



LIFE ARCPROM



Improving coexistence between brown
bears and humans in 4 National Parks
of Southern Europe

LIFE ARCPROM (LIFE18 NAT / GR / 000768)

LAYMAN'S REPORT



The four National Parks

Layman's Report

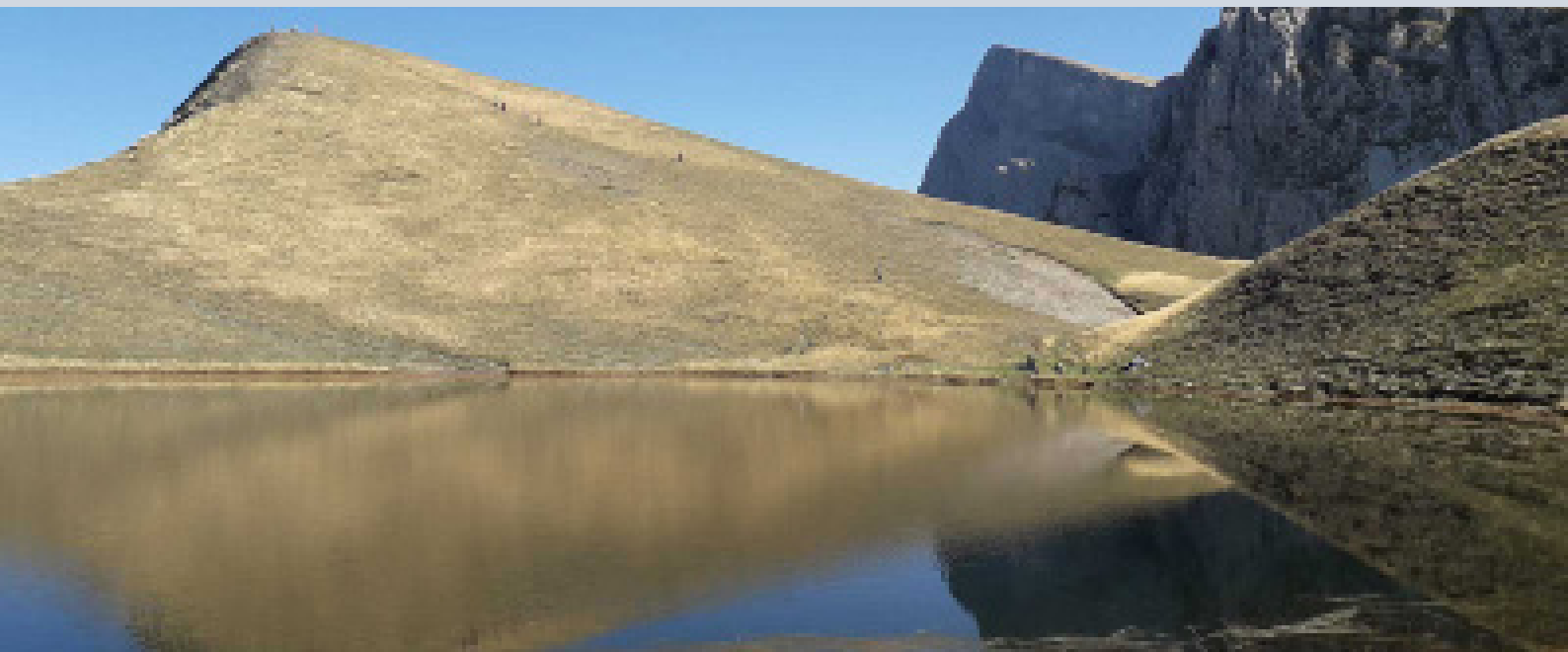
Contents:

- Project Description

- Introduction

- Project Actions and Results:

- Identification of areas with high risk of human-bear conflict and evaluation of bear distribution and numbers in project areas
- Giving voice to local communities – Operation of Local Coexistence Platforms
- Training of National Park and stakeholders' staff
- Operation of Specialised Units for the Detection of Poisoned Baits and distribution of first-aid kits for poisoned animals
- Operation of Bear Emergency Teams (BETs) and installation of deterrent measures
- Demonstration and use of Bear Deterrence Dog Unit
- Support to farmers for the exchange of Livestock Guarding Dogs (LGDs)
- Labeling of bear-friendly products and services
- Dissemination, awareness, and networking activities
- Environmental education and volunteerism

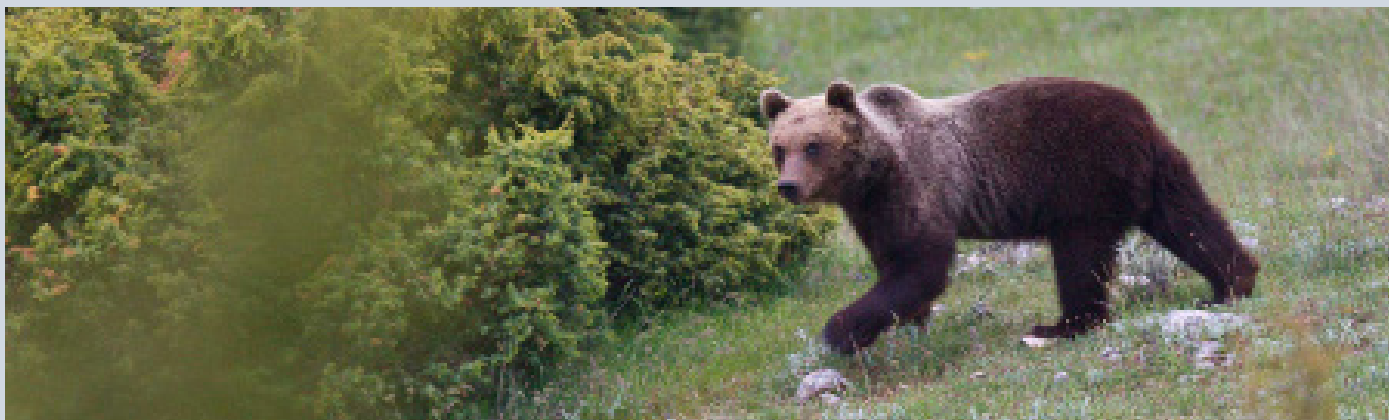


Project Description

The **LIFE ARCPROM** project aimed to improve coexistence between brown bears and humans in three Greek National Parks (Prespa, Northern Pindos, Rodopi Mountain Range) and one in Italy (Maiella). The brown bear (*Ursus arctos*) is an endangered species and classified as a “priority species,” strictly protected by EU law. In Greece, the species is considered “endangered,” while the Apennine brown bear (*Ursus arctos marsicanus*) is “critically endangered.”

The main goals of LIFE ARCPROM included enhancing the operational capacity of the Management Units of the Greek National Parks (under the Natural Environment and Climate Change Agency – NECCA), the Italian Maiella National Park, and other competent authorities. Staff training focused on damage prevention from large carnivores, minimizing illegal practices like poisoned baits, and dealing with bear approaches to residential areas.

Community involvement was crucial, encouraging participation in management practices and identifying and labeling bear-friendly products and services. The project also aimed to produce awareness and educational material, create bear-thematic trails, and engage volunteers to support bear-human coexistence.



