

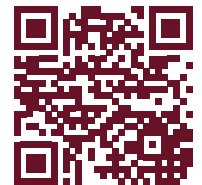


Short communication

Bear–human coexistence at risk in Trentino, Italy

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Reestablishing a bear population

Mainly due to direct persecution, by 1950 bears in the Alps had been reduced to a few animals in the Italian province of Trentino (Figs. 1 and 2). In 1969, no more than eight bears persisted. By the late 1990s, the population had dwindled to just three or four individuals and was on the verge of extinction [1]. To save this population, ten bears from Slovenia were released in Trentino in 1999–2002 [2].

As part of the population reinforcement programme, before the translocation of the animals, a feasibility study

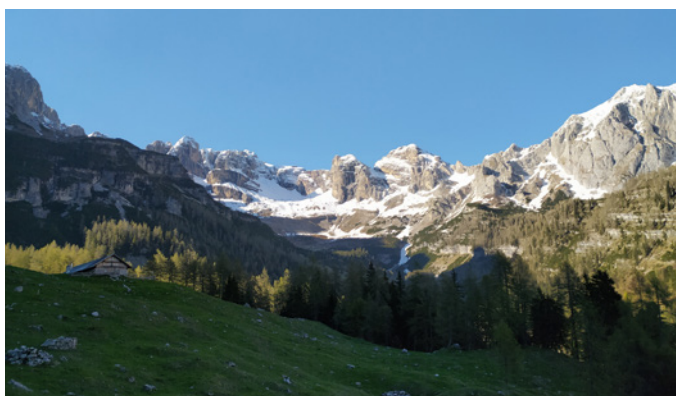


Fig. 1. Bear habitat in Trentino (Photo: C. Groff).

[1] and a survey of public attitudes were conducted and a management plan was created with the input of local government and stakeholders [3]. The basic goal was to increase the number of bears in Trentino to at least 40–60 (considered to be the minimum viable population) and, ultimately, to connect this small population with the larger population in the Dinaric region [4].

Each year since 2002 the population size has been estimated with capture–recapture models using genetic samples from hair traps and scats. Reproduction has been ascertained from sighting data and telemetry-collared bears have provided information about mortality events. In the early years of demographic monitoring, the genetic profile of virtually every individual bear was known, but that has become more difficult as the population has grown. A decade after release of the ten Slovenian bears, the population numbered 43–48 animals. Nowadays there are around 100 bears in an area of about 2,000 km² in the western part of the province (Fig. 3). The population is still growing numerically and expanding geographically regarding both females (slowly) and dispersing males [5].



Fig. 2. A bear in Trentino, Italy (Photo: M. Papi).

Damage mitigation

The feasibility study suggested that bear impacts on local communities (damage and risk to public safety) would arise as the population grew. A bear management plan was drafted and approved for the whole Italian Alps in 2008. The PACOBACE Action Plan [3] was produced following a cooperative effort among institutions from various Italian regional and provincial administrations, the National Institute for Wildlife Management and Research (ISPRA) and the Ministry of Environment. In particular, the plan considered bear predation on cattle, don-

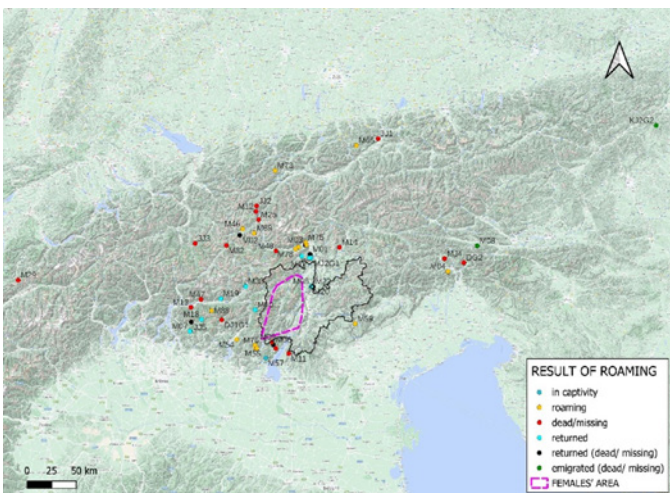


Fig. 3. Core area (pink polygon) of the bear population in Trentino (dark line) in 2022. Dots show individual dispersing males and their fate.



Fig. 4. A bear captured for management purposes (Photo: C. Groff).

keys, sheep, goats and poultry, damage to crops and beehives and possible danger to public safety.

Claims for compensation for damage caused by bears have risen steadily since 2002 [6]. In 2021, over 300 cases were filed amounting to over €170,000. Preventive measures, namely electric fencing and livestock guarding dogs, are heavily subsidised by the government and now cost over €160,000 annually. The damage prevention programme includes field visits and functionality checks at farms. Moreover, the Wildlife Department meets regularly with local stakeholders to discuss better ways of mitigating bear damage.

Notwithstanding these efforts to mitigate damage, some individual bears have shown a particular ability to overcome preventive measures or are highly tolerant of human presence, exhibiting bold behaviour around people or entering human settlements. Such individuals are

identified as ‘problem bears’ according to the precise indications of the Action Plan. All of them are fitted with radio-collars so they can be monitored more closely (Fig. 4). According to what was foreseen in the Action Plan, some have been subject to aversive conditioning by a dedicated emergency team using rubber bullets or trained bear dogs (Fig. 5) in an effort to alter their behaviour with respect to people.



