

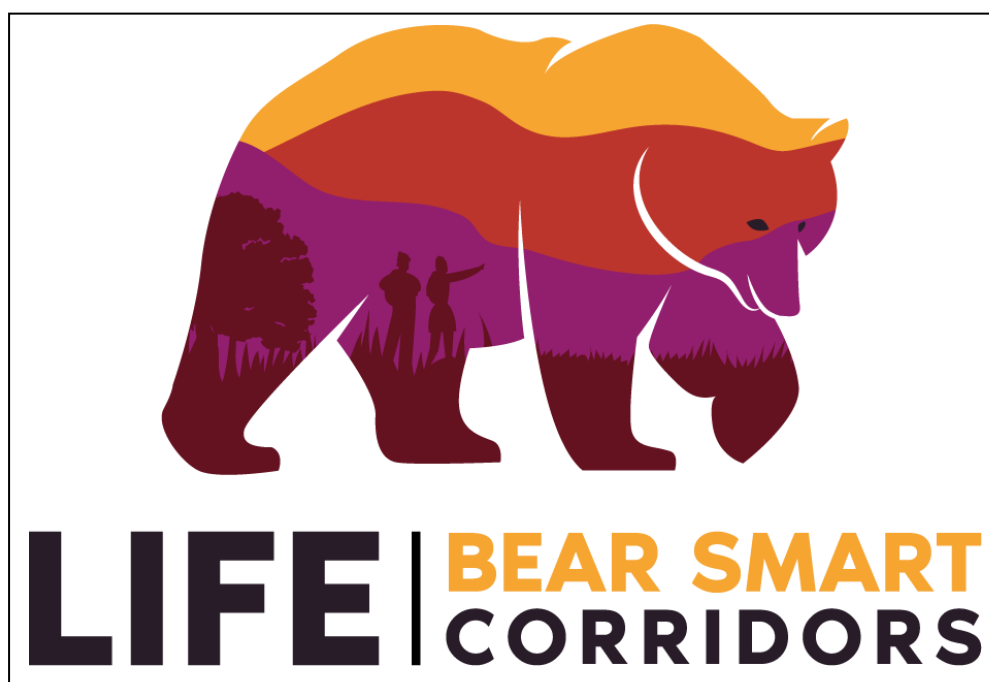


LIFE20 NAT/NL/001107

LIFE Bear-Smart Corridors

A3 – Assessment and identification of specific factors affecting bear conservation in the Italian Bear-Smart Corridors

Report on threats and conflicts identified for the bear by Rewilding Apennines (RA) and Salviamo L'Orso (SLO)



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1. SUMMARY

In the frame of action A3 of the LIFE Bear Smart Corridors project, threats to the conservation of Marsican bears were identified and are addressed under the scope of actions C1 to C6 and C8. The Italian area of the project covers the protected areas of the following beneficiaries: PNGSL, PRSV, PNALM, RNRMGAG, and the bear dispersal corridors mainly managed by SLO and RA. Thus far, 163 active threats, 29 potential risks and 36 conflicts have been identified. The most frequently observed one being waste dumping sites. Other threats include unsafe water wells, other accessible anthropogenic food sources and unprotected or insufficiently protected livestock and orchards. The latter being the main cause of human-bear conflicts with 21 reported conflict occurrences since the start of the LIFE Bear Smart Corridors project. Most of these threats have the potential to eventually be removed or secured. The main issues encountered were due to the size of the area being very large (ca 4300 km²). The results of this assessment help directing the conservation interventions (LBSC “C” actions) for the project and help ensuring the best possible project outcomes. Additionally, surveying efforts need to be constantly maintained to ensure staying on top of current developments and being able to manage occurring threats.



2. INTRODUCTION

This report was produced in the frame of Action A3 of the LIFE Bear Smart Corridors project. The report deals with the threats and conflicts that were detected as hazards to the conservation of the Marsican Brown Bear (Italy), as well as to identify areas in which conflicts could potentially occur. Hereby the focus also lies on identifying the threats that could potentially limit the movement of bears, through the designated Bear-Smart corridors which connect the protected areas of the PNSGSL, PRSV, PNALM and RNRMGAG/PSG as well as Majella National Park (not part of LBSC) and adjacent planned and active Bear-Smart communities.

For the actions C1, C5, C6, C8, the goal is to identify human-bear conflicts in communities where these have already occurred or could potentially occur in the future. For C2, locations of water wells that pose the risk of drowning to bears and other animals were identified. Action C3 aims at identifying unused fruit orchards and naturally occurring fruit, so that they can be maintained as food source outside of villages. For Action C4, the aim is to assess livestock farms, apiaries and unprotected fruit orchards and vegetable gardens in the project areas, to determine whether damage preventive devices need to be installed to avoid potential or already occurring damages.



caused by bears. Lastly, for C5, the aim was to determine the most effective locations for bear-proof garbage bin, in areas that are frequented by the bear.

To achieve these goals, assigned staff members of SLO and RA, as well as volunteers of RA and SLO carried out field surveys and routine monitoring throughout the project areas. The data collection area comprises the designated Bear-Smart Corridors, connecting the protected areas of the beneficiaries PNGSL, PRSV, RNRMGAG and PNALM. The activities were carried out partly during the proposal writing period (e.g. mapping of known, dangerous water wells that need to be closed), and since the official start of the project in October 2021 and throughout the year 2022. The followed methodology is described in chapter 4.



The main problem that was encountered is the vastness of the project areas and limited staff numbers, bearing the risk that not every single potential or actual threat is recorded and identified. Additionally, monitoring or exploring previously unknown places such as villages is very time consuming and requires a high amount of attention and experience. The success rate also depends on other factors such as timing, weather and willingness to collaborate of residents. To overcome these problems, continuous optimisation of surveying methods is suggested among the LBSC beneficiaries.

This report will be complemented by the yearly produced ‘Rapporto Orso’, through the Bear Monitoring Network (RMAM – Rete di monitoraggio dell’Orso Bruno Marsicano in Abruzzo e Molise), the collected data is added to the geospatial database on ArcGIS Online that was created for Action A3.

3. PROJECT AREA

The areas that are referred to in this report incorporate the bear dispersal corridors that are mostly managed by RA and SLO, as well as the municipal areas of the active- (PSG) and planned Bear-Smart communities that are managed by different or multiple Italian LBSC beneficiaries. The total Italian project area amounts to ca. 4300 km².

The Italian project areas are located in the Central Apennines and their center lies ca. 100 km east of Rome (Figure 1).



