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Réunion de la Conférence alpine

Sessione della Conferenza delle Alpi

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XVIII

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06-12-2024

ANNEX

3 Activity Report of the Large Carnivores, Wild Ungulates and Society Working Group (WISO) for the period 2023-2024

**ACTIVITY REPORT OF THE
LARGE CARNIVORES, WILD UNGULATES AND SOCIETY WORKING
GROUP (WISO)
FOR THE PERIOD 2023-2024
(BETWEEN THE XVII AND XVIII MEETINGS OF THE ALPINE CONFERENCE)**

1. Overview of the mandate given by the XVII Alpine Conference

Summary of the objectives according to the 2023-2024 mandate

The main tasks for the WISO working group according to the mandate were:

- To promote the exchange among the Working Group members of information, scientific data and experiences in order to support decision-making processes as well as the coordination of responding actions concerning large carnivores (LC).
- To share the available/applied monitoring methods and data for LC, underlying the understanding of the viability of populations per Contracting Parties.
- To compare the use and interpretation of the derogation regimes of the Berne Convention and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (The Habitats Directive) regarding the management of LC.
- To present the national schemes for the use of the EARDF for prevention measures (under the current and next Common Agricultural Policy – CAP).
- To exchange best practice examples about adapting the wild ungulates' management according to the presence of LC, via a discussion in a broader circle of experts/stakeholders on a symposium.

The WISO Working Group was chaired by Mr. Rok Černe from Slovenia Forest Service, by authorization of the Slovenian Ministry of Natural Resources and Spatial Planning.

2. Meetings

Summary of the meetings held (date, place, main topics and milestones)

The WISO Working Group met five times during its 2023–2024 mandate. In these meetings, the following topics were tackled:

1. Online, 24 February, 2023. Topics: review of the mandate, work plan with attributed tasks and time plan.
2. Mitters (AUT), 5-6 June, 2023. Topics: country updates regarding LC, presentations by country representatives of the use of the EARDF or national funds to protect livestock.
3. Online, 16 October 2023. Topics: presentation of the applied monitoring methods and data for wolves in the Alps by F. Marucco (UNITO), presentation of the applied monitoring

methods and data for lynx in the Alps by A. Molinari Jobin (KORA), presentation of the draft programme of the joint conference of the Alpine Convention and the Carpathian Convention by Slovenia Forest Service.

4. Nice (France), 3-5 June 2024. Topics: country updates regarding LC; exchange on the European Commission's proposal to lower the protection status of the wolf; presentation and confirmation of the joint report of WISO and LIFE WOLFALPS EU project on the CAP and prevention of damages caused by LC by T. Berce (SFS); presentation of the draft report showing the population of brown bears in the Alpine region by C. Groff (PAT); discussion on the next mandate. The meeting also included the excursion visiting the farm in the Regional Natural Park of the Pre-Alpes d'Azur (damage prevention from LC, coexistence) and presentation from the French Biodiversity Office (OFB).

5. Online, 6 September 2024. Topics: discussion on the next mandate; presentation of the situation with problem bears in Trentino by C. Groff (PAT).

3. Activities carried out

Activities carried out with their outputs and results, highlighting their contributions to the relevant priorities of the [Multi-Annual Work Programme 2023-2030](#)

The Working Group carried out the following activities for the fulfilment of the mandate:

1. Exchange of information: a regular agenda item was set at the Working Group meetings once a year in order to allow for a regular exchange among members on the status of LC, ungulates and the main news related to their management as well as on other events relevant for WISO.

Underlying the importance of the viability of populations per contracting parties, this activity contributed to the MAP priority area 1 – Biodiversity and ecosystems by better monitoring of the state of this segment of biodiversity in the Alps.

2. Presentations of monitoring methods and data for LC in the Alps: for wolf, F. Marucco presented the LIFE WOLFALPS EU and Wolf Alpine Group (WAG) report – "[The wolf alpine population in 2020-2022 over 7 countries](#)". WISO recognised the high quality and significance of the report and confirmed its importance for the Alpine region.

For lynx, A. Molinari Jobin presented [the SCALP methods and data for the Alpine countries](#). WISO recognised the high quality and significance of these results and confirmed their importance for the Alpine countries.

C. Groff prepared the report for the bear in the Alpine region for WISO, based on the data provided from PAT (Italy) and SFS (SI).

This activity contributed to the MAP priority area 1 – Biodiversity and ecosystems by comparing the experiences with the use of monitoring methods and results.

3. Co-organization of the joint conference of the Alpine Convention and the Carpathian Convention for the exchange of practices on management of LC: together with the LECA (Interreg Central Europe) project and the Carpathian Convention, the first joint conference focused on the management of LC in the scope of both conventions provided an opportunity to meet relevant actors from across Europe and get an insight into different aspects of

management of LC. A report was prepared, sent to all the participants. It includes a comparison of the use and interpretation of the derogation regimes of the Bern Convention and the Habitats Directive regarding the management of the large carnivores.

This activity contributed to the MAP priority area 1 – Biodiversity and ecosystems by comparing the experiences, best practices and challenges faced within the management of LC.

4. Preparation of the joint report of WISO and LIFE WOLFALPS EU project on the CAP and prevention of damages caused by LC: report based on data gathered and presented by country representatives on the 2nd meeting. Edited by SFS, the report was sent for two rounds of commenting to the members and presented on the 4th meeting of WISO. It is an update of the WISO report from 2018 “Preventing damage by large carnivores”.

The various preventive measures and means for the reimbursement of damages to the breeders are presented in the report by countries, offering the breeders that face different farming conditions with the presence of LC a set of guidelines. Thus, enhancing their quality of life and contributing to the MAP priority area 3.

4. Cooperation

Cooperation developed with other Alpine Convention bodies and further relevant partners and processes, and resulting benefits

The Working Group cooperated with the following organisations and projects:

- LIFE WOLFALPS EU project, through the preparation of the joint report on CAP and prevention of damages caused by LC.
- LIFE WOLFALPS EU project and (WAG), through the presentation of the applied monitoring methods and data for wolves in the Alps, online meeting (16. 10. 2023).
- KORA, through the presentation of the applied monitoring methods and data for lynx in the Alps, online meeting (16. 10. 2023).
- CARPATHIAN CONVENTION and LECA (Interreg Central Europe) project, through the organisation of the joint conference of the Alpine and Carpathian Conventions for the exchange of practices on management of large carnivores.
- L'OFFICE FRANÇAIS DE LA BIODIVERSITÉ (OFB), through presentation of its work at the 4th meeting (3. 6. 2024).

The Working Group presented its work and results at the 77th meeting of the Permanent Committee (Bolzano, 7.-8.11.2023), at the meeting of the chairs of the AC Thematic Working Bodies (Maribor, 14. 5. 2024), on the 3rd conference of the Dinaric-Balkan-Pindos platform (Skopje, 27.-28. 3. 2023), on the joint conference of the Alpine and the Carpathian Convention at Brdo, 7.-8. 3. 2024, at the conference Joint action for the Alps - conserve, connect and restore (Kranjska Gora, 12.–14. 6. 2024), and at the final conference of the LIFE WOLFALPS EU project (Trento, 17.–19. 5. 2024).

5. Communication

Communication measures and outreach activities carried out, specifying their respective target groups

WISO activities and outputs were presented at the events listed in point 4. Sharing the best practice example and experience regarding the working group's organisation, levels of cooperation and document preparation process, with the new Dinaric-Balkan-Pindos platform is highly appreciated and valuable in the first steps of this platform.

Communication regarding the joint conference of the Alpine Convention and Carpathian Convention for the exchange of practices on management of large carnivores – the conference was presented to the relevant public through the channels of the Alpine and Carpathian Conventions, promoted and also reported. Also, the report was sent to all the participants. The conference had a big reach – more than 80 participants shared their views, experiences and best practices, discussed the challenges and presented their visions for the future. Following its successful implementation, participants expressed their hope that this form of cooperation between the two Conventions would be continued.

6. Attachments

List of the documents attached to this report, such as papers proposed for approval by the XVIII Alpine Conference (thematic reports, guidelines, statements etc.) and supporting documents (workshop proceedings, survey reports, communication materials etc.).

- *Common Agricultural Policy (CAP) and prevention of damages caused by large carnivores, joint report from WISO and LIFE WOLFALPS EU project*
- *Joint Conference of the Alpine and Carpathian Conventions for the exchange of practices on management of large carnivores, REPORT OF THE EVENT*
- *Report on the Monitoring, Status And Management of the Brown bear in the Alps*



LIFE18 NAT/IT/000972



COMMON AGRICULTURAL POLICY (CAP) AND PREVENTION OF DAMAGES CAUSED BY LARGE CARNIVORES

Joint report prepared by:

**LARGE CARNIVORES, WILD UNGULATES AND SOCIETY WORKING
GROUP (WISO) of the ALPINE CONVENTION and the project LIFE
WOLFALPS EU**

April 2024

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1 PREFACE

Large carnivores were absent from the Alpine region for many decades. This led to the abandonment of traditional practices and the disappearance of knowledge about the coexistence with predators. The main result of the absence of large carnivores are the free-ranging herds that graze and roam around without any protection and are therefore easy prey for predators.

The presence of large carnivores, regardless of the population size, can affect the agricultural practices of people, especially farmers, present in the area of their territories or home ranges. Throughout the Alps, sheep (and goat) herding is the most affected farming practice, mainly due to its widespread distribution in the Alps and the evolutionary lack of defensive mechanism towards large predators in sheep. However, in the last years, also cattle depredation is increasing representing an important source of conflicts, especially with wolves.

The fast-spreading large carnivores, especially wolves, represent a major challenge not only for farmers and local communities, but also for decision makers. The need for rapid introduction of new, sustainable and, most importantly, effective measures and supports for farmers, is being increasingly showed in the field among livestock herders' communities.

In general, the support from the policy has to be divided in two main parts: first, the support for investments and infrastructure (fences, livestock guarding dogs, shelters for animals and shepherds) and second, support for the extra work-load that farmers bear when engaged with activities that are needed to set up, maintain and carry out to protect their property.

Livestock protection experts from the Alpine region and throughout Europe are convinced that with regular collaboration between expert, different stakeholders, decision makers and especially farmers, it is possible to mitigate conflicts and generate common goals to preserve agriculture and pastoralism in the Alpine region in presence of large carnivores. Close collaboration improves knowledge and experiences on different implemented practices, which is crucial for coping with ever-growing challenges arising in new areas of large carnivore recolonization.

The Large Carnivores, Wild Ungulates and Society Working Group of the Alpine Convention (WISO) is committed to face these challenges through interregional and international collaboration, exchange of experiences and dissemination of knowledge between stakeholders and interested public.

In 2018, a joint report entitled “*Prevention of damages caused by large carnivores in the Alps*” was prepared in collaboration with the LIFE WOLFALPS EU project. It represents an overview of measures aimed at preventing conflicts arisen due to the reappearing of large carnivores in each Alpine country.

With the present report, we focus on the European Union’s Common Agricultural Policy (CAP). The CAP policy for the period 2023-27 has a strong emphasis on results and performance. The policy focuses on ten specific objectives, linked to common EU goals for social, environmental, and economic sustainability in agriculture and rural areas. European countries implement CAP through designed national CAP Strategic Plans, combining funding for income support, rural development, and market measures.

The present document is prepared through the collaboration of members of WISO of the Alpine Convention and the LIFE WOLFALPS EU project personnel in order to involve experts from different countries who are leading the evolution of different damage prevention practices and try to include them within the perspective of agricultural policies.

The main objectives of the present report are to (1) present the preventive measures involved in different Alpine countries, (2) present the measures and practices implemented within CAP 2023-2027 and (3) compare the previous EU supporting scheme RDP 2014-2020 with CAP 2023-2027. Additionally, the report includes the complementary activities that each country (or region) has adopted to mitigate the conflicts between farming practices and large carnivore species.

2 REPORTS BY COUNTRY

2.1 AUSTRIA

Prepared by:

Albin Blaschka

The Common agricultural policy (CAP) 2023-2027	
<p>The Austrian Strategic plan (SP) for the Common agricultural policy (CAP) 2023-2027 was confirmed by the European Commission in September 2022.</p> <p>It contains measures, which can help to prevent damages by large carnivores, via the Austrian program for the promotion of environmentally sound, extensive agriculture protecting natural habitats (Österreichisches Programm zur Förderung einer umweltgerechten, extensiven und den natürlichen Lebensraum schützenden Landwirtschaft- see https://www.lko.at/%C3%B6pul-2023-ein-%C3%BCberblick+2400+3563571, in German).</p> <p>There are two measures supported, one general for alpine pasture management and one under the label Animal Welfare with one supplement:</p>	
<p>Alpine pasture management</p>	<p><i>Description:</i></p> <p>At least 60 calendar days of grazing on one or more alpine pastures located in Austria by cattle, sheep, goats, equidae or New World camels.</p> <ul style="list-style-type: none"> • max. 2 AU/ha per alpine pasture, (AU = Animal Unit ~ 500kg live weight) • only animals with a total grazing period of at least 60 calendar days are taken into account. <p><i>Sums:</i></p> <ul style="list-style-type: none"> • 40 Euro/ha for alpine pasture accessible with tractor • 60 Euro/ha for alpine pasture accessible only by cable car or special mountain farmer machine; • 80 Euro/ha for alpine pasture only accessible via footpath or cattle path <p>See https://www.lko.at/14-almbewirtschaftung-%C3%B6pul-2023+2400+3587363 (in German)</p>
<p>Animal welfare husbandry</p>	<p><i>Description:</i></p> <p>Herding of livestock for at least 60 calendar days on one or more mountain pastures. This measure is only available if the farmer gets the subsidy “Alpine pasture management”:</p> <ul style="list-style-type: none"> • a daily, proper care of the animals, if necessary, also

	<p>at night.</p> <ul style="list-style-type: none"> • A mere inspection is not sufficient; the shepherding has to take place at least during a substantial part of the day. • Proper care includes the provision of sufficient water, animal care, supply of proper treatment of diseases and injuries as well as safety measures on the mountain pasture. • Suitable overnight accommodation must be available on the mountain pasture. <p><i>Sums:</i></p> <ul style="list-style-type: none"> • for the first 20 AU: 75 Euro/AU • starting with 21 AU: 25 Euro/AU • Supplement dairy cattle for the first 20 AU: 140 Euro/AU • Supplement dairy cattle starting with 21 AU: 100 Euro/AU <p>(AU = Animal Unit ~ 500kg live weight)</p> <p>See https://www.lko.at/15-tierwohl-behirtung-%C3%B6pul-2023+2400+3587362 (in German)</p>
<p>Optional supplement: Livestock guarding dogs</p>	<p><i>Description:</i></p> <p>Support of costs for livestock guarding dog on an alpine pasture.</p> <p>This supplement is only available for the measure “Animal welfare husbandry”:</p> <ul style="list-style-type: none"> • The dogs must be used on the alpine pasture during the entire alpine pasture period of the herded animals, but at least 60 calendar days. • The minimum of 60 calendar days must be achieved on a single mountain pasture – Caveat: This 60 days’ requirement, also necessary for subsidy “Alpine Pasture Management” can there be divided to more than one pasture <p><i>Sums:</i></p> <ul style="list-style-type: none"> • 700 €/dog, max. 5 dogs per pasture
<p>Comparison between RDP 2014-2020 and SP 2023-2027</p>	
<p>During the period 2014-2020, there was only one measure “Alpine pasture management and herding”, with no supplement for livestock guarding dogs.</p>	
<p>General comment of the implemented measures</p>	
<ul style="list-style-type: none"> • The subsidy “Animal welfare husbandry” is only available if the farmer gets the subsidy for Alpine pasture management (those subsidies add up) • The optional supplement for livestock guarding dogs is therefore only available for alpine pastures • The subsidies are not high enough to finance a herder full time for the 	

grazing period	
Damage prevention on national level	
National subsidies /cofinancing schemes by the federal states	<p>Most federal states are funding livestock protection measures, mostly as an investment funding for fences and equipment. Budget is in general coming from agriculture, without EU-funding – see https://baer-wolf-luchs.at/hilfe-bei/praevention-foerderung (in German).</p> <p><i>Lower Austria</i></p> <ul style="list-style-type: none"> • Fence material: Subsidy 80% of the net material costs for renewal and upgrading or new construction of fences for sheep, goats, calves <p><i>Upper Austria</i></p> <ul style="list-style-type: none"> • Fence material: 50 % of the net material costs for renewal and upgrading or new construction of fences for sheep, goats and calves (young cattle up to 12 months); • GPS trackers: 50 % of the net material costs for GPS trackers for sheep and goats, • Livestock guarding dogs: Purchase can be supported; the amount is decided on a case-by-case basis (min. 150 sheep). <p><i>Salzburg</i></p> <ul style="list-style-type: none"> • Fence material: Upgrading or acquisition of protective fences incl. accessories, extent depending on herd size, to be determined per individual case according to professional criteria; 80 % of eligible costs, but maximum € 3,000. • GPS Tracker: First-time new acquisition, 80% of first-time acquisition costs for device, max. € 80€ per device: Eligible are sheep/goats from one year of age, at least 60 days on the pasture; A maximum of 3 GPS collar transmitters is subsidised per animal owner - € 240. • Livestock guarding dogs: for up to 200 sheep, 80% of the purchase costs of two dogs, maximum € 1600 per dog; for more than 200 sheep, one additional dog is eligible for every additional 100 sheep; for all other livestock, 80 % of the costs for two or more dogs, maximum € 1600 per dog <p><i>Tirol</i></p> <ul style="list-style-type: none"> • Fence material: 60% the purchase of fences and necessary accessories for sheep and goats within the framework of investments in agricultural production. Minimum investment sum is € 400

	<p>(before tax)</p> <ul style="list-style-type: none"> • GPS tracker: via the Tyrolean Sheep and Goat Breeders' Association, maximum 5 devices: 1 tracker and protective cover for every 10 animals, 5 trackers and cover for 41 animals or more. 50% of costs, maximum 75€ per device <p><i>Vorarlberg</i></p> <ul style="list-style-type: none"> • Basic subsidy: <ul style="list-style-type: none"> ○ 20 - 100 sheep/goats from 1 year 1.000,00 € per alpine season ○ 100 - 200 sheep/goats from 1 year 1.500,00 € per alpine season ○ over 200 sheep/goats from 1 year 2.000,00 € per alpine season • With the Possibility of wolves in the area, the increased care effort can be compensated for a maximum of 5 days <ul style="list-style-type: none"> ○ up to 200 sheep/goats from 1 year 50,00 € per day ○ over 200 sheep/goats from 1 year 100,00 € per day • Purchase of mobile fences for night pens is supported once: <ul style="list-style-type: none"> ○ a maximum of 200m of sheep net fence (pen area 50m x 50m), height of at least 90 cm, a one-off subsidy of a maximum of € 360 is granted. ○ The purchase of a pasture fencing device for the pen fence is supported once with a maximum amount of € 250 ○ The purchase of livestock guarding dogs can be supported. The amount is decided on a case-by-case basis <p><i>Styria</i></p> <p>Pilot-Phase Summer 2023, valid between May 15th and Sept. 30th 2023:</p> <ul style="list-style-type: none"> • Fence material: Subsidy 50% of the net material costs for renewal and upgrading or new construction of fences • Fences must fulfil minimum standards for protective fences as defined by the Austrian Centre Bear, Wolf, Lynx • Max. € 2000, min. € 200
Other damage prevention activities	
Projects	<p><i>Whole of Austria</i></p> <ul style="list-style-type: none"> • LIFEstockProtect The LIFE project LIFEstockProtect, which is besides

	<p>Austria also active in Bavaria and South Tyrol, promotes livestock prevention measures, including the use of livestock guarding dogs also among other actions via building so called “Livestock protection competence centres”, which are farms whose owners are specially trained within the project and should help/train on a peer-to-peer bases other farmers implementing livestock protection measures.</p> <p>Other topics covered:</p> <ul style="list-style-type: none"> ○ Training of livestock protection advisors ○ Improvement of public and professional support structures for livestock protection ○ Training of tourism managers on how to deal with livestock protection ○ Guidelines for the breeding and certification of livestock guarding dogs <ul style="list-style-type: none"> ● LIFE WolfAlpsEU – WPIU Within the work of this project, the so-called “Wolf Damage Prevention Intervention Units” (WPIU) are helping affected farmers after a damage by a large carnivore occurred. Specific measures include help building protective fences, rounding up dispersed animals, or helping with bringing back the animals back to the valley prematurely. The teams bring the necessary material and special equipment, as well as the necessary expertise. <p><i>Tirol</i></p> <ul style="list-style-type: none"> ● Pilot projects Livestock Protection – Targeted pasturing Those projects in the western part of Tirol on three alpine pastures, planned for a period of five years (2021 – 2025), experience in the implementation of livestock protection measures including the needed operational changes from free to managed grazing of sheep should be gained. In addition, the effects coming with this management changes in terms of animal health, weight developments, movement patterns, animal losses, shepherding work, possible vegetation changes and costs are studied. Suitable similar support for a small alpine pasture with a mixed herd was given in 2022.
Testing of new solutions	-
Intervention kits	-

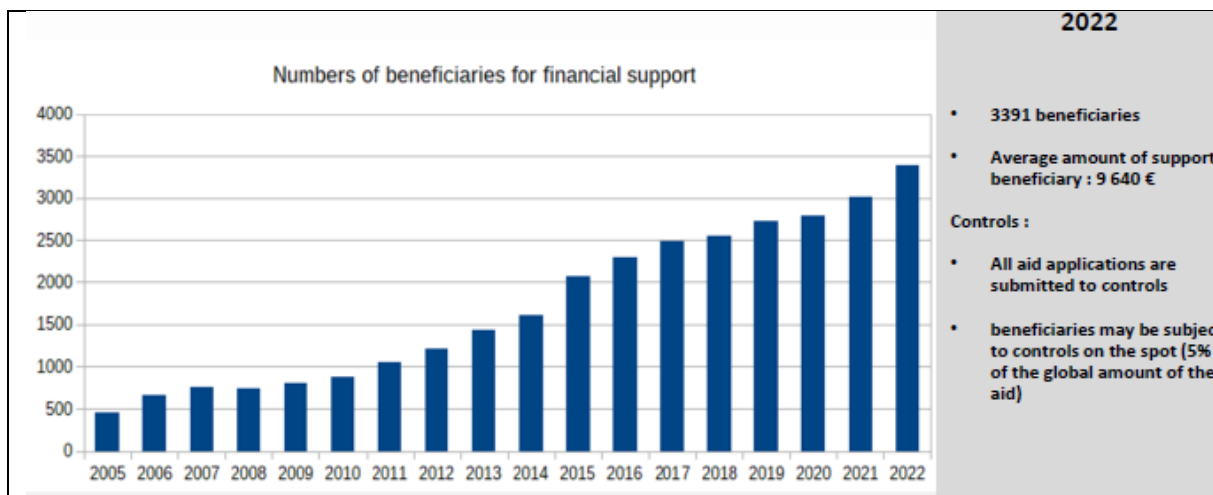
2.2 FRANCE

Prepared by:

Léa Rallu, Ricardo N. Simon, Rachel Berzins

The Common agricultural policy (CAP) 2023-2027	
<p>The France National Strategic plan (PSN) for the Common agricultural policy (CAP) 2023-2027 was confirmed by the European Commission in August 2022. It covers two types of support for farmers in terms of preventing damages by large carnivores (wolves and bears) to grazing animals (sheep and goats) where predation is annually confirmed by national and local authorities (cf. circle areas):</p> <ul style="list-style-type: none"> - Support to protect livestock against wolves and bears predation (shepherding), and -Support for investments to protect farms against wolves and bears predation (guarding dogs, electric fences ...). <p>There are five measures that are supported within PSN 2023-2027. The new scheme is relatively similar to the previous one. The subsidies are always paid to farmers based on the costs of the damage prevention measure or on flat-rate:</p>	
Shepherding	<ul style="list-style-type: none"> • Subsidies cover the work of a shepherd (salary shepherds, breeder guarding their flock, private company) under an upper limit. Payments to the beneficiaries are based on the period dedicated to shepherding with a 80% cofinancing rate (based on the salary costs or on a flat-rate per day), and 100%cofinancing rate in protected areas where wolf lethal control to protect flocks is forbidden (e.g., national parks) • Daily attendance of the shepherd with the herd • Financial support is available in circles 0 (hotspot) and 1 (confirmed predation)
Electric fences	<ul style="list-style-type: none"> • Subsidies cover the costs of setting up electric fences (fixed or mobile pens) and the electrification of existing fences under an upper limit • At least 3000 volts and 80cm high electric fences • The animals have to be gathered and closed in a night pen by night • Financial support is available in circle 0 (hotspot), 1 (confirmed predation) and 2 (possible predation in the coming year)

	<ul style="list-style-type: none"> • 80% cofinancing rate based on the costs, and 100% cofinancing rate in protected areas where wolf lethal control to protect flocks is forbidden
Guarding dogs	<ul style="list-style-type: none"> • Subsidies support the cost of livestock guarding dogs (300€ per dog and up to 2 dogs thus 600€ per year), dogs' sterilization (200€ per dog up to 400€), behavior tests and dog care (650€ per dog per year) • Dogs have to be guarding the herd permanently • Financial support is available in circle 0 (hotspot), 1 (confirmed predation), 2 (possible predation in the coming year) and 3 (possible predation in the mid term)
Technical support (optional)	<ul style="list-style-type: none"> • Farmers who take part in collective training or who get individual advice about the implementation of protection measures can benefit from this payment. • Support covers 100% of the costs up to 2,000€ per year per farmer • Financial support is available in circle 0 (hotspot), 1 (confirmed predation), 2 (possible predation in the coming year) and 3 (possible predation in the mid term)
Vulnerability analysis	<ul style="list-style-type: none"> • aims at establishing an assessment of the farm and its context and define an action plan to reduce the risk of predation • After requesting the assessment, farmers can benefit from the payment to cover the costs of the vulnerability analysis • Support covers up to 5.000€ during the 2023-2027 period • Financial support is available in circle 0 (hotspot), 1 (confirmed predation) and 2 (possible predation in the coming year)
Comparison between RDP 2014-2020 and SP 2023-2027	
<p>In France, there are only few differences between the two CAP schemes except that the previous alone measure has been divided in two measures to separate investment support to other supports. The other small changes have been mainly introduced to simplify the measures (flat-rate support).</p>	



General comment of the implemented measures

- In circle 0 (hotspot) and 1 (confirmed predation), it is mandatory to have at least two types of protecting measures among: shepherding, electric fences, guarding dog
- More than 75% of the subsidies cover shepherding (salaries, shepherding by breeder)
- The level of funding for protection measures is likely to increase in the coming years due to the growing of wolf population and its geographic expansion
- Different types of controls are applied (administrative ones during the aid instruction, on field control for the payment)

Damage prevention on national level

Urgent funds for livestock protection (new area) (Ministry of Agriculture)

In addition to EARFD support, the Ministry of agriculture have national fund to protect livestock from large carnivore attacks. The fund can be used for beneficiaries who are not eligible for the EARFD supports. It includes protecting sheep and goats in area where predation by wolves and/or bears were not detected before.

The national fund can support mainly investments:

- Light or sound protection devices against large carnivore
- Electric fences
- Emergency housing to shepherd livestock

After having notified the Ministry of Agriculture of the urgent need of investments, local national authorities buy the equipment and provide farmers that have suffered attacks on their livestock with needed equipment.

Other damage prevention activities

Developing guarding dogs breed

More and more guarding dogs are used to protect livestock from large carnivore attacks in mountain as

	<p>well as in plain area but some incidents appear every year between dogs and hikers or tourists enjoying outdoor activities (attacks, bite).</p> <p>In order to trigger this issue, different actions are to be set up:</p> <ul style="list-style-type: none"> - Support network to improve training of guarding dogs; - Inventory of guarding dogs to support breeding - Follow-up of incidents with guarding dogs - Communication to outdoor activities users on how to act with guarding dogs (best-practices guide).
<p>Wolf Prevention Intervention Units (WPIU) of the LIFE WolfAlps EU (LWA EU) project</p>	<p>In the scope of the LWA EU project, the French Office for Biodiversity (OFB) and the Mercantour national park have each set up a WPIU to assist breeders in preventing wolf damages to their flocks. Each unit is composed of two agents who regularly perform field visits to flocks suffering from wolf depredation. Each visit usually last for one to fifteen days. The objectives of the WPIU are:</p> <ul style="list-style-type: none"> - to provide psychological support (an attentive ear) to breeders whose flocks are suffering from wolf depredation, - to evaluate the effectiveness of the preventive system, and - to give detailed, concrete advice to the breeder on how to improve the preventive system given wolf behavior and local conditions and constraints. <p>The advice provided by WPIU is based on observations of:</p> <ul style="list-style-type: none"> - the local context (landscape characteristics such as slope, forest cover, presence of shepherd cabins and other human infrastructure, etc.), - the state of night pens, if used (type, height, area and electrification), - the behavior of livestock guarding dogs, if used (number, attachment to the flock, reaction to stimuli, etc.), including through the use of GPS collars, - and, whenever possible, the actual behavior of wolves in the vicinity of the flock through the use of camera traps and thermal infrared cameras. <p>Breeders that could benefit from an intervention of the WPIU are usually identified by local authorities, which centralize wolf depredation damage claims, or WPIU staff. Breeders are free to decline the service and to act or not on the advice provided. Interventions are 100% free of charge: all costs are covered by funds</p>

	from LWA EU, OFB and Mercantour national park.
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2.3 GERMANY

Prepared by:

Axel Drechsler

The Common agricultural policy (CAP) 2023-2027				
<p>In Germany up to now the federal states finance livestock protection measures by own funds and some are also using the joint federal/länder task for "the Improvement of Agricultural Structures and Coastal protection" (GAK). Information about the sources of funding are published on a yearly basis (see https://dbb-wolf.de/mehr/literatur-download/berichte-zu-praevention-und-nutztierschaeden).</p> <p>Payment for prevention measures and for compensation of wolf caused damages by federal states in 2022.</p>				
	Payment for prevention (€)	Promoted prevention cases	Payment for compensation (€)	Number of attacks
Total	18.428.830	3.444	616.413	1.136
General comment of the implemented measures				
Damage prevention on national level				
<p>In Bavaria: Federal state funding scheme „Förderrichtlinie Investition Herdenschutz Wolf“ (since May 2020)</p>	<p>The Bavarian state ministry of the environment and consumer protection finances up to 100 % of the purchase of equipment to farmers who graze their animals within a designated area around the territories of stationary wolves and around ‘incidence areas’ (see map on https://www.lfu.bayern.de/natur/wildtiermanagement_grosse_beutegreifer/herdenschutz/herdenschutz_wolf/index.htm).</p> <p>The following elements are eligible for funding:</p> <ul style="list-style-type: none"> • Electric fences (mobile electric fences and electrified fixed fences) • Mobile Field Shelters (for sheep and goats only) • Livestock guarding dogs <p>From May 2020 (start of funding scheme) until the end of 2022, Bavaria invested 10,2 Mio. Euros to fund livestock protection measures. (The payment for the year 2022 – ca. 5 Mio. € - is included in the table above)</p>			
Other damage prevention activities				
<p>Projects and damage prevention center</p>	<p>The Federal Agency for Nature Conservation has four projects regarding livestock protection: One project contains a literature review about livestock protection measures that are not yet implemented in Germany but may be effective, too. Another project focuses on a literature review regarding livestock protection</p>			

(BZWW)	<p>species, e.g. donkeys, lamas etc. and their effectiveness regarding protection of livestock. Two additional projects focus on the implementation of livestock protection measures on dykes and steep slopes. For the last two projects livestock owners which implement protection measures on dykes and steep slopes were portrayed. All four reports will be published and will be available via https://dbb-wolf.de/mehr/relevante-literatur.</p> <p>The Federal Agency of Agriculture and Food has implemented the German Federal Center for Grazing Livestock and Wolf in 2021. The major objective of the new center is to support administrative processes as well as to promote best practice examples of livestock damage preventive measures and its transferability across federal states, grazing livestock associations and other stakeholders. Financial expenses of the federal center for the year 2022 sum up to € 214.850.</p>
In Bavaria: Stockage of intervention kits at local level	<p>Intervention kits are stored at local level (7 places, each: 25 nets, 5 electric fence energizers, 5 batteries and more)</p> <ul style="list-style-type: none"> - Distribution of fence material to livestock farmers after attacks - Fence construction help in urgent cases <p>The intervention kits stay in the field until the farmers establish a permanent reliable protection.</p>

2.4 ITALY

Prepared by:

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The Common agricultural policy (CAP) 2023-2027

The Italian Strategic plan (SP) for the Common agricultural policy (CAP) 2023-2027 was confirmed by the European Commission in December 2022. Each Region will be able to define a Regional Complement for Rural Development of the SP 2023-2027 (CSR), which is in fact the local implementation tool of the national strategy. The Regions remain the Managing Authorities and can choose the interventions to be implemented within the national plan, the financial allocation, and the timing of the calls with the definition of the selection criteria.

In Italy, two Alpine Regions have activated/will soon activate the SRA17-ACA17 "Specific commitments to coexistence with large carnivores", payments for implementing damage prevention (subsidies for extra workload): Liguria and Piemonte; and 3 have activated/will soon activate the SRD04 "Non-productive agricultural investments with an environmental purpose", supporting farmers in investments to improve coexistence between agriculture, livestock farming and the species of Community interest protected by the Habitats Directive 92/43/EEC (investments in equipment): Lombardia, Liguria and Piemonte.

Peculiarities of each Alpine Region are reported considering:

- the Regional Complement for Rural Development of the SP 2023-2027 (SCR)
- the comparison between SP 2023-2027 and RDP 2014-2022
- the damage prevention measures at regional level
- other damage prevention activities

The data about Veneto Region and Bolzano Autonomous Province are missing.

PIEMONTE REGION

Two measures are supported within the SP 2023-2027:

1. SRA17-ACA17 “Specific commitments to coexistence with large carnivores”

Selection criteria give priority to:

- breeding in areas with previous depredations
- sheep and goat farms
- mountain breeding

Protection with fences for the grazing and/or closing animals at night	<ul style="list-style-type: none"> • Subsidies cover the workload needed to setup, move, and maintain the enclosure. • Electrified or not-electrified, fixed, semi-permanent or movable fences as grazing enclosures / night pens. • Periodic check of the enclosure’s functionality. If mobile fences are used, they must be moved every 10 days. • Grazing/use of fences of at least 60 days/year.
Protection with livestock guarding dogs (LGDs)	<ul style="list-style-type: none"> • Subsidies cover the workload needed to work with LGDs. • A ratio of 1 LGD per 100 animals is required, with a minimum of at least 2 dogs. If more than 800 animals are present, a minimum of 8 dogs is allowed. • LGDs must belong to Pastore Maremmano-Abruzzese and Montagna dei Pirenei breeds. • Insurance for any damage caused by LGDs to people is required.
Protection with a shepherd	<ul style="list-style-type: none"> • Subsidies cover the work of a shepherd. • Regular presence of a shepherd is required. • The animals must be gathered and closed in a night pen or stable during the night.

2. SRD04 – “Non-productive agricultural investments with an environmental purpose” - D “Improving coexistence between agriculture, livestock and wildlife”

The measure has not yet been activated. It will support investments to improve coexistence between agriculture, livestock farming and the species of Community interest protected by Dir. 92/43/EEC (wolf, lynx, brown bear, and golden jackal). Subsidies will cover 100% of the cost of the investments.

The following investments are planned to be implemented:

- fixed or mobile, electrified or not-electrified fences for the protection of animals during the grazing activity and for night shelter;
- structures for beehives protection;
- virtual fencing systems;
- structures for the night protection of livestock and accommodation (micro-

- housing units) for shepherds;
- purchase of livestock guarding dogs;
- acoustic/visual deterrent devices.

Comparison between RDP 2014-2022 and SP 2023-2027

In Piemonte within the RDP 2014-2022 two different Measures had been activated:

- **Measure 4.4.2: Protection of livestock by canids depredations in pastures.** Farmers could access to a capital contribution to offset the prevention cost incurred. Subsidies covered 100% of the cost of the prevention system purchased (livestock guarding dog or electrified fences) with range from 1.000,00 to 30.000,00 € for each application. Totally 4.610,46 € have been funded in 2018 (3 applications).
- **Measure 10.1.6: Protection of livestock by canids depredations on hill and mountain pastures.** The area-based flat rate payment for mobile electric fences, livestock guarding dogs and constant human presence during grazing was 50,00 € / ha, only for mountain and hilly territories. Subsidies covered the workload which was needed to setup, move, and maintain the enclosure and the constant human presence. Eighty farmers have been funded in the period 2016-2023, for about 270.000 €/year.

Similar measures are being implemented within the SP 2023-2027.

The main changes between Measure 10.1.6 and ACA17 regard: 1. the extension of the premium areas from hill/mountain pastures to the entire Piemonte area due to the increased wolf spread; 2. a different in the payment considering breeders with livestock grazing in the mountain pastures vs. livestock grazing in the lowland pastures due to the different work required for protection activities from large carnivores required.

Between Measure 4.4.2 and SRD04 the main differences regard the greater number of investment types that will be implemented with the SP 2023-2027.

Comparison between the two schemes:

	RDP 2014-2022		SP 2023-2027	
	Payments	Farmers included	Payments	Farmers included
RDP 2014-2022 – Measure 10.1.6	270.000 €/year	80		
RDP 2014-2022 – Measure 4.4.2	4.610,46 €	3		
CSR 2023-2027 – SRD17-ACA17 (total foreseen budget ...)			284.000 € (2023)	47 (2023)

CSR 2023-2027 – SRD04			Not yet activated
General comment of the implemented measures			
<ul style="list-style-type: none"> • No field assistance is provided for breeders. • Breeders must implement all 3 protection measures to access to ACA17 funds. • There are no controls of the proper implementation of measures in the field (e.g. for the correct use of electric fences). 			
Damage prevention on regional level			
Regional cofinancing scheme	<p>Regional plan to protect livestock from large carnivore (from 2012 to 2022).</p> <p>From 2012 to 2021: about 290.000 €/year</p> <p>In 2022: about 400.000 €</p> <p>Currently not available.</p>		
Other damage prevention activities			
Projects	<p>Two LIFE Projects were active in Piemonte Region based on improving coexistence between human activities and wolf presence and dealing with damage prevention activities:</p> <ul style="list-style-type: none"> • LIFE WOLFALPS (2013-2018) - LWA • LIFE WOLFALPS EU (2019-2024) – LWA_EU <p>ELECTRIC FENCES</p> <p>Enclosures composed by 3 electrified wires, battery, a solar panel, and an energizer have been distributed to cattle farmers and kits composed by electrified nets (of at least 120 cm), battery, solar panel and energizer have been distributed to sheep farmers.</p> <p>LIVESTOCK GUARDING DOGS</p> <p>Eight LGDs from working lines were purchased, bred, socialized, and distributed to interested farmers within the LWA project.</p> <p>ALPINE SHELTER</p> <p>A prefabricated building made of durable, high-performance materials was provided to a shepherd and localized in an alpine pasture at 1.930 m a.s.l. within the Life WolfAlps project.</p>		
Testing of new	PROTECTION OF CATTLE		

<p>solutions</p>	<p>Since 2015, within the two LIFE projects, a multi-wire electrified enclosure for the protection of cattle has been tested with positive results both from a management and a protection point of view.</p> <p>FLADRY</p> <p>Since 2014, within the two LIFE projects, the efficacy of the system called fladry has been tested in the wolf captive facility “Centro uomini e lupi” and in the field to prevent wolf attacks on livestock (both cattle and sheep). No animals have been attacked while fladry was in place.</p> <p>ACOUSTIC DETERRENTS</p> <p>Since 2015, within the two LIFE projects, the efficacy of acoustic devices which emit pre-recorded sounds, either at programmed intervals or by photocell activation has been tested. The acoustic deterrent has been used in the wolf captive facility “Centro uomini e lupi” where a wolf rapid adaptation to the system has been observed, and in the field where no animals have been attacked during the trials.</p>
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LIGURIA REGION

Two measures are supported within the SP 2023-2027:

1. **SRA17-ACA17 “Specific commitments to coexistence with large carnivores”**

The measure has not yet been activated.

Selection criteria will give priority to:

- breeding in areas with previous depredation
- sheep and goat farms

<p>Protection with fences for the grazing and/or for closing animals at night</p>	<ul style="list-style-type: none"> • Subsidies cover the workload needed to setup, move, and maintain the enclosure. • Electrified or not-electrified, fixed, semi-permanent or movable fences as grazing enclosures / night pens. • Periodic check of the functionality of the enclosures; if mobile fences are used, they must be moved periodically. • A grazing period and use of fences of at least 60 days/year is required. • Minimum grazing area of 2,5 ha.
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<p>Protection with livestock guarding</p>	<ul style="list-style-type: none"> • Subsidies cover the workload needed to work with LGDs. • LGDs must belong to Pastore Maremmano-Abruzzese
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dogs (LGDs)	<p>and Montagna dei Pirenei breeds.</p> <ul style="list-style-type: none"> • Insurance for any damage caused by LGDs to people is required. • Dogs must come from work lines of at least one generation. • Participation by beneficiaries in training activities is required.
Protection with a shepherd	<ul style="list-style-type: none"> • Subsidies cover the work of a shepherd. • Regular presence of a shepherd is required. • The animals must be gathered and closed in a night pen or stable during the night.
<p>2. SRD04 – “<u>Non-productive agricultural investments with an environmental purpose</u>” - D “<u>Improving coexistence between agriculture, livestock and wildlife</u>“</p> <p>The measure has not yet been activated. It will support investments to improve coexistence between agriculture, livestock farming and the species of Community interest protected by Dir. 92/43/EEC (Wolf, Lynx, Brown Bear and Golden Jackal). A capital grant is provided to reimburse the expenditures. The eligible expenditures start from a minimum of 5.000 €. A maximum value is not defined. 100% of the eligible expenditures will be refunded.</p> <p><u>The following investments are planned:</u></p> <ul style="list-style-type: none"> ○ fixed or mobile, electrified or not-electrified fences for the protection of animals during the grazing activity and for night shelter; ○ structures for beehives protection; ○ virtual fencing systems; ○ structures for the night protection of livestock and accommodation (micro-housing units) for shepherds; ○ purchase of livestock guarding dogs; ○ acoustic/visual deterrent devices. 	
Comparison between RDP 2014-2022 and SP 2023-2027	
<p>In Liguria within the RDP 2014-2022 had been activated only one preventive measure:</p> <ul style="list-style-type: none"> ○ Measure 4.4.2: "Support for non-productive investments related to the fulfilment of the agri-climate-environmental objectives" - Prevention of animal damage". Farmers could access to a capital contribution to offset the prevention cost incurred. Subsidies covered 50% of the cost of the prevention system purchased (livestock guarding dog or electrified fences). The practices are still ongoing for almost 150.000,00 € for 10 applications. <p>Similar measures are being implemented within the SP 2023-2027.</p> <p>Measure as ACA17 was not activated before.</p> 	

Between Measure 4.4.2 and SRD04 there aren't substantial differences.

Comparison between the two schemes:

	RDP 2014-2022		SP 2023-2027	
	Payments ongoing	Farmers included	Payments	Farmers included
RDP 2014-2022 – Measure 4.4.2	approximately 150.000,00 € in 2023	10		
CSR 2023-2027 – SRD17-ACA17 (total foreseen budget 1.863.333 €)			Not yet activated	
CSR 2023-2027 – SRD04			Not yet activated	

Damage prevention on regional level

Regional cofinancing scheme	<p>Regional plan to protect livestock from wolf (from 2012 to 2022).</p> <p>From 2012 to 2022: about 160.000 € in total</p>
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Other damage prevention activities

Projects	<p>Regione Liguria is partner of the LIFE WolfAlps EU Project (2019-2024). The project aims to improve coexistence between human activities and wolf presence and deals with damage prevention activities.</p> <p>ELECTRIC FENCES</p> <p>Five enclosures composed by 5 electrified wires, battery, solar panel and energizer have been bought with project funds and distributed to farmers.</p>
Testing of new solutions	<p>ACOUSTIC DETERRENTS</p> <p>The efficacy of acoustic devices which emit pre-recorded sounds, either at programmed intervals or by photocell activation, have been tested in the past in field conditions but a wolf rapid adaptation to the system was observed.</p>

LOMBARDIA REGION

There is one measure supported within the SP 2023-2027:

1. **SRD04 – “Non-productive agricultural investments with an environmental purpose” - D “Improving coexistence between agriculture, livestock and wildlife“**

The measure has not yet been activated. It will support investments to improve coexistence between agriculture, livestock farming and fauna species, including ungulates and the species of Community interest protected by Dir. 92/43/EEC (Wolf, Lynx, Brown Bear and Golden Jackal). A capital grant is provided to reimburse the expenditures. The eligible expenditures still need to be defined. 100% of eligible expenditures will be refunded.

The following investments are planned:

- fixed or mobile, electrified or not-electrified fences for the protection of animals during the grazing activity and for night recovery;
- structures for beehives protection;
- purchase of livestock guarding dogs.

Comparison between RDP 2014-2022 and SP 2023-2027

In Lombardia, within the RDP 2014-2022, one measure had been activated:

- **Measure 4.4.1: Non-productive agricultural investments with an environmental purpose.** Farmers could access to a capital contribution to offset the prevention costs. Subsidies covered 100% of the cost of the prevention system purchased (livestock guarding dog or electrified fences), between 1.000 and 30.000 € for each application. Totally, 59 applications have been funded within the call 2019 (249.652 € funded) and 46 within the call 2022 (220.019 € funded)

A similar measure will be implemented within the SP 2023-2027.

Between measure 4.4.1 and SRD04 no substantial differences are foreseen.

Comparison between the two schemes:

	RDP 2014-2022		SP 2023-2027	
	Payments	Farmers included	Payments	Farmers included
RDP 2014-2022 – Measure 4.4.1	469.671 €	105		
CSR 2023-2027 – SRD04			Not yet activated	

General comment of the implemented measures

In 2019 for the first time this measure has been financed in Lombardia, as it was not foreseen in the previous RDP. The contents of the measure have been defined

thanks to the support of experts of the LIFE WOLFALPS and LIFE GESTIRE2020 projects and the experience gained in these projects. Region Lombardia has contributed to the active promotion of this measure through the technical assistance provided to farmers by the technical facilitators of the LIFE GESTIRE2020 project, who helped farmers in compiling the proposals and organized a dedicated webinar, and through direct information to farmers that came in contact within LIFE WOLFALPS and LIFE WOLFALPS EU projects, especially through the active role of the WPIUs and ERSAF in the ALCP of LIFE WOLFALPS EU. Furthermore, an active role of local administrations involved in the project such as Provinces and Parks was a key aspect in facilitating the contact with local potential beneficiaries.

Damage prevention on regional level

Regional cofinancing scheme

In august 2023, the regional government adopted a regional financing scheme for prevention of damages by wildlife, including protected species, that finances 100% of the purchase of equipment.

Other damage prevention activities

Projects

In the last decade, 4 LIFE projects based on improving coexistence between human activities and large carnivores have been carried out in Lombardia:

LIFE ARCTOS (2010-2014)

LIFE WOLFALPS (2013-2018)

LIFE GESTIRE2020 (2016-2023)

LIFE WOLFALPS EU (2019-2024)

AFTER LIFE CONSERVATION PLAN (ALCP) of LIFE WOLFALPS financed to ERSAF (2018-2020, extended to 2023) that included support for farmers; also including the purchase of electric fences and prevention materials. The total amount of the project is 208.000 €.

ELECTRIC FENCES

Within the above-mentioned projects, a total of 162 kits of electric fences were distributed to livestock breeders and beekeepers: 36 (LIFE ARCTOS), 52 (LIFE WOLFALPS), 74 (ALCP WOLFALPS).

LIVESTOCK GUARDING DOGS

In Lombardia, there are no mechanism for the support of livestock guarding dogs to farmers. 3 LGDs were distributed to interested farmers within LIFE WOLFALPS project.

Testing of new solutions

Four acoustic devices and 3 fladry have been tested in selected pastures within LIFE WOLFALPS project.

Intervention kits	The kits tested were composed of: energizer, battery, solar panel, 200 linear meters of electrified wire or net, multimeter and all the materials for electrification signalling in accordance with the law.																								
VALLE D'AOSTA REGION																									
There are no measures supported within the RDP 2014-2022 and SP 2023-2027 in Valle d'Aosta Region.																									
Damage prevention on regional level																									
Regional cofinancing scheme	<p>Regional plan to protect livestock from large carnivore attacks supports the cost for electric fences, mechanic fences, livestock guarding dogs, acoustic and optical devices, shepherds' work, and helicopter travels.</p> <p>The funds and the number of farmers assisted, from 2017 to 2023, are reported:</p> <table border="1" data-bbox="531 891 1394 1525"> <thead> <tr> <th>Year</th> <th>Funds (€)</th> <th>N. farmers supported</th> </tr> </thead> <tbody> <tr> <td>2017</td> <td>4615,37</td> <td>5</td> </tr> <tr> <td>2018</td> <td>55587,84</td> <td>23</td> </tr> <tr> <td>2019</td> <td>91721,62</td> <td>39</td> </tr> <tr> <td>2020</td> <td>73533,76</td> <td>25</td> </tr> <tr> <td>2021</td> <td>162562,00</td> <td>56</td> </tr> <tr> <td>2022</td> <td>138754,13</td> <td>64</td> </tr> <tr> <td>2023 (not definitive data)</td> <td>169249,49</td> <td>39</td> </tr> </tbody> </table>	Year	Funds (€)	N. farmers supported	2017	4615,37	5	2018	55587,84	23	2019	91721,62	39	2020	73533,76	25	2021	162562,00	56	2022	138754,13	64	2023 (not definitive data)	169249,49	39
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Other damage prevention activities																									
Projects	<p>LIFE WOLFALPS EU (2019-2024) Project is active in Valle d'Aosta Region based on improving coexistence between human activities and wolf presence and dealing with damage prevention activities.</p> <p>ELECTRIC FENCES</p> <p>Enclosures composed by 4 or 5 electrified wires, battery, solar panel and energizer have been distributed to cattle farmers and kits composed by electrified nets (of at least 145 cm), battery, solar panel and energizer have been distributed to sheep farmers.</p>																								

	<p>LIVESTOCK GUARDING DOGS</p> <p>Eight LGDs from working lines were purchased, bred and socialized within the project and distributed to interested farmers.</p>
TRENTO AUTONOMOUS PROVINCE (APT)	
The Common agricultural policy (CAP) 2023-2027	
<p>At the moment, in the APT there are no initiatives covered by the CAP program 2023-2027 for the implementation of protection measures.</p>	
Comparison between RDP 2014-2020 and SP 2023-2027	
<p>In the APT, during the period 2014-2020, a total amount of € 262.560 were used through the RDP (measure 4.4.2) for the following protection measures:</p> <p>A) Traditional wooden fences (<i>60% of the expense between € 10.000 and € 50.000 for each intervention</i>)</p> <p>B) Stone walls for livestock confinement and protection (<i>60% of the expense between € 10.000 and € 50.000 for each intervention</i>)</p> <p>C) “Bienenhaus” fences for the protection of beehives from bears (<i>100% of the expense</i>)</p> <p>D) Electric fences for livestock protection from bears and wolves (<i>70% of the expense between € 3.000 and € 50.000 for each intervention</i>)</p> <p>E) Temporary living modules for shepherds (<i>100% of the expense</i>)</p>	
Damage prevention on local level	

Funds from the APT

In the APT there are three main types of interventions, financed with direct funds from the provincial administration, to promote protection measures:

- Free loan for use, i.e., the direct transfer of materials for the construction of electrified multi-wire networks and fences. The loan, lasting eight years, is guaranteed by the staff of the Trentino Forestry Corps, through the stipulation of specific contracts between the public administration and the user;
- Short loan (i.e., the temporary transfer of electrified fences or housing modules, for a maximum of a few months);
- Financing. The financing formula provides for reimbursement for the purchase of the materials necessary for the construction of electrified fences, or for the purchase of Maremmano Abruzzese protection dog puppies.

The program covers respectively:

60% of the purchase costs if the prevention measure is directed to protect bovine or equine livestock. In the case of equines and cattle, the funding is aimed, respectively, at the protection of foals and calves younger than 15 months. Adult horses and cattle are therefore excluded, as they are statistically much less at risk of predation than the categories listed above;

90% of the purchase costs if the work will protect sheep, goats, donkeys, small ponies, and camelids (llamas and alpacas) and, exclusively in western Trentino (west of the Adige River), chicken coops and beekeeping heritage.

Other damage prevention activities

Projects

At the moment, in the APT, there are no additional projects or funding sources for the implementation of livestock and beehives protection measures. Still, in the last fifteen years, protection measures and activities were financed also in the context of two LIFE projects, LIFE ARCTOS (2010-2014) and LIFE DINALP BEAR (2014-2019).

LIFE ARCTOS: The project activity was focused on the implementation of livestock and beehives protection measures during the period 2010-2014, in the earlier stages of the brown bear recolonization process after their reintroduction in 1999-2002. During the period 2010-2014, the project covered most of the costs related to financing protection measures in the APT. Each year, an average of about 50 measures were financed (mostly for beehives, but also for livestock), for an annual expense of about € 40.000 – 50.000.

LIFE DINALP BEAR: The project was active during a later stage of the bear recolonization phase (2014-2019), when also wolves returned to the territory of the APT. A total of 19 electric fences for livestock and beehives protection were financed through the LIFE DINALP BEAR funds. Additionally, an expert referent from the project worked to check the health and training of 25 Maremmano Abruzzese puppies provided by the APT to local breeders. Also for these dogs, the veterinary visit was guaranteed.

FRIULI-VENEZIA GIULIA REGION

The Common agricultural policy (CAP) 2023-2027

At the moment, in Friuli-Venezia Giulia there are no initiatives covered by the CAP program 2023-2027 for the implementation of protection measures.

Comparison between RDP 2014-2020 and SP 2023-2027

Also for the period 2014-2020, Friuli-Venezia Giulia did not activate initiatives connected to the RDP funds.

Damage prevention on local level

Regional funds

In Friuli-Venezia Giulia there are two initiatives, covered by regional funds, supporting farmers who implement protection measures:

- 1) Regional act 6/2008 and regional decree. 162/2020: Direct contribution for protection measures**

- a) Contribution for fixed or mobile fences, electrified or otherwise.
- b) Contribution for the purchase of guardian dogs.
- c) Contribution for labour costs for installing protection measures.
- d) Contribution for the labour costs of managing prevention measures in mountain pastures.
- e) Information activities for breeders on LGDs

2) Regional act 183/2023 (still in evaluation): Contribution to offset the increased costs of agricultural companies that adopt and manage prevention measures

- a) Contribution based on the number of Adult Bovine Units (ABU), starting from a minimum of 10 ABU/company;
- b) Contribution for farmers working in mountain pastures and transforming milk products;
- c) Contribution for farmers working in mountain pastures and not transforming milk products;
- d) Contribution for guardian dogs

Other damage prevention activities

At the moment, in Friuli-Venezia Giulia there are no additional projects or funding sources for the implementation of protection measures, nor such measures had been activated during the period 2014-2020.

2.5 LIECHTENSTEIN

Prepared by:

Cathérine Frick

Legislation on national level	
<p>The Principality of Liechtenstein is not part of the European Union and thereby is not affected by the Common agricultural policy (CAP).</p> <p>The responsibility for supporting farmers in terms of preventing damages to grazing animal by large carnivores lies with the government. The Office of Environment is tasked with revising legislation and management plans concerning damage prevention and compensation payments and further enforces this legislation.</p>	
Damage prevention on national level	
<p>National co-financing scheme (national funds, same source as for damage compensation)</p>	<p>The guideline concerning aptitude, training, keeping, breeding and for government-funded livestock guarding dogs was brought into force on July 11th, 2023.</p> <p>The regulation on prevention and compensation for damages by protected animals is currently under revision.</p>
Other damage prevention activities	
<p>Pilot project: Shepherding in 2024</p>	<p>In the year 2022 free grazing sheep on alpine pastures in Liechtenstein were attacked and killed by a transient wolf. This was the first documented incident of damages by large carnivores Liechtenstein.</p> <p>In 2023 a motion was proposed for a pilot project. The plan is to fund a shepherd in 2024. This person is planned to join the three existing flocks together, be present with the sheep and gather them and close them in a night pen.</p>

2.6 SLOVENIA

Prepared by:

Tomaž Berce, Rok Černe

The Common agricultural policy (CAP) 2023-2027	
<p>The Slovenia Strategic plan (SP) for the Common agricultural policy (CAP) 2023-2027 was confirmed by the European Commission in October 2022. It covers two types of support for farmers in terms of preventing damages by large carnivores to grazing animals:</p> <ul style="list-style-type: none"> - payments for implementing damage prevention (subsidies for extra workload) and - support for pasture arrangements (investments in equipment). <p>There are three measures that are supported within SP 2023-2027:</p>	
<p>Protection with high electric nettings or night pens</p>	<ul style="list-style-type: none"> • Subsidies cover the workload needed to setup, move and maintain the enclosure. • High electric nettings (160 cm) or fixed fences as enclosures / night pens.
<p>Protection with livestock guarding dogs</p>	<ul style="list-style-type: none"> • Subsidies cover the workload needed to work with livestock guarding dogs. • At least 3 dogs are required and kept within a fenced pasture.
<p>Protection with a shepherd</p>	<ul style="list-style-type: none"> • Subsidies cover the work of a shepherd. • Regular presence of a shepherd is required. • The animals have to be gathered and closed in a night pen or stable during the night.
Comparison between RDP 204-2020 and SP 2023-2027	
<p>In Slovenia, there are almost no differences between the two CAP schemes. The only changes have been made to the amount of support (payments per hectare) for the three prevention measures, as presented in the chart below.</p> <p>Within the support for pasture arrangements, the Ministry of agriculture, forestry and food foresees the support of improved fencing systems to farmers living in areas of large carnivore presence. The idea is to support the purchase of pure-bred livestock guarding dog, but the system has not been set yet.</p>	

Comparison between the two schemes:

Protection measure	RDP 2014-2020		SP 2023-2027
	Payments	Farmers included	Payments
Protection with high electric nettings or night pens	119,90 € / ha	55-58	118,64 € / ha
Protection with livestock guarding dogs	107,60 € / ha	22-25	85,60 € / ha
Protection with shepherd	112,60 € / ha	5-8	269,20 € / ha

General comment of the implemented measures

- Farmers can apply only for one type of measure, except the combination of shepherds and livestock guarding dogs, where they can receive payments for both measures.
- Subsidies based on grazing area (per hectare) do not always cover actual costs (e.g. employment of a shepherd or the maintenance of three LGDs are fixed costs, not based on grazing surface).
- The surveillance is applied only for the subsidy obligations and it is done by the Agency for Agricultural Markets and Rural Development. The controls are random and cover only 5% of the farmers involved. There are no controls of the proper implementation of measures in the field (e.g. for the correct use of electric fences).

Damage prevention on national level

<p>National cofinancing schemes (national funds, same source as for damage compensation)</p>	<p>Ministry of Natural Resources and Spatial Planning cofinances 80% of the purchase of equipment to farmers who have already experienced damage on their property.</p> <p>The cofinancing covers the costs (up to 4000 €) for the implementation of high electric fences (160 cm) for the protection of grazing animals, beehives, orchards, etc. Applications are possible all-year-long and the payments after performed after the purchase and the installation of the equipment in the field.</p> <p>Regular field controls are made by Slovenia Forest Service damage officials – in general two controls per year for livestock breeders (more in case of detected improper use). The controls are announced and unannounced. The purpose of such controls is to check, whether the equipment is correctly installed in the field and to stay in touch with farmers. This is a kind of collaboration between farmers and officials, as they share useful feedback information and improve the general knowledge about the use of these</p>
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	<p>preventive measures. Regular field controls are crucial for ensuring the correct use the equipment. The control is also useful to monitor the effectiveness of the implemented measures.</p> <p>The main weakness of the current system is the eligibility towards the co-financing, as is allows the support only for farmers who have already experienced damages on their animals. Therefore, the support does not cover the prevention of damages and proactive farmers who would like to protect their herds from attacks.</p>
<p>Other damage prevention activities</p>	
<p>Projects</p>	<p>In the last decade, many projects were focused on finding solutions for preventing damages caused by large carnivores on human property, especially for protecting grazing animals. Within projects, SFS and other institutions have been collaborating with livestock breeders, beekeepers and other farmers to spread the network of good practice examples.</p> <p>The aim of damage prevention activities within project is to test new methods and approaches, to test the effectiveness, to try to implement new measures in national schemes, to educate, advise and closely collaborate with farmers, damage officials and other stakeholders, to improve controls of the implemented measures. The negative side of the project-based activities is that the actions and initiatives are limited to the project duration.</p> <p>From 2010 there were several projects working on this topic:</p> <ul style="list-style-type: none"> • LIFE SloWolf • LIFE DINALP BEAR • Carnivora Dinarica (Interreg Slovenia-Croatia) • LIFE Lynx • LIFE WOLFALPS EU • LIFE WILD WOLF <p>ELECTRIC FENCES</p> <p>Within the above-mentioned project, 106 kits of electric fences were distributed to livestock breeders and beekeepers.</p> <p>LIVESTOCK GUARDING DOGS</p> <p>In Slovenia, there are no mechanism for the support of livestock guarding dogs to farmers. For this reason, LGDs were distributed to interested farmers from projects. Altogether, 44 dogs joined new owners from LGD working lines.</p>

<p>Testing of new solutions</p>	<p>PROTECTION OF CATTLE</p> <p>In 2021, Slovenia Forest Service started with the collaboration with four cattle breeders to test different solution for the protection of cattle, especially calves up to the age of 3 months and suckler cows. High electric nettings and multiwire electric fences have been tested with positive results.</p> <p>ADULT LIVESTOCK GUARDING DOGS</p> <p>In 2020, based on the interest of farmers, two LGDs were raised and educated by an experienced LGD breeder until adult phase and transferred to a new farm to protect a herd of sheep. This practice has shown great results, as less experienced farmers can receive an educated and more stable dog that can immediately work in the new environment.</p> <p>FLADRY</p> <p>In 2022, Slovenia Forest Service started with testing a system called fladry to prevent wolf attacks on livestock. As the system is still being tested, we cannot make any conclusions on the effectiveness.</p>
<p>Intervention kits</p>	<p>Within the LIFE DINALP BEAR project, Slovenia Forest Service established the so-called intervention kits. These kits consist of all the equipment needed to implement a quick temporary protection for livestock or other types of human property and prevent large carnivore attacks from reoccurring. Intervention kits are stored in SFS regional offices and are available all the time. Damage officials are ready to help farmers in need and the intervention kit usually stays in the field for 2 months before the owners establish a permanent reliable protection.</p> <p>On average, 12 kits are requested and set in the field every year. We observe a moderate increase in the need for quick reaction in the field after attacks in the last years, due to the occurrence of wolves and bears in areas where they have been absent or very rare in the last decades.</p>

2.7 SWITZERLAND

Prepared by:

Sarah Stéhly

The agricultural policy (AP) 2022-+	
<p>Switzerland is not member of the EUROPEAN AGRICULTURAL FUND FOR RURAL DEVELOPMENT (EAFRD)</p> <p>The Swiss Strategic plan for the agricultural policy (AP) 22+ focuses on strengthening the efficiency of farms and reducing environmental pollution and the consumption of non-renewable resources. Protection of livestock plays a subordinate role. Nevertheless, the Confederation has earmarked additional financial resources to support alpine farming: the use of shepherds on alps will be supported with higher contributions depending on pasture management.</p> <p>For its part, the Federal Office for the Environment (FOEN) supports production agriculture with financial resources for specific herd protection measures. This includes material for the raising/reinforcement and electrification of existing pasture fences or for the construction of new night pastures/repens on alps, and the provision of protection dogs according to the specifications of the official system.</p> <p>Measures that are supported within the general strategy of Switzerland:</p>	
<p>Protection with high electric nettings or electrified night pens</p>	<ul style="list-style-type: none"> • Supported by the Federal Office for Agriculture (FOFA) through direct payments workload needed to setup, move and maintain the enclosure (only on alps). • Supported by the FOEN through financial aid High electric nettings (105 cm) or mobile electrified fences as enclosures / night pens.
<p>Protection with livestock guarding dogs</p>	<ul style="list-style-type: none"> • Supported by the FOEN through financial aid • Financial aid for breeding, training, field testing, keeping and use in summer pastures • At least 2 dogs are required for protecting one herd
<p>Protection with a shepherd</p>	<ul style="list-style-type: none"> • Supported by the Federal Office for Agriculture (FOFA) through direct payments. • Subsidies cover part of the work of a shepherd. • Regular presence of a shepherd is required. • The animals have to be guided.
Comparison between RDP 204-2020 and SP 2023-2027	

Measures and financial aid from the FOEN have not changed. On the FOAG side, subsidies for shepherds on the Alps will be added in 2024.

In addition, last year and this year additional financial resources were added for so-called emergency measures in summering. This is a mixture of support for manpower and material. The FOEN was tasked with distributing the funds, which is not in line with its actual policy (support for material).

Protection measure	FOEN	FOEN	FOAG
	Payment 2022	Payments 2023	Payments 2022/2023
Protection with higher electric nettings or night pens	CHF 330'000.00/year	CHF 250'000.00/year	--
Protection with livestock guarding dogs	CHF 1'700'000.00/year	CHF 1'850'000.00/year	--
Subsidies for shepherd	--	CHF n--	n.n.
Emergency measures	CHF 4,7 mio/year	CHF 4 mio/year	--

General comment of the implemented measures

- Due to the joint task of the FOEN and FOAG, the involvement of the cantonal agricultural offices and other agricultural organisations, it is difficult for the FOEN to assess the efficiency of the measures. In addition, the wolf population has only increased significantly since 2021.

Damage prevention on national level

<p>National cofinancing scheme (National funds, other source as for damage compensation)</p>	<p>The FOEN co-finances 80%</p> <p>In order to prevent damage to farm animals by large carnivores, the FOEN shall contribute 80 per cent of the flat-rate costs of the following measures:</p> <ol style="list-style-type: none"> Breeding, training, keeping and use of livestock guardian dogs that meet the federal requirements; Electrical reinforcement of pasture fences to protect against large predators; Electric fences to protect beehives from bears; Further measures by the cantons in consultation with the FOEN if the measures under letters a-c are not sufficient or not appropriate <p>The cofinancing covers the costs (for the implementation of</p>
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	<p>electrical reinforced and raised fences (105 cm) for the protection of grazing animals and beehives (fence even higher).</p> <p>Currently field controls are only carried out in connection with attacks by large carnivores. It is planned that regular inspections will be carried out by the agricultural authorities in future. The purpose of such controls is to check, whether the equipment is correctly installed in the field. Regular field controls are crucial for ensuring the correct use of the equipment. Controls are also useful to monitor the effectiveness of the implemented measures.</p> <p>Further measures to prevent damage are the compensation of killed livestock and, as a last possibility, the shooting of large carnivores. However, this is only possible if the milder measures such as herd protection and compensation have "failed".</p>
Other damage prevention activities	
Projects	<p>Since the return of the wolf to Switzerland, various approaches for better herd protection have been tested. The currently established system could prove its worth if all parties involved would support it. Unfortunately, the wolf is still not accepted by large parts of the agricultural population.</p>
Testing of new solutions	<p>Wolves and cattle is a project financed by third parties and carried out by a foundation (https://www.kora.ch/en/projects/wolf/wolves-and-cattle).</p> <p>A trial with pheromone collars is currently underway, but also without the participation of the federal government (www.studioalpino.ch).</p>

3 CONCLUSIONS

Members of the WISO working group and LIFE WOLFALPS EU project members who contributed to this report recognize the importance of the EU's Common agricultural policy and the effects that its support has on farming practices, especially when dealing with such an urgent topic of large carnivore depredations.

When retrieving information from different countries, we had difficulties in comparing the implemented systems as each country has its own way to collect data, present the results and most importantly, each country (in some cases region) has the liberty to decide whether or not to apply for CAP.

In this context, we are convinced that there is room for improvement both within the implementation of focused measures applied and within their effectiveness and results in the field.

Hereafter we discuss the topics we define the most crucial in terms of implementation of CAP.

CONTROLLING OF THE IMPLEMENTED MEASURES

Financing damage prevention measures represent a crucial recourse to prevent conflicts with large carnivores in agriculture. However, financial support alone does not bring results if there are no mechanisms for giving advice to farmers how to properly use the subsidized prevention measures and control the proper use. Damage prevention supports should not be a general allowance for farmers that live in areas where large carnivores are present. In order for farmers to effectively implement damage prevention measures, it is necessary that financial supports are focused for the use of specific tools to protect their herds.

Technical support, control and monitoring of the correct implementation of damage protection measures need to be done on a regular basis in order to assure their effectiveness.

Regular visits to breeders do not act only as a systematic control, but also represent a way of exchanging experiences between users, competent expert personnel and other stakeholders.

The main risks of having implemented measures without performing field controls and a monitor system is their ineffectiveness and consequently common belief that nothing

can be done for protection of the herds. If large amount of finances is used with no concrete results in the field, a general mistrust in any damage prevention measure will take over and the pressure to implement lethal control of the populations will increase.

GENERAL, NOT FOCUSED MEASURES

The implemented subsidies not always aim at the prevention of depredations on livestock caused by large carnivores. We are convinced that large carnivores represent an important factor affecting farming practices and ultimately the persistence of alpine pastoralism. Having such an important influence, supporting practices to prevent damages on livestock have to be considered, as crucial and focused approaches have to be applied. Defined proven practices (such as electric nettings, livestock guarding dogs, etc.) have to be supported. Wide and general measures to support the existence of alpine farming practices cannot be seen as an effective tool to prevent damage cases. In this context, it is necessary to consider more focused implementations based on problems in the field. One example arising in the last years throughout the Alps are the attacks on cattle caused by wolves. Some of the potential measures to be applied and supported include planned calvings, the adapted protection of young animals and the protection of suckler cows. In cases of regular attacks on adult cattle, removal of problematic animals can be an effective tool for reduction of damage cases. Cattle protection remains a challenge for alpine pastoralism.

SUPPORTING INVESTMENTS AND EXTRA WORK-LOAD

Within CAP, there are basically two types of support: support for investments (purchase of different types of materials needed to fence grazing areas, shelters for animals, shelters for shepherds, basic fences, livestock guarding dogs, etc.) and support for the extra work that farmers experience when dealing with protective measures (setting up fences, taking care of livestock guarding dogs and related expenses, salaries for shepherds).

In general, supports for employing shepherds do not allow the coverage of the entire shepherd's salary for the entire pasturing season, especially if the support is area-based (the amount of support per hectare). The salary represents a fixed expenditure for the farmer who employs a shepherd, however it would be rational to provide support to farmers with larger flocks, with the cap being adapted to the size of the herds in each country.

The same applies for the support for livestock guarding dogs. As each dog represents a fixed cost, the support cannot be area-based.

NON-UTILISATION OF EU FUNDS

As documented in the national reports, some countries (especially regions) do not use the CAP funds to mitigate conflict with large carnivores. It is not clear what are the reasons for not applying; however, we encourage each country to opt for CAP in order to have an extra financial source and a broader range of options in dealing with damage prevention.

COMPLEMENTARITY WITH NATIONAL MEASURES

Within most countries, national or regional damage prevention measures and schemes represent a welcome conflict mitigation strategy. In contrast to the CAP, where applied measures are long-term and fixed more or less for the entire period of the scheme, national supports tend to be more plastic and adaptable to specific needs, and usually involve less administration. Here we see more chances for testing of new approaches and quickly implementing them into the system.



JOINT CONFERENCE

of the Alpine and Carpathian Conventions

for the exchange of practices on management of large carnivores

REPORT ON THE EVENT

(Revised version)



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INTRODUCTION

The report of the first joint conference of the Alpine and the Carpathian Conventions summarises the main themes of the event that took place between 6 and 8 March 2024 in Brdo pri Kranju, Slovenia. The first part of the report focuses on key presented points of the current status of large carnivore populations in the Alps and the Carpathians, the monitoring approaches currently used, and an overview of the challenges of conflict and poaching prevention. All topics are accompanied by highlighted orientations for future work and challenges to be addressed. The following sections of the report summarize the conservation and management policies of the Member States of the two Conventions. The final part of the report summarises the roundtable discussions relating to the pre-defined themes, which represent key challenges for future work in this area.

More detailed information on each topic can be found in the attached presentations.

STATE OF THE PLAY – LARGE CARNIVORE STATUS AND CURRENT ISSUES

Conference Opening

Ms. Alenka Smerkolj, Secretary General of the Alpine Convention, highlighted that biodiversity is one of the main goals of the Slovenian presidency to the Alpine Convention, and outlined the necessity of international cooperation. The wildlife-human conflict is a political topic based both on rejection and enthusiasm. Despite the common legal basis, there is still much to learn. This conference is an important step in implementing the Memorandum of Cooperation between the Convention on Biological Diversity and the Alpine Convention and the Carpathian Convention.

Ms. Klaudia Kuraś, representing the UNEP Vienna Programme Office and Secretariat of the Carpathian Convention, emphasized the ecological balance maintained by the large carnivores and the need to harmonize management and conservation efforts. The LECA project supported by the Interreg CE Programme is one example of how to address the key aspect of the coexistence of humans and wildlife. Ms. Kuraś also referred to the Carpathian Biodiversity Framework, adopted at the 7th Meeting of the Conference of the Parties to the Carpathian Convention, and the recent listing of Eurasian and Balkan lynx in the appendices to the Convention on the Conservation of Migratory Species of Wild Animals.

Introductory lectures

Mr. Rok Černe, Chair of the WISO Working Group, presented the Alpine Convention in the context of activities related to large carnivores. The Alpine Convention has 8 protocols that lead to concrete steps in terms of implementation of the convention. WISO is one of 9 working groups established under this framework and consists of ministry representatives from 7 countries dealing with large carnivores. The main outputs of the working group are damage prevention, connectivity issues, exchange of experience, and issues connected with wild ungulates. With the support of the WISO working group, successful projects were also implemented, e. g. LIFE DINALP BEAR (<https://dinalpbear.eu>).

Ms. Eliška Rolfová, Chair of the Carpathian Convention Working Group on Biodiversity, emphasized that the Carpathians are one of the key biodiversity hotspots in Europe with one of the largest populations of large carnivores. The Carpathian Convention enables cooperation and multi-sectoral policy coordination at the level of Parties and via an extensive network of stakeholders. Large carnivores are a prominent topic of WG Biodiversity, focusing on the implementation of the International Action Plan on the Conservation of Large Carnivores and Ensuring Ecological Connectivity in the Carpathians.

Mr. Martin Duľa, project manager of the LECA project (<https://www.interreg-central.eu/projects/leca/>) from Mendel University in Brno, stressed that transnational cooperation is crucial, as well as an evidence-based approach. The LECA project has a partnership consisting of 12 partners and many associated partners. The main three pillars are focused on harmonizing monitoring practices across the Carpathians, human-wildlife conflict prevention, and prevention of poaching. Activities focus on 4 pilot areas and 2 reference areas and results will be widely distributed beyond the Carpathian region. The outputs of the project include recommendations for the revision of the International Action Plan on the conservation of large carnivores and ensuring ecological connectivity, multi-stakeholder engagement and policy, education and public roll-out of project findings, and scaling up towards the Alpine region and the EU level.

STATE OF PLAY: LARGE CARNIVORES' STATUS AND MONITORING ACROSS THE ALPS AND CARPATHIANS

Conservation of the Carpathian lynx in West and Central Europe

On behalf of the IUCN SSC Cat Specialist Group, Mr. Jochen Krebs presented a recent success of the conservation of the Eurasian lynx – listing under Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals by the proponent North Macedonia and co-proponents with the assistance from the Secretariat of the Carpathian Convention. Mr. Krebs introduced activities of the Linking Lynx - expert network (<https://www.linking-lynx.org>) which works on harmonizing approaches, developing technical protocols, coordinating of transferring lynxes between populations, and advising governmental organizations in lynx conservation.

Countering genetic erosion of lynx population in Dinaric Mountains and Eastern Alps

Mr. Tomaž Skrbinšek presented the topic of genetic erosion in Dinaric lynx, which was facing extinction because of inbreeding depression. During the LIFE Lynx project (<https://www.lifelynx.eu/>), 18 lynxes were translocated to Slovenia and Croatia from the source countries Slovakia and Romania, effectively saving the population in the Dinaric Mts. and creating another stepping stone population in the Alps. As the population still remains small and isolated, long term genetic management is needed to keep inbreeding coefficient below $F=0.15$ and ensure population's viability. Inbreeding coefficient below $F=0.15$ is considered acceptable for lynx populations, which is also supported by the historical data for the Dinaric lynx which seemed to be doing well at this level of inbreeding (in the 1980s). While we can already expect some inbreeding depression (negative fitness effects of inbreeding) at this level of inbreeding, it should still be low enough not to endanger the population's survival. Since the Dinaric-SE Alpine population will most likely not be naturally connected with other large lynx populations in the near future, routine translocations of animals in regular intervals will be required to meet this goal.

Population status and monitoring of Eurasian lynx in the Carpathians

Mr. Jakub Kubala introduced monitoring methods for lynx, where camera trapping seems to be the most robust, as each animal has unique coat pattern. In terms of robust and systematic monitoring, camera trapping along with telemetry and genetic surveys is being used. The majority of the lynx population is based in Romania, Slovakia, Poland, and Ukraine.

The Carpathian population is currently stable but slowly declining (Romania reports stable population). Poaching, reduced prey availability, habitat loss, and fragmentation, and expanding transport infrastructure have been highlighted as the most the most threatening factors to current species' conservation. More and more Carpathian Convention countries have a lynx management plan in place, which is a significant improvement from 2011 onwards.

Population status and monitoring of Eurasian lynx in the Alps

Ms. Anja Molinari-Jobin is the coordinator of the SCALP mapping network in the Alpine area, which could be expanded to the Carpathians. The reason for monitoring populations in the Alps is that the Alpine population of lynxes is reintroduced, therefore genetic monitoring is a must. Ms. Molinari-Jobin also highlighted the importance of seeking collaboration with hunters (7 million hunters in Europe currently on record).

Discussion and orientations for the future

One of the main ideas that came up in the discussion was whether it would be possible to extend the SCALP system to the Carpathians. It is considered as a suitable practice and it will be necessary to harmonize approaches. Another topic of discussion was connectivity in terms of hard borders, which is a major issue at the continental level, particularly regarding military fences.

From a national perspective, Ukraine is an interesting case for monitoring population interactions, where the Baltic and Carpathian lynx populations may meet within the country. Italy has good potential for connectivity between different populations. Some work has already been done in recent years, especially with the introduction of new lynx. There is a possibility to link the Slovenian and Swiss lynx populations on Italian territory.

Population status and monitoring of brown bear in the Carpathians

Mr. Mihai Pop stressed the main issues regarding the monitoring: different numbers across institutions (IUCN, EU LCs platform, and even scientific groups), different interpretation, no agreement on methods. Genetic monitoring in Romania is carried out every 6 years, presently the first genetic study is ongoing. Currently, the population is estimated at 8,000 bears in the Carpathians, of which about 7,000 in Romania. Mr. Pop emphasized the spatial dynamic of bears and the importance of considering it in population monitoring projects, landscape planning and resources use. Administrative problems, e.g. costs that need to be acceptable, institutional capacities that need to be increased, and working framework were also mentioned as highly relevant together with networking between research groups and stakeholders.

In conclusion, sharing good practices and finding common objectives and indicators for population monitoring, was recommended, as well as cooperation in working on action plans.

Population status and monitoring of brown bear in the Alps

Mr. Caludio Groff presented the genetic monitoring which started in 2002 in the Alps, and systematic monitoring with camera traps. Genetic monitoring (both opportunistic and systematic) in the long term is a basic tool, but for the effective work, laboratories must be connected, and methods and results need to be shared. Camera trapping monitoring method is also used, which is less important than genetic monitoring in terms of abundance data, but is important for detecting the presence of bears on the periphery of the areas of presence. Bear monitoring is carried out every other year in central Italy and annually in peripheral areas. Across the whole Alps the increase in bear abundance is recorded. In Eastern Alps the population trend is considered stable trend with few specimens, mostly males. In Slovenian Alps the population increased between 2007-2015 and was considered stable between 2016 – 2022. Bear numbers are increasing in central Alps. In the last 10 years, 8 bear attacks on humans have been recorded, 1 of which was fatal. Bears require special management in dealing with problematic individuals, and aggressive bears have to be removed without delay. Conflicts may be reduced, but not eliminated. Mr. Groff also shared his experience with aversive conditioning: in Italy it was done regularly, but with no significant results, e. g. using rubber bullets needs lots of resources. Improving human attitude seems to be more important than prosecution in terms of poaching reduction.

Discussion and orientations for the future

The discussion on the brown bear topic was focused on a strategy of monitoring and possible ideas on how to improve it. As a good example the LIFE Lynx project was mentioned, which actively involved key stakeholders in the preparation of the project application. The framework of an international convention that supports cooperation between partners appears to be very useful. For the monitoring of brown bear, as an example of high effort Romania was pointed out, with over 15,000 samples collected in 2022-2023 as part of the non-invasive bear monitoring.

Another topic discussed were the three possible measures for problem bears: the first deterrence (e.g. with rubber bullets), the second relocation of problem individuals, and the third removal. The very limited effectiveness of the deterrence and also possible relocation of problematic bears was further discussed, where there does not seem to be enough space to relocate to places without people's presence and no support from receiving areas. Emphasis was put on differences between emergency situations and conflict mitigation/coexistence tools/measures.

Population status and monitoring of wolf in the Carpathians

Mr. Miroslav Kutal emphasized that there is only partial knowledge about wolf populations across the Carpathians. The Carpathians have a relatively high genetic diversity of wolves. From 2013 to 2022, the wolf population in the Czech Carpathians increased substantially. Most of the focus is on "robust" estimation of population density (obtaining an approximate number). It is important to use genetics in wolf monitoring. In terms of field monitoring, Mr. Kutal mentioned a successful involvement of volunteers ("wolf patrol" project in the Czech Republic). As one of the recommendations, more studies focused on robust population density estimates across the Carpathians were mentioned, as well as avoiding double counting of transboundary packs, involving local people/volunteers in wolf monitoring, focusing on reliable estimates of wolf mortality using telemetry (undetected poaching), standardized protocols for veterinary examinations (health, parasites, cause of death), and Carpathian-wide study on genetic structure.

Population status and monitoring of grey wolf in the Alps

Ms. Francesca stressed that it took a process of 20 years to effectively have Alpine countries working together with an harmonize monitoring approach and output, and this happened in the framework of the "Wolf Alpine Group" (WAG), which was started in 2001. The major task was to establish a methodology that avoided double-counting. A key is to put together results based on the same approach and since 2020 the method is effective, and several publications and reports came out from the WAG (doi.org/10.3390/ani13223551). In this framework the most robust parameter to monitor the population size at the transboundary scale in the Alps, over 7 countries, is the number of packs/pair (i.e. the number of reproductive units of the population), which also allow to avoid double counting, A new emerging challenge is how to commonly document hybrid packs/pairs and how to monitor wolf packs in semi-urban areas in a transboundary context with a unique approach over the 7 alpine countries.

Discussion and orientations for the future

The discussion related to the population status and monitoring of wolves focused on recommendations from the Alps, which is based on a joint effort to get samples for genetics ideally everywhere at the same time. In case of a lack of funding for full-scale monitoring, a minimum standard should refer to a species distribution range. Another topic was hybridization, which is becoming one of the most significant threats to the wolf population. It is important to establish a common legal definition of hybrid, and the discussion should be agreed internationally. One of the problems in reporting and comparing data from different countries is that the data are sometimes not comparable/compatible: in some countries the number of all wolves is counted, in others only the number of packs or the number of litters is counted. Therefore, the harmonization and standardization of the data collection is needed.

THE ISSUE OF CONFLICTS AND POACHING ACROSS THE ALPS AND CARPATHIANS

Conflict prevention in the Carpathians

Mr. Cristian Remus-Papp presented the main aspects of conflict prevention and highlighted a holistic conflict framework. The conflict has different levels, e. g. dispute, underlying conflict, and deep-rooted conflict. Conflict prevention has three pillars, which are livestock protection, lethal control, and economic compensation. Mr. Papp also stated that based on many studies, hunting wolves does not decrease livestock conflicts per se. Threats to large carnivores have also been highlighted: roads, cities, fragmentation of space. The main problems with large carnivores are currently: habituation and approach to settlements, grazing close to large carnivore habitats.

The majority of problems is recorded with small livestock and beehives (in case of bear). To compensate the damage, Hungary and Ukraine have no established compensation scheme for damage, other Carpathian countries do.

Conflict prevention in the Alps

Mr. Tomaž Berce presented the main challenges and best practices of conflict prevention in the Alps. One side of the conflict is encounters and fear of attacks possibly caused by large carnivores. In terms of bears and problematic behaviour, Mr. Berce presented a sequence of responses - translocations, repelling (rubber bullets, bear dogs), and removal of problematic animals in case of reoccurrence. Above all, the prevention of these cases is crucial – using bear-proof compost bins, containers, etc to prevent bear habituation to human presence. In the conflict hot-spots, the constant dialogue between farmers and managers is needed. Examples of the best preventive practices were mentioned: electricity, livestock guardian dogs, the presence of a shepherd, additionally to other main preventive measures – fladry, and deterrents. A good controlling system of the applied preventive measures in the field is needed, as there is no one-size-fits-all solution. In the mountains, free grazing is a tradition. Consequently, more oppositions to preventive measures arise and also more protection problems. In all Alpine countries compensation is paid, mostly only for direct damage. Awareness is needed, that compensation is for conflict mitigation, not prevention. It is important to analyse the damage when it occurs to a facility protected by a supposedly good security method (case-specific).

Discussion and orientations for the future

A possible method of aversive conditioning was discussed in the relation of conflict prevention. According to the experience in some countries, the use of rubber bullets does not seem to be very effective. A trial of this method in Romania in 2015 showed that it only worked for a day or so, after which bears avoided the car associated with the hunter rather than the action of shooting. In 2019, the method was tried again in practice, but due to difficulties in obtaining a permit for such an intervention, it was not granted. In Germany, they have also tried using airsoft guns instead of rubber bullets. The necessity of informing people on regular basis was stressed out many times, because hearing news in the media without sufficient explanation, can only cause panic and irrational fear.

In Italy, they have a system of intervention kits to help those that suffered from damage for the first time. They can use this kit for a few months, and in the meantime, they have time to secure their own protection. The system is the same as in Slovenia.

The traditional knowledge of shepherds was highlighted, which was recommended to be taken into account in policy-making. A frequently addressed topic is the workload of shepherds in the specific season. In some countries, shepherds are paid by the sheep owners. They confine the animals in pens at night. In France, the monthly salary of a shepherd is €2,400. Shepherds have proved to be a reliable means of protection there, but it is difficult to get a good shepherd.

Another topic discussed was damage prevention measures for cattle, where changes in the management system are recommended - a predictable calving period. In Slovenia, former traditional knowledge aimed to protect cattle mainly up to 6 months of age already existed. Young cattle have also been shown to be the most vulnerable stage of cattle abroad (in Germany, about 60% of cattle damage occurs to calves up to 2 weeks of age, see www.dbb-wolf.de/home).

Investigation into poaching in the Alps

Mr. Karl Frauenberger presented the legal background, which is the Environmental Crime Directive from 2008 implemented in national criminal law, and Habitats Directive. Mr. Frauenberger explained the main investigation challenges and investigation tools. He emphasized the necessity of cooperation with experts – scientists, and laboratories. One of the challenges of poaching investigation is that there are usually no witnesses and the work is done afterwards (weeks and even months). All must be aware, the killing of protected species is a serious offence, as the loss of each individual represents a major loss in small populations. Mr. Frauenberger highlighted the existence of the New Environmental Crime Directive 2024 introducing the obligation for the EU MS to develop an environmental crime strategy, and the platform EMPACT (European Multidisciplinary Platform Against Criminal Threats), where the goal is that EU MS assist each other in sharing information, experience exchange, and actions coordination.

The issue of poaching in the Carpathians

Mr. Cristian Remus-Papp presented forms of poaching, which include illegal killing, poisoning, retaliatory killing, etc. Traps and illegal trade in live animals are still being used. The main problem that drives poaching is predation by large carnivores, which some hunters see as competition. Challenges in the prosecution of poaching cases are lack of information/resources, sophisticated tactics, and corruption. Mr. Papp also mentioned legal challenges – inconsistency in wildlife laws.

Discussion and orientations for the future

Discussion of the poaching issue has focused on the motivation for illegal killing, which can generally include competition for ungulates, damage to livestock and trophy hunting. Even in cases where a hunter accidentally shoots the wrong animal, an investigation is launched.

Another topic discussed was experiences with poisoning of large animals, which are very difficult to investigate, since it is often difficult to trace the culprit.

CONSERVATION POLICIES FOR LARGE CARNIVORES

Conference Opening

Ms. Katarina Groznik Zeiler, the General Director of the Nature Directorate at the Ministry of Natural Resource and Spatial Planning in Slovenia, addressed the opening remarks on the conservation policies for large carnivores. Large carnivores are European native species and a crucial part of Slovenian nature, and also one of the priorities of the ministry. Ms. Groznik Zeiler stated that balancing of protection and minimizing conflicts is the only good way forward. The Ministry is also responsible for paying compensation. Last year, a Consultative Group on Large Carnivores to jointly address the issues was set up.

Introductory lecture: Introduction to the current international legislation

Ms. Marta Mędzińska, Programme Manager at the Bern Convention on the Conservation of European Wildlife and Natural Habitats of the Council of Europe, presented the Bern Convention – the legal basis common to all countries. In 1979 when the Bern Convention was established, the orientation to the protection of species and their habitats was very new and holistic.

The Bern Convention has 3 annexes listing protected species (I – III) and brown bear (*Ursus arctos*), Balkan lynx (*Lynx lynx balcanicus*) and wolf (*Canis lupus*) are in Annex II (strictly protected fauna species), while the Eurasian lynx (*Lynx lynx*) is in Annex III (protected fauna species). In comparison, the EU Habitats Directive on the conservation of natural habitats and of wild fauna and flora includes the large carnivores in Annexes II and IV.

Ms. Mędlińska presented also a case-file system and large carnivores-related case files, as well as the Emerald network: network of sites of special conservation interest, that comprises Natura 2000 sites within the EU and similar protected areas of countries outside the EU.

CONSERVATION POLICIES FOR LARGE CARNIVORES - CARPATHIANS

Slovakia

Mr. Lukas Záhorec presented lynx, wolf and bear distribution and amount of damages. Damage caused by lynx in 2023 was approx. 2,000 €. Lynx is a strictly protected species. Damage caused by wolves in the last year was approx. 530,000 €. The wolf population is increasing, the culling quota has been reinstated recently. Bear damages last year amounted to 500,000 €. Wolf and bear damage is increasing sharply. A 24/7 centre for solving bear problems is being set up (intervention team). They see the shooting of bear specimens as the last resort to resolve conflicts. In the coming months, a property protection system will also be put in place.

In terms of the wolf, this quota has been reinstated (1 November – 15 January), and will be set every year. The brown bear is an issue in Slovakia, causing significant damage and attacks. Since 1 March 2024, there has been a new guideline for culling bears; currently, 5 bear intervention teams operate in Slovakia. Mr. Záhorec described future plans which will focus on developing a methodology for preventive measures.

Czechia

Ms. Jana Fuglíková described the underlying legislation and especially the use of derogations in the Czech Republic. It is possible at the level of 19 regional authorities under specific conditions. Wolf was the subject of 56 applications for derogation between 2020-22, not allowing shooting (mainly research). The last bear was shot around 1890, and bears currently appear only in the east of the country (The Carpathians). In September 2023, there were recorded at least 120-150 wolves in 29 packs. The main activities related to large carnivores are management plans – in place for wolf since 2020; for lynx and bear, they are in preparation. For wolves, the objective is to have a stable population while minimising the number of damage events. The state provides damage compensations, preventive measures, and compensations for legal constraints.

The number of damages is increasing in the country, and so is the need of moderate communication and approach. The data about damages caused by wolves are public and transparent on a special wolf website. The new tool is the Emergency plan for problematic wolf individuals.

Romania

Mr. Mihai Pop stated that all three large carnivores are in favourable status according to the last report in 2019. There is a National action plan for wolf and bear. Conflicts are not uniformly distributed in the country, some hotspots of human bear conflict being known since the '90s. Since 2016, derogation were implemented but presently, they are approved only to remove problem individuals from the population. For bears, there are two types of quotas: preventive and intervention; hunting purposes are forbidden. There is no protocol/method to assess the impact of different removal strategies on the conflict level and no control on how the derogations are implemented. An emergency intervention system has been in place since 2021 since the presence of bears in human settlements seems to be on a growing trend. From 2018 to 2023, only 14 wolves were culled legally in the country. Since 2012, no derogations for lynx hunting were approved. It seems that it is an issue rather for social sciences, than ecology. Key pillars addressed in this regard are game management, conservation management and emergency situation management. It is stressed that species conservation is not so much about ecology as it is about relationships and communication with people.

Hungary

Ms. Laura Diószegi-Jelinek presented the national law and species conservation plans. Large carnivore populations have been slowly increasing over the last 10 years. So far, observation and mostly passive protection of the population has been sufficient, but now a more active approach is needed. Regards to the species-specific management plans: for wolf, the plan is in place since 2004 and currently under revision. A plan for lynx is valid since 2001. In Hungary, there are also conflict management plans, however, they need revision. The wolf population now seems to be in decline (due to poaching and roadkill).

Ukraine

Mr. Yaroslav Dovhanych presented the development of the large carnivore population in Ukraine through the years. In the past, bears were widespread throughout the country, but today, they appear only in the Carpathian Mountains and in the north of the country. Over the past 50 years, the bear population decreased from 1,300 to approx. 300 individuals. In Ukraine, there are about 500 lynxes but since 1994, when the lynx was added to the list of endangered animals, the situation has not changed significantly. The wolf population is estimated to about

2,500-2,700 individuals. Official data on large carnivores numbers are probably overestimated due to multiple counts of the same animals. This is probably why the real picture is worse for bears and lynx. Wolf is declared as a “harmful” animal – shooting and trapping outside of the hunting season is carried out by hunters with permission. The penalty for a wolf shot is significantly lower than for a lynx or a bear. Fines for illegal killing were delineated (wolf in protected areas – 47 €, but it is legal upon permission), about 3,000 € for bear in any territory, and about 400 € for lynx in any territory. For lynx and bear, national action plans are established.

Poland

Ms. Karolina Paulewicz-Bazala presented overall population data of the large carnivores. The wolf population is increasing and monitoring is ongoing. Wolf monitoring is based on 2 approaches: national (to determine distribution) and regional (to assess threat). In 2001, monitoring data estimated 510 wolves, in 2020, over 2,500. In Poland, 53.7% of the country's forests are protected. The state forests' personnel actively contribute during the monitoring. In the Carpathians, there are about 1,000 individual wolves. In Poland, the wolf is not protected at an international level, but it is protected at the national level. Decisions on culling are based on the Habitats Directive. The total annual compensation across all protected species is 178,000 €. 77 % of wolf damage is caused on small livestock and preventive measures must be applied before using a derogation. The lynx has been a strictly protected species since 1995 and until 2016. Currently, they are under the minister's regulation. As a good practice example, Ms. Paulewicz-Bazala mentioned project Carnivore Borderland (Interreg PL-SK) focusing on monitoring methods and strengthening transboundary cooperation. They also have the ambition to create a database on the distribution of large carnivores.

Serbia

Ms. Tatjana Spirković outlined the legal background of the environmental and nature protection in Serbia. The bear is a strictly protected species. There are three bear populations with more than 100 individuals. The brown bear population management plan was drafted in 2023. Lynx is strictly protected. The population of wolves is protected by the hunting ban only for a few months a year. The current estimate of wolf abundance is 1,850 individuals. An updated management plan for bears and lynx was prepared in 2024. Pros of existing practices are management plans, tourism, improving public opinion and hunting informational system. Cons are that there is no national management plan for wolf and no country-wide standardized monitoring program, as well as lack of funding.

Conservation policies for large carnivores - Alps

Germany

Ms. Katharina Steyer introduced various institutions that deal with large carnivores in Germany. There is a sporadic evidence of brown bears, the closest population is in Trentino 120 km far away. For bears, there has been a gradual management plan in Bavaria since 2007, which is currently in phase 1. Regarding lynx, there are three distinct populations based on reintroduction. Wolf has a management guideline since the 2020 amendment to the federal nature conservation act LEX WOLF (practical guidance on wolf management) that permits individual members of a wolf pack to be shot in case of damage to livestock, even though it has not been attributed to any specific wolf, but to a specific pack (§ 45a BNatSchG). Problems with wolves: hybrids, bold wolves, damages. Feeding of wolves is prohibited in the country, hybrids are culled. The concept of bold wolves is implemented in all management plans. Co-financing of measures and payment of compensation is at federal state level.

Italy

Mr. Vincenzo Gervasi described that Italy is currently in a transition phase. There are about 1,000 individual wolves in the Alpine region. Bear has an increasing population trend, about 100 individuals with limited connectivity. In terms of management, Italy is divided into 7 provinces. Italian Institute for Environmental Protection and Research (ISPRA) provides technical opinion. Derogation must be authorized by the Ministry of the Environment and Energy Security, based on the technical opinion of ISPRA. Criteria are that the bear has aggressive and self-confident behaviour and no damage to livestock is valid. For bold wolves, a protocol is under revision in terms of security reasons. Mr. Gervasi mentioned the principle of majority and minority of farmers – the majority have most of the livestock and very low damage (“tolerable losses”), and on the other side, there is a minority with huge damages. No wolf may be shot, proposal for change was made in 2015, no change has been made to date. Almost all bear and wolf shootings have been stopped due to the intervention of animal protection organisations.

Switzerland and Lichtenstein

Ms. Manuela von Arx presented the management concepts in both countries. In Switzerland, there is a division of roles between the confederation and cantons which is specified in the management plans for lynx, wolf and bear. For lynx (around 250 individuals), the conflict issue is high losses in the hunting prerogatives, but criteria that would allow a regulation of lynx populations have never been met so far (data did not prove that lynx was responsible for lowering the ungulate populations). Bear has only sporadic occurrence in the country and the management is based on behaviour typology. First wolf pack was detected in 2012, since then numbers have been increasing rapidly.

For wolf, the new management and legislation came partly into force in December 2023 and will entirely come into force in February 2025. There are two types of regulation: proactive regulation (before severe damage is done), and reactive regulation (reaction to damage or harmful behaviour). Proactive has two options, the complete elimination of a pack (it must be proven that the pack caused damage on protected pastures), a minimum of 12 packs must remain in Switzerland; the second option is the elimination of some of the cubs of the year (pack education) – only half or two-thirds of the cubs can be eliminated. Reactive regulation means the elimination of some of the cubs of the year if the pack has reached the threshold level of number of livestock killed.

Austria

Mr. Aldin Selimovic presented the legal background in Austria. Monitoring and management of large carnivores are organized in the nine federal states/provinces differently based on their law. Bear is a game species in 8/9 provinces but not allowed to hunt (there is no occurrence of bears in Austria). Bear management plan has been in use since 2005. For lynx, there is no official management plan in any of the provinces of Austria. For wolves, there are official management recommendations made together with provinces, and universities. Provinces have their own regulations. Criteria is damage caused by wolves and bold individuals. Each situation is considered case by case based on specific conditions. There have been 15 wolves culled since 2022. Mr. Selimovic mentioned using aversive conditioning in terms of bold wolf individuals that approach human settlement in a perimeter of 200 m during a day. If it is not effective, the individual can be removed.

Slovenia

Mr. Miha Marenče explained the current situation regarding large carnivores in Slovenia. For bear, the yearly culling quota is established based on expert opinion, the main reason is conflict. Between 2019 and 2022, the culling was stopped based on NGOs intervention. For wolves, there was a similar situation for removal until 2017. Since then, only 1-3 individuals from the pack can be removed if they cause serious damage (at least 3 attacks on large grazing animals or 9 damage events on small grazing animals with above-standard protection and within the territory of one pack). According to the national guidelines, hybrids must be removed immediately. For lynxes, as a good practice of conservation effort, Mr. Marenče highlighted the LIFE Lynx project thanks to which 18 individuals have been reintroduced (altogether in Slovenia and Croatia).

France

Mr. Pierre-Edouard Guillain described the situation with large carnivores in France. All three species are strictly protected and a national action plan is dedicated for each species. Bear is critically endangered – currently 76 individuals, most of which from reintroductions from Slovenia. An action plan has been established (no culling regime), as well as a protocol for scaring the bears and a protocol for bold bears (4 stages). Farmers receive financial support to protect their herds. There are between 100–150 individuals of lynx. Currently no reintroduction is in place, nor culling. Wolves are counted every year and there are around 1,100 individuals. Genetic analysis is used to estimate the wolf population. Currently, the fifth issue of the National action plan (complete policy package) is running. The present situation also demonstrates the effectiveness of flock protection (damage is stable and the population is growing). Livestock protection is a condition for culling. Derogatory three-level culling regime to prevent serious damage to livestock, is established, with a ceiling of 19 % of the population. Specialized hunters chosen by local authorities or agents of the national agency for biodiversity take a large part in the culling process.

SUMMARY OF ROUND TABLE DISCUSSIONS AND ORIENTATIONS FOR THE FUTURE

ROUND TABLE 1 – Strategic documents

Key points that discussion refers to:

- *Preparation of strategic documents (action plans, strategies, international guidelines)*
- *which aspect needs to be taken into account and how to make them as efficient as possible*

Strategic documents are seen as important in providing vision and direction, but for them to be successfully implemented, attention must be paid both to the process of their development and to their content. Regarding the content, ambitious goals should be matched with clear and feasible actions, designed in a SMART way and regularly revised/updated, science-based, connecting theory and practice.

Experts should be involved in drafting at technical level and different stakeholders' groups in consultation. Their engagement is considered crucial, but should be designed carefully (need to build trust and long-term relationships, facilitate the discussion and ensure that they will not evade ownership of the document when adopted, preference for smaller groups and local level, to avoid politization).

Another key element of successful implementation are capacities: not only financial, but also human.

ROUND TABLE 2: Communication with stakeholders

Key point that discussion refers to:

- *Public involvement into strategic document preparation process (who and when in participating)*
- *Public involvement into removal process (which opinions are considered and at what stage)*

In any actions, public should be involved as much as possible. For planning the communication activities with stakeholders, it is recommended: small, local, informal groups. The events should be led by a neutral facilitator (someone out of working groups or other various groups; not representative of the capital authority, but rather local representative, should accompany informal discussion). Local events are also efficient and more visited if organized by locals themselves. In all cases, the baseline for discussion should be set in advance – what can be negotiable. In case of need to tackle a new group, a detailed communication strategy is needed – the issues to expect: dynamic topic, difficult to make strategy, large group with high peer pressure can destroy the work very fast. General public is good to tackle and easier to be involved (use media!).

ROUND TABLE 3: Derogation criteria

Key points that discussion refers to:

- *Which criteria must be met to say that derogation to strict protection is reasonable and eligible?*
- *How are damage levels evaluated to define a threshold for derogations?*
- *Which minimum levels of preventive measures are required for derogations?*
- *How is the maximum yearly number of derogations defined?*
- *Should coexistence times be a component in defining derogation criteria?*

Derogations can be a tool for large carnivores' conservation. There is a need to evaluate their effects on the several dimensions of the conflict: livestock damage, human security, wolf genetic conservation, human attitudes.

Derogations should focus on bold and habituated individuals; priority: 1 - bold, 2 - hybrids, 3 - damage. In urban areas, repeated presence should justify removal (there was no full agreement on this, since due to habitat fragmentation, large carnivores can visit anthropogenic areas without being harmful). "Urban" large carnivores can increase hybridization (habituation may lead to hybridization) and strongly reduce social acceptance.. In case of detecting large carnivores close to houses but outside urban areas: repeated close approaches and behaviours that show loss of fear should be used to justify derogation.

The derogation approach should be progressive and based on hard evidence, gradual intervention, and education (e.g. proper waste management).

Hybrids – full consensus of the participants that culling of hybrid wolves should be preferred over other approaches (sterilization, capture, no euthanasia). Control of stray dogs is also important.

Damage on livestock - damage levels should be evaluated mainly based on the number of attacks. Considering the number of domestic animals killed also allows to see the impact from the perspective of the farmer/shepherd.

Derogations should be provided in situations in which prevention measures are used, unless the landscape does not allow it – how are unprotectable landscapes defined? It would be important to compare and discuss the criteria on which some areas are defined as unsuitable for preventive measures. The requirements for farmers should be light in newly recolonized areas and become progressively stricter after a certain time for the adoption of measures passes by. The risk of pack disruption cannot be disregarded when removing only one individual in a pack. The time component – requirements should be modulated with time of coexistence (e. g. France: 1 measure required at the beginning, 2 after a prolonged period of presence of the species). This underlines the importance of accurate data and pack distribution, preparation of spatial risk maps and recording of number of attacks (wolf perspective) vs number of depredated animals (farmer perspective).

ROUND TABLE 4: Conservation status and derogations

Key point that discussion refers to:

- Which level is enough for restriction -- criteria for the population status evaluation (e.g. favourable or not)?
- How to ensure viable and stable population, its density?

First question is at what level to be considered (national, local, population-level, biogeographical region)? Conservation status should be considered at local level first, then national, then population. Favourable conservation status within one country: if that country contributes “it’s fair share” to a favourable status at the trans-national population level. If favourable status is reached, more flexible management is possible, provided that the effect of such extra flexibility is monitored, and it is ensured that the favourable status is maintained.

Biogeographical regions: each country reports whether it is as favourable as can be at its level (even if it does not ensure good status on its own), and when all countries of a biogeographical region report “favourable”, it is considered “favourable” for that region.

Having a more flexible management can be needed to ensure/improve acceptance, and acceptance is key for conservation. There is a need for common basic standards for monitoring, in order to prove whether conservation status is favourable.

A need to prove that acceptance is better when there is “more flexibility”. Countries are free to decide whether the goal is to be over the favourable conservation status threshold or to have the best possible conservation status.

ROUND TABLE 5: Removals - how and when

Key points that discussion refers to:

- How are the culling numbers accurately decided and how do they affect management (and additionally Does the removal of individuals contribute to species conservation and conflict mitigation?)

- How are the prevention measures evaluated and taken into account in this regard / how management measures is evaluated and taken into consideration - when the decision for removal is made?

The group focus was on Brown bear, seconded by wolf. On lynx, there was a general opinion that removal is not recommended and, if needed, should be very well documented.

Problems highlighted:

1. The quality of available data on population status varies within the same population of LC. Some LC populations benefit of good data (long term, large areas) and it is somehow easy to take a decision, and some populations lack the reliable data making the decisions riskier for the species' conservation. The model of removal system is promoted transboundary, but indifferent of the data quality which a practice that is not supported by the EU legislation and by the principle of scientific-based solutions.

2. FCS (favourable conservation status) vs. MVP (minimum viable population), which one is better to be used when we have to decide on a removal system? On ecological terms, MVP seems to be a better solution, but implies the use of reliable data on population size, structure, distribution.

3. The existence of contexts on which the decision makers decide to make/keep people happy. Should the decision-makers approve quotas to keep hunters, farmers and some politicians happy or should they not give quotas to keep NGO's and some parts of the public and politicians happy? Quota/No quota will satisfy people? Which are more important, the values or the interests in order to define the opportunity and resource allocation?

4. Lack of reliable monitoring of the removal impact on both species and society. In the first case, the population monitoring should consider the impact of removal not only in terms of numbers but also in terms of population health, structure etc. In the second case, there are some issues to be solved: (1) public opinion as a conflict generator, (2) media impact should be considered as a source of assessment errors, (3) stakeholders should be better informed before asking them for feedback and (4) before the revision of any action/management plan, all three points should be considered.

5. There is a thin line between regulations/laws and standards/norms/guidelines/terminology (e.g. legal or technical aspects related to protection status, hunting use etc.), but the most important is the context on which actions should be made. When removal should be implemented, all of these situations are often not in the existing legal framework due to the high variability of (potential) situations (including a social conflict). Example: Definition of a bold wolf might be limiting some interventions but also might be promoting others that are not needed in a specific case. Another example might be the decision to use/not to use some specific aversive conditioning like rubber bullets.

Key ideas listed:

1. Human life is the priority! Removal is justified for people safety, therefore it should be focused on problem individuals, especially if present in human settlements. In terms of priority, conflict mitigation comes first and species conservation comes second.

2. Plans/strategies/measures should be considered based on two scenarios:

- Population management in terms of avoiding overpopulation (there is no clear consensus on what overpopulation means) through the use of quota (should be an expert decision) assuming that large population/high densities imply a large number of conflicts/attacks on people. The main problem identified is within the shared population that can be large in one country but low in other countries therefore it is complicated to assess the impact on the whole population.

- Removal of problem individuals as a priority before quotas for two reasons (1) removing the potential risks and (2) maintain/improve the social acceptance/tolerance. Also, relevant for conservation purposes, to consider in case of wolf population, is the removal of hybrids. The second scenario would be recommended for small populations.

- Any decision for removal (quotas or problem individuals) should be context related since we have diversity on bear densities, people density, landscapes, farming systems, protection systems, habitat quality etc. Also, there are other issues to be considered: (1) removal ethics in case of females (presence of cubs) and (2) a matter of emergency related to the group of people exposed to risk.

- If not justified, removal should be avoided in small population. The principle of prevention when making decision should be applied in large populations.

How and When?

1. Before reaching to HOW & WHEN, all possible answer should be given to WHY.
2. When you ask HOW & WHEN, be ready to answer to WHAT & WHERE.
3. Removal as a tool to prevent and not to satisfy. Keep (all) people (and carnivores) safe, not happy.

Conclusions and orientations for the future:

Removal should be integrated as a decision into a holistic framework and should be considered context related with (1) social context/values/perceptions (i.e. social acceptance as a yes/maybe/no should be integrated with social tolerance as a scale), (2) ecological context in terms of population status, landscape/land use and targeted ecosystem functions that serve general interests.

(3) Large carnivore management should be integrated with other game species management, solution should be searched for at ecosystem levels (i.e. food availability, prey availability, safe areas, habitat degradation, fragmentation).

(4) In general, politicians should avoid compromise between management and conservation, but when needed, it (a) should be justified from both social and ecological perspective, and (b) should be well documented.

(5) Assessing the removal impact (quotas or problem individuals) should be mandatory and standardized.

When decision is taken, it is only a matter of law and ethics to be implemented in as much possible humane way.

ROUND TABLE 6: Removal system

Key points that discussion refers to:

- *Whole process / system of the removals – how it works and to find proper system to make this kind of decisions*

PRIOR TO REMOVAL:

- State of the large carnivores in place – experts needed and intervention teams

Damage to livestock:

- Pre-check and train on prevention measures
- Prevention necessary for removal
- Official has to confirm damage; alternative – self-documentation
- Threshold of attacks /livestock needed for removal

Human safety:

- Documentation of action
- Joint approach of management actions of different scenarios e.g. attractant removal

Needed:

- Collection of cases / data needed for LC aversive conditioning – Europe experience

RESPONSE TIME SPAN OF THE REMOVAL: hybrids and LC attacks on humans ASAP!

QUOTAS:

- Maybe sometimes necessary for acceptance and trophy demand of local hunters
- With an aim to reduce illegal killing

HOW TO DO A REMOVAL:

- Check of derogation by an independent person and an official of the state/country authority for re-checking of the decision
- Public announcement of removal prior = clear and honest information needed
- Experts (e.g. intervention teams, veterinarians, foresters, ...) and local experience (3-5 persons / region incl. coordinator) – traits needed for detection (e.g. tracks, scats, ...): eye-to-eye contact on the same land from experts and locals is essential for a successful removal.

ROUND TABLE 7: Communication with communities

Key points that discussion refers to:

- *How to keep an interest in LCs in the countryside and their willingness to keep the species?*
- *How to tackle more political and social aspects (the ecological part is quite clear)?*

Communication with all the communities (“village by village”) should be regular, honest, clear and have a continuous topic-related communication. Important is to offer knowledge about useful ideas how to make a living with LCs, openly communicate pros and cons, and increase awareness of the ecological role of LCs. Research on social / economic aspects should serve as a baseline information for preparing the communication actions.

How could one reach this: using local people for presentations, handing over certain decisions to the local authorities, using approach of citizen science / involvement in monitoring, professional communication / education – improvement of media communication on the right terms, communicate through creating stories, help local communities in the creation of value out of LCs (e.g. bear-friendly label), be present - when you meet, you make friends.

Social aspects to be taken into account in this regard (communities usually not in favour): many layers – behaviour, solutions (possibility of being over-run by certain stakeholder groups).

Special focus should also be set on education – investment in the future / younger public with open minds for different opinions.

Examples from different states and programs:

- RO: low value of LC to hunters – low interest to take care; pride in managing populations /management of local populations – suggestion to give money for not hunting (not as much pride in there).
- Lower Saxonia: voluntary fencing team – labour; trust, best practices examples (education within stakeholder groups).
- Stewardship of areas / species – incorporating into communication (e.g. LIFE WOLFALPS EU stewardship program).

ROUND TABLE 8: Intervention teams

Key point that discussion refer to:

- *Effectiveness of professional intervention teams, their working status and overall management of these teams*
- *Comparison of this approach with more conventional form - involvement of hunters as a management tool for managing problematic bear/wolf behaviour and removals*

STATUS of teams across the Carpathians and the Alps:

- Romania (bear): currently 400 intervention teams - aim to reduce the number of teams and to introduce more specialised ones.
- Slovenia (bear): the intervention teams was established during LIFE DINALP BEAR). Even if needed, specialized team currently not exists (requires significant financial resources to operate).
- Austria (bear): there was an intervention team, have experiences, but its operation is not needed at the moment; Austria (wolf): not effective and therefore not established.
- Croatia (bears): they have active intervention teams from 2000 onwards; Croatia (wolf): intervention team exists.
- Germany (bear): currently does not exist, but they are considering about establishing it in Bavaria.
- Slovakia (bear, not wolf): 5 intervention teams, 1 was not effective. They consist of up to 30 people (located at longer distances). Police always cooperate in the actions, hunters are included. The use of aversive conditioning (rubber bullets) has proved unsuccessful, problem with equipment also emerged.
- Serbia (bear): the intervention team not officially established yet.
- Poland (bear): not officially established yet, no system established, the issue of funding is highlighted In Tatra National Park the team exists, but is not official.
- France (bear): the intervention team is established in the Pyrenees; France (wolf): intervention teams exist – not only specialized, but also involves thevolunteers, but they need special authorisation and training from a national authority in prior.

KEY POINTS:

- Not related to livestock depredation, but to bold behaviour
- BEAR – 4 from 9 countries have official intervention team, 1 not official but working as one. The effectiveness of the intervention teams depends on many factors – i.e. in Romania, there are 400 intervention teams and more specialisation and effectiveness. Usually they have no resources and their operation is very expensive. The effectiveness of interventions – in general, they are not effective regarding using aversive conditioning.
- There is NO study across Europe to summarize the effectiveness and provide recommendation – proposed to be done in the nearest future.

Report on Monitoring, Status And Management of the Brown bear in the Alps



**Large Carnivores, Wild Ungulates and Society Working Group
(WISO) of the Alpine Convention**

Mandate 2022-2024



ALPENKONVENTION
CONVENTION ALPINE
ALPSKA KONVENCIJA
CONVENZIONE DELLE ALPI

IMPRINT

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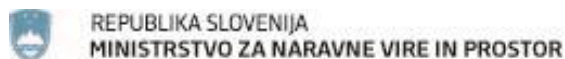
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Executive Summary

The population **trend of bears across the Alps is positive**, but with a great discrepancy between central Alps (strongly increasing population, so far; 98 ind. CI 86-120 in 2023) and eastern Alps (stable presence; 48 ind. CI 41-57 in 2015). No genetic connection between the two subpopulations has been documented so far.

The main monitoring tool for bears in the Alps is **genetic**. Bear samples from the two main alpine subpopulations are processed by a network of labs. While in Slovenia the genetic monitoring is implemented on a 7-8 year basis, in Trentino the intensive monitoring is carried out every second year. All this data is collected in the long term as the **basic input for CMR population estimations** for both subpopulations, and to quantify the minimum number of individuals in other alpine areas.

Systematic **camera-trapping** is also carried out in Trentino as a complementary tool to the other investigation methods. **Radio and GPS tracking** are used to monitor problem bears, and are crucial to implement prevention actions and to facilitate bear removal.

Bears in human dominated landscapes cause conflicts with people, potentially threatening both property and human safety. This is particularly true for the **Alps, one of the mountain ranges with the highest human density** across all the brown bear world distribution.

Prevention and communication are crucial in bear management. The **bear spray** may be considered as well a useful tool to avoid attacks. Nowadays it can be legally purchased and used in Slovenia while it is forbidden in the other alpine countries. **Aversive conditioning** against confident bears has been constantly implemented in the central Alps, but its real effectiveness will require further investigations.

Regarding the **central Alps population 27 problem bears** have been recorded in the period **2007-2024**; for several reasons, only a few of them have been removed. Differently, **in northern Slovenia problem bears are regularly removed**.

Bear removal is suggested when the other primary tools prove to be ineffective or in case of attacks on humans. **In the central Alps 7 bears performed 9 attacks** on humans in eleven

years (2014-2024). All these bears have been removed. Two females (out of the five that attacked people) were not immediately removed after their first attack, and both of them attacked again two years later, when with the next litter.

To date, in the central Alps a weak reaction of managers to the attacks has been observed, often hampered by animal rights Associations and Courts. One of the main consequences of such **missing or delayed management** is the worsening of people's attitude, which in turn may cause an increase in poaching risk. It has to be understood that removals, as for the specific situations stated in the Action Plan, are in the best interest of the whole bear population and that **conservation cannot overcome public safety**.

The **management of problem bears** in the future years will be the most **crucial** issue for bear conservation in the Alps.

1. MONITORING AND STATUS

1.1 Monitoring

1.2 Status

1.3 Zoom on Central Alps

1.1 Monitoring

The monitoring of the brown bear population of the Central Alps is performed by a network of several Institutions and volunteers. Here below are listed the main ones:

- Provincia Autonoma di Trento
- Regione Autonoma Friuli Venezia Giulia
- Regione Veneto
- Provincia Autonoma di Bolzano
- Regione Lombardia
- Regione Piemonte
- Swiss confederation (KORA, Cantons, Laboratoire de Biologie de la Conservation, Lausanne)
- Slovenia - Slovenia Forest Service, Ljubiana University, Divja labs
- Austria - Land Tirol - (Amt der Tiroler Landesregierung) and Carinthia
- Bavaria (Bayerisches Landesamt für Umwelt - LfU)
- Parks, Hunting associations, Alpine clubs, Volunteers, several others.

The main monitoring tool for bears in the Alps is **genetic**, since 2002. Bear samples are processed by Fondazione Edmund Mach (FEM) and Istituto nazionale per la Protezione e la Ricerca Ambientale (ISPRA) Labs in Italy, the Divja Lab in Slovenia, the Vienna Lab in Austria and Germany, the Losanna Lab in Switzerland. As a strong point, labs are connected and communicating with each other, with the advantage that methods and results can be shared.

From 2002 to 2023, approximately **12.000** and **7.000 bear samples** from the two main alpine subpopulations (from Trentino, central Italian Alps and Slovenia, eastern Alps, respectively) have been processed. The genetic monitoring is performed with different timing and schedules, according to the different subpopulations, areas, conservation status and management options.

In Trentino genetic monitoring takes place using two methods, described as systematic/intensive monitoring, based on the use of traps with scent bait, designed to capture hairs using barbed wire, and opportunistic monitoring, based on the collection of organic samples found in the area during routine activities, when ascertaining damage and by checking rub trees. Since 2019 the **intensive monitoring is carried out every two years** and consists of 114 hair-traps (2023) distributed in 4x4 km cells across the western side of the province and in the surrounding areas. Forest rangers play a key role in such monitoring field activities.

In Slovenia the genetic monitoring is implemented on a 7-8 years basis, mainly thanks to the hunters and foresters support. In the other alpine areas (Switzerland, Austria, Bavaria, Lombardia, Veneto and Friuli VG regions, Autonomous Province of Bolzano) where the bear density is much lower and no females have been detected so far, opportunistic genetic monitoring is made on a yearly basis.

All these genetic monitoring activities are performed in the long term as a basic tool for **CMR population estimations** (Trentino and Slovenia) or to quantify the minimum number of individuals (if not only presence/absence of the species) in the other areas (Switzerland, Austria, Bavaria and rest of the Italian Alps).

Furthermore, since 2015 the wild mammal community of Trentino, including the brown bear, has been studied using **systematic camera trapping**, as a cooperation between MUSE the Science Museum of Trento, the University of Florence, the APT's Wildlife Department and the Adamello-Brenta Nature Park, and with the support of a few volunteers. This monitoring, complementary to other investigation methods, is carried out every summer through a grid of 60 camera-trapping sites distributed across the brown bear core area, covering approx. 220 km² in the southern part of the Brenta range and the neighbouring Paganella-Gazza massif, with each camera trap being operational for around 35 days between June and August. The project's goals include: determining changes in the medium-to-large mammal community, investigating activity patterns, documenting the arrival of new species, integrate information on the presence of bear females with cubs, understanding how species react to the extensive and widespread presence of people, and comprehending trends in relation to the use of the area by species over time.

Systematic camera-trap monitoring is much less important than the genetic monitoring in terms of population estimates, but it may play an important role in both the definitions of the population trends, the monitoring of peripheral areas with very low animal densities or the investigation of ecological patterns.

Radio and GPS tracking are used to monitor problem bears, especially in the Central Alps, or for research, mainly in Slovenia. Monitoring problem bears with GPS collars is crucial to implement all the prevention actions and also to facilitate bear removals. In the central Alps, when an attack occurs, this bear has to be removed: in such cases, monitoring with GPS collars is functional to that goal.

1.2 Status

At the end of 2023 the status of the two alpine bear populations, as for the size estimates, is:

- **98 (CI 86-120) individuals** (COY excluded) **in the central Alps** (i.e. Trentino and surrounding areas). The data comes from the 2023 intensive genetic monitoring;
- **48 (CI 41-57) individuals** (COY excluded) **in the eastern Alps** (i.e. Slovenia). This estimate dates back to 2015. At the time this report was drafted, no more recent data was available.

- **very few more bears (0-5?)** may be roaming **in-between these areas** (i.e. north-eastern Italian corner and southern Austria), and for this reason most of them may be not included in neither of the estimates above

The **eastern Alps** sub-population is the northern part of the big Dinaric-Pindos population (est. > 3.000 bears); very few females are present. The **trend** looks **stable** in the period 2016-2022, while 2023 data will soon be available.

The **central Alps** population has its core area in western Trentino, where all females and reproductions occurred since the reintroductions took place. The **trend** looks **positive** in the period 2002-2023.

No genetic connection between the two subpopulations has been documented so far.

Figure 1 compares the maps of the brown bear whole distribution in the Alps 2016 and 2022, showing the positive trend in the central Alps population vs. the stable situation in the eastern Alps.

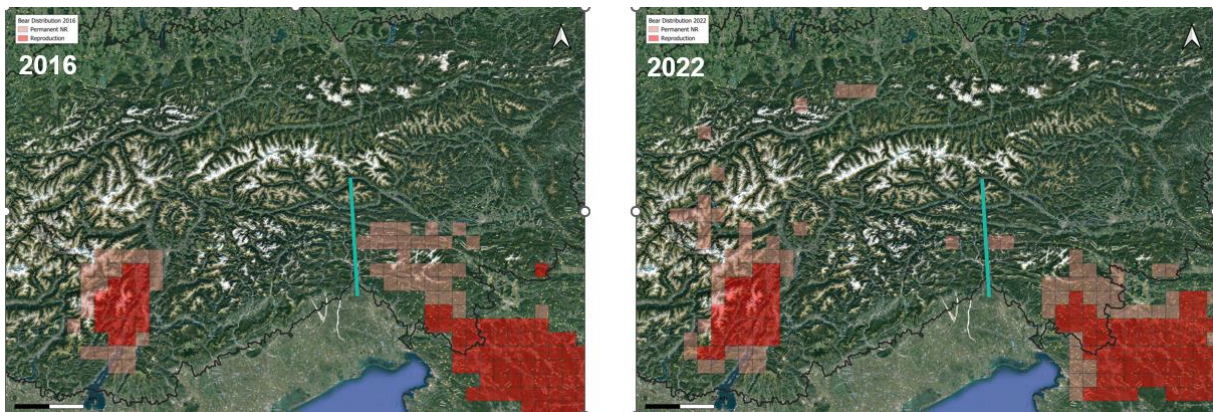
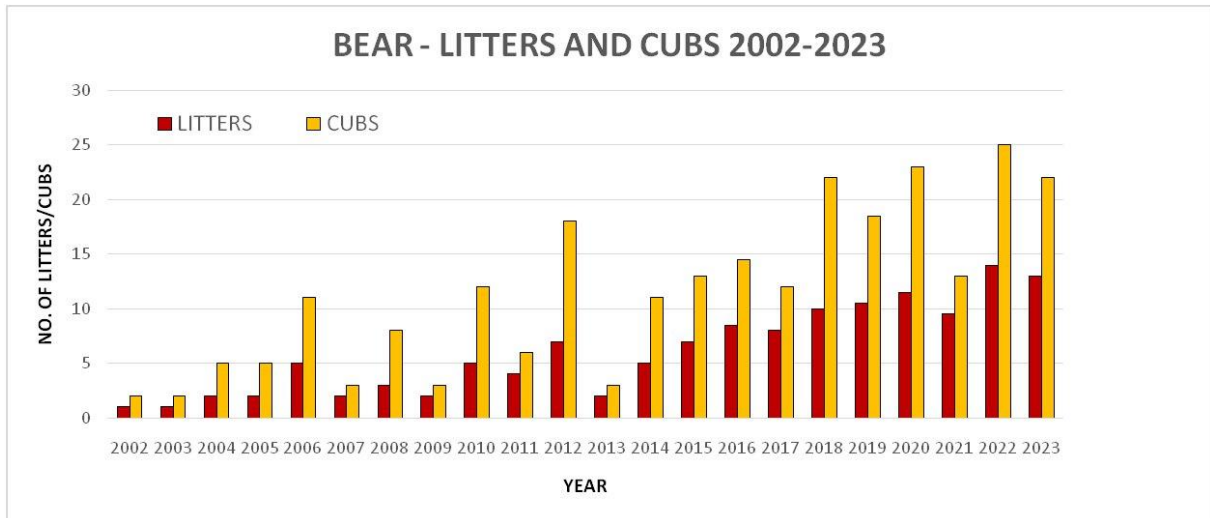


