



ARCTOS Project

Brown Bear Conservation: coordinated actions for the Alpine and Apennines range



Habitat Directive

improving biodiversity

preservation
techniques

management tools

PROJECT DESCRIPTION

The protection of the two brown bear populations in Italy, the one in the Alps and the other in the Apennines, was the purpose of the **LIFE project ARCTOS**. Its goal was to support the conservation of the two groups through the adoption of management measures which are compatible with the presence of this plantigrade, the reduction of conflicts with human activities as well as the dissemination of information and outreach of the major interest groups. The main threats to the brown bear conservation in Italy are represented by the progressive loss of natural habitats, an inadequate management of conflicts with human productive activities (particularly with livestock raising) and the lack of an eco-ethology knowledge base of the species necessary for the adoption of proper management practices.

The results expected on long-term were:

- reduction of conflicts (often a cause of mortality) through the application of virtuous and innovative livestock raising practices;
- the establishment of emergency teams to deal with critical situations caused by bears dangerously close to residential areas;
- a high level of involvement of local communities.



The brown bear is present in Europe with 10 distinguished and completely separated populations, while the two Italian populations are characterized by very different history features but having similar survival problems. The Apennine population has been isolated for over 500 years and is made up of a sub-species (Marsicano type brown bear) to be considered an evolutionary and conservationist unit by itself. It has an extremely small range in the National Park of Abruzzo, Lazio and Molise (NPALM) and surroundings. In the Alps, on the other hand, the brown bear population was reduced to a few individuals in the 90s when the release of 10 bears from Slovenia in the Adamello Brenta Nature Park was undertaken in the frame of the LIFE project URSUS, implemented between 1999 and 2002. The presence of the species is permanent only in the territory of the Autonomous Province of Trento where there is a concentration of female individuals and where the reproductions occur.

Before the launch of the ARCTOS project the brown bear population of the Apennines consisted of approx. 50 exemplars, while that of the Alps of approx. 30-40 individuals, all very vulnerable with a high grade of mortality which slowed down the increase of the populations.

OBJECTIVES

The project provided an opportunity for the implementation of the **Action Plan for the Protection of the Marsicano type Brown Bear** and the **Interregional Action Plan for the Brown Bear Conservation in the Central-East Alps** (respectively PATOM and PACOBACE plans), according to which all involved subjects commit themselves to operate in a coordinated manner in order to contribute to the general objectives of the brown bear conservation. The initiative allowed the implementation of some actions



foreseen in the frame of the two plans, requiring the transfer of experience from areas characterized by the permanent presence of brown bear to newly colonized areas (in the Alps) and a high level of coordination between local authorities in different fields (in the Apennines).

ARCTOS involved 10 beneficiaries: National Park of Abruzzo, Lazio and Molise (coordinator), Abruzzo Region, Lazio Region, Lombardy Region, Friuli Venezia Giulia Autonomous Region, Trento Autonomous Province, National Forest Corps, University of Rome La Sapienza, Nature Park Adamello Brenta, WWF Italy.

PROJECT PHASES

The ARCTOS project has implemented a series of actions referring to four line activities aimed at mitigating the threats concerning the brown bear:

- **actions for livestock raising practices more compatible** with the presence of brown bear. The actions were aimed at developing and putting in practice a series of guidelines to implement practices to grant brown bear conservation and breeding of livestock (in the same area), giving attention also to health aspects;
- **bear-human conflicts reduction.** Hostilities derived mainly from damage caused by the plantigrade to farms, by their frequentation of human settlements and habit to nourish with organic garbage. Guidelines have been drawn up to limit the impact of some human activities on the bears. The project also included the development of a protocol for the practical implementation of actions aimed at dissuading problem bears from adopting human-confident behaviors in order to push them away from human settlements. Bear-emergency teams (BET), formed by trained staff, were set up in the Apennines (2), in the Friuli-Venezia-Giulia region (2), in Lombardy (4) and in the Veneto region (1). In the frame of the project support has been provided also to farms located in territories with bear presence, both in the Alps and the Apennines, consisting in electric fences transferred on free loan for use. Bins for organic waste, provided with anti-bear lids, were placed in the critical areas in order to dissuade animals from getting close to the human settlements; through the use of barriers and road signs the vehicular traffic has been limited in the areas frequented by bears;
- **management of feeding sources for bears.** In particular in the Apennine project area all the buckthorns (*Rhamnus alpine*) were mapped. These shrubs are very appreciated by bears, especially in critical periods, but threatened by wood encroachment and leaf grazing by wild and domestic ungulates. In order to conserve the buckthorns and to ensure bears accessibility to such an important source of food, thinning of beech woodlands, coppicing of dead buckthorns and planting of thousands of seedlings were performed;
- **estimates of brown bear population.** Although the populations in Italy are small sized, no scientific information and data on their effective size were available for the Apennines and for expansion areas in the Alps. A standard protocol for collecting, analyzing and storing genetic data on Italian bears was elaborated.