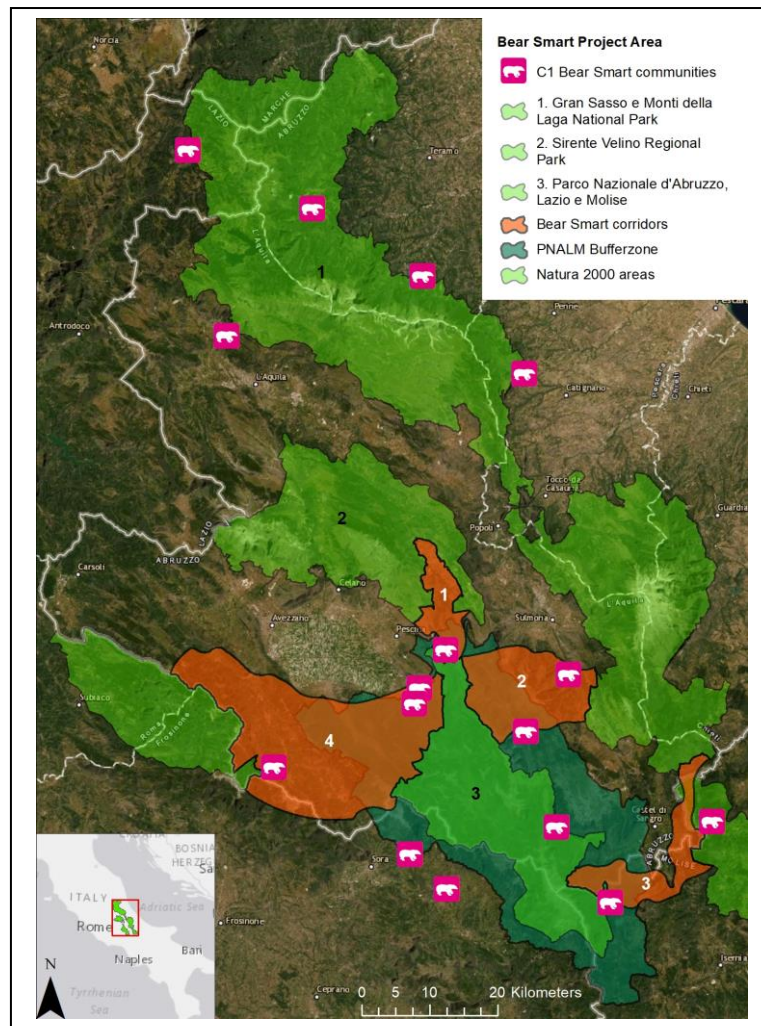


Figure 1. Map of Italian LBSC project areas

4. MATERIAL AND METHODS

4.1 Action C1, C5, C6 and C8 – Identification of human-bear conflicts in communities where these have already occurred or could potentially occur

RA and SLO operate in close collaboration in the Central Apennines outside of the major protected areas that are beneficiaries of this LIFE project. Additionally, the bear dispersal corridors have been priority areas of RA since its creation in 2018. Staff members and volunteers of both organisations are commuting daily in the corridor areas for routine monitoring and other regular activities.



Through previous activities such as the building of electric fences and fruit tree pruning, the organisations are keeping close ties to local farmers and are always receptive for information regarding human-bear conflicts. Through years of successful collaboration with the aim to reduce human-bear conflicts, local communities have gained trust in the work of SLO and RA and are contacting SLO and RA, when conflicts occur, usually by social media, phone or email. The reported information regarding the incident – location, date, damage and whether it was presumed or proven that a bear was involved in the incident is collected in a database, through the use of the ‘EarthRanger’ app (Vulcan Inc.). This app is used by all staff members and volunteers of the organisations and allows quick data entry in the field. For the LBSC project, the data on identified human-bear conflicts is directly fed into the LBSC shared geodatabase.

Additionally, staff and volunteers are monitoring potentially problematic food sources for the bears, such as open garbage dumps, insufficiently protected fruit and vegetable gardens, chicken-coops, livestock enclosures and regular trash collection areas in the local communities. All reported actual and potential threats that could lead to bear-human conflicts are serving as the base to determine whether interventions are necessary.

Furthermore, bear presence within the Bear-Smart Corridors is monitored using passive techniques of Camera trapping and active tracking of bear-signs of presence, which are likewise reported by using the field app EarthRanger. This approach helps to understand which areas might be at risk for potential conflicts caused by the presence of the bear. Through comparing recent to previous bear presence records, additional knowledge about potentially occurring conflicts can be gained. Sightings of the bear are also communicated to the Abruzzo and Molise bear monitoring network.

4.2 Action C2 - Set out locations of the water wells presenting high risk of drowning for bears and other wildlife species requiring intervention

Locations of water wells were set out before and in the project planning phase and continuously since the official start of the project in October 2021. The wells are identified based on reports of local people, as well as through regular field activities. The spatial locations of potentially dangerous wells were recorded on the monitoring app and saved in the database.



4.3 Action C3 - Set out unused fruit orchards locations or natural fruit resources currently available for bears to prevent them from encroachment following land abandonment from traditional rural activities.

For Action C3, unused/abandoned fruit trees and orchards were surveyed. The surveying was done either opportunistically in areas known for high apple tree/fruit tree occurrence and through randomly generated transects for a master thesis carried out by a RA intern.

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4.4 Action C4 - Assess livestock farms, apiaries and unprotected fruit orchards close to human settlements within the project areas that need to be protected from attacks of bears with the deployment of specific preventive measures

Opportunistic surveys were carried out to assess livestock farms, apiaries and fruit orchards close to or inside of human settlements in the project areas, assessing their level of protection and registering register unprotected or insufficiently protected potential and actual food sources for the bear. Additionally, local farmers are contacting RA and SLO to request support for protecting their possessions and the information is collected.

4.5 For Action C5: Analysis of the effective location of bear-proof garbage cans and other food attractors (fruittrees, pet food, random garbage dumps etc.) inside or around human settlements, to prevent foodconditioning of bears.

The locations for the placement of bear proof garbage cans are determined following reports of local people concerning bears plundering waste bins in their communities. Additionally, garbage disposal locations that are prone to bears were identified in areas where recent bear sightings or signs were reported or where improperly protected garbage bins were found.

5. RESULTS

5.1 Action C1, C5, C6 and C8 – Identification of human-bear conflicts in communities where these have already occurred or could potentially occur

In total, 163 threats and 36 conflicts have been reported. The most frequently mapped threats being waste dumping sites, abandoned barbed wire fragments that poses a threat to bear and wildlife dispersal and other human disturbances such as hunting or recreational activities. On the



other hand, trash dumping sites close to villages and along roads that attract bears and endanger them through drawing them close to human infrastructure, increasing road-kill and conflict risk were found throughout the project areas. Additionally, lower numbers of human disturbance through recreational activities (e.g. Moto crossing in protected areas) were reported.

In terms of human-bear conflicts, raids of chicken coops, apiaries and fruit orchards/vegetable gardens are predominant. Since the start of LBSC, a number of 20 human-bear conflicts with resulting property damages have been documented in the corridor areas, resulting in losses of 136 chicken, 10 apiaries, 3 sheep and goats since the start of LBSC.

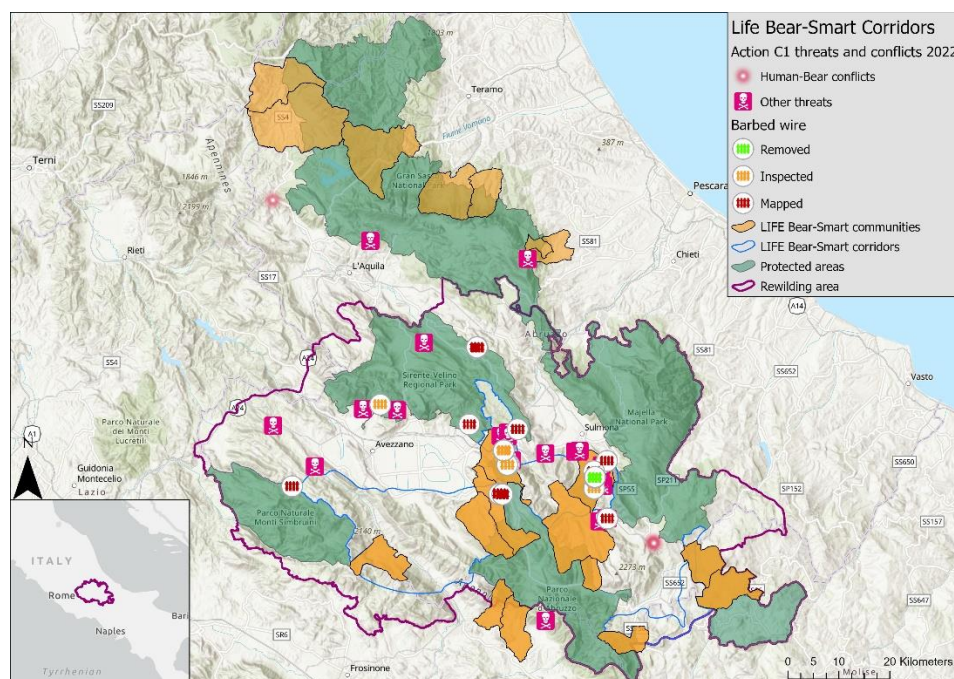


Figure 2. Mapped threats and conflicts for action C1

5.2 Action C2 - Set out locations of the water wells presenting high risk of drowning for bears and other wildlife species requiring intervention

Since the project start, 15 additional wells and other unsafe water sources were identified, measured and potential drowning risk for bears and other wildlife species evaluated. One of which was modified (see pictures) in June 2022 on the territory of the PNALM, to enable bears and other animals to safely get in and out





Picture 1 and 2. Water well made safe for bears and wildlife

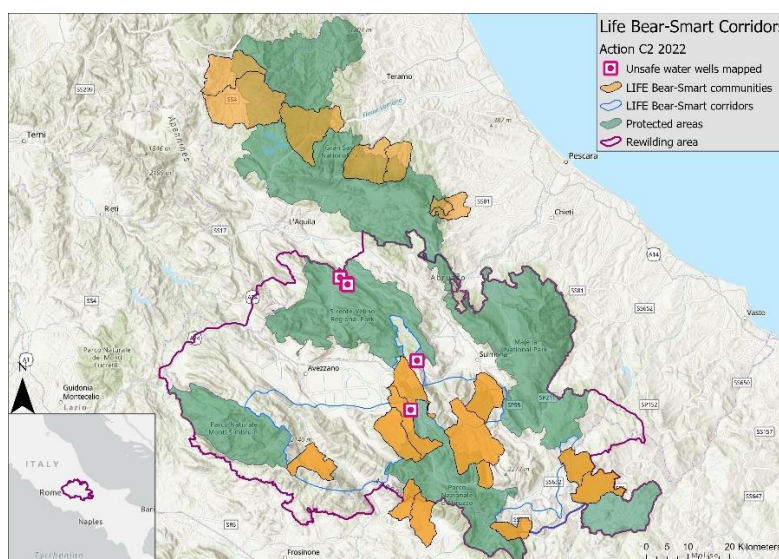


Figure 3. Map of unsafe water wells

5.3 Action C3 - Set out unused fruit orchards locations or natural fruit resources currently available for bears to prevent them from encroachment following land abandonment from traditional rural activities.

With the help of staff and interns/volunteers, 804 individual fruit trees and orchards were identified throughout the areas, most of them located in corridor 1 and 2 (Figure 4). In total, 174 individual fruit trees were pruned since the start of the project, in order to maintain food availability for bears outside of villages.



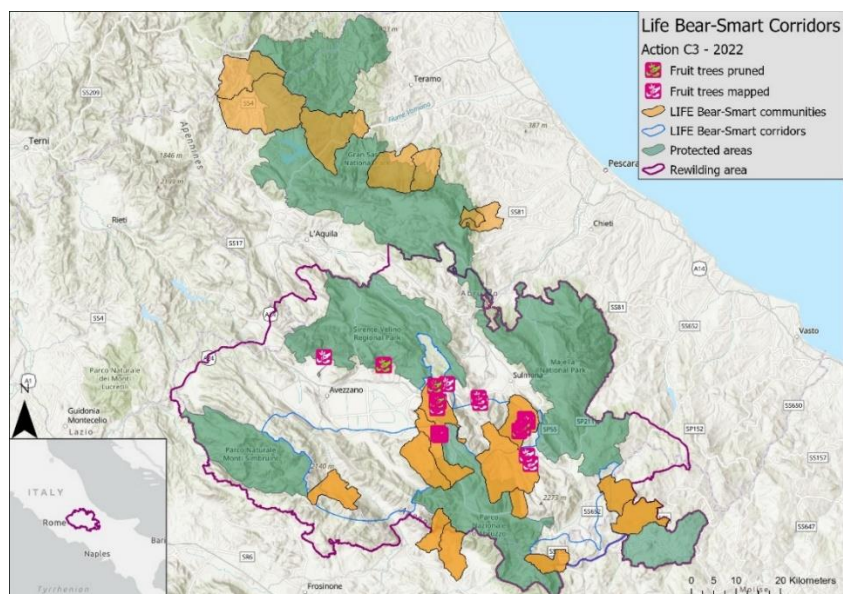


Figure 4: Locations of some of the identified fruit trees and partially pruned



Pictures 3 and 4. Pruned apple trees, December 2022

5.4 Action C4 - Assess livestock farms, apiaries and unprotected fruit orchards close to human settlements within the project areas that need to be protected from attacks of bears with the deployment of specific preventive measures



Prior to the project, RA and SLO have built a combined number of 293 electric fences in the project areas, focused on the Bear-Smart Corridors and dating back to 2014. This enormous effort has led to a severe reduction of human-bear conflicts and especially in the are of the first Italian Bear-Smart Community Genzana/Pettorano sul Gizio (Figure 5).

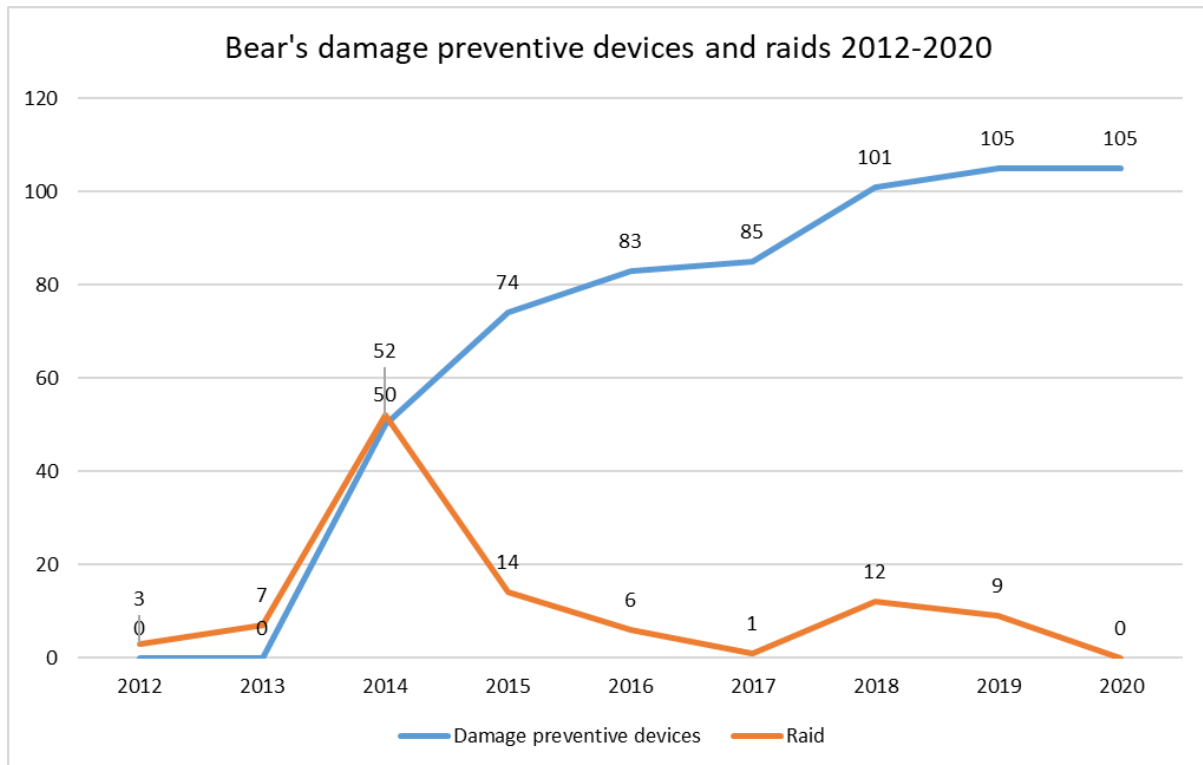


Figure 5: Relationship between installation of protective devices and human-bear conflicts in BSC Genzana 2012 -2020

Through the surveys for LBSC, 20 insufficiently protected structures were identified, with the majority being chicken coops (n = 10). Additionally, 6 structures without any protection were identified. These structures are posing the risk of future conflicts and will be targeted by action C4.





Picture 5. Electric fence installed in November 2022

Apart from that, RA and SLO already installed 46 electric fences and other damage preventive devices that were partly created in direct response to human-bear conflicts since the project started.

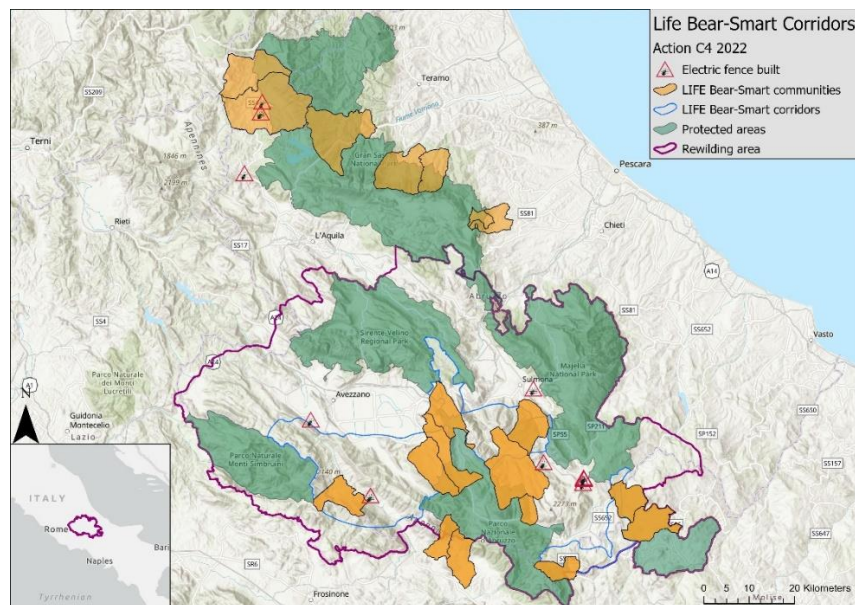


Figure 5. Map showing electric fences built in 2022



5.1 For Action C5: Analysis of the effective location of bear-proof garbage cans and other food attractors (fruittrees, pet food, random garbage dumps etc.) inside or around human settlements, to prevent food conditioning of bears.

Since the start of LBSC and based on the report of waste-bin plundering by bears in the Bear-Smart Corridors, 3 additional suitable locations for bear-proof garbage bins were identified. Two of the locations are found in a pick-nick area in the municipal area of the planned BSC Scanno and in the vicinity of Corridor 2. This location is prone to waste bin raids by bears through its remote location in a mountain valley which is highly attractive to bears due to organic waste being disposed by visitors. The third location is located on a highly frequented hiking trail in the municipality of Morino in Corridor 4 (Picture 6).

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Picture 6: Unsecured simple waste bins

6. DISCUSSION/CONCLUSIONS

In the Italian corridor areas, the most frequently mapped threats are waste dumping sites, abandoned barbed wire fragments that poses a threat to bear and wildlife dispersal and other human disturbances such as hunting or recreational activities. On the other hand, trash dumping sites close to villages and along roads that attract bears and endanger them through drawing them close to human infrastructure, increasing road-kill and conflict risk were found throughout



the project areas. Additionally, lower numbers of human disturbance through recreational activities (e.g. Moto crossing in protected areas) were reported.

Removing threats for bear conservation and reducing human-bear conflicts are the main goal of the LBSC project. The problems that were reported through this preliminary project action A3 will be addressed through the projects conservation actions. Thus, mapped fragments of dangerous abandoned barbed will be addressed under the scope of action C3. Additionally, water wells are part of abandoned features representing a direct threat animals, including the Marsican brown bear, as several have been recorded to have drowned. They are secured in the scope of action C2. Getting authorisations from the authorities and organizing the activity has in some cases proven to be difficult. In some instances, the water well couldn't be closed due to remoteness of the location and/or bureaucratic issues but were made safe by creating a ramp using nearby rocks (Pictures 1 and 2), allowing for wildlife to eventually escape the well.

Other threats include the availability of anthropogenic food sources, responsible for attracting bears towards and around villages in search for easily accessible food, conditioning the bears to the availability of human food but also increasing the risks of conflicts and road kills. Unprotected waste bins and illegal trash dumps are removed when possible and replaced by bear proof waste bins in action C5.

In an attempt to raise attractivity and accessibility of wild food sources to bears, wild trophic sources as well as abandoned fruit orchards were mapped throughout the areas. Fruit trees outside of villages are pruned and the surrounding vegetation cleared in the scope of action C3. This action has the aim to increase food abundance in areas that are in remote distances to human settlements, to further reduce the risk of unwanted encounters of bear and humans.

Direct human bear conflicts have been reported in 36 cases in the corridor areas managed by SLO and RA, where most of the damages were lost chicken and beehives. These results indicate that especially chicken coops and apiaries are prone to bear attacks. Insufficiently protected or completely unprotected livestock farms, apiaries and fruit orchards may be protected with electric fences in agreement- or following the request for help by the owner. Negative attitudes towards the bear from affected owners may be the main obstacle encountered in the implementation of electric fences, but diplomacy and attentive listening from the field officers in charge of this action have proven to be efficient in solving problems. Nevertheless, these structures have to be continuously monitored, to ensure functionality and positive attitudes of the local communities towards the bear.



The main problem encountered in this action was the size of the area and the limited staff numbers, making it difficult to cover the entire range at a fine scale, at the risk of not detecting all the potential threats and conflict areas.

In the future, the focus should be:

- To keep encouraging the use of electric fences to prevent bear damages and bear-human conflict which are the main reason for potentially negative perception of the species in the area
- To further develop the use of bear proof bins especially in Bear Smart Communities, which are just starting to be used in
- To continuously monitor the areas most frequented by bears and to focus our actions and conservation efforts in the most efficient way
- To provide knowledge for the establishment of the bear intervention units under Action C8 and to engage local people in bear conservation
- To continuously improve monitoring and data collection techniques in collaboration with the LBSC beneficiaries

