Bear Smart Community Genzana

Final report 2017

1. Executive summary

The project **Marsican Bear Smart Community Genzana (BSCG)[1]** of **Salviamo l'Orso[2]** (SLO), in partnership with the Monte Genzana Alto Gizio Nature Reserve (NRMGAG), the municipalities of Pettorano sul Gizio and Rocca Pia and the associations Rewilding Apennines and Dalla parte dell'Orso, started in 2015 thanks to an IBA's grant. Since then, IBA has supported this project with a total donation of USD 15,000. The BSCG is set in the municipal territory of Pettorano sul Gizio (~41°58′ N 13°57′ E) and Rocca Pia (~41°56′ N 13°58′ E), identified by mount Genzana, which gives also the name to the local regional nature reserve Monte Genzana Alto Gizio. This area is a wildlife corridor of crucial importance for wildlife movements from the Abruzzo, Lazio and Molise (ALMNP) and the Majella National Park (MNP). In particular, in the last 5 years the presence of individuals of the **Marsican brown bear** (*Ursus arctos marsicanus*, Altobello, 1921) in this corridor has increased giving higher chances to this small relict population to persist.

The Marsican brown bear is a subspecies of *Ursus arctos* that the IUCN has included in the Italian Red List[3] as "critically endangered". The latest genetic research[4] from the University of Ferrara proved the uniqueness of this subspecies that, probably isolated for thousands of years because of people, developed its own morphological and behavioural characteristics.

The Bear Smart Community Genzana originates from the need to secure this important wildlife corridor from negative impact of interactions between people and wildlife, bears in particular. In fact, in September 2014 a farmer shot a young male bear dead on retaliation for some damage to his livestock.

The Bear Smart Community Genzana has three main goals:

1) Promoting the capacity of the Marsican brown bear to reclaim suitable lands and spread its population,
2) Ensuring its persistence in the Central Apennines by preventing conflicts between humans and bears,
3) Educating local communities on how to coexist with this critically endangered relict bear population.

The counts of female with cubs in the ALMNP and its buffer zone, to which SLO volunteers participated, proves that the population in the core area of the ALMNP is healthy with the birth of 11 and 12 cubs of the year confirmed in 2016 and 2017 respectively. While in 2016 a male died in an accident with a truck on the SS17 road, just outside of the project area, in 2017 no bear was reported dead for human causes. This positive balance must have some positive spill over effects on the presence of new bears in areas neighbouring the ALMNP, including the Genzana corridor. In fact, the presence of two new individuals has been reported thanks to the project trail camera traps, in addition to three cubs born in 2018 from the **bear F1.99 called Peppina** – erroneously considered sterile until this event. It is very likely that the mother will pass her food-conditioned behaviour to her cubs. So, it is more than necessary to carry on monitoring activities, check the efficiency of

[1] http://www.salviamolorso.it/en/portfolio-items/bear-smart-community-genzana/

[2] http://www.salviamolorso.it/en/

[3] Rondinini, C., Battistoni, A., Peronace, V., & Teofili, C. (2013). Lista Rossa IUCN dei Vertebrati Italiani. Comitato Italiano IUCN e Ministero dell'Ambiente e della Tutela del Territorio e del Mare, Roma, 56.

[4] A. Benazzo et al. (2017), *Survival and divergence in a small group: the extraordinary genomic history of the endangered Apennine brown bear stragglers*. Proceedings of the National Academy of Science USA. Doi: XXXX.

damage prevention measures on a regular basis and deepen and expand the dissemination of best practices of man-bear coexistence.

The most remarkable achievement in 2017 is a further **reduction of bear damage**, estimated in **98% less than 2014's baseline**, after a 73% reduction in 2015 and 89% in 2016, far exceeding the intended project objectives.

Quantitative analyses of changes in human perception of bears since the start of the project in 2015 suggest that the vast majority of the population supports bear conservation. In fact, 96.4% of the questionnaires across the two years agreed that it is important to protect bears and 79.2% stated that the local extinction of bears would be a loss for the small towns of Pettorano sul Gizio and Rocca Pia. Remarkably, we also found that our manual for best-practices of coexistence with bears has had a significantly positive effect on knowledge of bear ecology, threats and measures to mitigate human-wildlife conflicts. That proves that all partners need to carry on the education of local communities based on the best practices of coexistence.