The active involvement of the population and especially of farmers, the most affected by the presence of bears, was one of the main objectives of ARCTOS which performed an intensive **communication activity** through meetings, educational programs, targeted campaigns associated with crucial tasks such as extraordinary vaccination of dogs present in the bear's ranges and the activation of emergency teams.

PROJECT RESULTS

The project was quite challenging because of the complexity of the partnership and the conformation of the separated application areas. The immediate visible results were those relating to **mitigation of the conflicts**, cooperation with the farming community to reduce the damage caused by the bear, testing of innovative interventions on buckthorns, vaccination of dogs against distemper and commissioning of anti-bear bins. The interventions on buckthorns with the planting of new seedlings and coppicing activities constituted an important and innovative practice, never experienced before on this species. During the project a quantity of buckthorn berries was collected and delivered to the regional forest nursery "Fonte dell'Eremita" of the NFC (National Forest Corps) located in Castel di Sangro, to produce more seedlings to be used in subsequent plantings, given the difficulty of finding on the market the seedling of this species. An amplifying effect in the consolidation of buckthorns is also determined by the coppicing of the most aged or damaged specimens. It was noted how buckthorn, which has a slow growth from seed, proves and maintain on the long term a high stump sprouting capacity. These two measures constitute replicable interventions that can be applied during normal forestry activities exercised by private and public owners in all areas where buckthorn, even occasionally, is present, or in other areas subject to specific targeted interventions. The vigour of new shoots in coppiced plants made it clear that in the short-medium terms these interventions may allow an upturn of the production in the presently dry plants, and thus a faster and extremely low cost increase in the buckthorn productivity. The coppicing experiment has certainly represented a good practice to be exported to other areas where buckthorn is critical to the bears' diet.



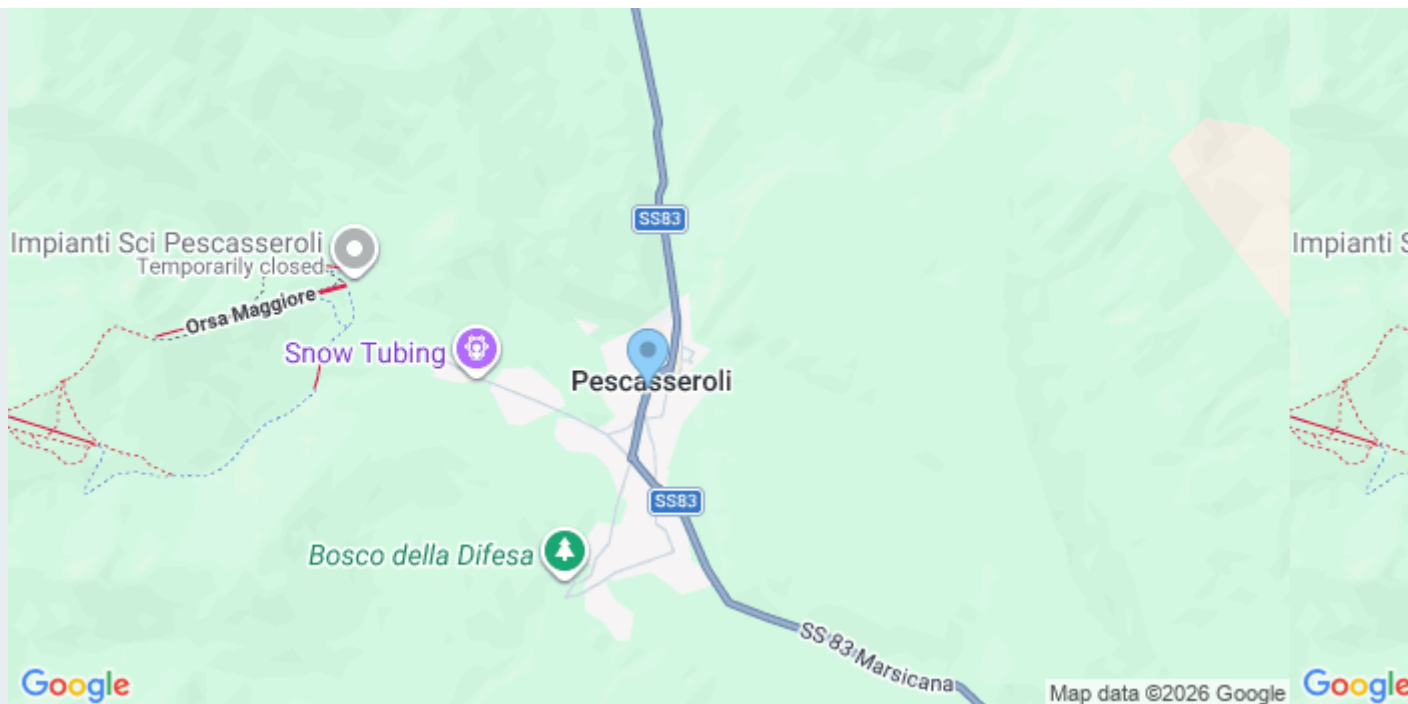
As regards the Apennine area the produced guidelines formed the basis for the preparation of the **Management Plan of the Natura 2000 sites of NPALM** and also for those sites of the Abruzzo region which are located in the Marsicano bear's expansion area. The Lazio region has entered the information in the Regional Council Resolution by which the conservation measures of the regional sites with bear presence were approved, propaedeutical measures for the transformation of SCIs (Sites of Community Importance) into SACs (Special Areas of Conservation). Moreover the measures established in the guidelines for the first time were adopted by the **Rural Development Plan (RDP)** of the Abruzzo region, so that **farmers can take advantage of incentives only if adopting an environmental friendly corporate policy such compliant with bears**. Finally consultations were held with municipalities and breeders for the drafting of the pasture management plan which will lead also to a revision of the rules governing the sector.