Fig. 5. The bear dog team in Trentino (Photo: C Groff).

Public safety

Local people regularly report close encounters with bears. This is not unexpected as Trentino has the highest human density (80 inhabitants per km²) of all bear-occupied areas in Europe. Reports of human–bear encounters are collated and analysed systematically. An emergency team composed of officials from the province investigates to better understand the circumstances in which they occurred and how bears behaved (Fig. 6). These data are useful in guiding human behaviour and in documenting which individual bears may pose a threat to people.

Results of data analysis suggest that, in most close encounters, bears simply moved away. On some occasions



Fig. 6. Members of the bear emergency team investigate an incident (Photo: Wildlife Service archive).

they bluff-charged, meaning that the bear rushed towards the person but turned away without making physical contact. Typically, these were cases in which neither the person nor the bear were aware of each other’s presence until they were in close proximity, when the bear responded defensively. However, in eight cases since 2014 a bear physically attacked a person causing injuries and, in one of them, a fatality. Six of these cases involved a female bear with cubs of the year. Two of the females attacked people twice, in different years and with different litters. A total of four different females with cubs were involved in the six cases.

One notable case is that of female bear JJ4, born in 2006. She was reportedly involved in several bluff charges. Then, in June 2020, a father and adult son encountered her with two cubs as they crested a hill while hiking. She charged them, injuring both. Following this attack, and in accordance with the provisions of the Action Plan, the President of the Province issued an emergency order to lethally remove JJ4 from the population to protect public safety. Although it may be said that a mother bear behaving aggressively in defence of her cubs is not abnormal, the IUCN SSC Bear Specialist Group wrote a letter supporting this decision. However, animal rights organisations took the case to court and managed to have the order overturned. As a result, bear JJ4 was captured, fitted with a GPS telemetry collar and released. People in Trentino can follow the movements¹ of telemetry-collared bears with an online app² as a way to be more bear-aware and to reduce potentially dangerous encounters, especially with females and cubs. The Wildlife Department raised the issue of the danger posed by JJ4 and the risk of new attacks three more times in 2021 – 2022. Despite this, and the fact that in the meantime another female with cubs of the year, KJ2, had attacked and injured people in different years while defending different litters, the National Wildlife Institute stated that the bear was not dangerous enough to be removed from the wild.

Responses to a fatal attack

In early April 2023, a 26-year-old man was jogging on a mountain path above his village when, unsuspectingly, he came close to female bear JJ4, then 17 years old and

¹ There is a reduction in resolution of the position data to protect the bears from disturbance or harm.

² <https://grandicarnivori.provincia.tn.it/Comunicazione/MAPPA-ORSI-RADIOCOLLARATI>

with three yearling offspring. She attacked and killed him – the first human fatality caused by a bear in Italy in more than a century. JJ4 was implicated in the attack by DNA found at the scene. Authorities again decided to capture and euthanise her as mandated in the Action Plan. The bear was captured a few days after the attack but, following intervention by the same animal rights organisations, a court again overturned the order to kill her. As of October 2023, JJ4 was being kept in an enclosure and it appears that the court decision will result in her remaining in permanent captivity.

The Wildlife Department has argued that captivity is not a practical long-term solution for bears that may pose a danger to public safety, as in the future there are likely to be increasing numbers of such individuals, and limited space to house them, as the population continues to grow. According to a recent study by the National Wildlife Institute, 1 – 5 such bears may show up each year [7]. Keeping wild bears in captivity also causes a lot of controversy and public protest, worsening attitudes toward bears due to continuous conflict between polarised positions. Last, but not least, capturing a bear usually takes much more time than shooting it (when collared), exposing people to further risk in the meantime.

Even when courts agree on the need to remove a dangerous bear (and the 2023 fatality made a lot of people understand that bears can be dangerous), they mostly argue that killing it is disproportionate and that captivity is more appropriate. So far, experts and authorities have been unable to convince the courts that these two choices are absolutely equal in terms of wildlife management: in both scenarios, the animal is permanently removed from the population.

Coexistence at risk

Actions such as public awareness campaigns, removal of attractants and aversive conditioning with rubber bullets and bear dogs are prioritised and implemented by the Wildlife Department on a regular basis [6], while the removal of dangerous bears is a last resort which is de facto difficult to implement when needed.

In the aftermath of the recent fatality, some people are calling for a significant reduction in the size of the bear population; others emphasise the need for people to take

more safety precautions. For the first time in Italy (and most of Europe), there are serious considerations of setting a maximum threshold for bear populations as one means of controlling conflicts. Bear spray (containing capsaicin), which is commonly used in North America to deter bears during close encounters, is not legal in Italy, although the national government recently changed this restriction to allow use of bear spray by Department personnel dealing with bears.

Attacks on people, combined with a lack of active management (shooting) of dangerous bears by the local government because of courts overturning removal orders, sharply erode public confidence in the bear management programme, undermine trust in bear managers and increase the temptation for individuals to take matters into their own hands. Five bears were found dead in Trentino since the fatality up to October; at that time, official autopsies were still in progress but poaching was suspected in at least some cases. Nevertheless, animal rights protesters do not seem to see a connection between this situation and the court decisions. Thus, Trentino, which has served as an exemplary model of the recovery of a nearly-extirpated bear population, is now at a crucial juncture, testing the limits of coexistence of people and bears.

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