2. Actions

All actions and products planned for years 2017-2018, and their time for completion, are in the Gannt chart below. Existing resources and in-kind contributions of SLO and project partners funded all actions labelled in green, while the IBA grant covered those in blue. Months in green are for 2017, months in orange are for 2018. The projects PATOM[5] and EU's LIFE "Arctos"[6] identified all conservation actions proposed in this project as priority measures.

Action	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
Reprint 1,000 best practices manuals, installation of information panels, and best practice manuals distribution		■	■	■	■											
Removal of any possible attractor for bears				■	■	■	■	■	■	■	■					
Regular maintenance of the electric fences						■	■	■	■	■	■					
Organize at least three meetings			■					■				■				
Reimbursement of losses caused by bears in areas equipped by electric fences																
Maintenance of the abandoned orchards and wild fruit trees			■	■							■	■				
Maintenance of two underpasses used by wildlife and other soft road ecology measures							■			■						
Purchase of camera traps and continued monitoring of bear activity	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Quantitative spatial analysis of bear activity in the study area to quantify the impact of the project in terms of shifting bear activity-patterns away from human properties	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Quantitative analyses of changes in human perception of bears since the start of the project (surveys conducted in 2015 and to be replicated in 2017)										■	■					
Final reports to IBA																■

Gannt chart 1 Project plan as submitted to IBA in December 2016

Gannt chart 2 shows all actions and products, and their time for completion, as they were actually implemented in 2017-2018 (labelled in yellow). Some actions were modified on the field. The relevant section describes changes.

[5] http://www.minambiente.it/sites/default/files/archivio/allegati/biodiversita/qcn_37_orso_bruno_marsicano_patom.pdf
[6] http://www.life-arctos.it/english/progetto_azioni_previste.html

Action	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
Reprint 1,000 best practices manuals, installation of information panels and best practice manuals distribution		X	X	X												X
Removal of any possible attractor for bears				X	X	X	X	X	X	X	X					
Regular maintenance of the electric fences					X	X	X	X	X	X						
Organize at least three meetings						X							X		X	
Reimbursement of losses caused by bears in areas equipped by electrified fences																
Maintenance of the abandoned orchards and wild fruit trees			X							X						
Maintenance of two underpasses used by wildlife and other soft road ecology measures						X				X						
Purchase of camera traps and continued monitoring of bear activity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quantitative spatial analysis of bear activity in the study area to quantify the impact of the project in terms of shifting bear activity-patterns away from human properties	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quantitative analyses of changes in human perception of bears since the start of the project (surveys conducted in 2015 and to be replicated in 2017)										X		X				
Final reports to IBA																X

Gannt chart 2 Project progress and planned activities for 2017-2018

2.1 Reprint 1,000 best practices manuals, installation of information panels, and best practice manuals distribution

In April 2017, SLO reprinted **1,000 copies of the best practice manual** and distributed them to local communities and project partners, in particular to the NRMGAG.

2.2 Installation of information panels

This action has been seriously delayed because the graphic designer worked on it for free and could not prioritise it as expected. However, the final result was worth waiting for the accuracy of the message conveyed with a preference for the use of images, pictures and drawings on wording (Image 1). This approach was consistent with rules of environmental communication lo maximise the uptake of best practices and information about bear biology and ethology from the large public. Though the information panels are ready, we agreed with the Nature Reserve to set them up on their information board in the spring 2019. This report was delayed accordingly.

2.2 Removal of any possible attractor for bears

In the period April-November 2017, SLO and partners identified all possible food sources for bears in the urban areas of Pettorano sul Gizio and Rocca Pia and carried on monitoring of small farms, orchards and organic waste management in order to prevent any occurrence of damage or insurgence of new food-conditioned bears. This task is not easy because of the difficulty to check what people have in their courtyard, but the dramatic reduction of damage and man-bear interactions since the beginning of the BSCG project proves this regular monitoring effective. The use of bear-proof waste bins in Rocca Pia has been extremely effective in dissuading bears from scavenging food in the township, no bears have frequented the township in the last two years.

Image 1 – BSCG information panels.

2.3 Regular maintenance of the electric fences

In the period June-November 2017, regular maintenance focused on the twenty fences, built in 2015 and 2016, as reported in Table 1 below. These checks gave a very positive outcome. Best practices were well received and properly implemented by farmers, and SLO volunteers had to intervene only in few cases to reactivate or just improve the fences' functionality. The reliability of the energizers used won the scepticism of farmers about the effectiveness of this prevention measure. The energizers chosen according to the characteristics of the farm to protect were Gallagher POWERPLUS B 100 (0.8 Joule), Gallagher POWERPLUS B 300 (3.1 Joule), and Gallagher M300 (3.1 Joule)[7].

No.	Domestic animals	Area	Year
1	Geese	Vallelarga, Pettorano sul Gizio	2015
2	Chickens and rabbits	Vallelarga, Pettorano sul Gizio	2015
3	Chickens	Vallelarga, Pettorano sul Gizio	2015
4	Chickens	Vallelarga, Pettorano sul Gizio	2015
5	15 sheep	Vicenne, Pettorano sul Gizio	2015
6	10 sheep, 1 horse, 1 pig	Valle Pescara, Pettorano sul Gizio	2015
7	Chickens and rabbits	Valle Pescara, Pettorano sul Gizio	2015
8	Chickens	Ponte d'Arce, Pettorano sul Gizio	2015
9	Chickens	Via Cavate, Pettorano sul Gizio	2015

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[7] http://www.ghislandi.it/ghislandi.it/CatalogoGallagher2015.pdf?m=80&f=3&idf=187

10	Chickens	Vallone S. Pietro, Pettorano sul Gizio	2015
11	Ducks	Vallone S. Pietro, Pettorano sul Gizio	2015
12	Poultry	Vallelarga, Pettorano sul Gizio	2015
13	Bee hives	Vallelarga, Pettorano sul Gizio	2015
14	Chickens	Vallelarga, Pettorano sul Gizio	2016
15	Chickens, turkeys	Vallelarga, Pettorano sul Gizio	2016
16	Chickens	Vallelarga, Pettorano sul Gizio	2016
17	Chickens	Vallelarga, Pettorano sul Gizio	2016
18	Chickens, rabbits	Vallelarga, Pettorano sul Gizio	2016

Table 1 - GPS coordinates of the 18 electric fences, which were set in the study area in 2015 and 2016.

Table 2 shows the two electric fences set in Sulmona as an **adaptive management measure** to prevent damage to high-value properties. In the final report 2015 the property numbered 19 in the list below was considered within the study area, due to the difficulty to identify municipal borders in that specific area where three municipalities (Pettorano sul Gizio, Introdacqua and Sulmona) touch one another.

No.	Domestic animals	Area	Year
19	Two horses and a foal	Cavate di Sulmona	2016
20	60 bee hives	Cavate di Sulmona	2016

Table 2 - SLO electric fences outside the study area in April 2016.

In addition to these electric fences, in September 2017 SLO spent USD 1,462.78 to secure two brick stables (Ph. 1, 2, 3, below) by bear-proof metal doors and windows, replacing wooden ones. Table 3 reports information about the stable.

No.	Domestic animals	Area	Year
21	70 chickens	Vallelarga, Pettorano sul Gizio	2017
22	30 rabbits, 20 chickens	Case Susi, Sulmona	2017

Table 3 - SLO bear-proof metal doors and windows in September 2017.

Stable no. 22 is located in Sulmona, separated from Pettorano sul Gizio by a lane. SLO decided to secure it after a bear attack in September 2017 as an **adaptive management measure**, to minimize negative perception of the bear in the community neighbouring Pettorano sul Gizio. Killing of rabbits and chickens in this stable was not included in 2017's damage bulletin because it occurred outside of the BSCG community framework.

Table 4 sums up the damage events reported in 2014-2017. It means a 98% reduction in 2017 compared to the baseline amount of damage in 2014, beyond the ≥ 90% reduction expected for this year, the last of the project.

Year	2014	2015	2016	2017
No. Damage events	52	14	6	1
% Damage reduction	100	73	89	98
% Expected reduction	-	50	75	90

Table 4 - Bear damages from 2014 to 2017 in the project areas (source: NRMGAG). