



Project

Creating bear smart communities: the example of Băile Tuşnad, Romania

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Background context

As people increasingly share landscapes with large carnivores [1–3], their interactions result in damage to property and livestock, to human injuries and even deaths [4–6]. In certain regions of Romania, the brown bear (*Ursus arctos*) has become a social problem, as its presence in large numbers poses a real threat to the safety and integrity of local residents and their households [7]. Furthermore, discussions of the issue through social networks and the media typically lack proper contextualisation and explanation of the phenomenon, instead promulgating an atmosphere of severe insecurity and danger [8]. This has started to create a negative perception of the species and undermine recognition of its importance in ecosystems, a situation which is used by some interest groups to demand a reduction in legal protection of the species¹. At the same time, environmental groups advocate maintaining strict protection, despite high lev-

els of conflict². Views on the topic of bear conservation and management in Romania have thus become increasingly polarised in recent years, especially after a ban on hunting bears was introduced in 2016³.

Efforts are needed to reconcile the diverse perspectives of key stakeholders to ensure both human safety and acceptance of bear presence at the landscape level while minimising negative consequences for both species. An attempt was made in 2017 when a joint WWF–FACE meeting was organised under the umbrella of the EU Platform on Coexistence between people and large carnivores. Despite the participants reaching an agreement⁴, no significant improvement of the situation was observed⁵. Efforts to build trust were therefore pursued at the local level.

To this end, the creation of a ‘bear smart’ community started in 2022 in Băile Tuşnad, Harghita County, Romania, where the estimated density of 12.4 bears/100 km² (95 % confidence interval: 8.6–16.3) is among the highest

¹ <https://transylvanianow.com/romanian-counties-asking-for-eu-intervention-to-solve-the-bear-problem/>

² <https://www.romania-insider.com/environmental-ngos-protest-bear-hunting-quotas-romania-2023>

³ <https://www.theguardian.com/environment/2016/oct/05/romania-bans-trophy-hunting-of-brown-bears-wolves-lynx-and-wild-cats>

⁴ <https://adelphi.de/en/news/romania-hunters-and-environmental-ngos-sign-a-joint-statement>

⁵ <https://www.politico.eu/article/romania-bear-attacks-on-humans/>



Fig. 1. Location of Băile Tușnad in Harghita County, Romania (Source: WWF-Romania).

in the country [9]. The large number of bears in this area is partly due to its geographical position: the town is situated on an important ecological corridor, actively used by bears and other species as a movement/dispersal route across the Eastern Carpathians (Fig. 1). The bear has become a symbol for this small community of about 1,700 inhabitants and bear watching generates important revenues for the tourism sector. On the other hand, some bears enter the town, habituate to human presence, damage property and generate fear (Fig. 2). The overall goal of the initiative is therefore to improve human–bear coexistence by co-creating and developing tailor-made, viable solutions in conflict management through an inclusive and participatory stakeholder process. The specific objectives are to:

- 1) improve and maintain safety for both humans and bears by implementing functional prevention measures and operationalising a bear intervention team;
- 2) understand the triggers and processes of bear habituation in the area by conducting a dedicated study;
- 3) improve the perceptions and attitudes of the local community towards the bear by implementing awareness-raising campaigns and providing regular targeted information;
- 4) work with key stakeholders to co-create viable solutions and measures to reduce the level of conflict in the area;
- 5) improve legislation and, more generally, the management of bears in Romania by providing clear policy recommendations based on experience in Băile Tușnad.



Fig. 2. Bears seeking easily-accessible food in the town (Photos: Laszlo Gál).

Building partnerships

The initiative was brought to life through cooperation between WWF-Romania⁶, Băile Tușnad Town Hall and Accent GeoEcological Organisation⁷, a local NGO focused on developing ecotourism in the area. The interests of the community are represented through the mayor while the other organisations bring valuable knowledge and insights concerning coexistence with bears.

The most relevant stakeholders were identified and involved in the initiative right from the start (Fig. 3). They include the Ministry of Environment, the local council, Harghita County Environmental Protection Agency, the Agency for Natural Protected Areas of Harghita County, Harghita Environmental Inspectorate, the gendarmerie, hunting management units, the local landowners' association, Băile Tușnad Tourism Association, St. Anne Lake – Mohos Peat Bog administration, Babeș-Bolyai University in Cluj-Napoca, Accent and another NGO, the Transylvanian Wildlife Project.

⁶ <https://wwf.ro/>

⁷ <https://www.ogaccent.ro/?lang=en>

The idea of co-generating solutions was appealing to every stakeholder from the very beginning of the initiative. There was no prior active cooperation between the key stakeholders in the area, although there had been some initial attempts to collaborate. The initiative started to take shape after a bear-themed festival (TusnadEco-BearFest) and conference were held in the town in 2022 within the project WatchBear & AdvoCity – Bears and people for a common future⁸. During this event the partners identified a clear common interest, namely to demonstrate that human–bear coexistence is possible. WWF-Romania together with the Town Hall and Accent campaigned to raise funds that have enabled the initiative to go ahead.



Fig. 3. Stakeholder meeting to discuss the project (Photo: Accent GO).

Actions towards becoming bear smart

The initiative in Băile Tușnad was inspired by the concept developed by the Get Bear Smart Society⁹ in North America. The original idea was to “help bears be bears again” and we are now further integrating the needs of the human community and enhancing safety in a landscape where both species have a prominent presence.

Operationalising an intervention team

The initiative has significantly enhanced the operational capabilities of the local Bear Emergency Team¹⁰ (BET) through two key measures: upgrading equipment and introducing cutting-edge technology. The team’s equipment now includes walkie-talkies and body cams as well as GPS telemetry collars, GPS video collars and trail cameras to monitor bears in the area. The new technology allows continuous monitoring in near-real time via the Cluey app that operates with the associated Sensing-Clues¹¹ platform to systematically store and manage field data in a standardised format. Purpose-specific field sheets have been designed to comprehensively address technical needs. In addition, the system also alerts the BET when a GPS-collared bear approaches a pre-defined ‘area of interest’, such as a residential area (Fig. 4). This enables the BET to respond swiftly to emergency situations when bears threaten human safety or property. The information obtained from GPS collars and trail cameras will also allow a more comprehensive understanding of how individual bears respond to different management measures.

While recognising that not all bears pose a threat to people or cause material damage, the project’s technical team¹² considers various strategies to deter bears from entering populated areas, prioritising non-lethal methods such as aversive conditioning (with projectiles or noise) and installing bear-proof containers for storage of food or refuse. All such management options are analysed in more detail by the BET, drawing insights from prior experience. Interventions, which are tailored to the particular personalities of the bears involved, include continuous monitoring, chasing away, relocation or, as a last resort, euthanasia.

Interestingly, the same methods have been used in other settlements with varying degrees of success, so it seems that not only the choice of methods themselves but also the manner in which they are implemented are important. For example, if a bear is given the chance to seek refuge in a secure location without being pursued, it may

⁸ <https://www.ogaccent.ro/watchbear/?lang=en>

⁹ <https://www.bearsmart.com>

¹⁰ Bear Emergency Teams were established by the state in July 2021 in areas with high bear densities. Costs are paid by town halls and refunded by the government. Town halls make agreements with a veterinarian and a local hunting association; the town mayor must be included and the gendarmerie is responsible for safety.

¹¹ <https://sensingclues.org/>

¹² The technical team comprises a coordinator, project manager, a field technician/ecologist and a GIS expert.

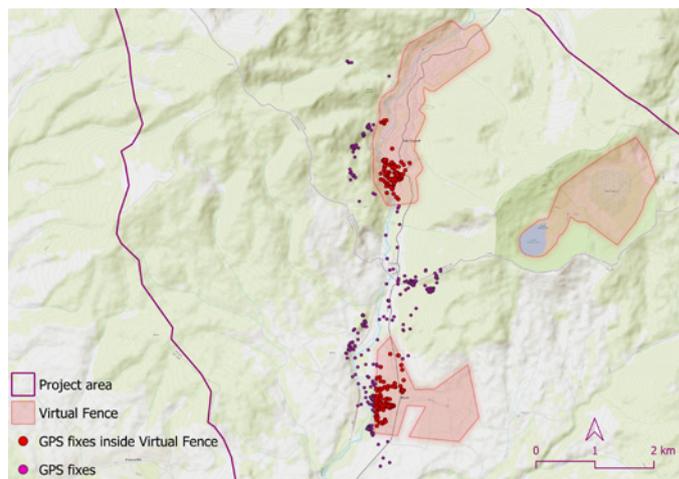
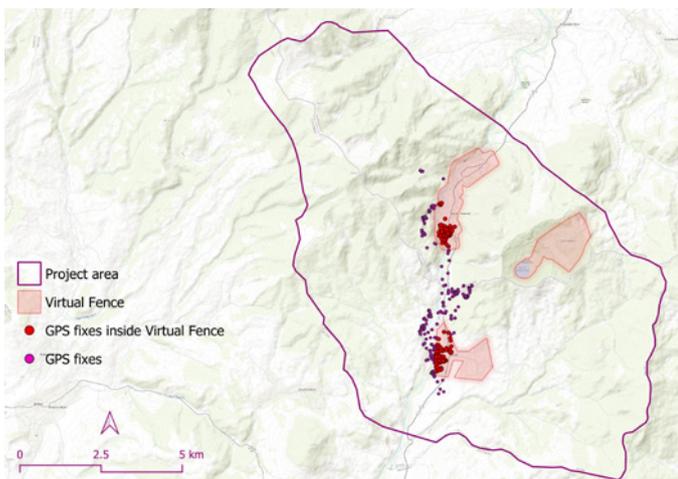


Fig. 4. Visualisation of data from a GPS collar used as part of an early warning system, showing incursions by a bear into Băile Tușnad and neighbouring town (Source: project technical team, WWF-Romania and Babeș-Bolyai University).

soon return to the settlement. The effectiveness of an intervention team depends on its capacity to patrol at night and observe bears under different circumstances. Interventions must be timely and effective; otherwise there is a risk of people’s fear increasing.

Increasing understanding of problem bears

A study on bear habituation, financed by WWF-Romania with support from WWF-Belgium, was initiated at the beginning of 2023. A habituated young female bear that had been roaming in the area for over a year was fitted with a GPS video collar (Fig. 5). The device delivers valuable data regarding the position, movement and daily activity of the bear while the video provides important insights into the life and behaviour of the animal. It is



Fig. 5. A tranquilised bear being fitted with a GPS video collar so its movements can be tracked and activity observed (Photo: WWF-Romania).

planned to fit four more such collars to bears from spring 2024. Trail cameras are deployed at wildlife feeding sites, in cooperation with local hunting management units, to gather additional information in order to better understand the habituation process of bears.

The data collected within this study will be analysed using AI algorithms to create early warning signals with the potential to reduce human–bear conflicts and predict when and where future conflicts may occur. The probability of bear presence in various areas of the landscape can be forecast by analysing past locations and behaviours. This is crucial in terms of optimising the investment of resources as well as to implement the most appropriate solutions to keep the community and bears safe. The data will also contribute to research on bear behaviour, population dynamics and habitat use, informing strategic management decisions and enhancing understanding of bear ecology.

Implementing preventive measures

Not only bears but also potential food sources (‘attractants’) are being managed in the immediate vicinity of the town area through the removal of wild fruit trees, clearing bear hiding places, adapting waste management and using electric fencing (Fig. 6). Two years ago, on the basis of expert advice provided to the Town Hall, the community took a seemingly radical decision to cut down fruit trees that were not protected by electric fencing and replace them with other tree species whose fruit does not attract bears. This has helped to reduce the occurrence of bears in gardens and on public land (Fig. 7). Various pro-



Fig. 6. A mobile fast-food outlet secured with electric fencing at night to deter bears (Photo: Robin Rigg).

totype bear-proof containers will be tested to identify the most suitable design for the town, which later should be more widely used to discourage bears from entering the community in search of food. This activity will go hand-in-hand with informing residents and tourists about the need to store waste securely¹⁵.

