attitudes towards wolves.

2. STUDY AREA

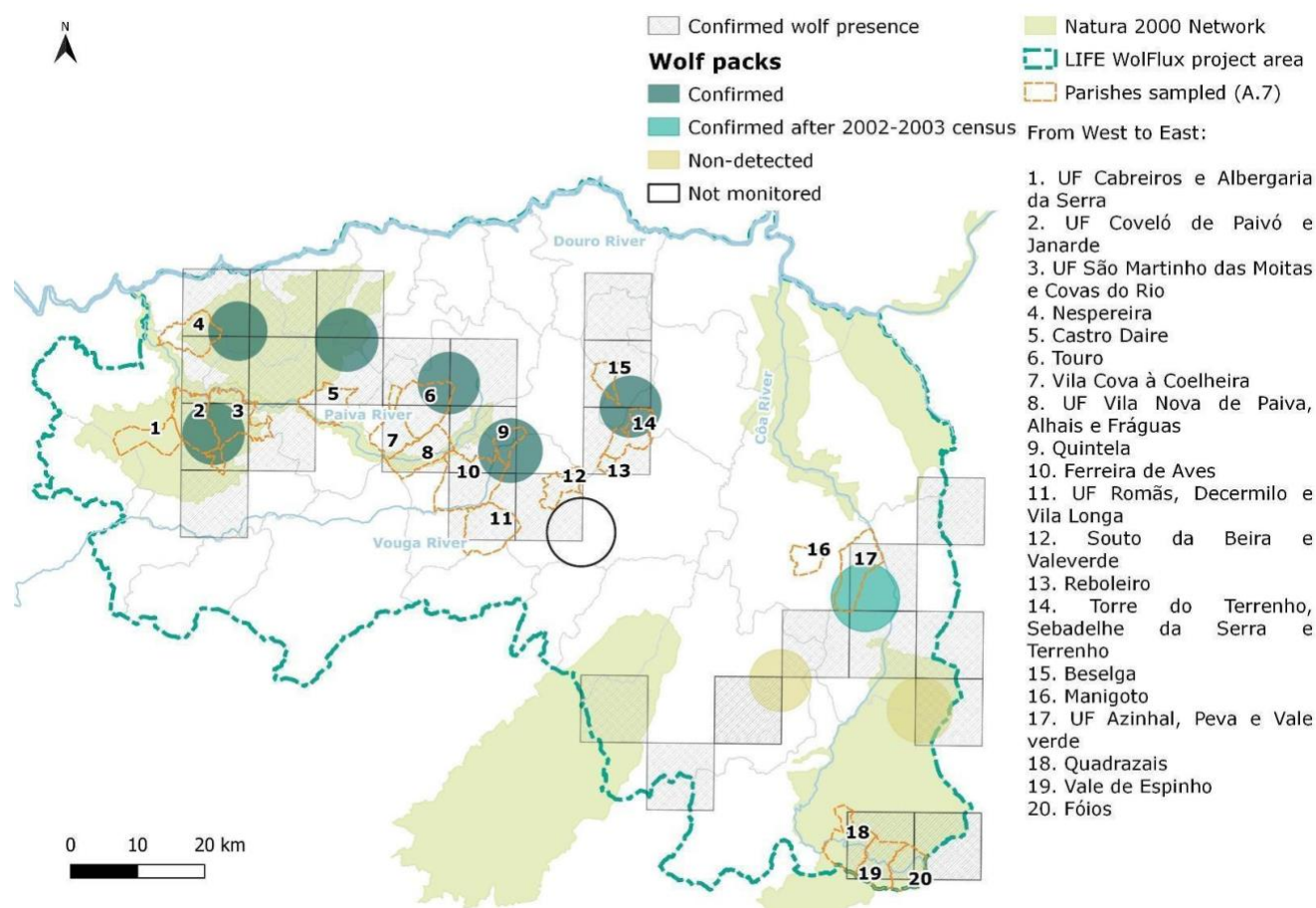
2.1 Selection of geographical areas

Given the vast extent of the WolFlux project area, some parishes were selected for Action A.7 based on three criteria: the presence of wolf packs, the occurrence of illegal activities, and the record of attacks on domestic animals. Although this approach may be biased, highlighting negative attitudes, it allows for the identification of potential social barriers and provides valuable information for the project, thus meeting the objectives of the Action.

Considering the criteria described, 20 parishes were selected (Figure 1), which were also selected for Action D.4 for comparative purposes. In these parishes, face-to-face interviews were carried out with four different profiles of key actors: hunting managers (hunting area directors), local authority representatives (parish and municipal councils), livestock breeders and nature activity promoters.

While nature conservation experts were selected for the first phase of the survey (Action A.7), they were not selected for the second phase (Action D.4) because they were not the direct target of the project's actions. In fact, this is a profile from which we expect stability in attitudes and perceptions, which are reasonably positive towards the wolf and nature conservation.

Figure 1. Location of the 20 parishes selected for Actions A.7 and D.4 of the WolfFlux project, with the location of the wolf packs in 2019.



2.2 SOCIO-ECOLOGICAL CONTEXT

The social characterisation of the project area is not described here in detail. However, given that the results of the 2019 General Agricultural Census, the 2021 Population Census, and 2022 wolf assessment have been published, it is important to mention a few aspects.

Considering the evolution of the resident population in the 20 parishes considered, the tendency to decrease is confirmed, with an average rate of change of 18% between 2011 and 2021. In two parishes, both in the municipality of Sabugal, this rate of change was over 26% (Vale de Espinho and Quadrazais). It is a low human density territory, with an average of 25.2 inhabitants/km² in 2021, a number considerably lower than the national average (602 inhabitants/km²) (INE, 2022). The area is increasingly depopulated—800 inhabitants in 2021 in the selected parishes, after a decrease of 52% since 1960. People older than 65 years old represent 34% of the population, whereas those under 14 years old represent 10% (INE, 2022). This trend is particularly marked in the municipalities of the border with Spain, like Almeida and Sabugal. The rural areas in the interior of Portugal – including Viseu and Guarda districts - have dramatically lost population towards urban areas and other countries since the 1950s (Alarcão, 1964) in a process of continuous “rural exodus” from inland to coastal areas. This loss of inhabitants has affected the population structure as well as demographic and economic parameters.

Regarding livestock production in the parishes, it should be noted that in 2023/24 the decline in sheep and goats seems to continue (72% and 80%, respectively, between 1955 and 2019), and it has been confirmed in the field that several farmers have given up the activity. There also seems to be a slight increase in the number of cattle. According to data from the 2009 and 2019 General Agricultural Censuses, there is in fact an increasing trend in this type of livestock in the parishes considered (circa 29%) (INE, 2021), triggered by subsidies from the Common Agricultural Policy. According to the 2019 national census of heads of livestock, there are currently around 7800 sheep, 3800 goats, and 5000 cattle in the selected parishes (INE, 2021). Spatial distribution of the main types of livestock predated by wolves in the project area (cattle, sheep and goats) is irregular. Cattle and sheep are more abundant in the border area with Spain in Guarda district (Figueira de Castelo Rodrigo, Almeida, Guarda and Sabugal) and in Arouca (Aveiro district). On the contrary, goats are mainly concentrated in Viseu district, with Castro Daire holding the highest number.

Although wild prey for wolves, such as wild boar (*Sus scrofa*), have increased, the low densities of roe deer (Carvalho et al., 2020) and mainly the extensive grazing and unprotected livestock favour wolf attacks (Pimenta et al., 2017), resulting in significant livestock damage. In 2017, around 330,000 EUR were paid for damage compensation, decreasing in the following years to 40-90,000 EUR/year (ICNF data).

The risk of extinction of wolf in Portugal was assessed in 2022, maintaining its *Endangered* status (Pimenta et al., 2023a). The population south of the Douro River remains isolated, genetically differentiated, with packs of irregular presence and inconstant reproduction. All these factors increase the risk of extinction of this population.

The LIFE WolFlux project area covers the current distribution of the Iberian wolf south of the Douro River, distributed in Guarda, Viseu and Aveiro districts, in the Portuguese region of Beira Alta. It encompasses 31 municipalities and 531 parishes, with a total extension of approximately 9.000 km².

The three main land uses of the territory are shrubland (44%), agriculture (39%) and forests (39%). Size of properties is small, as 77% of all agricultural lands have less than five hectares of arable land (INE, 2021). There are two important regions of wine production in the project area, Douro and Dão. Olive oil and almond production are also important crops in certain areas.

Classified natural areas are an important element of the territory. In total, there are three protected areas (Douro International Park, Serra da Estrela Natural Park and Malcata Nature Reserve) and seven Natura 2000 sites (six Special Areas of Conservation – SCI, and three Special Protected Areas – SPA) in the LIFE WolFlux project area (Figure 1). Natura 2000 Network accounts for 26% of the surface of the project area which exceeds the national proportion of 22%².



Covas do Monte

² <https://rea.apambiente.pt/content/sistema-nacional-de-%C3%A1reas-classificadas-0>

3. METHODOLOGY

Semi-structured interviews were conducted between March 2023 and March 2024, using a non-randomised method and pre-identifying key actors (action D.4). Livestock farms were visited, shepherds were accompanied, and practices and events (e.g., livestock practices, nature tourism, Rewilding presentations) were observed. The goal was to obtain a qualitative representation of residents most involved in areas with wolves.

The same interview guide developed in 2019 was followed, with simplifications in some questions regarding livestock practices, focusing on any changes since 2019. Some additional questions were adjusted to the profile of the interviewee, for example, to the "nature activities promoter" profile.

During the survey, regular meetings were held with representatives of the Rewilding Portugal team, and all field outings were coordinated to align with other project interactions with key actors in the area.

3.1 PROFILES OF INTERVIEWEES

Identifying target groups is one of the most critical phases of social studies. The approach focused on the selection of key actors to be interviewed (Descombre, 2007). A key actor is considered, in this study, as one who influences management (e.g., land and wildlife management, regulation) of the selected areas or who has interests involved in the area, for example, related to economic activities. This approach was previously applied with success to the evaluation of population attitudes towards Iberian Lynx (*Lynx pardinus*) reintroduction (Lopes-Fernandes et al., 2018), which was here adapted to actors that have a say in the decisions made in the areas of wolf presence and in the practices related to coexistence with the species. Based on the social context of the area, the previous knowledge of the study area, and considering the most relevant stakeholder groups the project needs to work with and that were already identified in the project proposal, five different profiles of key actors were identified (Table 1). Some actors may have more than one profile. In those cases, to facilitate data analysis, the profile that led to their selection to be interviewed was the one considered.

TABLE 1. CHARACTERISATION OF PROFILES OF KEY ACTORS

PROFILE	CHARACTERISATION	RELATION WITH THE TERRITORY: ACTIVITIES AND INTERESTS
Local authorities	Elected members of the executive commission of local governments. Local decision and representation.	<ul style="list-style-type: none"> -Voted by local population -Represent the interests of the local population - Knowledge of other key actors and main problems and interests occurring in the area -Dynamization of social activities, including nature activities
Nature conservation practitioners	Officers and technicians of the public sector, associations or NGOs active in the territory.	<ul style="list-style-type: none"> Surveillance and monitoring of interventions -Assessment of interventions and emission of authorisations and permits -Legal enforcement -Implementation of nature conservation projects -Monitoring of species and habitats
Hunting managers	Directors or other members of the board of hunting associations and managers of municipal hunting associations.	<ul style="list-style-type: none"> -Elaboration of hunting management plans -Management of hunting species and habitats -Communication with the authorities
Livestock breeders	Owners of the main types of livestock predated by wolf in the project area: cattle, sheep or goats.	<ul style="list-style-type: none"> -Potentially affected by wolf predation -Their practices condition predation risk -Direct influence in the management of habitats
Nature activity promoters	Private enterprises, institutions and associations that organise activities related to nature (e.g., wildlife watching, hiking) or in nature (e.g., kayaking, mountain bike trails).	<ul style="list-style-type: none"> - Interest in natural areas - Bring tourism and visitors to rural areas

3.2 METHODOLOGY AND PLANNING

The key actors were previously identified and contacted whenever possible. We assume that the number of interviews becomes less important as representativeness of the samples is achieved by interviewing all the profiles and key actors identified for each parish.

For each parish, the goal was to interview all the actors belonging to each profile, for example, all managers of all hunting areas that covered totally or partially a parish, and a representative of the local government per parish. This was possible for most of them, but livestock breeders were too numerous for interviewing them all, considering the time and capacity of the team. Therefore, the number of livestock breeders to be interviewed was determined proportionally to the number of agricultural holdings in each parish, considering a minimum number of two per parish and a maximum of four and using a snowball methodology, as explained below. Other profiles, like officers and technicians and nature-based business and activities had influence over several parishes.

A ‘snowball’ methodology was used (Bernard, 2006), so that a few key actors were identified in advance and after being interviewed they were asked to mention other key informants. At a certain point, category saturation is reached (Bernard, 2006), which is an indicator of good coverage of the range of perceptions and opinions (Lopes-Fernandes, 2018).

3.3 INTERVIEW SCRIPT

The script of the interview was designed in two phases: the first one, in July 2019, where the script was tested on a sample of 17 interviewees, the second phase, in August 2019, when the script was finalised based on this experimental phase. Later the same script was used in 2023-24.

The script contained open and closed questions as well as quantitative questions with Likert scales. As previously mentioned in chapter 1.1, this approach was chosen to deeply understand the attitudes of the key actors and the reasons behind their positioning, to allow them to describe and claim their reality and environment, but also to address practical management questions and concrete issues. It also allows comparison with previous human dimension studies about the wolf in the project area (Espírito-Santo, 2006, 2007, 2013, 2017).

The script was composed by the following parts: a) characterisation of practices related to the interviewee, composed by open questions; b) knowledge, emotions, perceptions towards the wolf and opinion about its presence, with 24 open questions and 6 questions with Likert scales; c) knowledge, perceptions towards roe deer and opinion about its presence, with 9 open questions; d) knowledge and perceptions about LIFE WolFlux and entities working on the word.

To support the script, unlabelled image cards were used in different parts of the interview to address memory of experiences of encounters with wolf and roe deer and to elicit opinions about different landscape features, species and types of management.



Using images during interviews to collect free discourses on conservation themes

3.4 INTERVIEWS

Key actors selected to be interviewed were pre-contacted by email or telephone, whenever possible, in order to inform them about the scope and objectives of the study and to schedule an interview. This approach allows also to inform the stakeholders about the existence of the ongoing study and the presence of interviewers in the field.

In addition, a standard letter with information about the scope and objectives of the study and conditions of confidentiality and anonymity was given to all interviewees before the interview, so they could give informed consent to the interview.

In 2019, interviews were conducted by a team of five people, with previous experience in carrying out interviews or trained specifically to do so. This allowed the WolFlux team to get directly in touch with the actors they were going to be working with during the rest of the project and to experience and understand directly by themselves the different perceptions on the ground.

In 2023/24, the interviews were conducted by members of the CRIA team, all with previous experience, ensuring neutrality in how the questions were asked and independence from the project's other ongoing conservation actions. The interviewers adapted their language to the interviewee's profile and adopted a non-judgemental position, introducing new questions whenever it was necessary to further clarify the answers received.

Some key actors were unwilling to be interviewed. We think this was partly because the subject was wolf conservation, a heated and controversial topic. Some have not been present in the area on an ongoing basis; others have preconceptions and prejudices about these types of study or conservation projects.

In 2023/24, an effort was made to interview the same actors interviewed in 2019. When this was not possible, they were replaced by an interviewee with the same profile.







Interviews in Sernancelhe, Sabugal, Pinhel and Touro

3.5 TRANSCRIPTION AND DATA ANALYSES

The answers to the interviews and other informal conversations were recorded, transcribed and categorised using, as far as possible, the categories previously used in 2019. All the transcribed information was entered into an Excel matrix, a repository for all the data, which is shared with Rewilding Portugal on a condition of confidentiality.

The content of the interviews was analysed in as much detail as possible in order to identify discourses, positions and opinions in different answers and comments during the interviews. In this report, profile information has not been included in the quotes to preserve the anonymity of the interviewees.

An attitude index was produced based on the average of a Likert scale applied to the answers to 6 specific questions. Attitude towards the presence of wolves was also assessed by categorising the open-ended question: “Do you think wolves could live in this area?” For the 2019 data, intolerance and fear indices were calculated.

4. RESULTS

In 2019 and 2023/24, a total of 117 and 97 interviews, respectively, were carried out for the profiles identified within the 20 selected parishes (Table 2 and Figure 1). Interviews had an approximate duration of 40 to 60 minutes, depending on the profile, since the first part was specific for each profile and had a different length. Among all the profiles, 53% of interviewees were not hunters, 30% were hunters and for 17% this information remained unknown. The ages of the key actors interviewed in 2019 ranged from 20 to 88 years old distributed as: 8% between 20-30 years old, 21% between 31-45, 55% between 46-65 and 17% older than 65 years old (median=54 years old). Interviewees in 2023-24 were similar (see scheme below).

Of the 97 people interviewed in 2023, 10 livestock breeders, 7 nature activity promoters, 6 hunting managers and 3 local authorities were targeted by LIFE WolFlux actions (27% of the interviewees). Most of the key actors targeted by LIFE WolFlux were not included in this survey because actions have spread by a larger area. Nonetheless, the parishes included in the survey were assessed as a priority to work with during action A.7 and later on were targeted for conservation and awareness and dissemination actions. In most of them (75%) there was direct work on the scope of the LIFE WolFlux in which at least one key actor (hunter, livestock breeder or entrepreneur) was targeted.

Nature Conservation Practitioners were not interviewed in 2023 and a lower number of nature activity promoters were interviewed compared to 2019 which reduced the proportion of the sample that tends to be positive towards wolf presence. Therefore, comparison of results between the two periods has to consider this reduction in the proportion of a priori more positive profiles (18% in 2019 vs 7% in 2023).

Table 2. Number of interviews per profile

Profile	Number of interviews 2019	2023/24
Local authorities	19	19
Hunting managers	24	21
Livestock breeders	53	50
Nature conservation practitioner	10	0
Nature activity promoters	11	7
Total	117	97

Interviewees 2023-24



Two parishes that met the criteria of having livestock owners with more than 10 attacks on average and two parishes where illegal wolf mortality was registered were not surveyed due to constraints in time or lack of availability of the key actors. Similarly, few actors of the profile of nature conservation practitioners were not possible to interview.

The profiles of local authorities, hunting managers and livestock breeders were, in general, related to one parish, although two hunting areas covered two and three parishes respectively. On the contrary, nature conservation practitioners and nature activity promoters had, in all cases, influence over several parishes and they were not included when mapping results per parish.

In the following sections, the results are presented quantitatively to allow comparisons with previous results. However, for the purpose of the project LIFE WolFlux it is especially important to take into consideration the variability of answers found, the key topics identified and the trends in local communities they might represent. These results are relevant for their qualitative value too and because they reflect a selected group of key actors who represent various interests and have influence on decision making in the most important territories where Iberian wolf occurs or is likely to occur.

4.1 THE IBERIAN WOLF

4.1.1 DESCRIPTION OF THE IBERIAN WOLF – VALUES AND EMOTIONS

Based on the adjectives and nouns used during the interviews and descriptions of the wolf, word clouds were built that represent the local actors' vision of the species (Figures 2 and 3).

The analyses of expressions used by the interviewees to describe the wolf reveal that the most frequent adjectives were positive or neutral, associated with beauty, wilderness and intelligence (Figures 2 and 3). The positive, neutral or tolerant and negative emotions and feelings were quite balanced. Fear, danger and aggressiveness were mentioned by almost a quarter of the interviewees. In 2023/24, the proportion of descriptive answers with no particular emotion associated was the same as the positive answers (n=33). A total of 23 interviewees mentioned 'dog' to describe the wolf. It is "like a dog" or "like a wild dog" were common expressions.

In 2023/24, the ratio between positive (49) and negative (45) descriptions and adjectives was 1.09, while in 2019 it was 1.18 (33/28). Although the analysis is simplistic and above all indicative of a multifaceted image of the wolf among key actors, the negative connotations seem to remain or even be more expressive.



Figure 2. Adjectives used to describe the wolf in 2019. Created with WordItOut

Figure 3. Adjectives and nouns used to describe the wolf in 2023/24. Created with WordItOut

Moreover, the use of both positive and negative adjectives by some interviewees shows that the feelings about the species can be complex and some ambiguity sometimes exists:

Beautiful, ferocious, it's needed.

(Bonito, feroz, necessário)

I think it's friendly, but I've seen so much disgrace coming from them...tens of goats killed. It kills for pleasure, from one side it's fascinating, from the other it's dumb.

(Acho simpático, mas vi tanta desgraça deles, dezenas de cabras mortas. Mata por prazer. Se por um lado fascina, por outro lado é burro).

Beautiful, if they didn't cause the harm they do, I would even like to see them.

(Bonitos, se por um acaso não fizessem o mal que fazem até gostava de vê-los.)

Even though the wolf is an elusive species, in 2019, 67% of the interviewees (n=78) had seen a wolf in the wild at least once in their lives, inside or outside the project area. Of those, 44 were livestock breeders, 17 hunting managers, 9 local authorities, 5 conservation practitioners and 4 nature activity promoters. The most common feeling associated with the experience of seeing a wolf was “shivers” or goosebumps, although there was a wide range of complex emotions associated with wolf encounters, most of them memorable (Table 3).

What did you feel when saw a wolf?	Frequency
goosebumps	17
nothing	10
calm	7
not scared	7
happy	6
excitement	5
anger	4
fear	4
scare	4
respect	3
curiosity	2
I liked to see it	2
joy	2
sadness	2
spectacular	2
amazed	1
comforting	1
enjoyment	1
fascination	1
horror	1
nervous	1
satisfied	1

Table 3. Frequency of emotions mentioned for the question “What did you feel when you saw a wolf?” (2019)

From 2019 to 2023/24, the percentage of interviewees who had the experience of having seen a wolf at least once in their lives remained at 66%.