Following some of the main achievements of the ARCTOS project in synthesis:

- **Guidelines for the compatibility of livestock raising practices with the marsicano type brown bear conservation.**
- **Guidelines for the compatibility of the bear presence with livestock raising practices in Lombardy.**
- **National Genetic Data Bank** with provision of **standard kit** for the collection of biological samples.
- GIS-based **database** on the classification and distribution of the pastures in the sample areas.
- Geographical database on the Alpine population, called **GeOrso**, developed in order to store all the information, also in real time, on bear observation in not regularly frequented areas.
- **Guidelines for health monitoring** in line with the need for protection of the brown bear populations, including 7 of the 13 pathogens identified among pets and transmissible to bear. The Ministry of Health was also involved in the elaboration process.
- Free supply of **6750 doses of vaccine** for breeders' dogs with the aim of limiting the spread of pathogens from dogs to bears.
- Drafting of a **Protocol for the management and prevention of the phenomenon of human-confident/ problem bears**, an operational tool to be applied in the NPALM area and, more generally, in the central Apennines in order to prevent human-bear conflicts so that problematic or potentially problematic bears will not be subtracted to the exiguous bear population present in the Apennines.
- Issue of a manual for schools **"We get to know the brown bear"**.
- Establishment of **9 bear emergency teams (BET)** for the management of problem bears, with **200** trained professionals, coming both from the Apennines and the Alps, in collaboration with the State Forestry Corps, equipped with rifles with rubber bullets, tube traps, firecrackers, radio-collars, and radio receivers.
- Realization of the publication **"Communicating about bear, activities undertaken and lessons learned within the LIFE Project ARCTOS"**.
- Installation of **643 electric fences**, on free loan for use, for the protection of livestock, apiaries, valuable crops in critical areas. Most of them were installed in the core area of the two populations (245 in the Apennines and 278 in the Province of Trento), and a lower number in the areas of sporadic presence (36 in Lombardy and 84 in Friuli Venezia Giulia). Their use in the Apennines led to a decrease of the occurrences of damage **up to 83%**.
- Installation of **201 bear-proof waste bins** in the province of Trento, in Lombardy and in the Apennines.
- An inventory of buckthorns expressed in updated maps including **7 new groups of buckthorns**.
- Interventions on **19 hectares of buckthorns**, among which coppicing proved to be the most effective making sprout new productive stems within 3-4 years.
- **155 meetings** with the participation of about **11 thousand people**, including breeders, farmers, beekeepers, hunters, tour operators/ tourists, managers, the general public and journalists.

Thanks to ARCTOS it was experienced, for the first time in the National Park of Abruzzo, the so-called participatory communication where the traditional frontal meetings were replaced by an innovative methodology that allowed an active involvement of local communities in order to ensure greater effectiveness of the conservation actions.

Communication activities allowed to gain some information about the opinions of special interest groups and their state of knowledge about bears. In this regard several brochures were produced for the dissemination of the main issues relating to the prevention of damages from large carnivores, livestock raising practice management in the areas with bear presence, prevention and management of human-confident bears, waste management and hunting management. A major achievement was also the implementation of project activities addressing some schools in the Alps, allowing to work with 70 classes and 1.300 pupils.



Acronym

ARCTOS

Number of reference

LIFE09/ NAT/IT/000160

Reference Programme

[LIFE](#)

Beneficiary Coordinator

Parco Nazionale d'Abruzzo-Servizio Scientifico

Contacts

Cinzia Sulli

EU contribution

2.694.934,00

Call Year

2009

Start Year

2010

End Year

2014

Beneficiary headquarters

Viale S. Lucia snc
67032 Pescasseroli AQ
Italy

Region

Abruzzo

Description

Lombardia, Abruzzo, Molise, Friuli Venezia Giulia, Lazio, SIC IT602002, SIC IT 6020020, SIC IT602003, SIC IT 6020014, SICIT6020015, SICIT605004, SICIT6050007, SICIT6030040, SIC IT 7110100, SIC IT 7110075, SICIT7110206, SICIT7110090, ZPS IT7110130, habitat 6170, habitat 6210, habitat 6220, habitat 6510