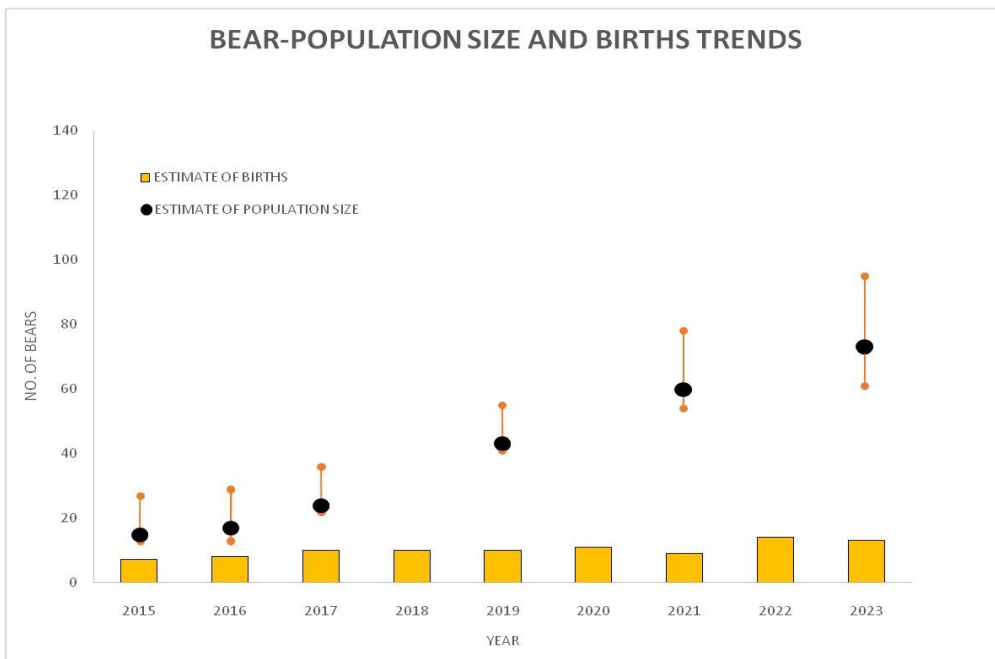
Figure 1: Brown bear distribution in the Alps - 2016 vs. 2022 (Life Dinalp Bear project)

1.3 Zoom on central Alps

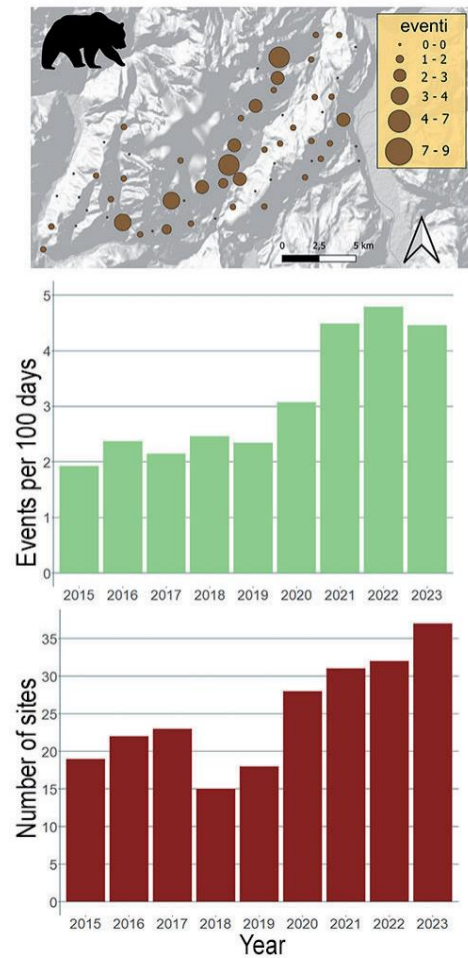
Since the first translocations of individuals in 1999, the trend of the small and isolated population in the central Alps has been positive, as shown by the **increasing number of litters recorded in the period 2002-2023** and **increasing population estimates** for the period 2015-2023 (see graph 1 and 2 below).



Graph 1: Number of litters and cubs estimated to be present each year, from 2002 to 2023 in the Trentino population. From 2016 onwards the data represent an average of the minimum and maximum number observed (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento)



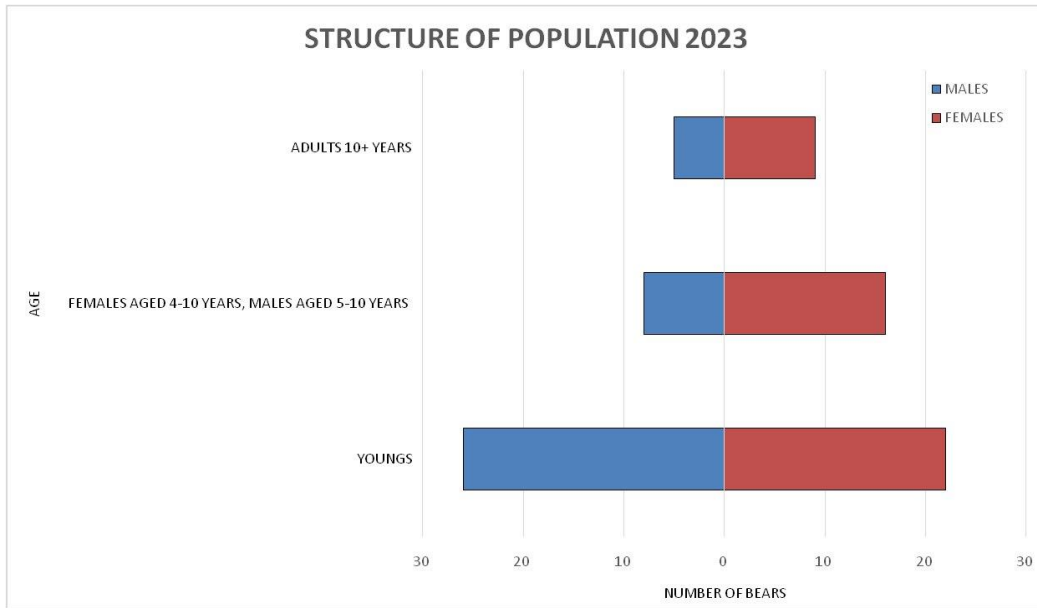
Graph 2: Trend for the population size of young and adult bears (excluding cubs) estimated using genetic marking-recapture (MR) models, (bars with dots representing the confidence intervals in orange) and trend for estimates of births (histogram with orange bars), (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento).



Panel 1: The panel shows the map of events involving the passage of bears in the study area in western Trentino based on the 2023 summer camera-trapping sampling programme. The green bar chart shows the number of events (in this case normalised for every 100 days of sampling) recorded for the brown bear in each year of the project, begun in 2015. Likewise, the red bar chart shows the number of sites where the brown bear was recorded in the same period (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento).

The positive trend of the population is also documented by the **systematic camera-trapping** results for the period 2015-2023, both in terms of number of sites where bears were detected and number of detected passages (panel 1).

The **structure** of the population in 2023 is shown in Graph 3, which indicates the presence of more males than females in the young class (females aged 1-3, males 1-4; 27 vs 22) and more females than males in the adult class (including all females aged 4+ and all males aged 5+; 25 vs 14).



Graph 3: Structure of the population in 2023 on the basis of age groups. It also includes some animals of uncertain age, which have therefore been distributed among the same age groups with the same proportions relating to bears of known age (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento).

As for the distribution of bears across the region, **the area occupied by females in 2023 is still almost completely within the province of Trento** (see Fig. 2) and remains relatively small (2.227 km²). Oppositely, males are spread over a much wider area of more than 40.000 km² encompassing most of the central Alps (this taking into account the long dispersal movements of young males).

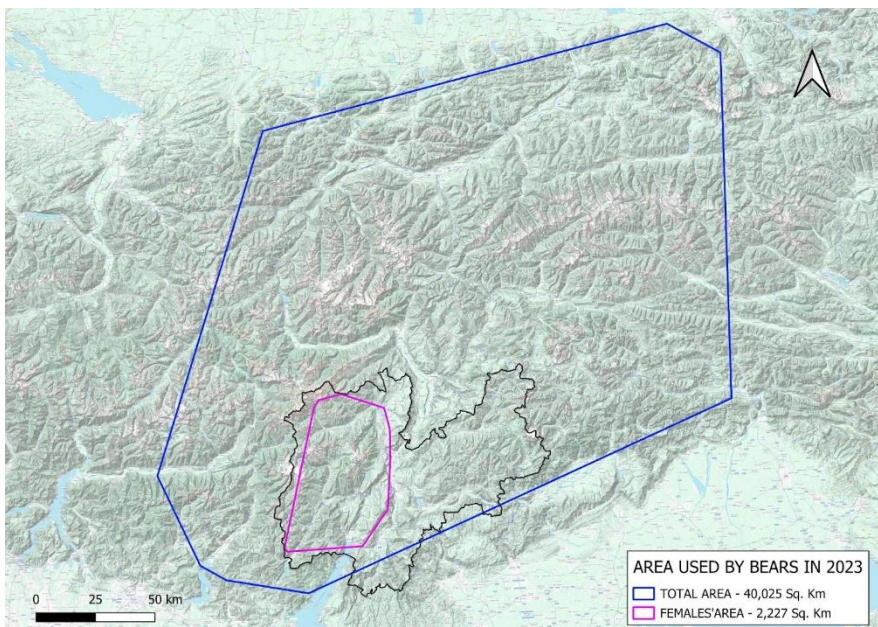
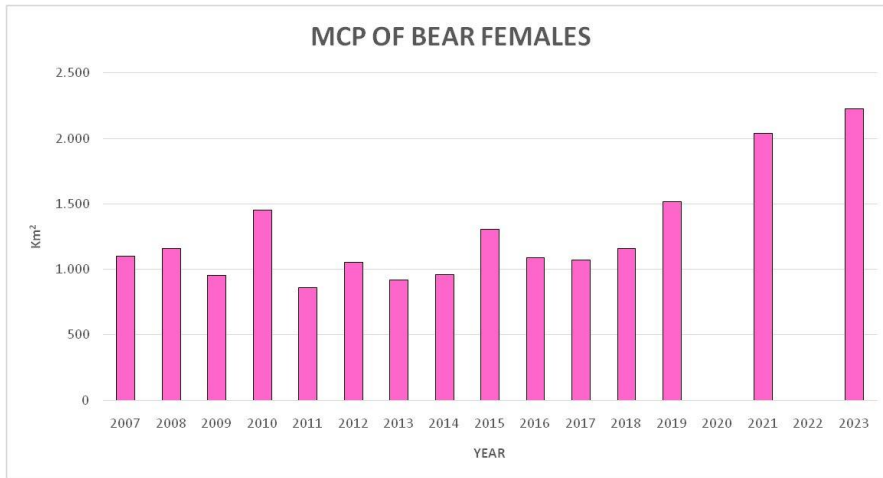


Figure 2: Area used in 2023 by brown bears from the central Alps population. Considering also the longest journeys made by young males, on the basis of the data obtained, in 2023 the bear population was distributed over a theoretical area of 40,025 km² (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento).

It has to be noted that, despite being relatively small, the **area occupied by females is increasing** at a slow but constant rate as shown by Graph 4.



Graph 4: Expansion of the area occupied by female bears of the Trentino population (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento).

Figure 3 summarises the **dispersion** movements of young bears, as documented from 2005 to 2023. Such roaming activities involved a total amount of 54 bears, all males. 15 of these (28%) died or disappeared, 24 (44%) returned, 2 (4%) emigrated, 1 (2%) is in captivity and 12 (22%) were still roaming in 2023.

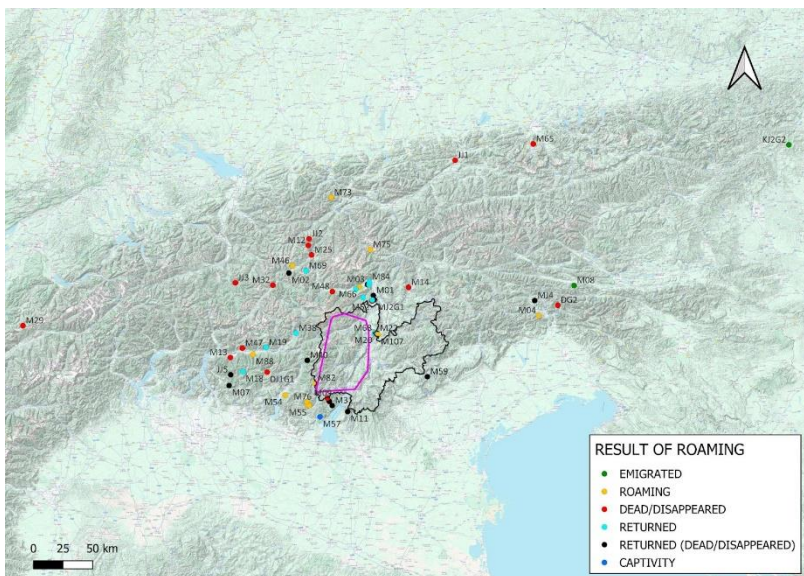


Figure 3: Documented cases of roaming (i.e. bears leaving western Trentino) in 2023 for the central Alps population (from Large Carnivores Report 2023, Wildlife Service, Autonomous Province of Trento).

2. CONFLICTS MANAGEMENT

2.1 Introduction

2.2 Primary tools for problem bear management

2.3 Removal: the extreme tool for problem bear management

2.1 Introduction

Bears in human dominated landscapes cause conflicts with people, potentially threatening both property and human safety. This is particularly true for the **Alps, one of the mountain ranges with the highest human density** across all the brown bear world distribution.

As for problem bears (usually less than 10% of the population according to the bibliography), they can be classified in two categories: a) **very damaging**, b) **dangerous** (i.e. a threat to human safety). This last quota is usually estimated to represent no more than 2% of the whole population.

According to the main Bear action Plans in Europe (Skrbinšek and Krofel 2014; Černe 2015) **damaging bears** are considered those that cause repeated damages to assets that are not easy to defend (i.e. cattle). **Dangerous bears** instead are so considered when they show repeated dangerous behaviours (i.e. trying to enter houses or following people) or when directly attacking people, both with a defensive or a non-defensive pattern, and regardless of whether they previously showed problematic behaviours.

Regarding the central Alps population and according to the PACOBACE definition, **27 “problem bears” have been recorded in the period 2007-2024**: 22 have been classified as dangerous according to the classifications mentioned above and 5 as very damaging. Among these, 6 have been legally shot (3 outside Trentino), 5 are kept in captivity, 2 have been found dead, 4 died as a result of accidents during management operations, 4 have been poached, 3 disappeared, 1 moved to another area, 2 are still free.

Differently, in the **eastern part of the Alps** (in northern Slovenia) **problem bears are regularly removed**.

2.2 Primary tools for problem bear management

Prevention is considered to be the first step to be implemented in problem bear management by the bear action Plans of the Alps, that means removal of attractants, bear-proofing of garbage bins, prevention of damages through electric fences, guarding dogs, placement of shelters for shepherds on high pastures.

Also the **bear spray** may be considered a useful tool to avoid attacks/physical contact between bears and people. Nowadays it can be legally purchased and used in Slovenia while it is forbidden in the other alpine countries.

Communication is crucial in all aspects of bear management. This is a key tool in order to make people aware of the right behaviour to adopt in the countries, to promote best practices and disseminate knowledge about the measures to be adopted for damages prevention.

Aversive conditioning against confident bears has been constantly implemented in the central Alps since 2003, with the use of both rubber bullets and bear dogs. Despite that, results are often mixed and of difficult interpretation and will require further investigation. This is usually also true at the international level.

2.3 Removal: the extreme tool for problem bear management

Bear **removal**, according to the Action Plans of the Alpine countries, is suggested when the other primary tools prove to be ineffective (i.e. no changes in bear behaviour) or in case of attacks on humans.

Regarding this last issue, **in the central Alps 7 bears performed 9 attacks on humans in eleven years (2014-2024)**. 6 of them have been classified as “defensive” attacks from the competent Authority and from the National Wildlife Institute (females defending COYS or yearlings), while 3 as “non defensive” attacks. 5 females and 2 males have been involved in the attacks, resulting in 9 people injured and 1 fatality. All these bears have been removed: 3 have been shot, 1 is in captivity, 1 died during capture and 2 have been found dead/poached.

It has to be noticed that **two females out of five were not immediately removed after their first attack, and that both of them attacked again two years later**, when with the next litter. In both cases the first removals had been obstructed by the Courts decisions, after the legal actions promoted by Animal rights Associations.

CONCLUSIONS AND RECOMMENDATIONS

The population **trend** of bears across the **Alps** is **positive**, but with a great discrepancy between central Alps (strongly increasing population, so far) and eastern Alps (stable presence of bears that are the northernmost part of the Dinaric-Pindos population).

To date, in the central Alps a weak reaction of managers to the attacks has been observed, often hampered by animal rights Associations and Courts. One of the main consequences of such missing or delayed management is the **worsening of people's attitude, especially in the rural and mountain areas** where people live close to bears and have to face the related issues. This of course may cause an **increase in poaching risk**.

For this reason it has to be noted that **removals**, as for the specific situations stated in the Action Plan, **are in the best interest of the whole bear population** and that **conservation cannot overcome public safety**.

Will the bear population (and related conflicts) grow more in the coming years? This is what is expected, if stochastic factors will not alter the consolidated trend. According to the ISPRA-MUSE study of 2021, up to 5 problem bears per year are expected in the coming years for the Trentino population, confirming how **management of problem bears in the future years will still be the most crucial issue for bear conservation in the Alps** (ISPRA-MUSE, 2021). Another ISPRA-MUSE study reports that up to 8 problem bears per year may be removed in the central Alps in the period 2023-2025, without compromising the sustainability of the population (ISPRA 2023).

A stronger **population control** (with yearly quotas such as in Slovenia) has been also recently discussed in the central Alps as a **possible future tool**, but the present Italian social/political framework seems to deny this possibility at the moment.

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