Project Details:

Total Budget: **€ 2.786.497**

EU Contribution: **75%**

Duration: **01/10/2019 - 30/06/2025**

Coordinator: **Environmental NGO “Callisto”**

Partners:

Greece: **NECCA, University of Thessaly, University of Western Macedonia**

Italy: **Maiella National Park, WWF Italy**

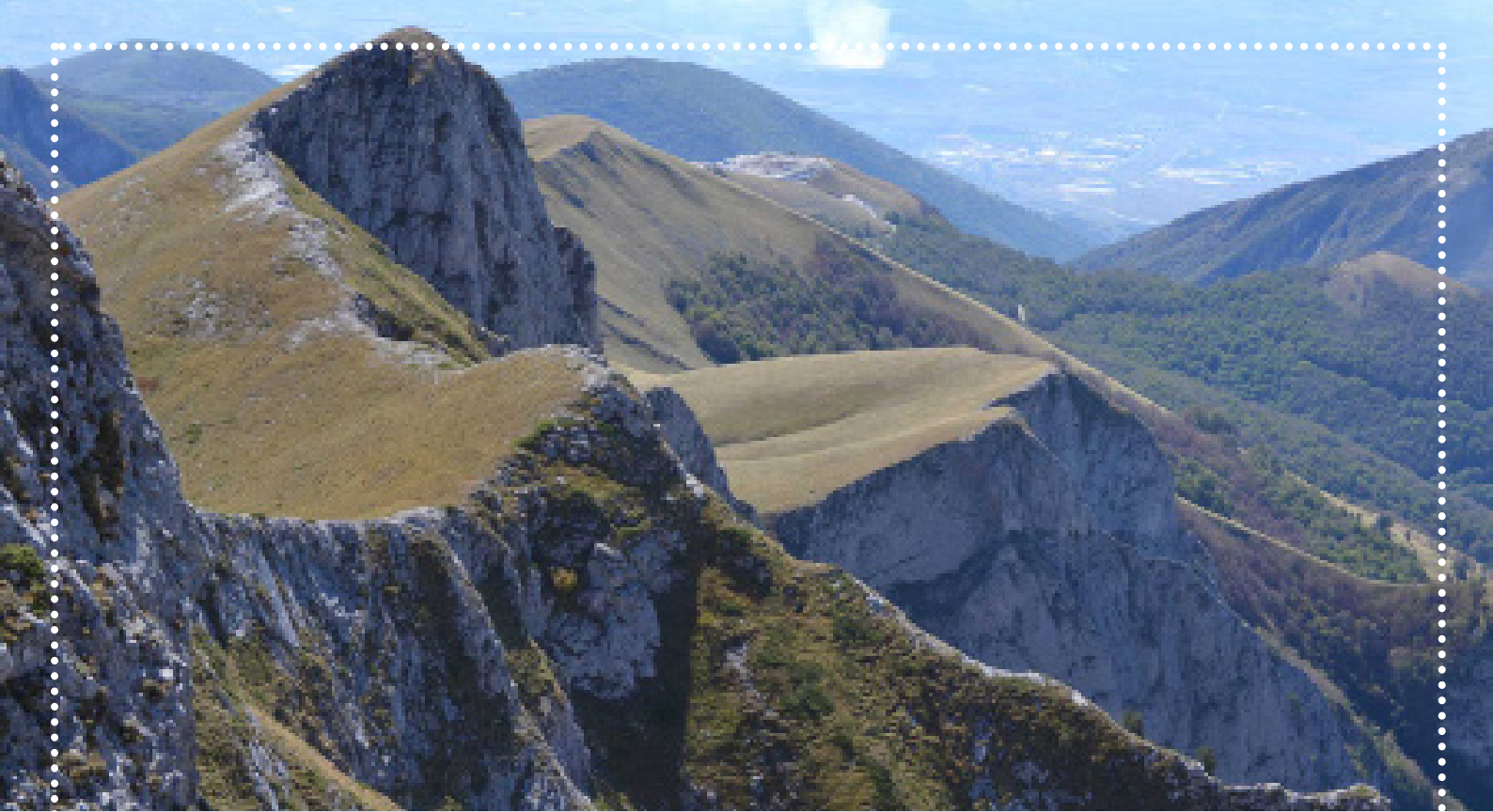
Introduction

The distribution area of *Ursus arctos* in **Greece** consists of two main distinct population nuclei, located approximately 150 km apart in the northwestern and northeastern parts of the country. These areas together form a total permanent range of approximately 33,000 km². This represents the southernmost edge of the species' distribution on a European (continental) scale, making it of exceptional biogeographical importance. The total bear population in the project's target sub-regions is estimated at around 365 individuals, representing approximately 45% of the overall brown bear population in Greece, underlining the significance of the three National Parks where project actions were implemented.