Communication

Awareness-raising among the local community and tourists is crucial. A dedicated mobile phone app called TusnadEcoBearWatch¹⁴ has been developed with the aim of having a permanent communication channel between local residents or tourists and the Town Hall or the BET that serves as a kind of ‘watchdog’ so that damage and conflicts can be addressed more efficiently. Regular consultation meetings are organised with key stakeholders to discuss the progress of the initiative as well as to agree next steps and solutions to be tested and implemented (Fig. 3). Four such meetings were held during the last 12 months. Additionally, in October 2023 a second Tusnad-EcoBear festival was held along with another conference, which this time had a more international set-up [Editor’s note: see the News Roundup section in this issue for details]. The TusnadEcoBear conference¹⁵ has the potential to become a reference event for Eastern Europe and beyond in



Fig. 7. A bear visiting fruit trees in Băile Tușnad (Photo: Laszlo Gál).

¹⁵ An open-air rubbish dump near the town, where bears used to forage nightly, was closed down in 2009.

¹⁴ <https://tusnadecobear.ro/app/?lang=en>

¹⁵ <https://tusnadecobear.ro/conf/>



Fig. 8. Single electrified wire mounted on an existing wooden fence to deter bears from entering a garden (Photo: Robin Rigg).

terms of bear management and human–bear coexistence. The intention is to organise a third conference in 2024.

Outcomes and next steps

The long-term goal of the initiative is to achieve viable human–bear coexistence, including through the development of clear policies and guidelines related to bear management, damage prevention and conflict resolution. From this perspective, the combined effort of key stakeholders in the Băile Tușnad area has already filled a gap related to the exchange of know-how and social cohesion. This was made possible in several ways but particularly through shared responsibilities within the BET, whose members are also part of the key stakeholder groups involved in the initiative such as the gendarmerie, game management units and the mayor. Further training and experience-sharing workshops are planned for the next year to ensure appropriate handling of bear-related incidents.

To keep bears away from their property, some local residents and businesses had already begun installing electric fencing, at their own expense and initiative, from around 2010. A programme was launched in 2019, with the joint support of the mayor’s office and county council, to provide and instal electric fences for all local residents. There are now around 400 systems in the town (which has a total of 600 households and businesses including hotels). However, most of them use single electrified wires (Fig. 8) whereas the efficacy of electric fences is greater when 3–5 wires are used (Fig. 9). The current initiative therefore aims to make further improvements, at least at the most critical sites.

The community is receptive to our communication and education activities: around 500 people attended the festival in 2022 and about 1,300 in 2023. The TusnadEco-BearCave visitor centre¹⁶, which opened in July 2023 and offers a comprehensive educational programme on the topic of human–bear coexistence, receives on average five visitors per hour. Results of monitoring and questionnaire

¹⁶ The visitor centre offers one-hour programmes for groups of up to 15 people or guided tours and information for other visitors. In both cases, communication is provided in three languages. The centre is funded by the same project as the festival and conference. See: <https://tusnadecobear.ro/cave/>

surveys¹⁷ indicate that the attitudes of the community towards bears have already improved to some extent. Local people perceive that bears enter the town less often than before and, when they do, spend less time there. The increased performance and efficiency of the intervention team has significantly reduced levels of conflict. Whereas 41 cases of damage by bears were documented in 2021, there were none in 2022 or 2023. RoAlert emergency calls due to bears show a similar trend: 149 in 2021, 30 in 2022 and six in 2023. Băile Tușnad is clearly well on its way to becoming a truly bear smart community.

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¹⁷ https://www.researchgate.net/publication/353688374_Provocari_ale_coexistentei_om-urs_in_localitatea_Baile_Tusnad_experienta_unei_practici_de_teren_in_domeniul_ecologiei

¹⁸ <https://www.naturefirst.info/>



Fig. 9. Multi-wire electric fence at St. Anna Lake tourist area, Băile Tușnad (Photo: Robin Rigg).

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