Interviewees had a range of different experiences of those encounters with wolves, positive and negative ones, childhood memories of 30 years ago and recent sightings. Among the livestock breeders, some of the negative encounters with the wolf were associated with damage to their livestock (e.g., “Anger, if they are around, I’m done. If I left one (goat) behind they attack”/“Raiva, já andam aqui já estou lixado. Se deixo uma (cabra) para trás eles atacam”). However, despite having had damage on their livestock, some breeders have also positive emotions related to the species:

I’ve seen many! I was nearby one once. They are very beautiful. This one in the picture is similar to one I saw near my sheep. It (the wolf) was at the gate of the farm, it killed one of my lambs, I was going to till the corn and the donkey didn’t walk because she smelt the wolf. We stopped and I encountered the wolf face to face. It ran away.

(Já vi tantos! Eu já uma vez estive ao pé de um. Eles são muito lindos. Este da foto parece um que eu vi ao pé das ovelhas. Foi à entrada do portão da quinta, tinha-me matado um borrego, eu fui lavrar o milho e a burra não andava porque cheirou o lobo. Paramos e encontrei-me de frente com o lobo. Depois fugiu.)

During the interviews, it was also possible to collect some information about wolf habits in the past, oral folklore, all still part of empirical knowledge about the wolf, showing how the species is still part of the collective imaginary or seen as the scapegoat of rural life. Stories about the wolf were part of the oral tradition until recently and in many the wolf is portrayed as with either human-like behaviours or fanciful behaviours. Some of the ones mentioned were about:

- **Wolves following people for long distances and communicating with people**

In the old times they (wolves) followed people. People talked to the wolf, the wolf even accompanied people to the door of their houses.

(Antigamente andavam atrás das pessoas. As pessoas conversavam com o lobo, chegavam a acompanhar até à porta.)

- **Wolves attacking people and leaving only their feet**

My grandmother used to tell that, one time, a wolf that was very hungry came to the village. It went into a house that had the door open and ate a baby, but it left the feet. The wolf cannot eat feet, it can eat a person but not the feet.

(A minha avó contava que uma vez o lobo tinha muita fome e foi ao povo. Entrou numa casa com a porta aberta e comeu um bebé, mas deixou os pés. O lobo não pode comer os pés, pode comer uma pessoa mas não os pés.)

- **Wolves sucking the blood of the animals they kill**

If the wolf would kill a goat and ate it...but it is not like that, it makes a hole in the neck, sucks all its blood and does not eat them. At the time, if it can kill them all, it does.

(Se o lobo matasse uma cabra e comesse... mas ele não é assim, faz-lhe um furo no pescoço, chupa-lhe o sangue todo e não as come. Nessa altura se puder matá-las todas mata.)

- **Wolf with exacerbated predatory character**

Where they put their teeth, dark marks are left. The wolf, I think, even has poison in its teeth.

(Onde eles metem dente, ficam marcas negras. O lobo penso que até tem veneno nos dentes.)

- **Wolf mother taking revenge**

There was once a mother wolf who looked after her young in a den [a crevice in a rock] at the top of namorados rock. From the top of this rock, every day the mother watched the flocks that passed below, without ever attacking, just observing the sheep. However, fears of a possible attack led to the search and killing of the two cubs. Shortly after, the wolf killed two sheep, which was seen as revenge by the mother for the death of her cubs.

(Em tempos houve uma loba parida que cuidava das crias pequenas numa toca [uma fenda numa rocha], localizada no topo da pedra dos namorados. Do topo dessa rocha, a progenitora vigiava todos os dias os rebanhos que passavam por baixo, sem nunca atacar, apenas observando as ovelhas. Contudo, os receios de um possível ataque levaram a procurar e matar as duas crias. Pouco tempo depois, a loba terá matado duas ovelhas, o que foi considerado como uma vingança da progenitora pela morte das suas crias.)

- **Wolves related to the “bad wolf” of the fairy tales**

I felt happy, astonished, it is not bad as we were told as kids. It is beautiful, we must respect it.

(Fiquei contente, admiradíssimo, não é mau como nos disseram de criança. É bonito, temos que o respeitar.)

- **Proverbs**

It's a walker animal: “Quiet wolf does not create fat”

(É um animal caminhante: “Lobo quedo, não ganha sebo”.)



Detail of a fountain next to a place where a story of a child and a wolf took place, Sabugal council

4.1.2 KNOWLEDGE ABOUT THE IBERIAN WOLF

In 2019, we registered that local knowledge about the wolf was mainly about its predatory character (43% of answers), habitats (17%) and social habits (27%), although a considerable percentage of key actors (19%) claimed not knowing anything about the species. Moreover, 17% of the answers mentioned wolves as having influence in the whole ecosystem, in the control of diseases or the density of other species, including smaller predators. However, the most frequent answer registered regarding this topic was that the wolf does not prey on wild boar, because of not being part of a pack or because wild boar is stronger. On the other hand, roe deer and wild boar were recognised as the main wolf prey among the interviewees that affirmed to have knowledge about wolf diet.

Regarding related knowledge about the wolf, those interviewed in 2023/24 also knew about its predatory character and diet and referred less to its habitat (Figure 5). A lower percentage said it did not know anything about the wolf.

What do you know about the wolf?

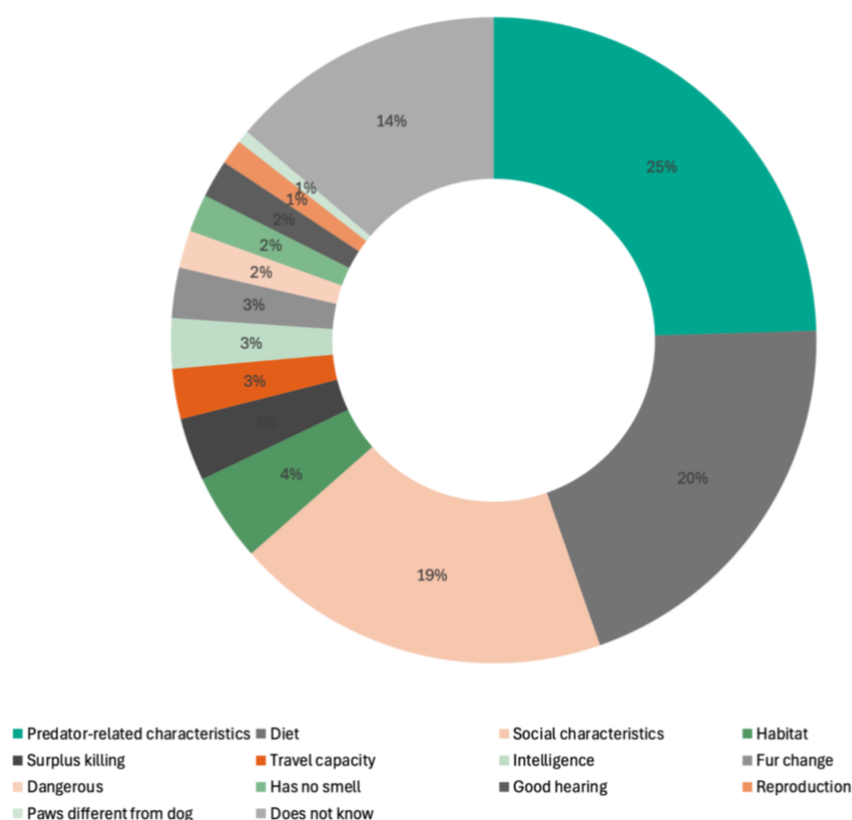


Figure 5. Knowledge about the wolf, calculated from the proportion of interviewees who mentioned each category (n=97), 2023/24

Regarding the question specifically about wolf's influence on other species, although there were more 'don't know' answers and doubts about the effect on wild boar and roe deer, there was a significant increase in the image of the wolf as a top predator that influences the entire ecosystem, controlling diseases and even selecting domestic or hunting species (Figure 6). The key actors seem to know more about this issue. Doubts about the impact on wild boar relate to the wolf's ability to kill it, especially if it is just one wolf or if it is an adult boar, as it is an animal well known for its resilience and strength. In fact, the local experience about wild boar is of a species that is very abundant, lives in large groups and defends itself with ferocity, for example, against dogs during hunting battues. This empirical knowledge outweighs any scientific ecological knowledge about the wolf's diet and the perception that wolf skills are similar to what they observe with the hunting dogs.

I don't know if the wild boar would attack. When we go hunting, the boar pierces the dogs.

(O javali não sei se atacará. Quando vamos à caça, o javali fura os cães.)

The wild boar [he] won't [eat]. It could put up a good fight [against the wolf]. If it was a small calf... But a big boar, only three or four big wolves.

(No javali não vai. É capaz de dar uma luta valente [ao lobo]. Se fosse uma cria pequena... Agora um javali já grande, só três ou quatro lobos já valentes.)

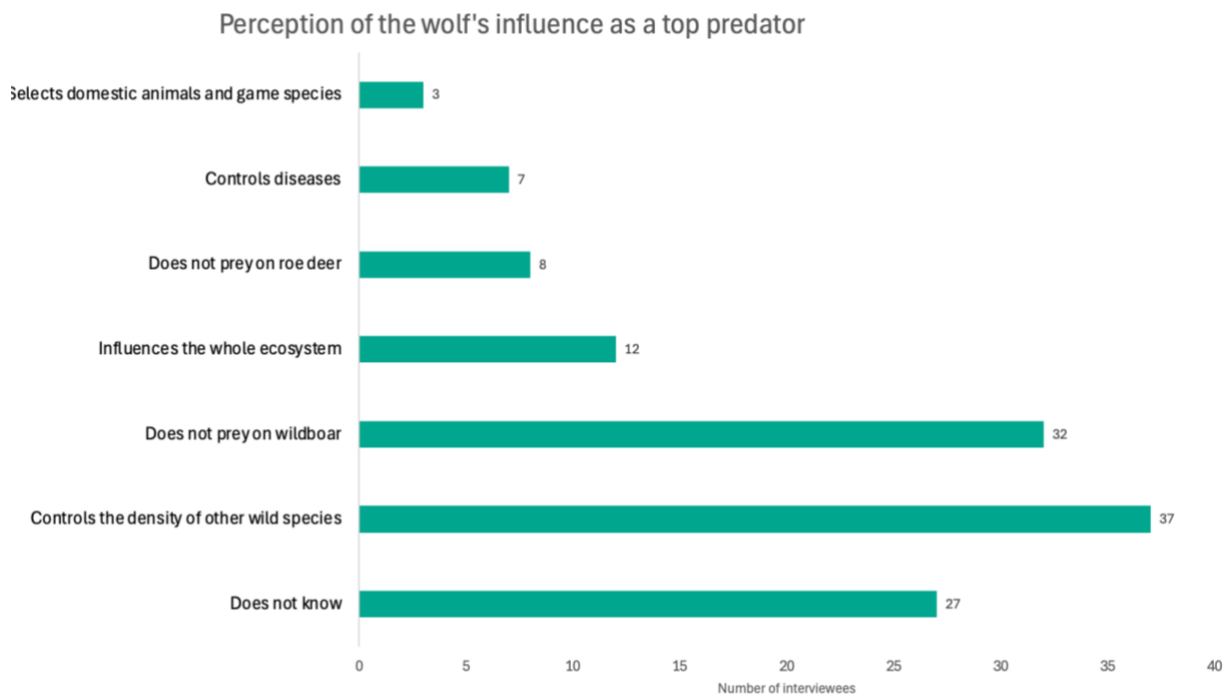


Figure 6. Perception of the wolf's influence as a top predator, calculated as the number of interviewees who mentioned each category, 2023/24

For many of the interviewees, it is the presence of wild boar that influences the presence and density of wolves, and not the other way round, considering that “where there is (a lot of) wild boar, there is no wolf”. This observation is corroborated, according to the key actors, by the abundance of wild boar: if the presence of the wolf had an influence on the wild boar, there would not be so many of the latter, even indicating that the wolves disappeared with the arrival of the wild boar.

*If [the wolf] attacked the wild boar, there would no longer be any [wild boar], and there still is.
(Se [o lobo] atacasse o javali, deixava de haver [javali] e ainda há.)*

*For me, the wolf left because of the wild boar (...) Before, you wouldn't see wild boar when there were wolves.
The wolf is afraid of the wild boar.*

(Para mim, o lobo abalou por causa do javali (...) Antes não se via javali, quando estava lobo. O lobo tem medo do javali.)

The wild boar kills the wolf's cubs, that's what I've heard. There are no wolves because there are lots of wild boar. The species is extinct because of that.

(O javali mata as crias do lobo, é o que ouvi dizer. Não há lobo porque há muito javali. A espécie está extinta por causa disso.)

Regarding the open question about wolf territory, in 2019 as well as in 2023/24 there was still the same difficulty in mentioning a specific area, and the same number of interviewees said they didn't know (Figure 7). The predominant characteristic is the ability to travel many kilometres.

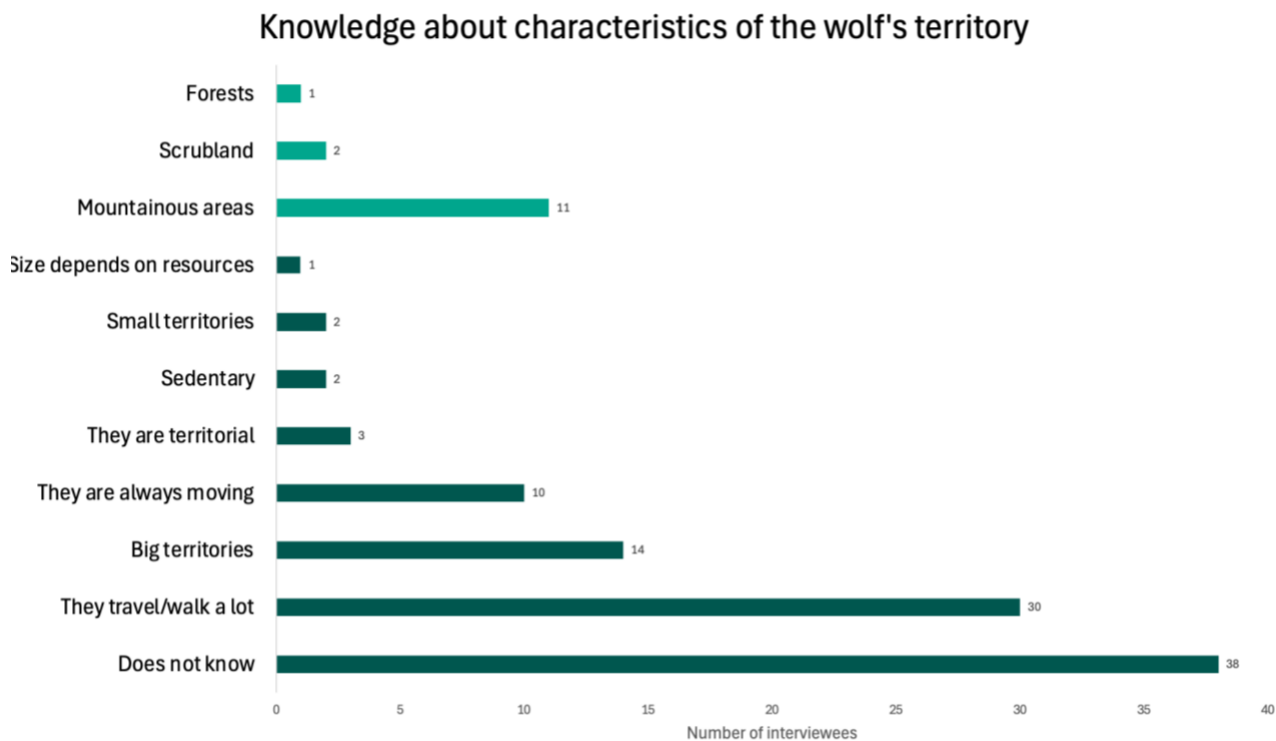


Figure 7. Knowledge about wolf territory, calculated as the number of interviewees who mentioned each category in 2023/24. In light green, reference to the type of wolf habitat

From memories of our interviewees, we gathered information about local/traditional knowledge about wolf protection.

Protection of livestock from the wolf in the past is described as based on constant presence of shepherds, guarding dogs and enclosure of livestock inside pens during the night. Those practices changed as lifestyle in rural areas changed and are not widely used anymore. EU subsidies also promoted more cattle breeding, and the presence of wolves disappeared from some areas. Somehow the traditional knowledge of protection, probably one of the essential keys to coexistence, is getting lost. Even when some livestock breeders successfully use several dogs to protect flocks, they can miss the knowledge of how to train the dogs from an early age. Spiked collars were applied to dogs so they could better defend themselves in potential fights. This was practically not seen for some years, but nowadays occasional owners look for those collars and even manufacture them, a reinvention of a traditional practice (Figure 8).



Figure 8: Young livestock breeder showing one traditional collars used to protect dogs from wolves that he makes

In response to the question “How was the livestock protected from the wolves in the past?”, one of the interviewees replied:

With dogs, spikes colars, they were permanently with livestock. They put cattle in stables.

There were no cows groups.

(Com cães; coleiras de picos; estavam permanentemente com o gado. Estabulavam o gado nas cortes. Não havia manadas de vacas).

Traditional knowledge on livestock protection also involved descriptions on how the domestic animals changed their behaviour when a wolf approached, how certain conditions such as fog require the shepherd much more attention on surveilling the flock—because wolves take advantage of such weather to attack—, and how to gather all the flock quickly to minimise the damage.

Concerning hunting of the wolf, descriptions reveal the organisation of battues in the past involving many men and the collective rewarding of those who killed a wolf as a good service to the community. Some interviewees participated as kids in those battues showing the power of the collective effort against the wolf as a “natural enemy” (Knight, 2000). *Fojos*, the old structures to capture wolves inside some stone walls, are still mentioned but have not been used for 50 years or so. There is one of these *fojos* identified south of Douro, but there were difficulties in collecting more information about this place.



Cows at Freita Mountain range

4.1.3 BELIEF IN WOLF RELEASES

As in 2019, one of the topics mentioned spontaneously in almost half of the interviews was the belief in the existence of secret wolf releases by the State or NGOs (40 cases out of 117), even though there has never been any reintroduction of wolves in Portugal (by Rewilding or any other organization). Except for nature activity promoters, this belief increased in all profiles compared to 2019, with livestock breeders being the most expressive (56%) (Figure 9).

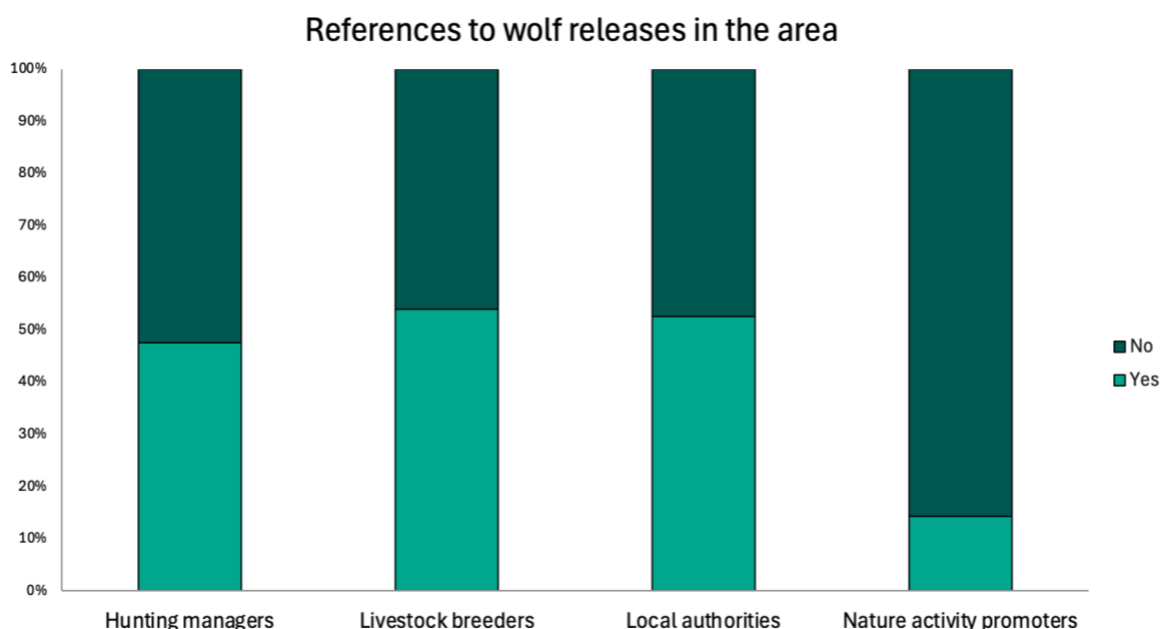


Figure 9. Percentage of interviewees from each profile who spontaneously mentioned wolf releases in the area (n=97), 2023/24

The topics related to wolf releases mentioned by the stakeholders are listed below. The interpretation of the origin of this widespread rumour, its implications and how to tackle it are detailed in chapter 5.4.

- Presence of helicopters or four-wheel vehicles.
- Releases started in different years, depending on the area. The oldest ones were described to have happened 10 years ago.
- Women are often associated with wolf releases.
- The released wolves are fed (e.g., “I have already seen many wolves in Lapa mountains – they put food for them, the wolves knew the sound of the cars and approached” / “E já vi bastantes lobos na serra da Lapa- punham lá comida para os lobos, eles conheciam o barulho dos carros e aproximavam-se”).
- Apart from wolves, foxes and other animals are also released.
- Local actors found proof for wolves being released and in these wolves being different to the ones in the old times, because they say they are not scared, come closer to the villages, and attack dogs. (e.g., “I saw two wolves two months ago, they had been released here recently, and they were calmly chasing the goats as if I wasn’t there. The dogs were the ones making them run away. The wolves don’t even run away from the cars the first days after being released. They also howl on the first days” / “Vi dois há dois meses. Tinham sido postos cá há pouco tempo, andavam atrás das cabras tranquilamente como se

eu não estivesse lá. Os cães é que os corriam. Nem fogem dos carros nos primeiros dias, depois já não. Nos primeiros dias eles uivam”.)

These references maintain a narrative in which certain elements constantly appear, such as: gendered technicians (women), a white van, a green jeep, wolf-dogs (more domesticated and different from the wolves of the past) and feeding the wolves.

The perceived releases also seem to justify the existence of wolves in areas where they ceased to exist in the past or at times of the year when they are not seen.

February and March are the worst, when they put them here. I've already been in trouble for saying this, that they're being put here. Grupo Lobo and the ICNF warned me that I had to prove that they're being put here. But we know, when they arrive, they howl for three days because they don't know where they are and they call each other.

(Nos meses de fevereiro e março é o pior, quando os põem cá. Já tive problemas por dizer isto, que os põem cá, avisaram-me, o Grupo Lobo e o ICNF, que eu tinha que provar que eram cá postos. Mas a gente sabe, quando chegam uivam três dias porque não sabem onde estão e é a chamarem-se uns aos outros.)

I hear people say that the wolves are put (here). I don't know if it's true, but I believe it is, because if they disappear and then appear again...

(Oíço dizer que os lobos são postos, dizem as pessoas do povo. Não sei se é verdade, mas acredito que sim, porque se eles vão desaparecendo e depois aparecem outra vez...)

4.1.4 DAMAGE, PROTECTION OF LIVESTOCK AND OPINION ABOUT COMPENSATION

4.1.4.1 Damage and livestock protection

In 2019, the livestock breeders interviewed managed a total of 5416 heads of livestock, among cattle (1708), sheep (2517) and goats (1191) for most of them, breeding livestock is their main economic activity (74%, n=39). Most livestock breeders have less than 100 animals, although there are few interviewees with more than 300 small ruminants and over 500 cows.

The livestock breeders interviewed in 2023/24 managed a total of approximately 5310 head of livestock, a similar number to 2019, including cattle (524), sheep (3612) and goats (1164). Many had reduced the number of livestock since the last survey (Figure 10).

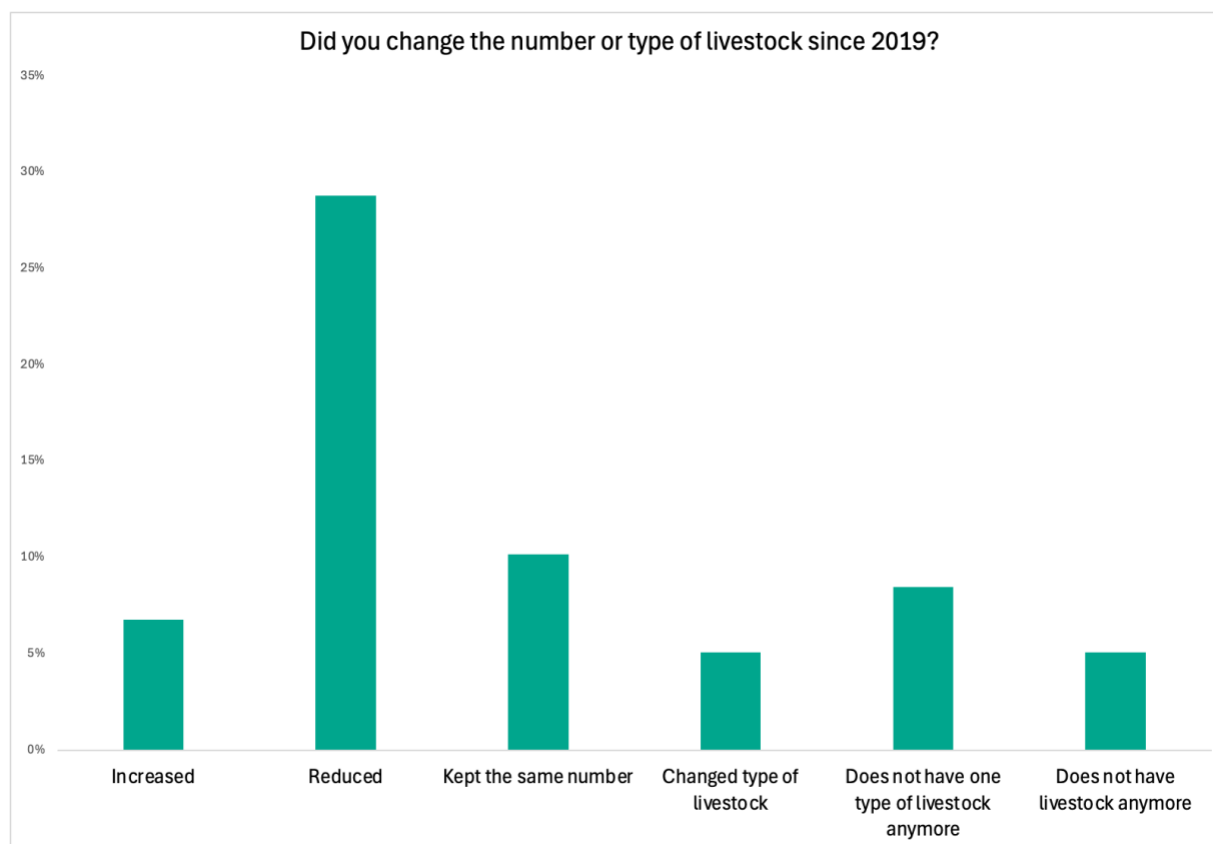


Figure 10. Percentage of livestock farmers who have changed the number or type of livestock since 2019 (n=38)

From the 53 livestock breeders interviewed in 2019, 72% have had damage due to predators, most of them caused by wolf (n=34) but also by dogs (n=13), foxes (n=4) and mongoose (n=1), and some reported damage from other wildlife as griffon vultures (n=3). Most of them considered that wolf damage had a significant economic impact for their activity, although the way each faced wolf damage varied. While some implemented practical measures to try to reduce damage (n=21), others did not take any measures to solve the problem (n=10) or did not have the means to do so (n=2) or just informed the authorities (n=9).

In 2023/24, 44% of the livestock breeders interviewed had experienced damage caused by wild animals, the majority caused by wolves (77%; n=17). The fact that breeders are relatively isolated and that they are the only ones (or one of two) with livestock in certain villages, makes them more vulnerable to predation, and attacks can be recurrent. This fact, which is widespread in the study area, becomes the most important for the viability of the exploitation and the exacerbation of conflicts. Damage caused by dogs continues to be mentioned by both breeders and non-breeders interviewed (n=24), and 34% of breeders reported this experience, a percentage close to those who had experienced damage caused by wolves.

The protection measures taken by livestock breeders after damage seem to be equivalent to 2019 and complementary: increasing surveillance, changing fences and acquiring livestock dogs (Figure 11). However, there is still a significant percentage (30%), higher than in 2019, of breeders who have not changed or do not see the need to take measures after suffering losses.

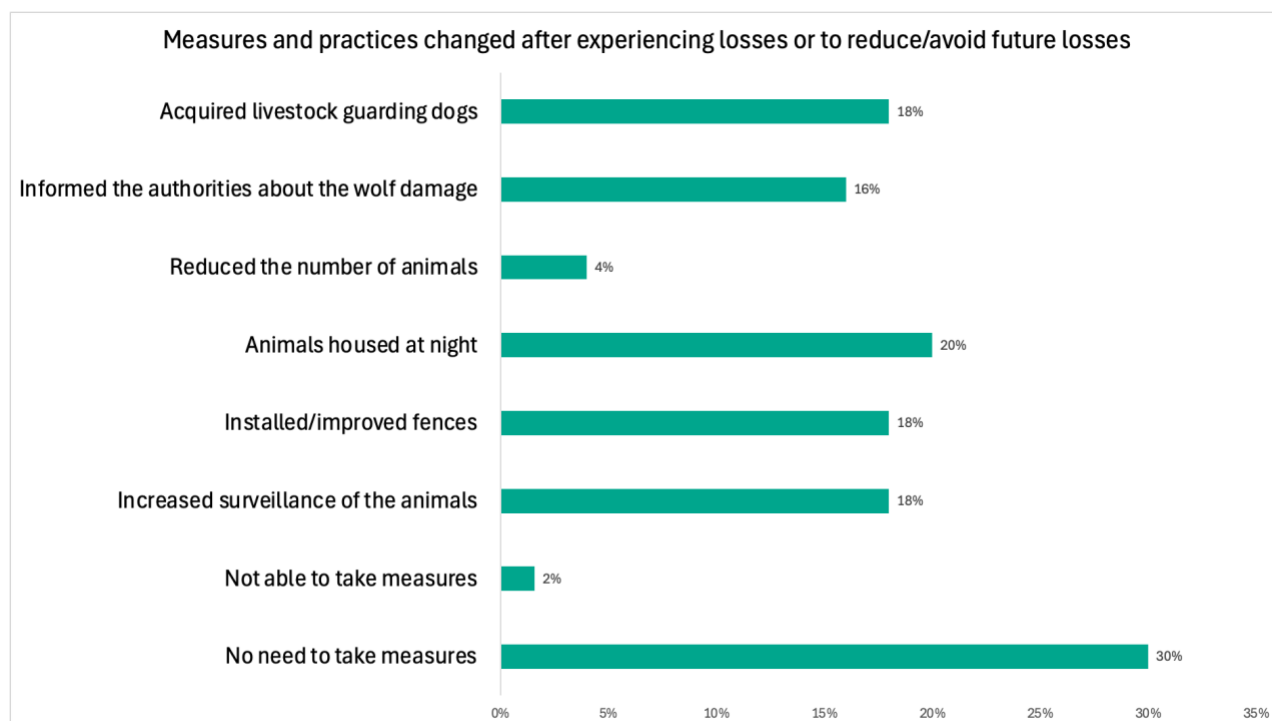


Figure 11. Measures and practices changed after experiencing losses or to reduce/avoid future losses. Percentage calculated as the number of interviewees in each category out of the total number of livestock breeders interviewed (n=50), 2023/24

In terms of solutions to avoid wolf damage, livestock breeders tend to prefer passive solutions, such as compensation or enclosure, or the disappearance of wolves, rather than active protection measures. However, some of them are receptive to fence livestock or acquiring better guard dogs, which were measures foreseen in the LIFE WolFlux (Figure 12).

57% of the farmers interviewed declared having livestock guarding dogs of native breeds Serra da Estrela and Castro Laboreiro, a shepherd (40%) or the combination of both. Moreover, there were described husbandry practices that increase predation risk, particularly for cattle, as calves younger than three months generally go to the pastures and births occur mostly in the pastures too. Births occur all year round, although they tend to be more numerous between November and February for the small ruminants and February to May for cattle.



Livestock guardian dog in Freitas Mountain range

WHAT DO YOU THINK IS THE BEST SOLUTION TO AVOID WOLF DAMAGE

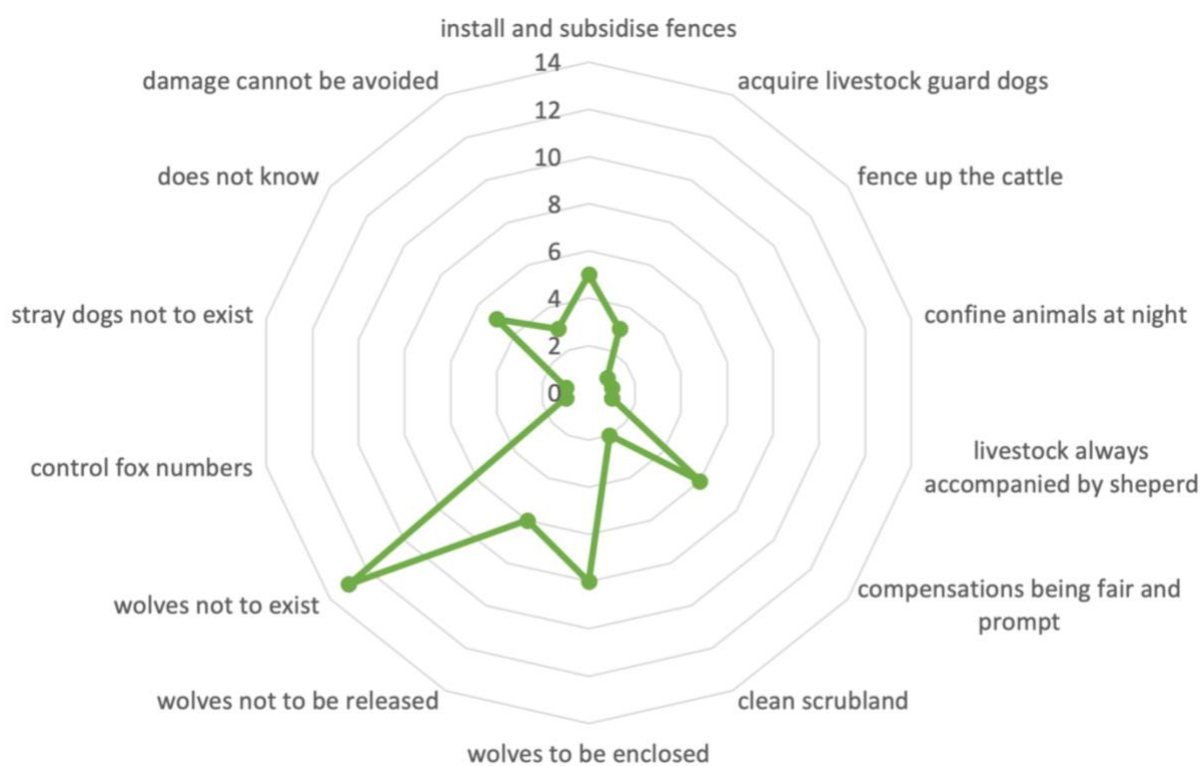


Figure 12. Solutions proposed by livestock breeders (n=53) to avoid wolf damage, 2019



Corral in the Sabugal area

4.1.4.2 State compensation system

One of the biggest impacts of wolves on human activities is livestock predation. The opinion on compensation is relevant as it is a measure to support harmonious coexistence and presumably affects tolerance toward this species.

Among the key actors, in 2023/24, 60% criticised the compensation system (4% increase since 2019) and, among breeders, 78% objected to it, particularly the new system. There is agreement that the payments are insufficient, late or overly bureaucratic (Figure 13). Some breeders have to travel many kilometres to report their losses, the online platform created for this purpose is not easily accessible to them and they associate this new system with an additional loss of production subsidies. In some specific locations, there were reports of delays in verifying losses or a lack of support for breeders to collect and remove corpses:

If I run out of animals and compensation, tolerance changes. I have animals that I won't sell for anything, no amount of money will pay.

(Se ficar sem animais e sem compensação, a tolerância muda. Tenho animais que por valor nenhum vendo, nenhum dinheiro paga.)

The application process is “very complicated”; the best solution would be for there to be no wolves.

(O processo de pedido é “muito complicado”; a melhor solução seria não haver lobos.)

Payments are late and insufficient and the process is very bureaucratic.

(Os pagamentos são tardios e insuficientes e o processo é muito burocrático.)



Accompanying sheep released from corral in the morning, Sabugal

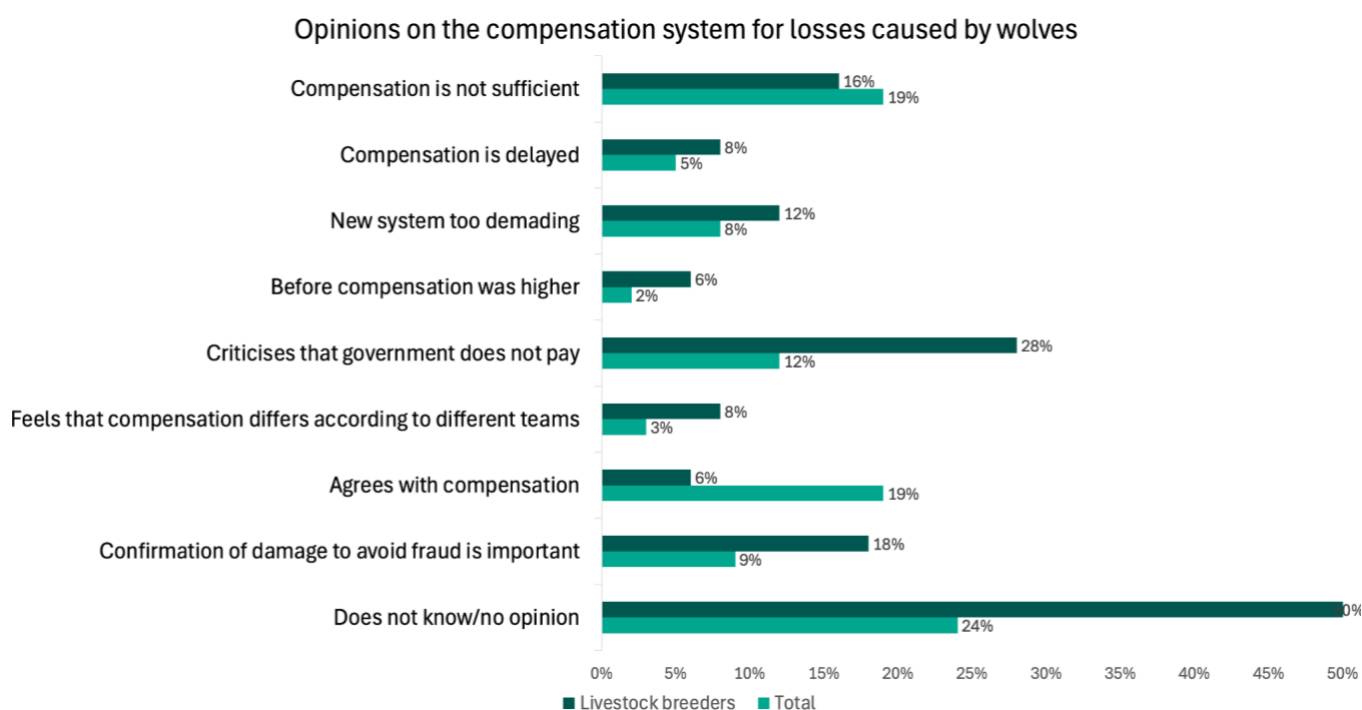


Figure 13. Opinions on the compensation system for losses caused by wolves. Percentage calculated as the number of interviewees in each category out of the total number of livestock breeders interviewed (n=50), 2023/24

From the point of view of the legal requirements for damages to be covered, '2 metre' fences are the ones most often mentioned as impossible to implement. Sometimes having livestock dogs is mentioned as a requirement in addition to fencing, even if it is not a cumulative requisite. Many farmers receive support for keeping livestock dogs, which they consider important, either from ongoing projects (Rewilding Portugal or Grupo Lobo) or from direct State support.

One of the additional losses mentioned with the new compensation system is the loss of direct support for livestock, not only those that have disappeared as a result of the damage, but also the loss due to changes in headage. On the other hand, livestock breeders say that it is not always easy to distinguish between payments made by the public institute IFAP (Institute for the Financing of Agriculture and Fisheries), whether for support or compensation for losses. The supervisory body is still the ICNF (Institute for Nature Conservation and Forests), but the paying body, for some, is IFAP, which leads to a confusion of competences and a relationship with different public administration bodies with different responsibilities.

Particular attention was paid to interviewees' opinions about the compensation scheme as to illustrate potential conflict in the area. This can be useful to authorities involved to take further action:

Insufficient and delayed. They are not able to assess things as we do, a pregnant or a non-pregnant cow is not the same, if the calf dies we have no profit and the cow's udders get infected when the wolf kills the calf.

(Insuficiente e tardio. Não conseguem avaliar as coisas como nós, não é igual uma vaca prenhe que vazia, se morre o vitelo não temos lucro. E as vacas ganham infecção nos ubres quando o lobo mata o vitelo.)

Not paying a fair value is the main problem. We have ways to measure that, in regular regional markets that can serve as a base to estimate a table of values of those animals (bovines) killed by the wolf.

(Não pagar o justo valor é o principal problema. Nós temos formas de mensurar isso porque temos até mercados de gado regionais, feitos com a devida periodicidade, e que podem servir como base para estimar uma tabela de prejuízos, do valor desses animais que são mortos por lobo.)

There are methods, indexes related to commercial transactions. It is just listening to people, they are the ones that know daily life, the ones that suffer the damage and they also like to be listened to, to get things out of their chest. Otherwise illegal killing ends up being committed.

(Há métodos, há formas, há índices, têm a ver com as transacções comerciais. E ouvir as pessoas, são eles que estão no dia-a-dia, são eles que têm os prejuízos e também gostam de ser ouvidos, gostam de desabafar. Se não acaba-se por incorrer na caça ilegal.)

Too many evidences are needed to receive compensation, no one manage to gather them. There should be found a more balanced system. A calf costs 500-600, which are not paid.

(São precisas tantas evidências para compensar um ataque de lobo que ninguém consegue reunir tantas evidências. Tem que se arranjar aqui um sistema mais equilibrado. Uma vitela tem um custo de 500-600 euros que ninguém paga.)

Ridiculous, the later changes equalize a compensation payment with a subsidy, not wanting to take responsibility for the damage wolves cause. A regressive system is not a co-responsability; if those holdings did not exist, the wolf wouldn't exist either.

(Ridículo, as mudanças mais recentes, a lei faz equiparar uma indemnização a um subsídio, está a não querer responsabilizar-se pelos prejuízos que os lobos causam. A regressividade não é uma co-responsabilização, se estas explorações não existirem o lobo deixa de existir.)

Now they pay 15€ for each sheep, before they paid part of the value (of the animal). The change happened last year. I know other people that, because of that, have stopped calling them (stopped reporting to ICNF rangers episodes of wolf attacks). Before they paid approximately 100 €, it was not the whole value but it was enough to cover the work. Now this really encourages to end up (the activity).

(Agora dão 15€ por cada ovelha, antes pagavam parte do valor (do animal). A mudança foi do outro ano para este. Conheço mais pessoal que por causa disso deixou de os chamar. O que eles pagavam antes era aproximadamente 100€, não era o valor todo mas dava para o trabalho. Agora foi mesmo para acabar.)



Indoor enclosure, Vila Nova Coelheira

4.1.5 ATTITUDES TOWARDS WOLVES

4.1.5.1 Perceptions about wolf presence: advantages and disadvantages

In 2019, half of the interviewees (49%) considered that it was possible for the wolf to live in the region, but only if certain conditions were met, mainly paying wolf damage effectively, reducing it or providing habitat and food for the species. Some key actors recognised “the right of the wolf to exist in the region” provided wolf densities are kept in small numbers (8%). However, almost half of the interviewees considered that the current wolf abundance south of the Douro River is low (Figure 14). The responses to the intrusive character of the wolf into human domain tended to be to “keep it apart” in the hills (free), in enclosures or away from the region or in areas with no livestock (3-4% of the local actors).

In 2023/24 the percentage was lower - 40% of the key actors in the wolf area believe that the presence of the species in the region is possible under certain conditions (Figure 14). Although overall “conditional yes” represents a positive step toward peaceful coexistence with the wolf, some habitat conditions are unrealistic or very difficult to achieve in the short term - no wildfires or wild boar, more hunting species (mentioned by 39%) or wolves not causing damage (14%).

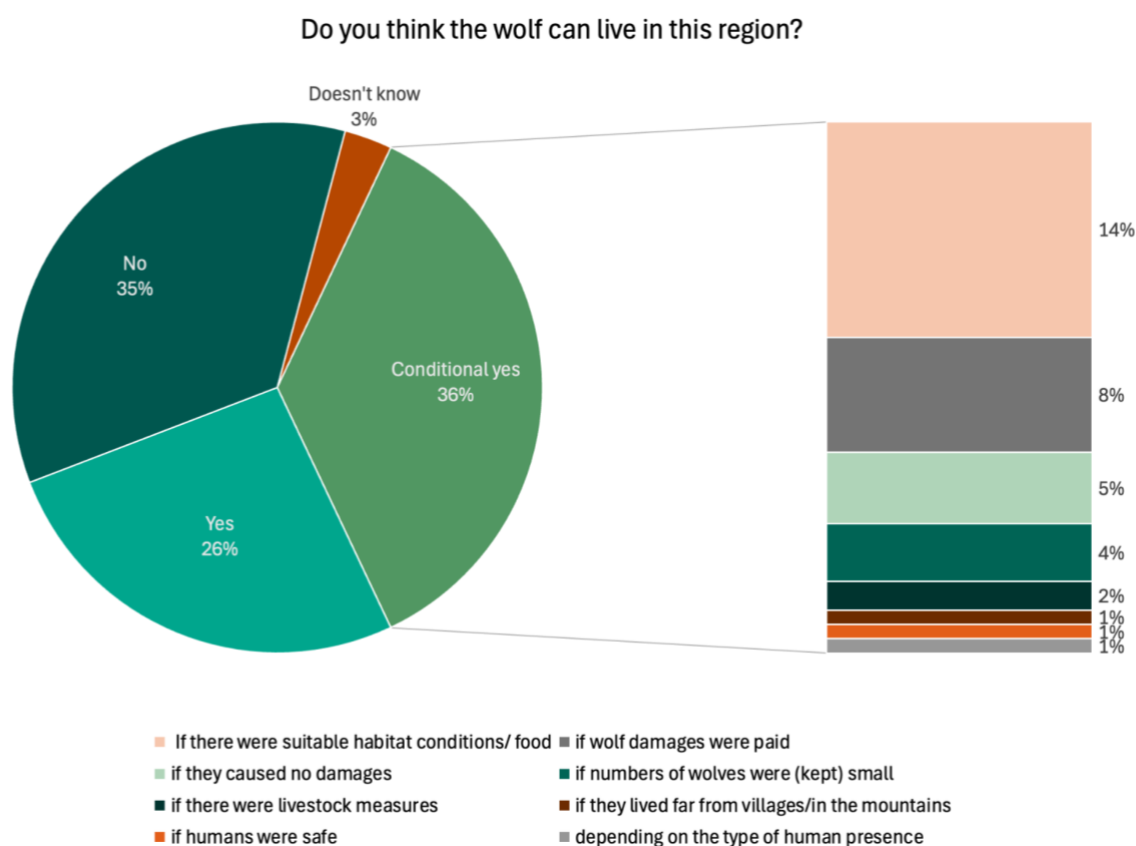


Figure 14. Interviewees' opinion on the possibilities for the wolf to live in the region (n=97), 2023/24, and the conditions specified

Like in 2019, some key actors in 2023/24 mentioned the wolf's right to exist (n=13), but one of the conditions for coexistence is that they be kept in controlled or low numbers. When confronted with the approximate real number of wolves living south of the Douro (30-40), around half of the interviewees considered them to be too many or enough (Figure 15), showing intolerance towards the increase of the wolf population. This figure is similar to the one recorded in 2019. Since the considered area is truly extensive, it is difficult for some interviewees to analyse this issue. In these categories of 'too many' and 'enough' (which can often mean 'already enough'), livestock breeders weigh most heavily (n=19 and n=11 in these categories, respectively).

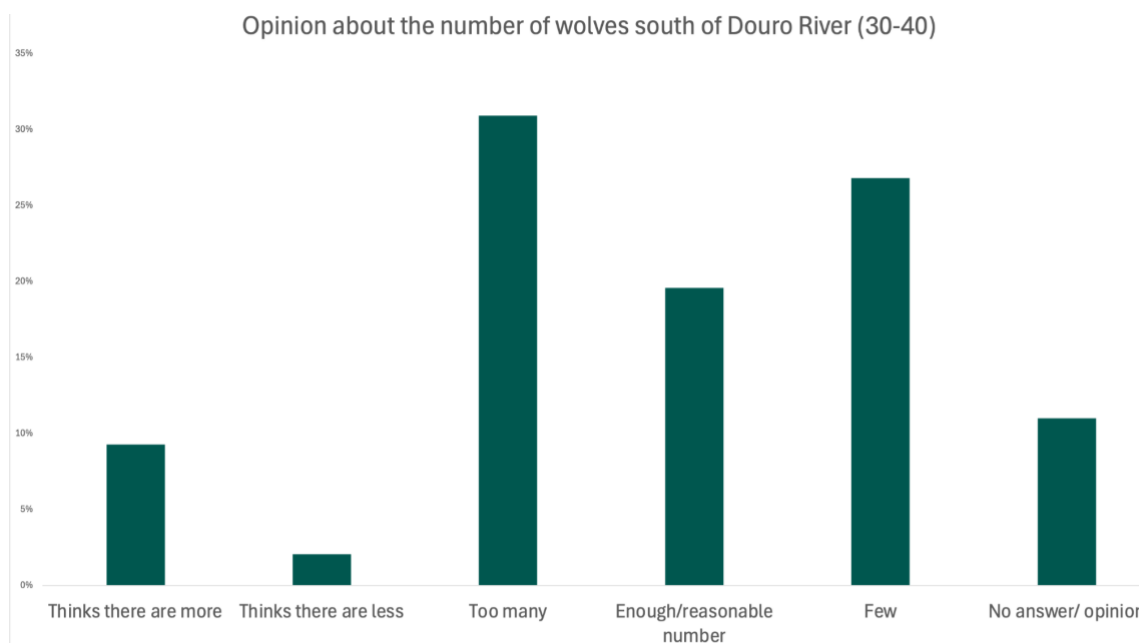


Figure 15. Interviewees' opinion on the estimated number of wolves south of the River Douro, according to the national census of 2002-3 (n=97), 2023/24

Among the profiles of the key actors, it is the livestock breeders who mostly say they do not want the presence of wolves, as would be expected (Figure 16). Local authorities are divided in their positions, but a significant percentage are opposed to the presence of wolves.

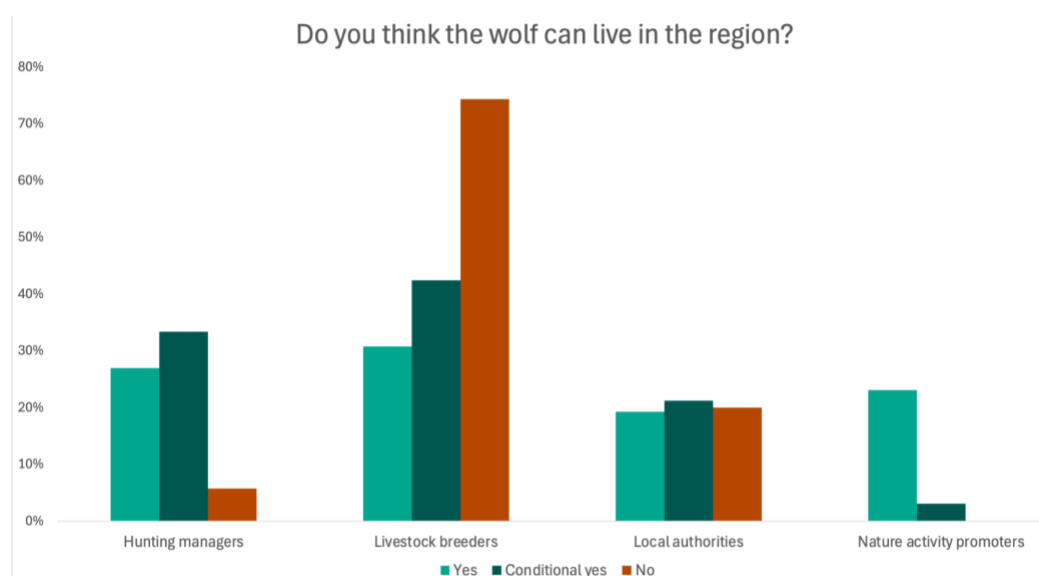


Figure 16. Opinion, by profile of key actors, on the presence of wolves in the region, 2023/24

Regarding the advantages and disadvantages of having wolves in the region, there have been no obvious changes since 2019 for the overall sample. However, all profiles recognised the advantages of having wolves or at least that there were no disadvantages (Figure 17 and Table 4).

The majority recognised there are disadvantages in wolf presence (74%). Less than half of the actors (46%) could point out advantages to the presence of the predator, notably ecosystem balance, ungulate control and preserving the species. Tourism does not seem to be a local trend and was only mentioned by 9% of the key actors interviewed, together with wolf's role as a natural "cleaner" of diseases and dead animals (9%) (Table 4).

Damage to livestock was the main disadvantage of wolf presence highlighted by the interviewees (61%), in line with the results about the main conditions pointed out for wolves to live in the region (Figure 14). Being considered a dangerous species and the negative reactions of local populations towards its presence were the other two main disadvantages mentioned.

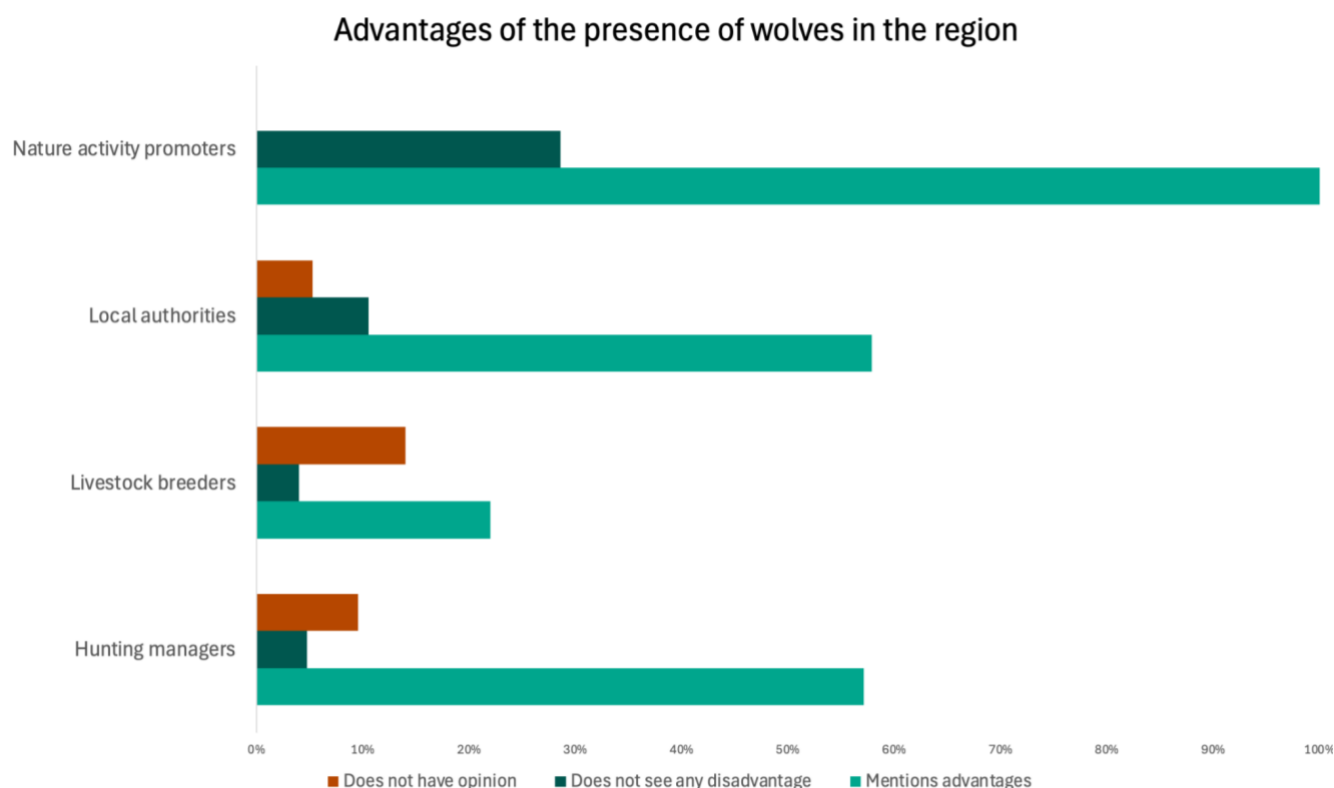


Figure 17. Opinion, by profile of key actors, on the advantages of the presence of wolves in the region, 2023/24

Table 4. Advantages pointed out by the interviewees regarding the presence of wolves, with an indication of the profiles of the key actors who referred the advantages

Advantages mentioned by the interviewees	Percentage of interviewees (n=97)	Profiles of key actors who mentioned the advantage
The wolf is part of the ecosystem; ecosystems are kept in balance	18%	All
The wolf controls the abundance of wild boar and/or roe deer	15%	Hunting managers, livestock breeders, local authorities
The wolf “cleans” sick or dead animals	8%	Hunting managers, livestock breeders, local authorities
The wolf controls other damaging animals (e.g., mice, predators, feral dogs)	7%	Livestock breeders, local authorities
To conserve the species	6%	Hunting managers, local authorities, nature activity promoters
Attracts tourism	4%	Local authorities
Opportunity for younger generations to know the wolf	3%	Hunting managers, livestock breeders, local authorities
It forces livestock farms to be better protected	1%	Livestock breeders
To keep a symbol of the popular imagination	1%	Hunting managers
Business opportunity	1%	Nature activity promoters
Does not know	11%	Hunting managers, livestock breeders, local authorities

4.1.5.2 Illegalities

The script included questions to know about the existence of illegal activities, which were carefully introduced. Practices include the use of snares, poison and illegal predator control in the parishes sampled and we tried to understand the target species of those activities. Snares are commonly used in the area to hunt wild boar and poison is used to “solve problems” with neighbours’ dogs or conflicts between hunting areas. A total of 23 interviewees declared knowing illegal activities of poison, shooting or use of snares in their parishes or neighbouring parishes (13 parishes in total). Even if wolves did not seem to be the main target species behind those activities, they are frequently affected by them. Information about three cases of wolves being hurt or killed by snares in the last 10 years was registered through the interviews and there was one more case of a wolf hurt by a snare registered by camera trapping in 2019 in action A.3 of this project. Moreover, it was registered in the interviews one case of direct wolf persecution where two wolves of the Leomil pack were killed by shooting and buried. Some local actors also mentioned in informal conversations a rumour that two wolves of the Almeida pack were killed (shot) around 2016-2017.

During interviews as well as in informal conversations sometimes information about wolves that had been illegally killed in recent years emerged. This mortality was recorded in several parishes. Although these are not confirmed cases, they are indicators of the possibility that illegal wolf killing persists in the study area and that it is more frequent than assumed, be it accidental (e.g., snares or poison) or directed.

The snares are aimed at wild boar, for control or sale, and have increased in some places given the abundance of wild boar and the associated complaints of damage to crops, particularly maize. Facilitating the killing of wild boar by shooting and battues (new legislation enacted in 2024 authorises wild boar hunting every night of the year in Portugal) also creates situations of spontaneous organisation of informal ‘hooks’ (small battues) which can increase the likelihood of illegal killing of protected species.

4.1.5.3 Attitude index towards wolf presence

In the 2019 analysis, a T-test for paired samples showed no significant differences between the open question “Do you think wolves can live in this region?” with the same closed question using a Likert-scale response ($t=0.253$; $p=0.801$), meaning that people answered in a similar way to an open question or to a Likert-scale closed question. Results were also similar between responses given to that open question, and an attitude index computed with 5 questions regarding wolf presence using a Likert-scale of responses ($t=-1.844$; $p=0.068$). This result indicates that both methods are complementary as the open questions allowed us to understand themes contested by actors and that with experienced interviewers and data analysts it is possible to obtain similar quantitative results.

The attitude index, calculated for each interviewee, varied among profiles (Figure 18). The profiles of nature activity promoters and conservation practitioners (conservation actors) clearly show a very positive attitude towards wolf presence, whereas all the other profiles spread along the scale. This result is particularly important concerning livestock breeders who could have been expected to show a stronger animosity, considering that they are the ones dealing directly with wolf damage.

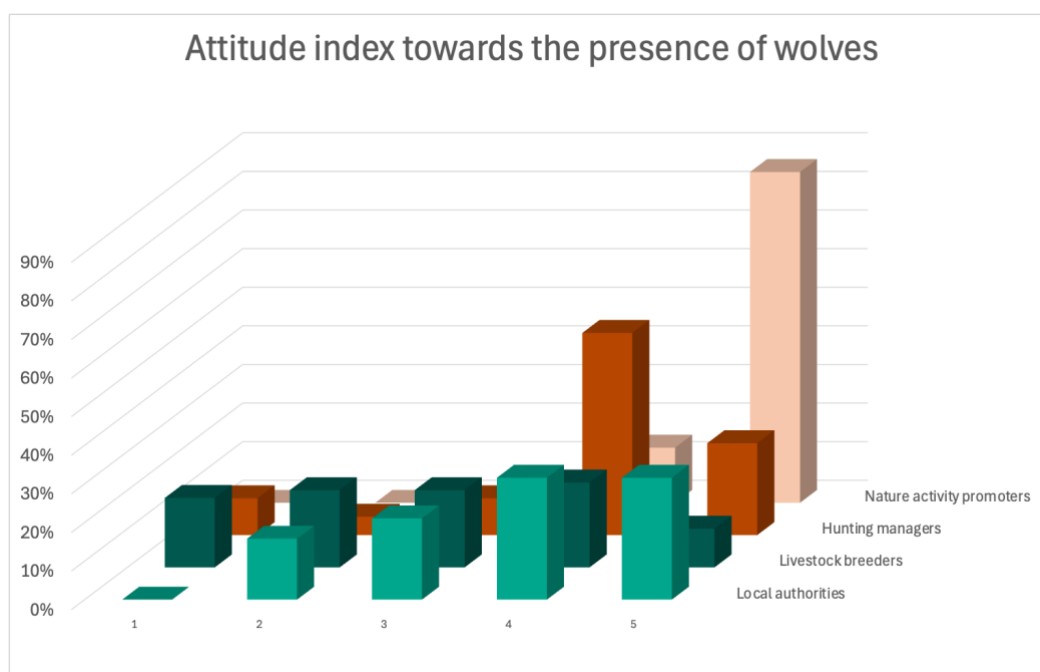


Figura 18. Index of attitude towards the presence of wolves, by profile of key actors, expressed in percentages of interviewees (within the profile), 2023/24. Calculated from the interview questions using a Likert scale 1- strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

Positive and negative attitudes towards wolf presence were spread across the project area and results showed a variability of attitudes within the same parish or neighbouring parishes (Figure 19). However, there are some areas where certain kinds of attitudes seem more prevalent.

These results are similar to those of 2019, with positive highlights:

- Livestock breeders maintaining a variable positioning from very negative to very positive, rather than just being against wolf presence;
- Local authorities never positioned themselves completely against (which had happened before);
- The neutral positions decreased slightly in the profiles of hunting managers, local authorities and livestock breeders, which could mean an increase in interest in the wolf issue.

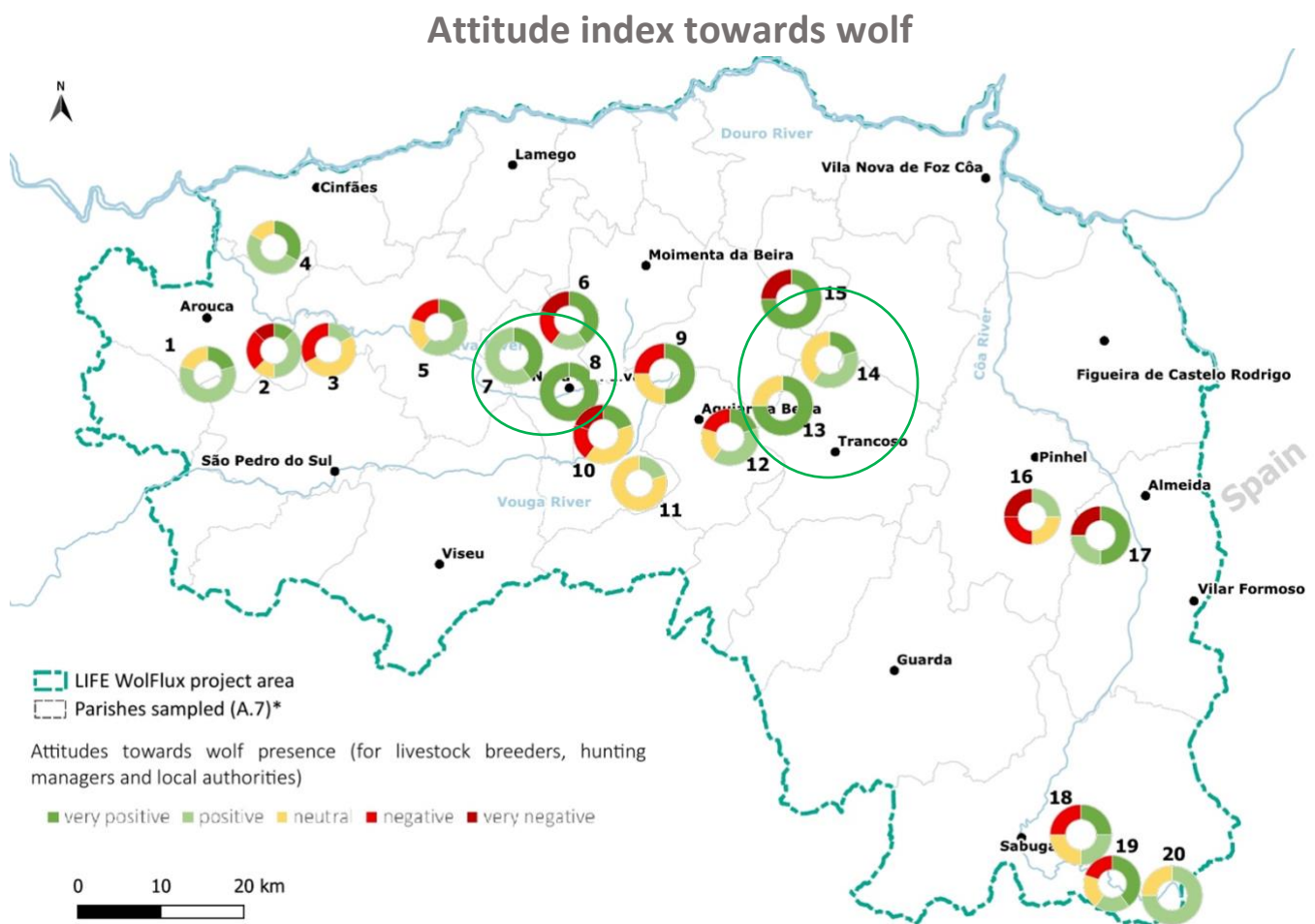


Figure 19. Spatial distribution of the index of average attitude towards wolf per parish in 2019. Only profiles of local authorities, livestock owners and hunting areas were considered (n=96). The attitude index for each respondent was recorded to fit in five categories for a better presentation of the graph: very negative [1-1.80], negative [1.81-2.60], neutral [2.61-3.40], positive [3.41-4.20] and very positive [4.21-5]. Green circles highlight areas with prevalence of positive attitudes. Parishes' numbers are referred in Figure 1

In 2023/24, the geographical variation throughout the study area was also explored graphically. Attitude indexes were analysed by groups of parishes. The parishes were grouped according to geographical proximity, similar characteristics and the potential influence of the same wolf packs. Without prejudice to other possible analyses, Figure 20 summarises the variation, highlighting the following:

- There are still two groups of parishes where there are no more extreme positions against the presence of wolves;
- The group of parishes Reboleiro / Sebadelhe da Serra / Beselga remains one of the most positive, although it has been one of the areas with the most damage in the recent past;
- The most negative group of parishes is Serras de Freitas, Arada and Montemuro, continuing the trend of 2019. It corresponds to the most mountainous area with a large pack (6 to 8 individuals), a fact known among some interviewees. This result differs to other areas with long term wolf presence where local actors are more positive about the species;
- Also in the easternmost border areas, where the presence of wolves is rarer or more irregular, there are more opposing positions, especially Manigoto/UF Azinhal, Peva and Vale Verde.

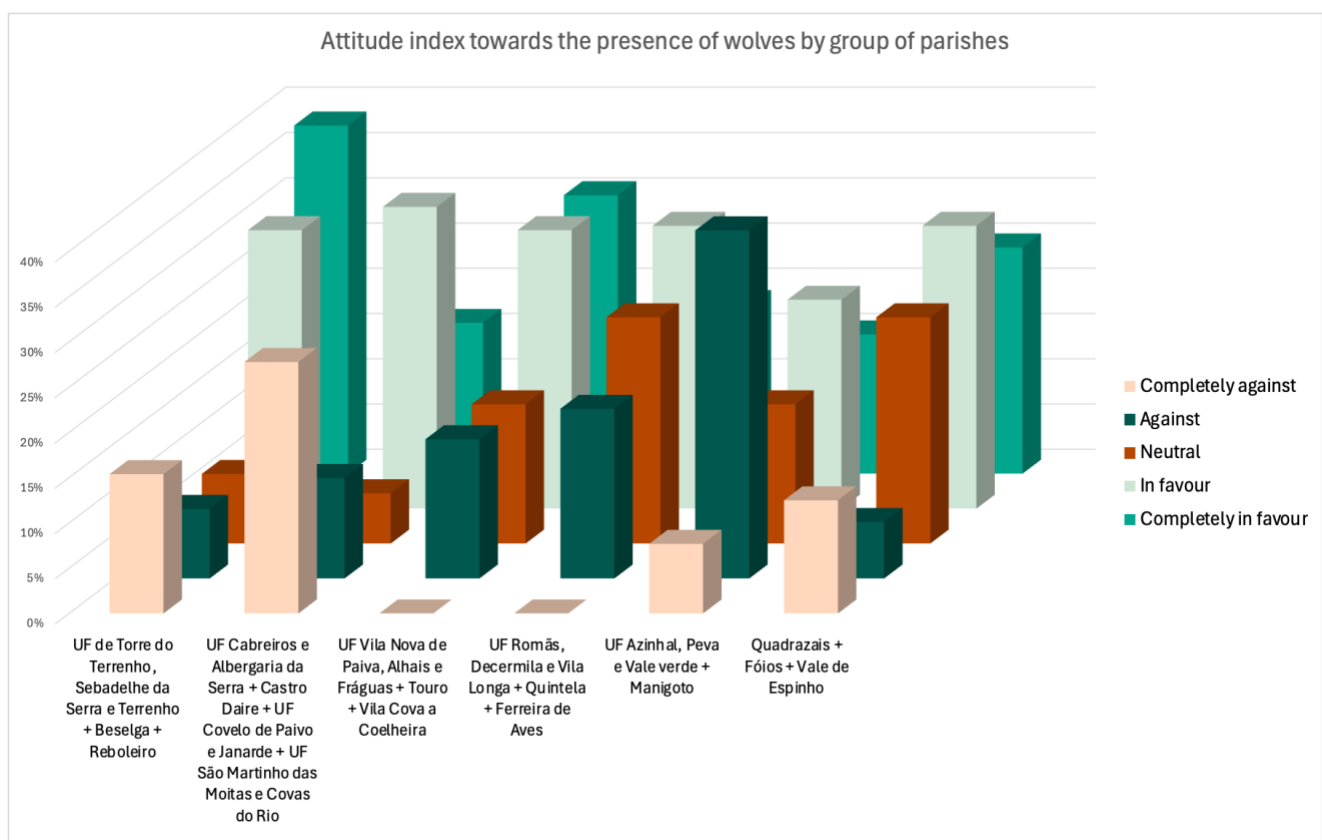


Figure 20. Geographical variation in the study area of the attitude index towards the presence of wolves, 2023/24. Percentages expressed in number of interviewees in the total of their profile, distributed in index ranges from 'completely against' to 'completely in favour'

4.1.5.5 Tolerance index towards wolf presence

In order to identify social barriers to the species, an intolerance index was also created complementary to the attitude index for the 2019 survey, showing that 55% (n=64) of the interviewees exhibit some kind of intolerance. Of those, 31% showed low or very low values of intolerance (scores 1 and 2), 24% values over 3 and only 9 actors had 5 or more responses showing intolerance (e.g., “the wolf is not needed here”).

Nature activity promoters and conservation practitioners showed a strong tolerance towards wolves (Figure 21). The highest levels of intolerance (score 4 and above) were registered among livestock breeders, local authorities and hunting managers. Livestock breeders showed a heterogeneous position of intolerance toward wolves, being the group with the most negative positions. However, almost half of the livestock breeders interviewed (n=22) showed very low or no intolerance towards wolves.

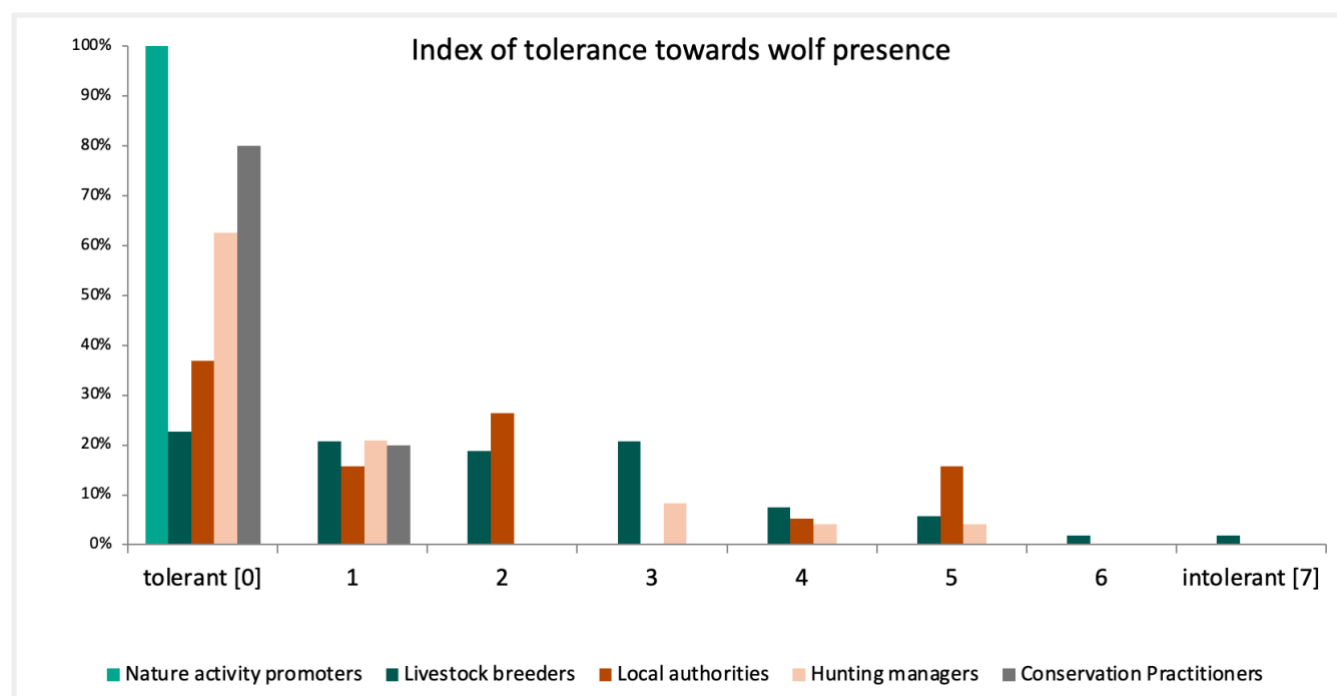


Figure 21. Index of tolerance-intolerance by profile scoring, 2019

Intolerance towards wolf presence was registered in almost all parishes in medium to high level (scores 3-4), although in almost all parishes there are also tolerant key actors. The highest values of intolerance (scores >4) were registered in Covelo de Paivó, Castro Daire, Manigoto, Vale Verde, Quintela, Ferreira de Aves, Souto de Aguiar da Beira and Vale de Espinho.

The main areas where intolerance could create a social barrier for wolves are highlighted with red circles in Figure 22. On the other hand, the highest proportion of tolerant key actors was found in the parishes of Vila a Cova à Coelheira, Vila Nova de Paiva, Reboleiro and Beselga, within the ranges of the packs of Leomil and Trancoso. Even though some exceptions exist (Vila Nova de Paiva), intolerance towards wolf presence was variable among the key actors interviewed in a parish or neighbouring parishes, finding cases where positions were very polarised (e.g., Manigoto)

Intolerance index towards wolf

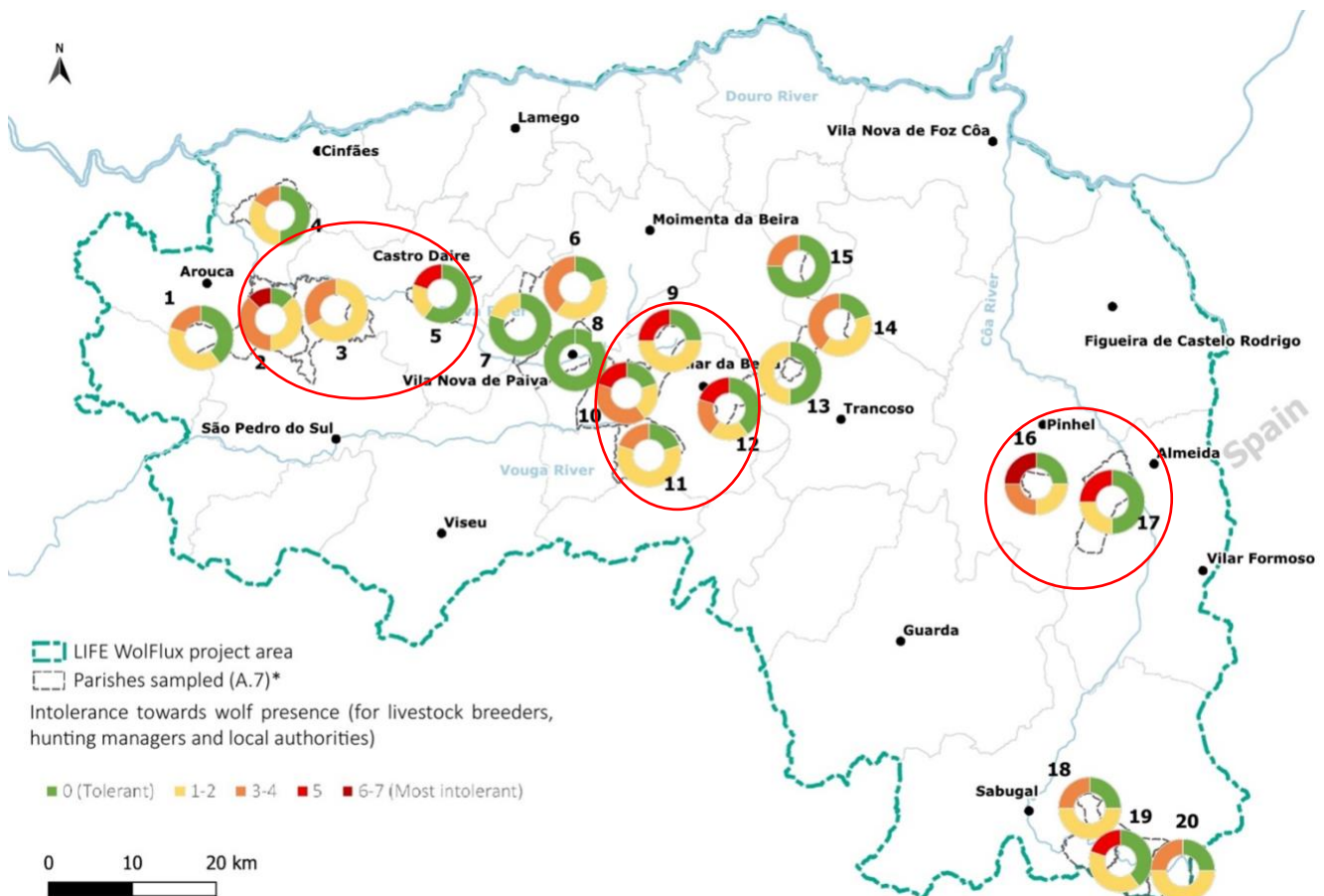


Figure 22. Spatial distribution of the index of intolerance towards wolves per parish, 2019. Only profiles of local authorities, livestock owners and hunting areas were considered (n=96). The intolerance index ranges from 0 (no intolerance) to 7 (most intolerant). Red circles represent areas where intolerance might be higher. Scores were represented in the map in 5 categories in order to homogenise with the 5 categories of attitudes and facilitate the interpretation of colours in the map. Parishes numbers are referred in Figure 1

4.1.5.6 Index of fear

An index of fear assessed that 45% (n=53) of interviewees in 2019 expressed some kind of concern or fear towards wolves. The species was considered dangerous for humans in an expressive way. Fear of wolves exists in parishes with a long record of wolf presence, in areas of recent recolonisation, but also in parishes where the species is absent or very rare (Figure 23).

There is a coincidence in the parishes where fear of wolves was higher (red circles in the map) and the ones with negative attitudes and intolerance, with some exceptions.

Fear index towards wolf

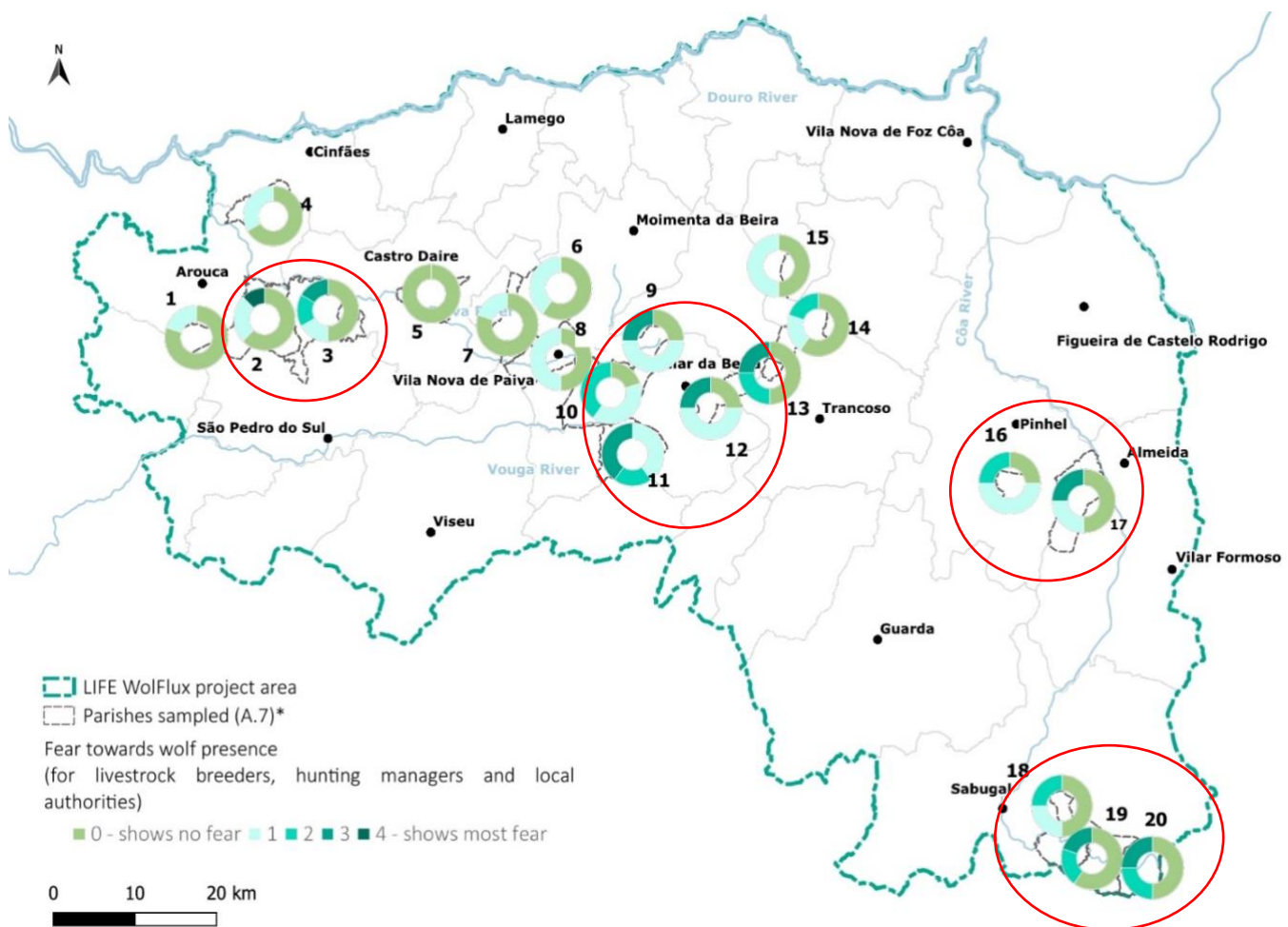


Figure 23. Spatial distribution of the index of fear towards wolves per parish, 2019. Only profiles of local authorities, livestock owners and hunting areas were considered (n=96). The fear index ranges from 0 (no fear) to 4 (highest value of fear). Red circles represent areas where fear is more prevalent. Parishes' numbers are referred in Figure 1

4.1.5.7 Factors associated to attitude, intolerance and fear

In 2019 analysis, attitude and intolerance were confirmed to be inversely correlated ($r=-0.783$; $p<0.001$). Considering that intolerance was registered only among hunters, livestock breeders and local authorities, this analysis was done only for these three profiles. This characterisation highlighted the following factors as the main ones to significantly influence attitude and intolerance among the interviewees:

- **Type of experience associated with seeing a wolf in the wild:** Those who describe the experience of seeing a wolf in the wild as something positive have a significantly more positive attitude towards wolf presence. This positive experience was described by nature activity promoters, livestock breeders, hunting managers and nature conservation practitioners.
- Similarly, intolerance towards wolf is significantly higher among those who describe the experience of seeing a wolf in the wild as something negative (45 out of 117 cases), which were mostly livestock breeders who encountered the species on an episode of depredation.
- **Those who believe in the widespread rumour that wolves are secretly being reintroduced in Portugal** showed higher levels of intolerance. Livestock breeders were the profile that believed the most in this rumour ($n=21$).
- **Agreement with the use of snares in certain situations is associated with intolerance.** Ten livestock breeders, whose intolerance spread between levels 2 and 7, agreed with the use of snares. The use of snares was not referred to be directed at the wolf but rather to catch wild boar in some cases. A dominant way of relating with wildlife, expressed by the right to capture and control wild species is related with this opinion. None of the hunting managers agreed with the use of snares.
- **Having heard about others with damage caused by wolves on livestock** being significantly related with some negativity towards wolves and intolerance. This variable is linked to livestock breeders. Only six out of 52 had not heard about wolf depredation on others' livestock. In all cases, people mentioned that they got the information about the damage of the wolf through word of mouth. This feeling of solidarity with neighbours or among livestock breeders was previously noted (Espírito-Santo, 2017).
- **Breeding livestock:** This variable had a strong association with a negative attitude. The activity of breeding livestock is linked to an intolerance towards wolves even if most of them have an intolerance score of 3 or below not being very intolerant.
- **Age and length of living in the region:** The youngest interviewees and/or the ones who live in the region for a short period of time were more positive towards wolves than oldest generations.

Positive attitude and fear have an inversely correlated relationship (2019, $r=0.361$; $p<0.001$): the most negative interviewees are also the most fearful of wolves, which is a similar result to what has been found in previous studies in the region South of the Douro River (Espírito-Santo, 2007, 2013, 2017). Not having activities in wolf habitat and having less or no direct experience of wolves seems to be related to being more fearful of the species. For example, high fear scores were registered in 21% of local authorities, with less direct experience of wolves. On the other hand, living or working in an area with records of wolf poaching or illegal activities was not significantly related to intolerance. Illegalities can be isolated actions from individuals and do not necessarily correspond to a negative predisposition of the community. Nevertheless, results should be taken with caution and considered as incomplete since records of wolf poaching might be underestimated and it was not possible to have access to full official records of illegalities.

Exploratory analyses in 2019 showed no significant correlation between the average number of wolf damages per parish per year and attitude, intolerance or fear, suggesting that interviewees were not more likely to be intolerant or negative to wolf presence because of living in an area with more attacks. This was an unexpected result that should be further investigated. It should be taken with caution, though, as parishes with lower numbers of attacks might have been underrepresented and a sampling design specific for this aim was not set.

A more detailed analysis was done for livestock breeders by exploring several variables of potential risk of depredation and rise of conflict: (i) number of animals (livestock); (ii) breeding cattle; (iii) occupancy (main job as livestock breeder or not related to agriculture); (iv) had damage on livestock caused by wolves; (v) type of measures carried out after damage caused by wolves; (vi) position on the best solution to avoid wolf depredation. None of the tested variables allowed distinguishing subgroups of livestock breeders with different levels of intolerance, showing the complexity of understanding why some breeders might be more tolerant than others. It was expected to see livestock breeders with damage caused by wolves on their livestock as the most intolerant, but in fact this is not evident from the tests. It seems that it is not the fact of having damage, but the fact of hearing about others who have had damage caused by wolves on livestock that is associated with a negative attitude.

Only the variable “What measures were taken after having damage caused by wolves on livestock” showed some clues on livestock breeders’ attitudes toward wolves. Those that have implemented preventive measures after wolf damage showed significantly more positive attitude than the ones who solely wait for the State to financially compensate them for damage.

REGARDING THE 2023/24 RESULTS, THE RELATIONSHIP BETWEEN ADDITIONAL FACTORS AND ATTITUDES WERE EXPLORATORILY POINTED OUT:

- **Owning a livestock dog:** there were no major differences in the attitude towards wolves between livestock breeders with and without livestock guarding dogs, an average of 2.92 (n=21, with a dog) versus an average of 3.01 (n=23, without a dog);
- **Gender:** women (n=14) had an average attitude of 3.10 versus men's average attitude of 3.35;
- **Having taken action following damage:** lower average attitude index compared to those who did not take any action (3.19 versus 3.35);
- **Having emigrated/lived part of their lives outside the region:** interviewees with experience of living outside their area of residence appear to be more tolerant of the presence of wolves (average attitude index 3.34 versus 3.25 for long-term residents of the region);
- **Knowing Rewilding Portugal:** there seems to be no difference between interviewees who did not know the organisation or had only heard of it (average attitude index 3.35) and those who knew the association or Rewilding Portugal's technicians (average index 3.34).



Informative sessions in two villages (Rewilding Portugal)

4.2 ROE DEER

Since 2019, roe deer has been associated with positive values and emotions by the interviewees. Most of them described the roe deer, known locally as 'cabra brava', as a beautiful animal, and its vigour and speed were also frequently mentioned and admired. In 2023/24, the vast majority of key actors said that it exists in the region (n=81, 84%), and they highlighted its beauty ('beautiful', 'handsome'; n=18) and speed (n=9).

As was the case in 2019, although it is not allowed to hunt roe deer in the study area, 8 interviewees mentioned in 2023/24 illegal hunting, both existing cases and potential hunting, associated with the damage that is already beginning to be experienced:

*They're starting to kill them because they're going to the plantation (new cultivated trees).
(Estão a começar a matá-los porque vão à plantação.)*

*Deviam estar em zonas protegidas. Caso contrário, vão ser alvo de caça ilegal.
(They should be in protected areas. Otherwise, they'll be poached.)*

4.2.1 PERCEPTIONS ABOUT ROE DEER: ADVANTAGES AND DISADVANTAGES

With regard to the advantages and disadvantages associated with the presence of the roe deer, in 2023/24 around half of the key actors mentioned both, while around ¼ mentioned only advantages and 19% mentioned only disadvantages. Compared to 2019, there was a slight increase in the consideration of disadvantages associated with the roe deer (Figure 24).

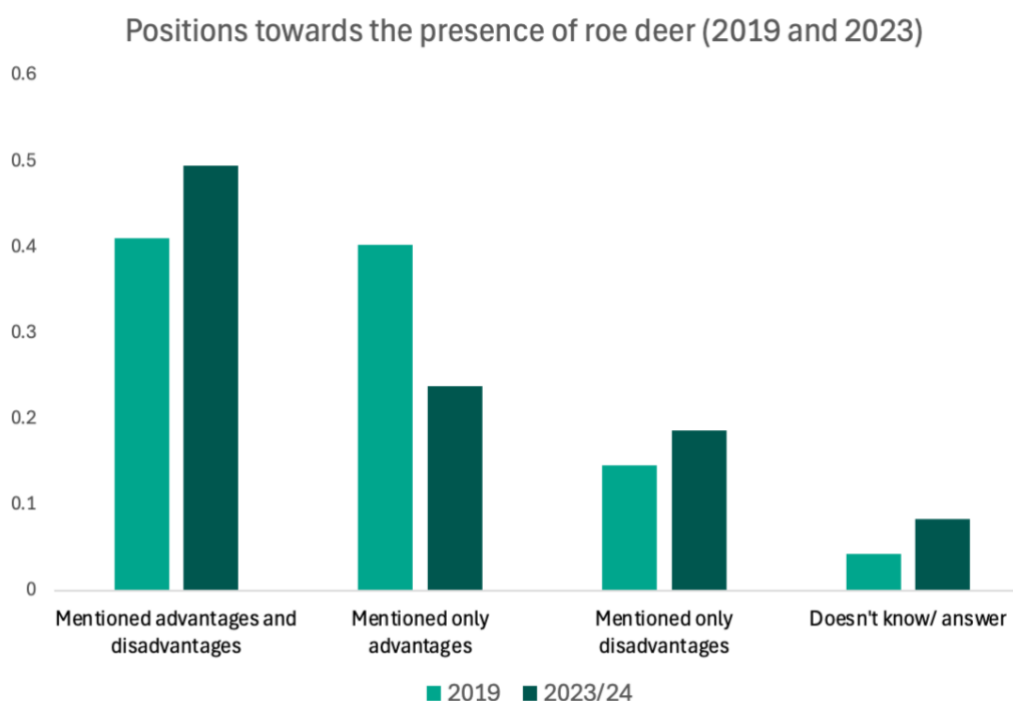


Figure 24. Position of key actors regarding the presence of roe deer in 2019 and 2023/24

Among the main advantages associated with the presence of the species, we highlight the fact that it is considered food for the wolf and consequently reduces predation on livestock (Figure 25). The roe deer was, in fact, mentioned by the interviewees as the wolf's main prey, despite some scepticism about the wolf's ability to catch the roe deer, given its speed:

They [the wolves] won't attack the sheep if their bellies are full, because the roe deer don't have dogs to defend them. But of course it's also difficult for them to hunt these wild goats [...] [The wolves] don't know if they have the speed for them.

(Eles [lobos] se andarem com a barriga cheia já não vão atacar as ovelhas, porque os corços não trazem lá cães para os defender. Mas claro que se torna difícil também caçarem essas cabras-bravas [...] [Os lobos] a nível de corrida não sei se têm pedalada para elas.)

While wolves attack wild goats, they don't attack our animals.

(Enquanto lobos atacam cabras bravas, não atacam os nossos animais.)

In addition to this advantage, the potential for hunting, the management of scrubland and the resulting contribution to preventing forest fires were also mentioned, as well as the possibility of sightings and the personal enjoyment of seeing roe deer:

It's good in terms of hunting and it's beautiful in terms of nature, beautiful to look at. Approach hunting should be phenomenal, when you can do it.

(É bom em termos cinegéticos e é bonito em termos de natureza, bonito de se ver. Caça de aproximação deve ser fenomenal, quando se puder fazer.)

They clear some brambles. [...] They're kind of sappers.

(Limparam umas silvas. [...] são meio sapadores.)

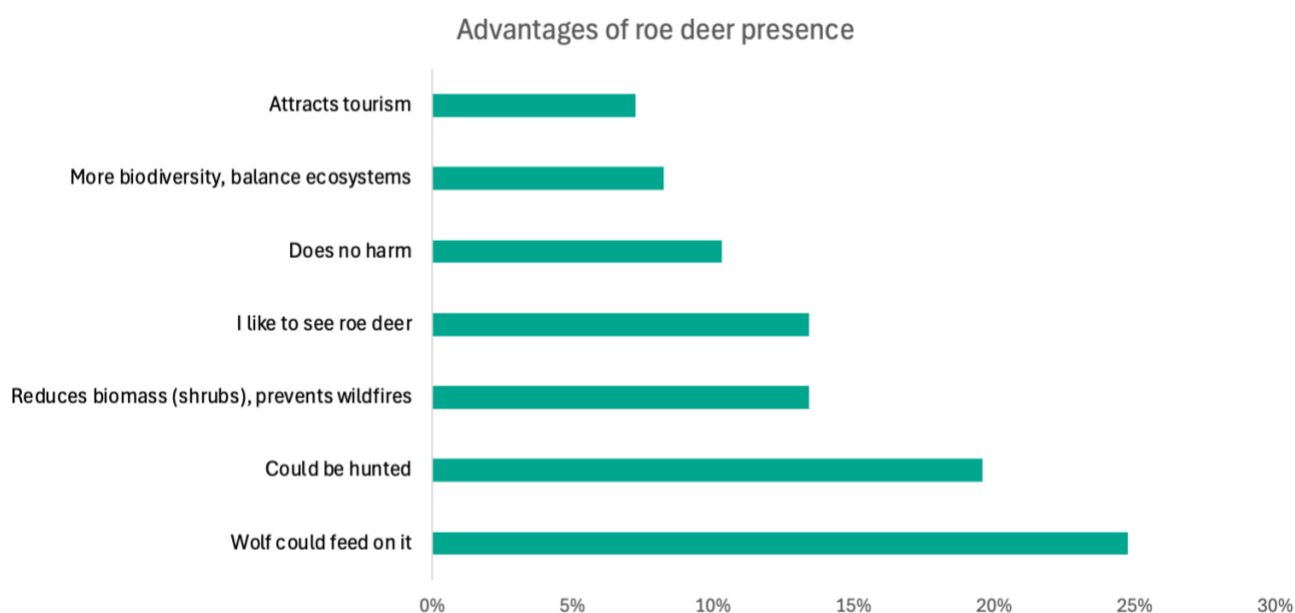


Figure 25. Advantages of the presence of roe deer mentioned by interviewees (n=97), 2023/24

As for the disadvantages of the presence of roe deer (Figure 26), these are mainly associated with the damage they cause to tree plantations (mentioned by more than half of the respondents), which they already cause (35%) or could cause (17%), especially the males. For some of the interviewees, this damage is less significant than that caused by the wild boar in agriculture, which was spontaneously mentioned as a problem by 69% of the interviewees, seen as a 'plague' and a 'pandemic' whose population is considered to be 'out of control'. Nevertheless, there is also some anger associated with the damage caused by the roe deer:

The wild goat is causing us more damage [than the wolf] because of the (fruit tree) plantations.

(A cabra-brava, a nós, está a dar mais prejuízo [do que o lobo] por causa das plantações.)

It destroys new crops, today it's the beginning, tomorrow it's a pandemic. The wild goat hasn't brought us anything good.

(Destroi plantações novas, hoje é início, amanhã, pandemia. A cabra-brava não nos trouxe nada de bom.)

It has caused a lot of damage to the chestnut plantations, and some people are angry.

(Tem dado muito prejuízo nas plantações de castanheiros, há por aí quem esteja revoltado.)

They tear the bark off the chestnut trees and they end up drying out. Chestnut trees are one of the main sources of income and this causes a lot of loss.

(Rasgam a casca do castanheiro e acabam por secar. O castanheiro é uma das principais fontes de rendimento e dão muito prejuízo.)

As a result of the damage, hunting managers have already requested authorisation to correct the density of the roe deer.

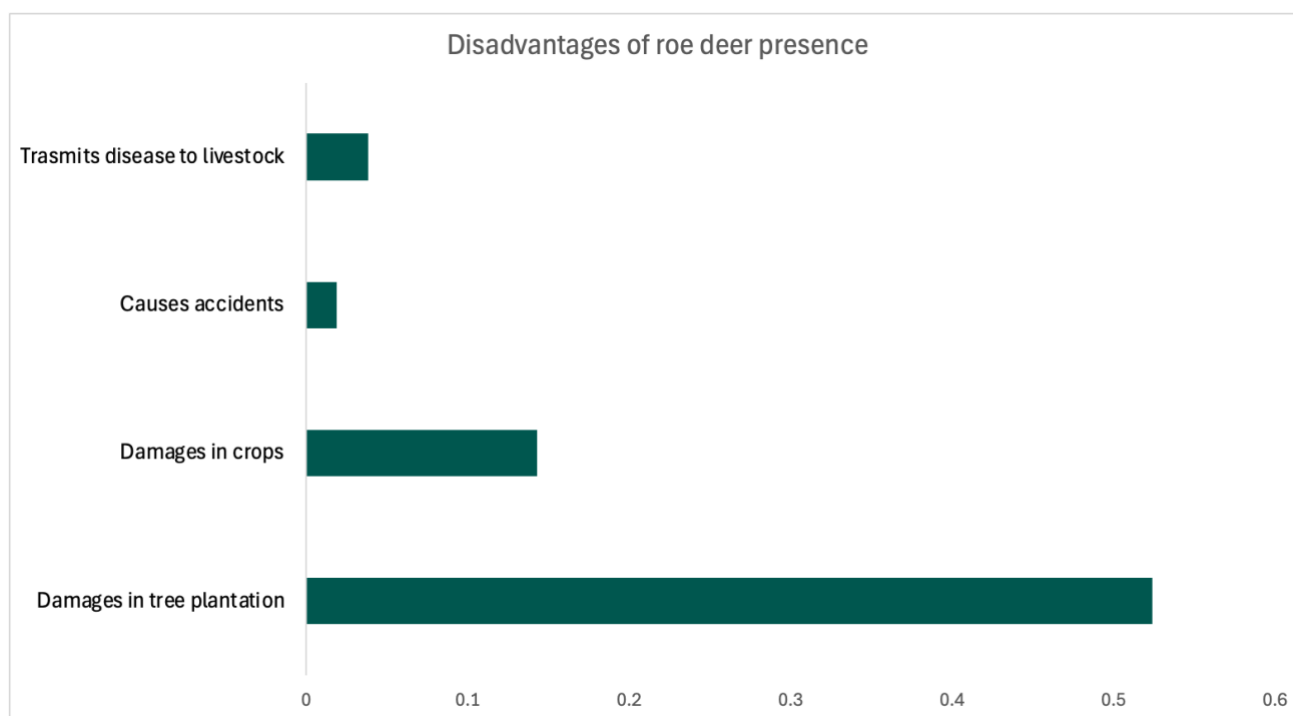


Figure 26. Disadvantages of the presence of roe deer mentioned by the interviewees (n=97), 2023/24

4.2.2 PERCEPTIONS OF ROE DEER REPOPULATION ACTIONS

Regarding roe deer repopulation actions, one of the measures which was initially included in WolFlux but not carried out (Action C.4), half of the respondents agree with them (Figure 27). Of these, some agree only under certain conditions: if they are carried out in closed areas (so as not to cause damage or to avoid illegal hunting), if they are in small or controlled numbers (so as not to cause damage) or if there is compensation for the damage caused.

Nevertheless, more than a quarter of those interviewed do not agree with repopulation, mostly livestock breeders. The reasons for this are the damage they already cause or could cause and the fact that they consider that there are already too many of them. There were also those who considered that there are already enough roe deer, so there would be no need for future action.

Do you agree with roe deer repopulation?

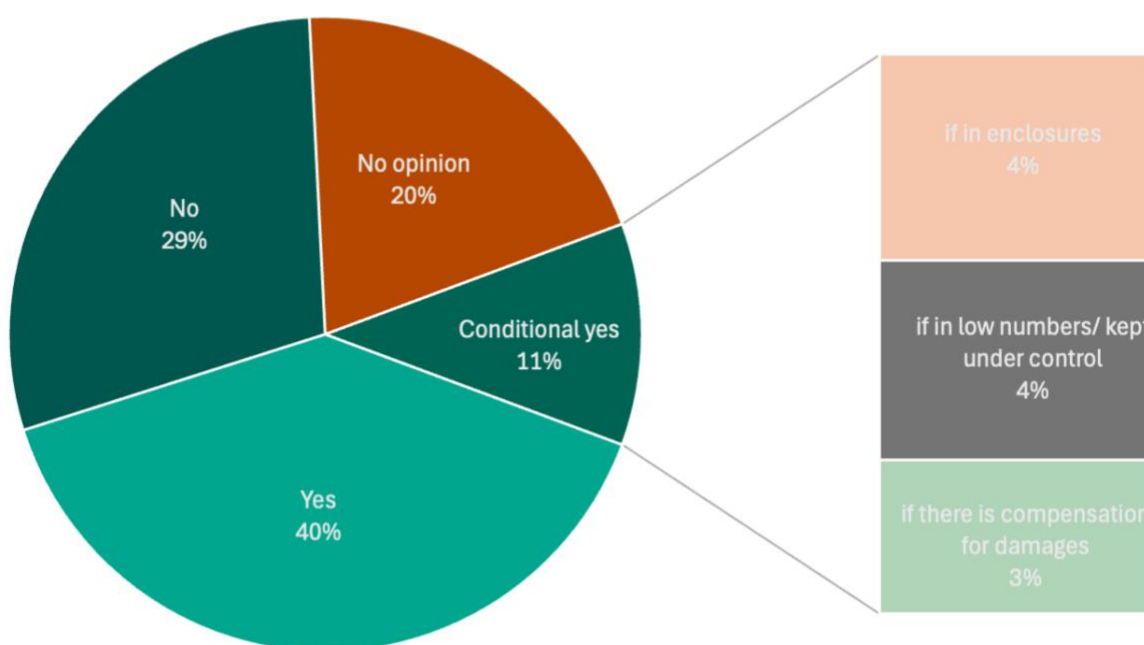


Figure 27. Opinions of the key actors with regard to roe deer repopulation in the region (n=97), 2023/24

4.3 REWILDING PORTUGAL AND WOLFLUX

4.3.1 KNOWLEDGE AND OPINIONS ABOUT REWILDING PORTUGAL

Between 2019 and 2023/24, there was a very significant increase in the number of key actors who were aware of Rewilding Portugal: from 8% (n=7) to 48% (n=47), respectively. There are, however, some differences between groups of key actors. In all profiles, except nature activity promoters, more than ¼ of those interviewees said they knew about the organisation (Figure 28). On the other hand, the group of livestock breeders was the one that knew Rewilding Portugal the least or had only heard of the organisation.

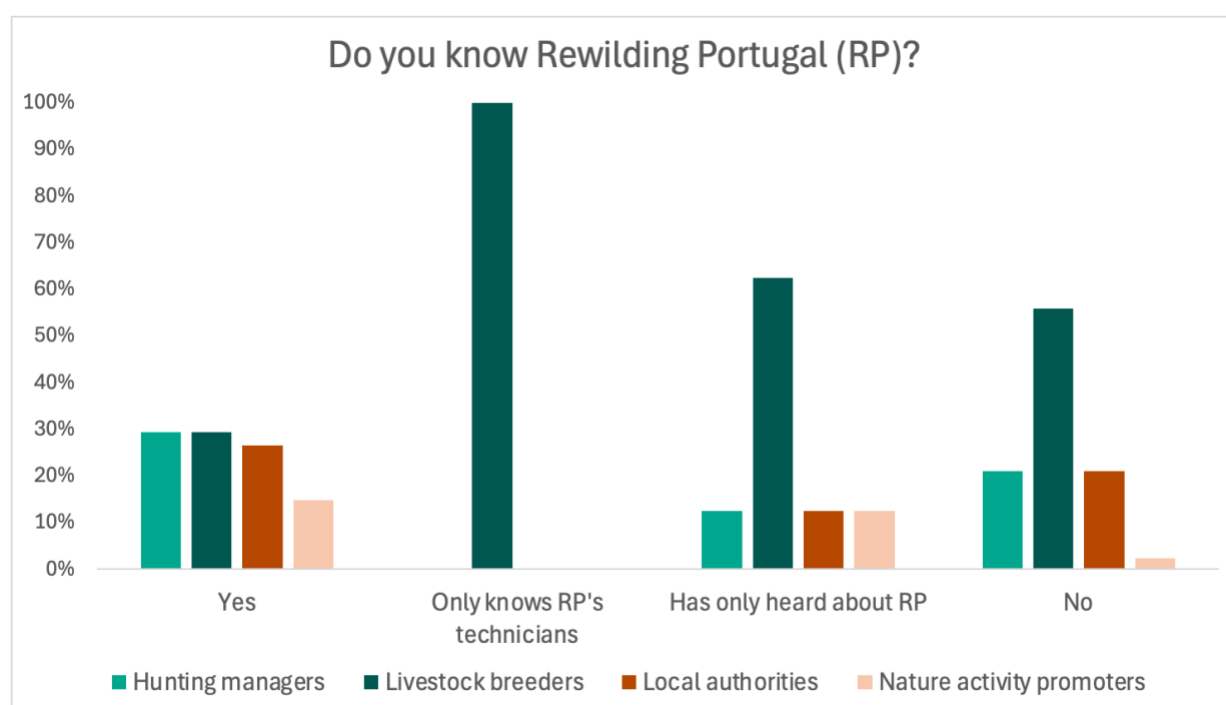


Figure 28. Percentage of interviewees who know or do not know about Rewilding Portugal, by profile of key actors (n=97), 2023/24

Among those who said they were familiar with Rewilding Portugal, eight had only heard of it and were unaware of its scope and activities (all profiles, especially livestock breeders) and four recognised Rewilding Portugal only by the name of two of the technicians, all of them livestock breeders. The rest said they were familiar with the areas of intervention and/or some of the activities and projects carried out:

- Actions to improve wolf and roe deer habitat (e.g., ponds, plantations, intervention on lands);
- Roe deer repopulation;
- Awareness-raising campaigns;
- Support measures for livestock breeders under WolFlux (see below);
- Release of Tauros and Sorraia horses;
- The organisation of hikes;
- Tourist accommodation and boosting the local economy.

Two interviewees also said that Rewilding Portugal releases wolves.

From the actions listed above, in reality, roe deer repopulations were not carried out in the LIFE WolFlux and wolf releases never took place in Portugal.

In what concerns opinions about the organisation, both positive and negative aspects were highlighted. Starting with the former, the support given to farmers, the initiative to protect wildlife, the valorisation of native species, the creation of new jobs and the valorisation of the territory by bringing people from outside were highlighted.

As for criticism or less positive aspects, the following stand out: the fact that the organisation's name is in English, which is not always identifiable or causes confusion; the issue of (dis)responsibility, for example, for the damage caused by the roe deer; the choice of some hunting areas over others, causing tensions between those that receive support from the project and those that do not.



Nature observation activity organised by Rewilding Portugal

4.3.2 NATURE AND WOLF TOURISM

On the subject of nature tourism in the region, although it seems to be a growing activity and there is demand, particularly from foreigners, some promoters of nature activities have shown that they have to develop various activities in a very wide region, from canoeing to hiking, rafting, etc. In more inland areas, there seem to be limitations on the part of participants who, by having to pay for accommodation and travel, do not necessarily adhere to an organised programme.

People are limited by the distance and the tolls, they don't come anymore because of the costs. We tried to put together packages with accommodation, but they didn't want it either. If people can't afford it, they don't do the programme.

(As pessoas estão limitadas pela distância e pelas portagens, não vêm mais por causa dos custos. Tentamos fazer pacotes com alojamento mas também não quiseram. As pessoas se não puderem não fazem programa.)

According to some of the nature activity promoters interviewed, there does not seem to be a demand for tourism specifically related to the wolf, more associated with other regions of the country (Gerês, for example), nor any particular interest in the species.

4.3.3 LIFE WOLFLUX PROJECT: KNOWLEDGE AND OPINIONS

Similar to what was said earlier about knowledge of Rewilding Portugal, between 2019 and 2023/24, there was an increase in the number of key actors who know about the WolFlux project, even though it is still unknown to the majority. While 91% were unaware of the project in 2019, this percentage dropped to 64% in 2023/24 (n=62). This is relevant if we consider that in 2019 those who knew about the project were mainly conservation technicians, who were not part of the sample in 2023/24.

Here, too, there are some differences between the profiles of key actors, with the highlight being the fact that around half of the 'Yes' and 'No' answers were from livestock breeders (Figure 29).

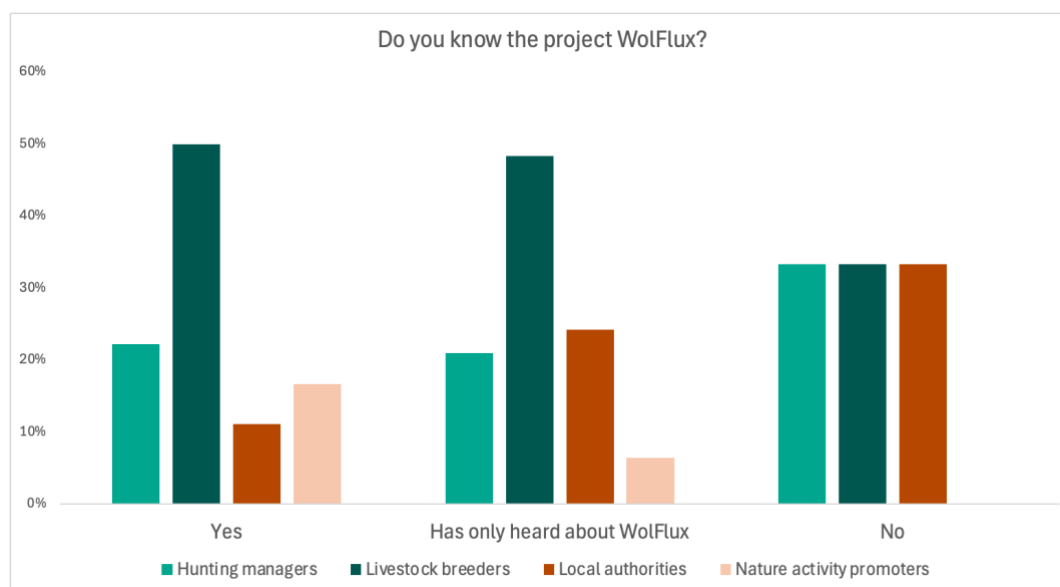


Figure 29. Percentage of interviewees who know or do not know about the WolFlux project, by profile of key actors (n=97), 2023/24

The key actors who are familiar with WolFlux associate it with the wolf ('it's the wolf [project]'), despite some confusion with the NGO Grupo Lobo, mentioning the monitoring of packs, the reintroduction and feeding of wolves and livestock protection measures. Information panels about the project were also mentioned, as were the awareness-raising activities in which some of the interviewees took part and the valorisation of local products. Some did not associate the name of the project with the measures to protect livestock, for example, and the name generated some strangeness among some interviewees, as did Rewilding Portugal.

5. DISCUSSION

This study has contributed to create an ethnoecological portrait of the social context in the project area and allowed to answer the main questions of this study and the objectives of action: to identify relevant stakeholders and target areas for the development of project actions, to describe attitudes towards wolf and roe deer, and to define a set of recommendations for the project LIFE WolFlux. Moreover, it has contributed to the following specific objectives of the National Wolf Action Plan (Despacho 9727/2017 de 8 de novembro): 2.8.4. Assess public attitudes towards wolves within stakeholders, and 3.1.4. Create collective learning about the wolf.

The methodology used, with an Anthropological approach but with components of Human Dimensions of Wildlife Management—applied by the first time in the project area—, proved very useful to obtain information not only about positioning and attitudes of key actors towards the wolf, but also the factors underlying them and the problems and solutions proposed by the interviewees themselves. Having access to the spontaneous discourse of key actors about the wolf was crucial for the project team to understand human-wolf relationships in depth, as well as the sociocultural context.

Even though no significant differences were found between the methods used to assess positioning (Likert scales and open questions), attitude and intolerance towards wolves, there are some considerations to be made when interpreting the results. All methods showed that approximately a quarter of the key actors interviewed manifested a relevant intolerance and negativity towards wolf presence, to levels of “wolves should not exit here” or “I’m against the wolf”. However, the level of positivity is different for each index presented.

On the other hand, the open question “Do you think the wolf can live in this region in freedom (in the wild)?” brought more information on reasons behind the opinion and nuances to the discourses than if we had only used a Likert scale. When answering the question, interviewees attended not only to their opinion on wanting to have wolves in their parishes, but also to the environmental and social conditions and the position they hold within their community. For this reason, they considered factors such as “if the mentalities changed”, “if they had more food” or “if they exist in low numbers”. This, together with the cost-benefit analysis of wolf presence (advantages and disadvantages), is extremely useful to understand the limitations and opportunities perceived by the local actors for coexistence with wolves in the project area. A simplification of the results in positive and negative attitudes would not have given access to this information. Therefore, one conclusion of the study is that, while studying wolf perceptions and public attitudes, free discourses are an important source of information and should always be registered and analysed *a posteriori*.

Other studies adopted non-random sampling and focused on the relationships between humans and large carnivores and the narratives of people engaged in those relationships. The anthropological approach proved to contribute to a wider holistic view of conflicts and be informative to conservation projects (Lescureux and Linnel, 2010; Lescureux et al., 2011; Lindquist, 2000).

Concerning the comparison of attitudes between 2019 and 2024, we found an increase of contestation and overall a more negative attitude towards wolf presence among actors. The results should be taken with care as a straightforward comparison is not advised. Not all actors were sampled in both periods and other methodological details might have interfered. Socioeconomic context between 2019 and 2024 with pandemic, inflation of prices, political changes in the country, involving agricultural subsidies and an increasing alarmism about wolf presence in the European context was not favourable to our respondents.

Considering a social science theoretical framework, a positive change in local communities during a short time and due to a conservation project was not to be expected, particularly in relation to such a controversial species like the wolf. Although positive positioning is present and ambiguity can be explored, our social survey was sensitive to pick up discontentment and opinions which are usually not heard. It was initially designed with the aim of identifying and understanding social barriers that might be hampering wolf recovery.

In any case the scenario is prone to more negativity and challenges short term solutions: traditional knowledge on preventing damage caused by wolves is disappearing, few livestock breeders have taken the initiative to apply preventive measures, owners of isolated flocks became more vulnerable to predation and damage threatens the continuation of the activity. Damage becomes less and less tolerable as reimbursements and support for measure does not compensate for all losses. As in Mink & Mann (2022), there might be a real threat that farmers will exit small ruminant farming in this scenario. This increase in vulnerability to predation and harder socio-economic conditions is happening alongside a reduction in coverage of wolf damage in the national compensation scheme. Although we cannot directly associate both variables, the increase of negative attitudes towards wolves in 2024 were in the same order of magnitude as the increase of discontentment of local actors, particularly livestock breeders with compensation schemes. Long-term studies and qualitative methodologies through which the voices and interests of actors can be better known help to understand coexistence scenarios.

5.1 TOLERANCE TOWARDS WOLF - TARGET GROUPS

Overall, key actors interviewed show tolerance or low levels of intolerance, as well as neutral or positive attitudes towards wolf presence. However, almost half of the interviewees think that certain conditions are still to be met for living with the wolf. This contestation, in particular improvement of the compensation scheme and livestock protection—both already pointed out by Espírito-Santo (2006)—should be attended to.

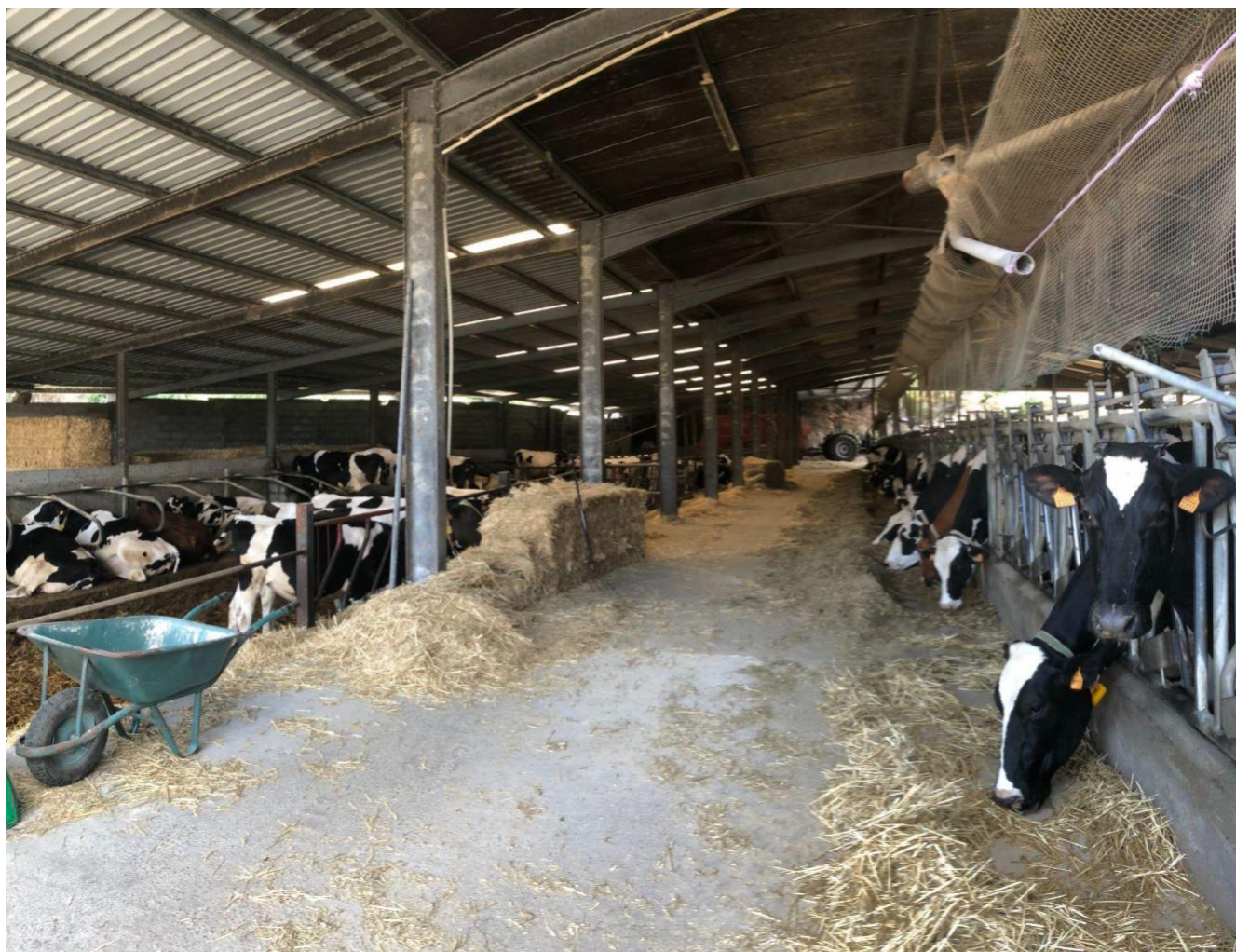
As the LIFE programme did not have the means to support the implementation and use of damage preventive measures on a large scale and in the medium/long-term, such a structural change would need more community funds through financial instruments such as the European Agricultural Fund for Rural Development (EAFRD), as well as coordinated efforts between the Portuguese government, associations and NGOs. EAFRD funds have already been used in Portugal to subsidise livestock guarding dogs. However, for these funds to be used effectively, they need to be accompanied by technical support and be accessible to a large number of livestock breeders. The project team has informally known of cases of livestock breeders that have received funds for livestock guarding dogs, but they did not know how to train the dogs for these tasks. Consequently, the dogs did not perform as expected. This can also play against damage prevention, as those livestock breeders can start believing that livestock guarding dogs do not work and spread this incorrect information.

Subsequently to social survey a general recognition of the importance of damage prevention LIFE WolFlux has created pilot cases and examples on the use of damage preventive measures, that aims to reach other livestock breeders and expand prevention in the landscape.

Even though the use of livestock guarding dogs and shepherds is still common in some areas—57% of the livestock breeders interviewed had guarding dogs, 40% shepherds or a combination of both—there are important changes in the traditional practices of livestock protection, as in other Southern European contexts. There is a gradual decrease of the number of shepherds and livestock guarding dogs, and of the knowledge to train those dogs, and practices of protection such as gathering cattle at night. The European agricultural policies triggered an intensification of cattle production for some areas and vulnerability to predation increased.

Therefore, there should be a better articulation between environmental and agricultural policies and a wider evaluation of the impact of incentives to livestock breeders.

For instance, nowadays, the most profitable husbandry in the project area is the extensive cattle farming, which is also the one that creates more conflicts with the wolf (Pimenta et al., 2018). This is because animals remain in the field all year round without any kind of protection and these farms are occupying and modifying some of the best habitats for wolves. This type of farming, promoted by European subsidies, has created a change in the paradigm of agricultural activities in the easternmost area of the project in the border with Spain, where small ruminants were dominant in the past. Livestock breeders of this area have lost the culture of living with the wolf and protecting livestock. Espírito-Santo (2013) showed that in this area in particular they generally have very negative attitudes towards the species and believe that they hold no responsibility in preventing wolf damage. Complementarily, in our surveys we have found that being proactive and implementing preventive measures is associated with more positive attitudes towards wolves compared to a passive position or expecting national authorities to solve the issues.



Indoors cattle farming in the study area

Moreover, the change in the Portuguese damage compensation scheme in 2017 might have exacerbated conflicts with the wolf and the issues pointed out by livestock breeders in this study have to be tackled, such as the changes in the amount received for some animals or the difficulty to access preventive measures like fences. Livestock breeders complain about the fact that, due to rural abandonment, damage concentrates on less agricultural holdings which can increase conflict with wolves.

Around a quarter of the key actors interviewed hold negative and intolerant positions against wolf presence, which are transversal to different profiles within the local communities (hunting managers, livestock breeders and local authorities). Future project actions should thus target them all. The number of interviewees with negative attitudes was higher among the profiles of local authorities and livestock breeders. This might be explained by the fact that they have a representative role in the community and tend to reject a species that might have a negative impact on part of the community (sense of fear, attacks on livestock). Local authorities can easily influence the opinion of the general public in their parishes and communities' willingness to work with conservation projects. Livestock breeders were expected to be the most contesting actors and are frequently found to be the most negative group (Bath, 1989; Blanco and Cortés, 2002). Our study found that this is not necessarily the case of all livestock breeders, and other studies south of the Douro River in Portugal have found more negative or polarised attitudes among the general public (Espírito-Santo, 2007; LIFE12 NAT/IT/807 LIFE WOLFALPS, 2018).

Previous Human Dimensions studies south of the Douro also reported neutral attitudes for hunters (Espírito-Santo, 2007, 2013). Livestock breeders of areas with a longer timespan of cohabitation with wolves were previously found to have neutral or moderately negative attitudes (Espírito-Santo, 2006, 2007), while those living in areas where wolves were recovering are strongly negative about wolf presence (Espírito-Santo, 2013). In this study, which has focused on selected key actors, attitudes of nature activity promoters and conservation practitioners were positive or very positive, and hunters are, overall, neutral to positive towards wolf presence. However, livestock breeders were a more variable profile, including very positive and very negative attitudes. This can be explained by the fact that the area surveyed is more heterogeneous than in previous studies south of the Douro. Negative attitudes of livestock breeders seem to be transversal to all the project area, occurring both in areas recently recolonised by wolves and in areas where their presence is stable and long-lasting. This would need to be further explored to find out more about the relationship between attitudes and coexistence with the wolf. In other European areas where the wolf was not present for a long time, like the Alps, livestock breeders opposed wolf conservation independently of actual wolf presence in their vicinity (LIFE12 NAT/IT/807 LIFE WOLFALPS, 2018).



Wild Boar hunters in study area

It might not have been realistic to expect a change from intolerance to tolerance among the most negative key actors in four years, even more considering the complexity of the relationships with the wolf that goes historically beyond the damage on livestock (Álvares et al., 2011; Lopes-Fernandes et al., 2016). The fact that all the key actors that recognised in four years' time that the project was positive, its actions useful and inclusive, could be considered a relevant positive impact. .

One of the most relevant findings of the project was that some livestock breeders are very tolerant and positive about wolves. Considering that this is the group that is directly impacted by wolf presence and that breeding livestock is one of the factors associated with intolerance towards wolves, these livestock breeders are extremely valuable examples. Their experience and points of view could be shared, taking advantage of their influence among peers. They are playing a very important role for wolf conservation that should be recognised. This study has served for the WolFlux team to contact them, which has facilitated collaboration.

The LIFE WolFlux has brought some of those livestock breeders in the region into round table seminars, peer-to-peer exchanges, interviews and videos. Some of them have even communicated in a positive way about damage prevention in their social media spontaneously.

Predation on livestock is a cause of animosity towards wolves (Bath, 2009; Naughton-Treves et al., 2003) and it could be expected that attitudes of key actors were more negative in areas with higher numbers of attacks on livestock. Thus, it was unexpected in this study to not find very negative attitudes in the three parishes surveyed in Trancoso municipality, which is one of the areas in the country with the highest impact of wolf predation (Pimenta et al., 2018). An exploratory analysis of all the data collected showed no association between living in parishes with higher numbers of attacks and intolerance nor attitude towards wolves. This should be considered with caution as parishes with lower numbers of attacks might have been underrepresented and answering this question was not the objective of the study design proposed. However, it might indicate how positive livestock breeders might be fundamental for wolf conservation locally, as well as the importance of wider social, cultural and political contexts as factors influencing wolf-human relationships, besides the impact of livestock predation (Linnel and Cretois, 2018).

What is associated with intolerance among livestock breeders is knowing about others who have had damage caused by wolves on livestock, similar to what was found by Espírito-Santo (2017). This result highlights the impact that a livestock breeder with high intolerance may have by getting a loud voice and visibility, creating a phenomenon of "contagious" dissatisfaction among peers and neighbours that can be spread beyond the borders of a village or parish. This also shows how "word of mouth" seems to be one of the main ways of local communities to receive and trust information. The sense of community in rural areas is usually strong, even among groups with different interests, in what is called "symbolic construction of community" (Skogen and Krangle, 2003). Other important factors in our context is low trust in external and formal sources for information, as exemplified by the belief in releasing wolves. This is an important factor to account for in future actions. Other studies also showed that people that trust in local sources of information are more likely to hold negative attitudes towards wolves than the ones that trust in formal information coming from institutions (Skogen and Thrane, 2008). The role of local wildlife ambassadors, people from the local communities that inform and advise their neighbours on issues related to wolf and other wildlife, can be fundamental.

An index of fear assessed that 45% of actors interviewed expressed some kind of concern or fear towards wolves. An experience of observation of a wolf in the wild and in a positive context could make a difference to reduce fear.

5.2 TOLERANCE TOWARDS WOLF – TARGET AREAS

Results showed that intolerance is spread along the project area. However, there are some areas where intolerance in key actors seems more prevalent or accentuated and might be creating social barriers for wolves. Examples include the area of Serra da Arada (Covêlo de Paivó), the area of the Lapa pack and surrounding parishes that connect Leomil and Trancoso packs (in particular Ferreira de Aves), and the border area with Spain (in particular Manigoto). In some of these areas, there is information that wolves could have been persecuted and the fact that wolf activity in the area seems to have decreased (results of Action A.3). This emphasises the importance of informal conversations as a complementary source of information along with interviews. To facilitate expansion and future coexistence, tolerance towards wolves should be increased in the potential area of wolf expansion of Serra da Malcata and illegal practices towards wildlife reduced.

Most parishes present heterogeneity and sometimes polarisation of opinions, with very positive and very negative key actors cohabiting. There was only one parish where there were no very positive key actors among the interviewees—Covas do Rio (Arada pack). This parish was foreseen to be targeted by project actions, particularly C.2 and E.3.

Barriers for wildlife can also be created by the existence of illegal activities that threaten their survival. The 13 parishes where interviewees declared to know about the existence of illegal practices, like the use of snares or poison, were foreseen to be targeted by project surveillance actions.

5.3 ATTITUDE TOWARDS ROE DEER: IMPLICATIONS FOR PROJECT ACTIONS

The attitudes towards roe deer were overall positive, providing ground for acceptance of foreseen project actions such as habitat improvement and restocking. Hunting managers are overall very positive towards an increase of roe deer, which they see as an opportunity for bringing more people and income to the rural areas through hunting activities. This is expected to facilitate project actions related to hunting management (A.5) and promotion of roe deer (C.4).

However, avoiding or reducing damage on tree plantations and agriculture is key for the future acceptance, as this is the main disadvantage the key actors interviewed pointed out. This could help avoid similar problems to the ones that already exist with wild boar, which is seen as a “pest” by many that mention that it causes severe damage on pastures, crops and hunting species. This is one of the reasons why wild boar is the main species targeted by snares in the study area, a practice that threatens all wildlife including the wolf and the roe deer. Poaching of roe deer exists and was mentioned during interviews, which is a risk for project actions. The presence of the project surveillance team and coordinated efforts with the authorities (SEPNA—Nature and Environment Protection Service of the National Republican Guard) intended mainly to dissuade illegal actions and increase the number of snares apprehended.

Moreover, given the results found, critiques from the community to unregulated hunting and poaching or poisoning are expected, as this can be an isolated behaviour harming the rest.

5.4 KNOWLEDGE AND BELIEFS ABOUT THE WOLF – INPUTS FOR A COMMUNICATION STRATEGY

A considerable percentage of key actors considered that they do not have knowledge about the wolf, and so they should be specifically addressed by communication and awareness actions. Information campaigns should focus on lesser known aspects such as the apex predator status of the wolf influencing the whole ecosystem and the predator-prey relationship with wild boar. Social habits of the wolf, like living in familiar groups, are better known and can be positively used to create feelings of empathy, emotional relatedness and to increase tolerance towards this predator. It can also be useful to counterbalance the utilitarian and dominion values that are quite frequent in rural areas and encourage values of environmental concern and attraction, which are also present in these communities (Lopes-Fernandes et al., 2016). Local knowledge related to the wolf, like traditional ways of protection, should be valued and explored using the way of spreading information among local communities (“word of mouth”). This would be important for knowledge about the wolf as a predator of wild ungulates, a pack animal and an intelligent being.

Regarding roe deer, one of the advantages of the species pointed out by the actors interviewed is its effect in reducing scrub biomass, a positive element to make habitats less vulnerable to wildfires, which are one of the main threats to people and wildlife in rural areas. This can be used in communication campaigns and be a topic for seminars and workshops, together with the fact that predation of wolf on roe deer in the medium/long-term could help to reduce damage on (protected) livestock.

Emotional aspects concerning the wolf are rich, complex and include ambiguity. As stated before, humans have multiple views of wolves, which are not necessarily polarised into negative or positive extremes but that coexist: the ‘vermin’ and the ‘noble beast’. In rural communities, the wolf is not always viewed as a fragile animal needing protection or as a modern symbol of wilderness. Thus, a mix of images should be used in communication to ensure that messages are closer to the local social perception about the species. That multiple image can be included in real positive testimonies, documentaries, films, theatre reaching actors through positive emotions (e.g., LIFE12 NAT/IT/807 LIFE WOLFALPS, 2018).

Moreover, there is a lack of knowledge on how wolves use the territory. Messages should clarify the differences between stable territory, its average size, and dispersal movements under certain conditions. Even though many key actors know that wolves can travel large distances, this characteristic is not associated with wolves being able to naturally recolonise new areas, which can contribute to the belief of wolves being secretly released.

5.5 THE BELIEF IN WOLF RELEASES

This rumour is widespread along the project area, independently of the time of cohabitation with the species. In fact, it is heard in areas with long-lasting packs and in areas of irregular and marginal presence. It was also reported in previous studies in the Iberian Peninsula (Álvares et al., 2011) and is linked with the ideas expressed by the interviewees that “reintroduced wolves are not the same as the Iberian wolf that existed in the past; this new breed approaches people more easily [i.e., are bolder]”; and the idea that “if the authorities/wolf conservationists want to reintroduce wolves, they should feed them; thus avoiding wolf predation on livestock”.

- This narrative may originate from a resistance to the natural return of wolves to some areas or a lack of understanding of the reasons behind irregularity of wolf presence or how a species can simply appear somewhere where it was not found before. This is powered by a situation of conflict with the public authorities related to the damage compensation scheme. Moreover, there are certain facts related to the work in conservation that could be easily misunderstood by local communities and be seen as “proof” for their suspicions:
- The presence of field technicians and conservation officers in the field that interact with nature and wildlife based on knowledge of the species and control of their movements (telemetry), which is completely different from the way local people interact with wildlife, frequently seen as a natural resource. The observation of animals with GPS collars triggers the idea that they come from captivity;
- The existence of releases of deer species since the 1990s by different entities and projects implied having animals travelling at night on trucks. This was certainly noticed by some local residents and the information of animals released spread;
- The presence of technicians from the government and NGOs that do not always interact with the local communities or explain what they are doing, giving the impression of secret operations;
- The regular release of birds from wildlife recovery centres that appears in the news and could be easily misunderstood as reintroductions;
- The creation and management of nature protected areas and the reintroduction of species like the lynx (in the south) is evidence for local actors that wolves could similarly be bred and released;
- The reduction of livestock densities compared to the 1950s and 1960s has concentrated the impact of predation, whereas in the past it was more diluted among parishes and livestock breeders. Moreover, in the past shepherds naturally accounted for having to protect the livestock from wolves, whereas now there are unprotected or poorly protected livestock. This can give the idea of the wolf as a fearless animal, transgressive of the limits of the wild and so different from the past.

There is probably a higher tolerance towards the “old Iberian wolf” or a natural process of wolf recolonisation than toward “reintroduced wolves” following the government’s or any organisation’s agenda. The word of mouth seems to be used to spread this belief that causes some discontent and animosity toward the species and organisations (government and NGOs) and a lack of trust in the information those organisations spread. This creates a problem of trust that can hamper effective communication and collaboration with the local communities and key actors. A better understanding of the facts associated with the narrative of wolf releases is fundamental to re-establish trust between local actors and conservation projects.

Traditional communication materials and means used in education campaigns, like pamphlets, social media and the internet, might not produce significant results concerning this topic and probably will not reach the most intolerant people toward wolves. Having a close and transparent relationship with local communities regarding project actions and objectives would be fundamental to build the trust needed to break down some of this animosity and scepticism about the work of NGOs. Specific workshops and round tables with a facilitator and with a small number of key actors can also be a better way to overcome the limitations this issue is bringing and to build some trust. Articulation of communication strategies with other entities working in the ground should be considered. This approach can also help minimise some negative opinions registered about nature conservation projects, such as not involving more local people, lacking capacity of direct management, or not having continuity. It is fundamental to make more visible the impact of project actions among the communities and to use the adequate means of communication.

6. SUMMARY OF PRACTICAL RECOMMENDATIONS

The results obtained were relevant to inform project actions and improved project strategy through a set of recommendations, which were not only relevant during the implementation of the LIFE WolFlux, but continue to be relevant for the after-LIFE.:

6.1 ABOUT RELATIONSHIPS WITH STAKEHOLDERS AND WAYS TO IMPROVE TOLERANCE TOWARDS WOLVES

- Building trust with local key actors should be a priority strategy: listening, being transparent, and investing efforts on working closely, involving stakeholders, and disseminating the impact of project actions.
- Considering that reducing the perceived impact of wolf damage on husbandry seems to be one of the bases to promote coexistence and trust in the work of the government and the NGOs, an articulated work should be done to stimulate and/or support farmers to adopt damage preventive measures as part of a structured and long-term strategy.
- More presence of the relevant entities on the ground and contact with local actors is also advised to help reduce the current animosity and lack of trust derived from the widespread belief of wolves being released. Specific workshops and round tables with a facilitator and a small number of key actors can also be a way to contribute to overcoming the limitations this issue is bringing and build trust. Articulation of communication strategies with other entities working in the ground should be considered.
- Collaborate with national authorities to explore ways in which EAFRD funds can be effectively dedicated to support and encourage livestock breeders to implement damage preventive measures, in the frame of the EU Common Agricultural Policy (CAP). Some livestock breeders interviewed pointed out the lack of economic resources and/or technical knowledge to implement preventive measures. The CAP brings an opportunity for Member States to encourage types of agriculture that support biodiversity and operate in synergy with different stakeholders on the ground, maximising the efficacy of the measures funded.
- The creation of a network of local wildlife ambassadors, the organisation of field visits to show project actions, exchanges of practices among livestock breeders and seminars or workshops with stakeholders are likely to be the most effective actions to increase tolerance and knowledge about the wolf and the conservation projects (activities of actions C.3 and E.3). Key actors expressing a more positive attitude can have a big influence among their peers and the whole community, and the project should work with them. Livestock breeders that have suffered damage to livestock, are proactive to the implementation of damage preventive measures and very positive towards wolf presence are a key group to work with.
- Increasing the visibility of nature-based activities and its promoters for the communities (linked to action E.6) can help promote a positive image of the wolf and start showing that its presence can contribute to bringing economic value.

6.2 ABOUT TARGET AREAS FOR PROJECT ACTIONS

- Areas where potential social barriers have been identified, due to more negative perceptions about the wolf among the key actors interviewed or the existence of illegal practices (13 parishes), like the use of snares or poison, should be continuously surveilled. However, it is fundamental to continue identifying key actors of other areas that were not surveyed in this study but that are recognised as strategic for other reasons or by other actions. This could be the case of Serra de Montemuro and Serra da Estrela. An adaptive strategy that maximises synergies with other project actions is recommended.
- Creating awareness about the wolf's importance in the ecosystem and the use of damage preventive measures like livestock guarding dogs in the areas of connectivity among packs, recently recolonised areas (Almeida pack), and areas of future expansion is important. Medium to very high levels of intolerance therein seem to have an influence on wolf dispersion and settlement.
- In the parishes with stable packs where higher levels or proportion of intolerant actors were found, with the livestock breeders, which are the most adequate methods in each particular case to reduce wolf attacks (some of this areas are damage hotspots with high risk of predation) and promote, overall, means for coexistence.

6.3. ABOUT COMMUNICATION AND MEDIA

- Communication and awareness actions, such as informative sessions or workshops, should be flexible enough to adapt to local contexts and target specific audiences or groups. Local ambassadors should be contact points of the project that can help inform the best strategies for each place.
- The use of short videos of positive testimonies in the project's final documentary was considered to promote positive attitudes and reduce fear. This might bring social recognition of locals and veracity to the portrait of wolves. In isolated areas, those screenings can create spaces for community gathering and socialising, facilitating discussion and exchange of information.
- Emphasising that the wolf is part of the local culture and tradition might be a way for people to value it as part of the identity of the territory, as a cultural emblem. Focusing only on the vulnerable image of the wolf as an endangered species might not be appealing for local communities, since they also have the image of a ferocious, intelligent and elusive animal. Therefore, including a multiple image of the wolf can help local communities recognise the species and create an important link.
- Organise visits with local stakeholders to other locations where the wolf is important for nature-based activities and its presence can bring economic value.
- Information and support for farmers and foresters on the use of damage preventive measures for roe deer should be considered, as well as subsidising protection measures in the areas where population is reinforced in the frame of the project.

6.4. ABOUT INCREASING SOCIAL KNOWLEDGE IN THE PROJECT AREA

- Continue involving social science experts in the project through partnerships with individuals, research centres and universities, to bring a multidisciplinary approach to the conservation projects.
- Continue broadening the knowledge about the social context and complex network of actors throughout the observation of practices when possible, during project implementation.

7. CONCLUSIONS

7.1 SYNERGIES WITH OTHER PROJECT ACTIONS

The methodology carried out was more demanding in terms of effort and resources than foreseen. However, it has allowed to obtain some results that are fundamental for other project actions and that would have been more difficult and costly to obtain through other means, namely:

- Characterisation of husbandry practices along the project area, which informed and allowed a better implementation of action C.2;
- Identification of livestock breeders interested in implementing damage preventive measures (complementary to action A.6) and willing to support the design of concept of brand for action E.5;
- Identification of potential businesses to be supported through action E.6;
- Identification of potential wildlife ambassadors for action C.3;
- A database of registers of illegalities mentioned in the interviews that were included in the surveillance protocol of action C.3.

Overall, this social consultation provided the Rewilding Portugal team with a particular insight of key actors and a deeper understanding of local communities' dynamics and the positions of stakeholders towards the presence of the wolf. Accessing local voices first hand gave the Rewilding Portugal team the opportunity to get to know better the social reality of the area of the project and identify key actors in person. This was particularly important for the areas where the team had not worked before. Moreover, being able to think over certain situations and implications in other actions of the project has allowed the team to evolve to a better management of the project overall. Finally, the training and experience of conducting neutral questions and registering a wide variety of opinions and different perceptions gave the team a new capacity of being able to avoid expressing a position or conservation advocacy when that is needed.

7.2 COMMENTS ABOUT THE METHODOLOGY

The chosen methodology seems to be adapted to the social context and the type of interviewees, who are unlikely to respond to an indirect questionnaire or express their opinion in detail with closed-ended questions. The importance of identifying and understanding the opinions of residents who are involved in activities in areas of coexistence undeniably adds quality to the data.

However, there were some limitations, which can be summarised as follows:

- The project area is very large, and the social dynamics are more complex than those that could be captured and described in the report;
- The number and distribution of interviews do not always allow for statistical comparisons;
- The interviewees were not always available, and more time on the ground would have been necessary to establish more relationships of trust and gather additional information, but there were not enough resources for this;

- The mountainous area of Montemuro, Freitas, and Arada presented more difficulties in sampling due to the slow pace of travel. The particular reality of this area, with isolated villages and where shepherds and community herds still exist, would require more time to characterise;
- Between 2019 and 2023/24, several livestock breeders gave up their activity, several mayors changed, and various hunting zones changed their board members. In these circumstances, it was not possible to repeat the interviews exactly with the same key actors, but rather with the same profile/role performed in the areas of coexistence;
- Consultation is understood to be indirectly aimed at the local community where these actors are integrated, and this factor is more relevant to the objectives than individual variations in attitude;
- The qualitative sampling proved to be ambitious and a huge effort for such a vast area with the available resources. If repeated or applied to other areas, it would require continued independence and neutrality of the interviewers, prior experience, and more resources and time.

7.3 CONTRIBUTION OF THE MAIN RESULTS

The 2023-24 survey, following the one conducted in 2019, further contributed to:

- Updating and deepening the social context in which, on the one hand, wolf packs exist and persist south of the Douro River but are decreasing (Pimenta et al., 2023b), and on the other hand, livestock farming, hunting, and nature tourism activities continue to exist;
- Identifying new key actors on the ground and understanding that rural areas are not static and have undergone significant changes in a few years;
- Gaining a better understanding of the vulnerability of some livestock farms and some positions regarding wolves related to support systems and livestock farming subsidies;
- Obtaining a baseline regarding the image of Rewilding Portugal and the nuances related to the presence of new projects on the ground, recognising that the project area was too vast to expect an impact in such a short period of time;
- Considering that getting to know Rewilding Portugal, or at least recognising the technicians of the association, despite other criticisms to be considered, was a positive outcome;
- Although we cannot directly associate both variables, the increase of negative attitudes towards wolves in 2024 were in the same order of magnitude as the increase of discontentment with compensation schemes.
- Understanding that some intolerant discourses have increased in recent years, particularly due to unfavourable socioeconomic circumstances (e.g., inflation, pandemic, rising prices of agricultural product, etc.), and that there were factors external to the project and wolf conservation efforts that always contribute to this;
- Internalising that it is not expected for changes in attitude and opinion about wolf conservation, wildlife, and nature to change within the lifetime of a project like LIFE WolFlux, especially if there are issues of friction between local communities and public administration or NGOs, and if financial losses or differing views on landscape, rural abandonment, and predator value are involved;
- Confirming that the gradual decrease of the number of shepherds remains a trend and that vulnerability to predation seems to have increased;



Shepherd in wolf area, 2023

- Conducting a better evaluation of the impacts of the Common Agricultural Policy support;
- Considering that measures such as support for livestock guardian dogs and fencing are well-received by the local population and support coexistence, but noting that they do not necessarily influence attitudes toward wolves;
- Consolidating knowledge about different key actors in wolf areas, each with distinct particularities, requiring specific approaches;
- Considering that it is necessary to engage actors and carry out demonstrative actions to increase tolerance and bring knowledge and examples to local populations about the benefits of the wolf's presence;
- Strengthening the need to plan long-term actions that influence the actors and focus on parishes with a tendency toward neutrality or a moderately positive attitude;
- Remembering that all opinions are important, even those with low frequency, as they come from key actors in wolf areas and influence what happens in these territories;
- Arguing with funding entities that monitoring attitudes in communities is essential, but emphasising that it is unrealistic to require proof of the social impact of the project through changes in attitude, particularly in a very short period of time;
- Reflecting on the heterogeneity and polarisation of opinions regarding the presence of wolves, even among key actors from the same parish.

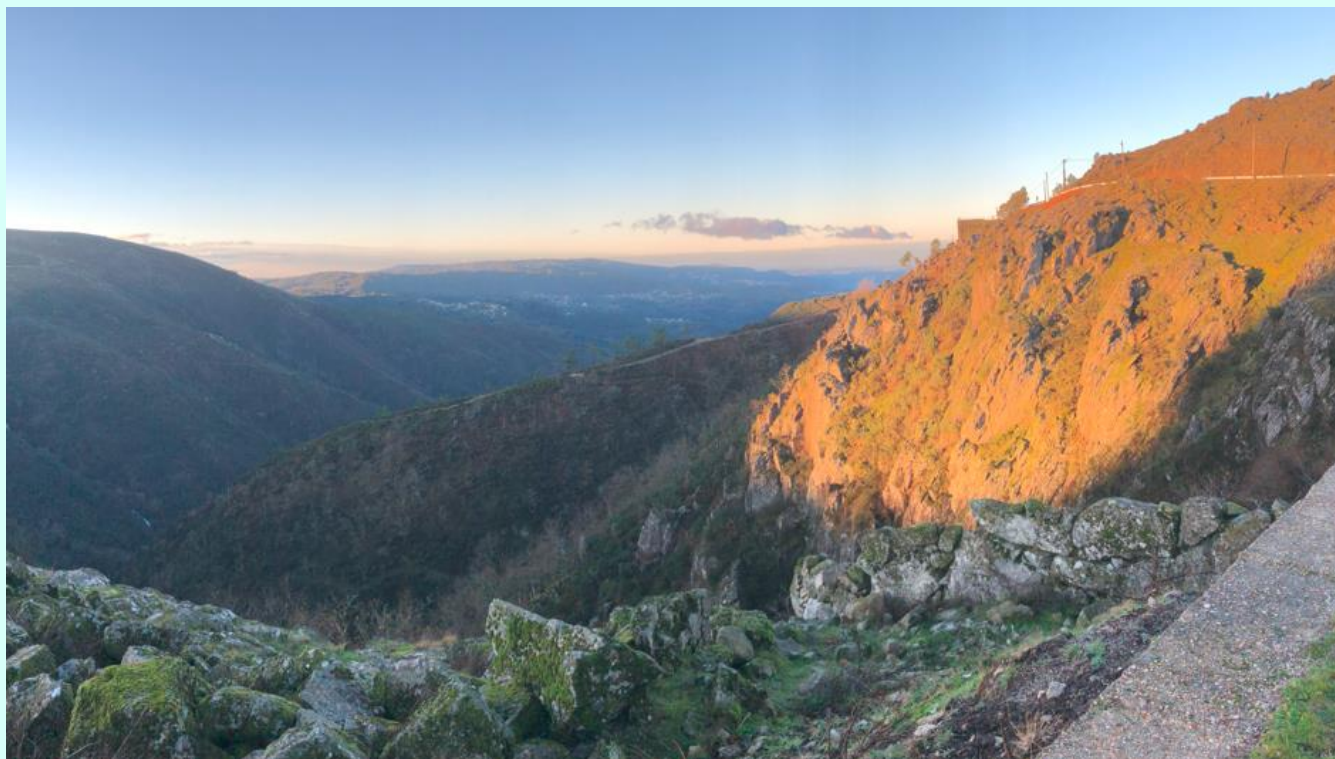
The contestation surrounding losses and the compensation scheme should be discussed with the livestock breeders and the national authority for nature conservation (ICNF). Compensation for losses will not, by itself, resolve the conflict with the wolf, as the conditions of vulnerability are under a process of change, and losses are always considered greater and of more significant impact than just financial losses.

More sensitive issues, such as wolf releases, have already been addressed and explored from a scientific perspective elsewhere (Lopes-Fernandes et al., 2023). These issues require a series of coordinated actions from various associations and entities with ongoing conservation projects in the area: ACHLI (Association for the Conservation of the Iberian Wolf Habitat), Grupo Lobo, Rewilding Portugal, ICNF, and other local and regional entities.

News about wolves and wolf attacks have had a negative effect on communities, exacerbating the issue of attacks, feelings of injustice, and the idea that species protection might override all other interests. Contact with the media, including press officers and editors of print media, TV and radio, as well as social media, could be more effective in changing the type of news being reported.

The events held in the villages and the promotion of various activities were well-received and brought Rewilding Portugal closer to local populations. However, the impact of a new vision, expressed in name changes and the systematic use of the English language, should be assessed, as it seems to cause a sense of detachment and unfamiliarity.

Projects of this nature should, preferably, maintain a multidisciplinary character, where various perspectives foster enriching and creative dialogue, and the collaboration of experts from the social sciences and facilitation.



Coexistence area at the most western part of wolf range, south of Douro, 2023

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SCIENTIFIC DISSEMINATION

As part of the consultations conducted and the collaboration established between CRIA and Rewilding Portugal, the scientific publication *“Staying alive: coexistence scenario of people and an endangered population of Iberian wolves”* was prepared and submitted in March 2024 to the *Journal of Rural Studies* and *Land Use Policy*. The publication *The devil is in the detail: studies about coexistence of humans and wolves* is in the submission phase (Dec 2024).