Although the conservation status of the species in Greece cannot yet be considered favourable, recent years have shown positive and increasing trends in the bear subpopulations. These trends are attributed either to previous successful conservation efforts and/or to increased reproductive success and survival rates of newborn animals, linked to food quality and availability as well as habitat suitability. These factors have led to an expansion of the species' range into areas of historical distribution. Most of these “reclaimed” brown bear habitats are characterized by forested-agroforestry ecosystems at mid-altitude with agricultural land use and numerous small settlements, forming a complex mosaic.

The lack of rational management of certain anthropogenic food sources—such as household waste, livestock facility waste, and illegal landfills with edible refuse—randomly scattered across the bear's habitat, is among the causes leading to habituation or problematic behaviour in some individuals. These factors are mainly responsible for creating conflict situations between humans and bears, which, if not properly addressed, may jeopardize all prior efforts to maintain the species in a sufficiently favourable conservation status.

In **Italy**, the Apennine brown bear (*Ursus arctos marsicanus*) is an endemic subspecies of the Central Apennines, with its range estimated at around 5,000 km². It survives in a small population of approximately 50 individuals, whose future depends largely on population growth and range expansion. Maiella National Park is one of the areas where bears have expanded their presence in recent years, now hosting at least 13 different individuals (30% of the estimated population), including two females who gave birth to five cubs. Unsustainable mortality rates remain the main threat to improving



the bear's status, particularly human-caused mortality, which negatively affects both survival and range expansion.

Data collected in Maiella National Park confirm that the problems to be addressed are human-related and revolve around two key issues: a lack of public awareness and the availability of human-provided food sources for bears, leading to problematic behaviours and subsequently to negative public attitudes toward the species. These findings highlight the need for investment in communication, improvement of the socio-economic conditions for coexistence, and capacity-building of responsible personnel, to raise awareness and minimize human impacts on the species' precarious conservation status.



Project Actions and Results

● Identification of Areas with High Risk of Human-Bear Conflict and Assessment of Bear Distribution and Numbers in the Project Areas



At the beginning of the project, research was carried out in the four project areas in order to identify and delineate zones where there is a high risk of conflict between human activity and bears. To achieve this objective, data were collected and analysed from multiple sources: responses to questionnaires distributed to farmers, livestock breeders, and residents of each area; recorded incidents of bear-human interactions in the respective areas; and records of bear-related damage to agricultural production over the past 20 years.

An assessment and evaluation of the status of bear populations in the project areas was also conducted. To achieve this, a combination of three different methods was used: genetic analysis of bear biological material, monitoring through infrared and thermal sensor camera traps (specialized cameras), and recording of bio-indicator signs.



Based on this research, it is estimated that 133 individuals live in Northern Pindos National Park, 76 in Prespa National Park, 156 in the Rodopi Mountain Range National Park, and 10 in Maiella National Park. Achieving the most accurate possible estimate of the population in the four National Parks was essential, as it enabled better planning of conservation actions under the project. Another important finding was the confirmation—albeit at a low percentage—of gene flow between the three bear sub-populations in Greece, which demonstrates that they are not geographically isolated from each other.



● Giving Voice to Local Communities – Operation of Local Coexistence Platforms

A key factor in the success of the LIFE ARCPROM project was the involvement of stakeholders from each area in designing the project's actions. For this purpose, Local Coexistence Platforms were established in each of the four National Parks, involving representatives from environmental organizations, local authorities, livestock breeders, farmers, beekeepers, hunters, and residents. More than 500 interviews were also conducted across the four project areas, aiming to better understand and document stakeholders' views and needs.

During the meetings of the Local Platforms and the project's Open Events, participants recognised the importance of participatory processes in facilitating coexistence between local communities and bears—not only during the implementation of LIFE ARCPROM but also beyond its completion. Despite the challenges, the project laid a strong foundation for future actions, which should further focus on strengthening community participation in decision-making processes.





● Training of National Park Staff and Other Stakeholders

Improving the skills of the staff from the National Parks involved in the project—as well as staff from other National Parks and public authorities engaged in wildlife management, human-bear conflict resolution, or damage assessment—was a significant component of the LIFE ARCPROM project.

To this end, training seminars were held for staff from the Management Units of the National Parks and other relevant authorities. These included the transfer of methods for monitoring bear populations in the field, operational management of poisoned bait incidents, first aid for poisoned animals, assessment of damage caused by bears, communication techniques for stakeholder engagement, and conflict resolution processes. In addition, exchange visits were organized with European countries that have experience in managing human-bear conflicts.

The training activities provided staff from the Management Units and other involved organizations with valuable knowledge and experience, thereby strengthening conservation efforts beyond the project's lifetime.



● Operation of Specialized Poison Bait Detection Units and Distribution of First Aid Kits for Poisoned Animals

The illegal use of poisoned baits poses one of the most serious threats to biodiversity. These poisons affect both wildlife and working animals, such as Livestock Guarding Dogs (LGDs). To address this severe issue, the LIFE ARCPROM project operated Specialized Poison Bait Detection Units in the three Greek National Parks. These units consist of specially trained dogs guided by their handlers, who patrol areas to detect and remove poisoned baits. Between 2022 and 2024, the three units successfully responded to 34 suspected poisoning incidents, 18 of which occurred within National Parks. This action is considered highly significant and will continue after the end of the LIFE ARCPROM project under the responsibility of NECCA, which has already recognised the value of these specialized units.

In parallel, over 1,000 anti-poison first aid kits were developed and distributed free of charge to livestock breeders and relevant authorities. Each kit contains all necessary pharmaceuticals, relevant equipment, and step-by-step rescue instructions for the crucial first moments in cases of LGD poisoning.

Another important success of the LIFE ARCPROM project in addressing the poisoned bait issue was the official designation of February 22 as the “National Anti-Poison Bait Action Day.” This initiative, proposed by the project partners, was accepted by the Greek Ministries of Environment and Rural Development, aiming to raise public awareness and coordinate actions against the use of poisoned baits that threaten biodiversity, working animals, and even public health.



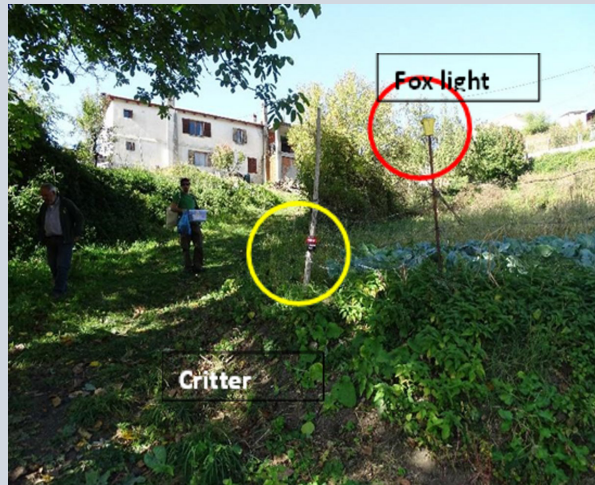


● Operation of Bear Emergency Teams (BETs) and Installation of Deterrent Measures

Under the project, Bear Emergency Teams (BETs) operated in all four National Parks to manage bear-human interaction incidents, particularly in residential areas. A key milestone for the operation of these teams was the refinement and formal adoption of the Human-Bear Interaction Management Protocol, which was established in Greece by Joint Ministerial Decision in 2014. During the project, more than 355 interventions were carried out across the four parks—183 in Greece and 173 in Italy. To prevent bear approaches to residential areas, 14 bear-proof waste bins were installed at selected points in the three Greek National Parks. These bins replaced old ones and are designed to be accessible to humans but not to bears, thus preventing bears from feeding on garbage and becoming habituated to human-related food sources.

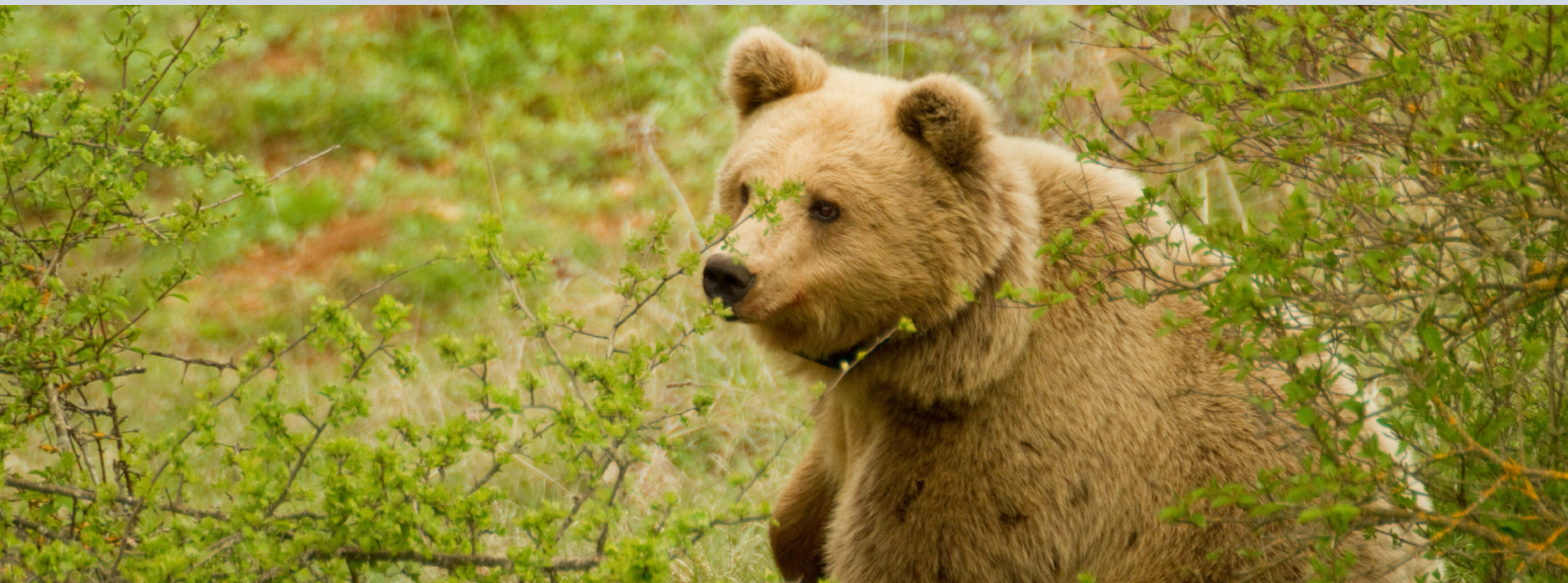
Similarly, in Italy's Maiella National Park, 15 metal structures were installed to protect chicken coops located in or near villages. Additionally, 45 electric fences were used in both Greece and Italy to effectively address agricultural damage and bear intrusions into settlements (e.g., targeting beekeeping, livestock farming, crops)—one of the key sources of human-bear conflict.





Another tool deployed to deter human-bear conflicts was the installation of specialized deterrent devices, aimed at modifying the behavior of habituated bears in all four project areas. These devices included sound or light deterrents (e.g., *Critter Gitter*), pepper spray bait stations, ultrasound air horns (e.g., *Falcon Super-sound Signal Horn*) and other bear-specific tools.





● Operation and Demonstration of the Bear Deterrence Dog Unit

In addition to the operation of Bear Emergency Teams (BETs) and the use of specialized deterrent tools, the LIFE ARCPROM project implemented another innovative action: the establishment of a Karelian Bear Dog Unit for the detection and deterrence of bears.

International experience has shown that the use of the Karelian Bear Dog breed, or other similar breeds, is an effective method for handling incidents involving bear-human interactions.

As part of the project, this special Unit was created and is operating on a pilot basis in Northern Pindos National Park. The Unit consists of two trained dogs and their handlers. The dogs can be used in various direct or indirect ways during bear-related incidents. They can investigate conflict cases by tracking bear movements, helping to identify bear corridors and determining the root cause of an incident. They can also detect the presence of bears in an area well before humans do, and can be used to actively deter bears from approaching settlements or other conflict-prone zones.



Initial results from the Unit's operation have shown that the public places trust in the dogs, as they provide a sense of safety and serve as a valuable connection with local communities dealing with bear-human coexistence challenges.

The Unit will continue its operation under the Management Unit of Northern Pindos National Park (NECCA) after the conclusion of LIFE ARCPROM. NECCA also plans to establish similar units in other National Parks across Greece.



- Support to Farmers for the Exchange of Livestock Guarding Dogs (LGDs)

To ensure the smooth coexistence of human activities with large carnivores, farmers and livestock breeders must adopt specific preventive measures. One of the most effective these ones is the use of appropriate Livestock Guarding Dog (LGD) breeds, such as the *Molossus of Epirus*, the *Greek Shepherd*, and the *White Greek Sheepdog*, which have been used in Greece for thousands of years.

Building on the results of previous LIFE projects, LIFE ARCPROM further developed and supported a network of LGD owners for the exchange, donation, and distribution of dogs to livestock breeders. As part of the project, a network of more than 40 LGDs was utilized and expanded, and a total of 62 dogs were donated or granted.

To ensure their welfare and effectiveness, the dogs were regularly monitored by veterinarians from the University of Thessaly. Puppies and adult dogs underwent clinical exams, were vaccinated, treated for internal and external parasites, and received health booklets and microchips according to protocol.



● Labeling of Bear-Friendly Products and Services

Aiming at the long-term conservation and promotion of bear coexistence with livestock farming and other activities, the project supported the production of bear-friendly agricultural products as well as the adoption of bear-friendly practices by tourism businesses and other service providers.

In Greece, the University of Thessaly created the “RESPECT Wildlife” label. In Italy, the action was implemented by Maiella National Park and WWF Italy, through the development of the “Bear-Friendly” label, which includes the LIFE ARCPROM project logo.

In total, the “RESPECT” label was awarded to 21 producers in Greece, while 27 producers in Italy received the “Bear-Friendly” label. The aim is for the bear-friendly labeling scheme to continue beyond the conclusion of the LIFE ARCPROM project. The strong interest shown by both producers and consumers in both countries demonstrates that such labeling is not just a promotional tool for quality product differentiation—it is a viable platform for coexistence, certification, and ecological responsibility, with real potential for continuation and expansion.





● Dissemination, Awareness-Raising, and Networking Activities

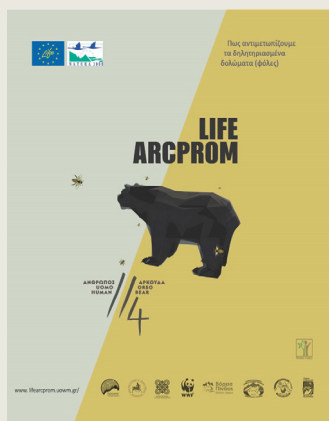
Throughout the duration of the project, dissemination activities were carried out to promote the key messages, goals, and actions of LIFE ARCPROM on human-bear coexistence. These targeted residents, visitors to the four National Parks, and the general public.

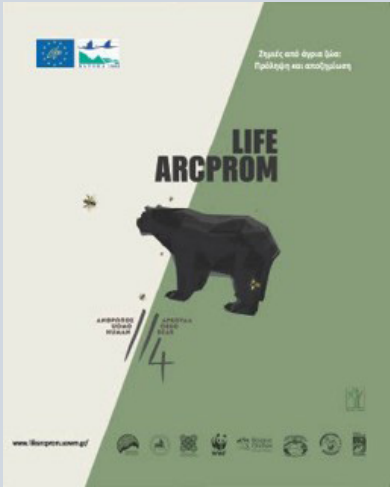
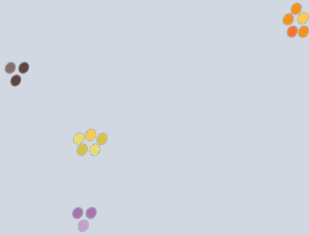
The visual identity and printed materials produced under LIFE ARCPROM—including the one you are holding—were designed by the Department of Fine Arts of the University of Western Macedonia, with active participation from its students.

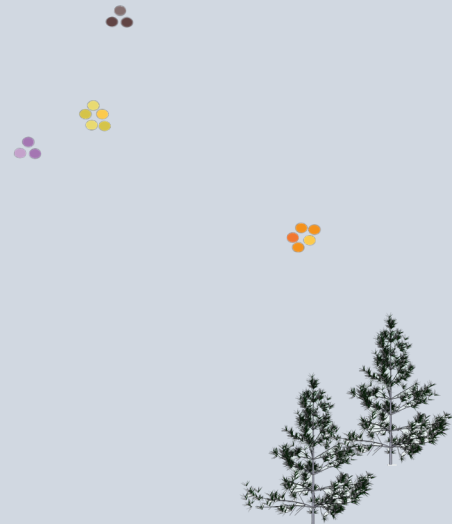
As part of the project, three television and radio messages were created and broadcast more than 1,500 times through national and regional media in Greece. A 32-minute documentary was also produced, presenting the project's key objectives, progress, and activities. The documentary is available on the LIFE ARCPROM YouTube channel and the project website.

To further inform and engage the public, local events were organized in all four project areas. In Greece, seven events were held with the participation of more than 100 residents, and in Italy, three events attracted more than 100 participants as well.

The LIFE ARCPROM International Conference took place in February 2025 in the city of Larissa, with the participation of 185 scientists, environmental organisation representatives, universities, and institutions from Greece, Italy, Spain, Albania, North Macedonia, and Bulgaria.







● Environmental Education and Volunteerism

Four “Coexistence Trails” with bears were delineated in Greece and Italy as part of the project's environmental education activities. Two are located in the Rodopi Mountain Range National Park, and the other two are in Prespa National Park and Maiella National Park.

These are accessible routes through areas of high natural beauty where bears are present, designed for all types of users, including students, adults, visitors, educators, and others. In parallel, educational materials were developed and made available to teachers of all levels via the Management Units of the three Greek National Parks and the LIFE ARCPROM website. It is worth noting that the selection of these “Coexistence Trails” was made through participatory consultations with residents and stakeholders in each area.

During the LIFE ARCPROM project, volunteer training and mobilization programs were also implemented to support project actions. A total of 34 volunteers participated in Greece and 65 volunteers in Italy.







→ **LIFE ARCPROM International Conference, 25-27 February 2025, Larissa, Greece**

A total of 185 scientists, representatives of environmental organizations, universities and institutions from Greece, Italy, Spain, Albania, North Macedonia and Bulgaria participated in the Conference.



For more information:

Email: info@callisto.gr

Website: www.lifearcprom.uowm.gr

Facebook: www.facebook.com/lifearcprom

Instagram: [instagram.com/lifearcprom/](https://www.instagram.com/lifearcprom/)

Youtube: LIFE ARCPROM

Phone: +30 231 025 2530

Address: Velissariou 3, Thessaloniki, PC 54640, Greece



Co-financed by:

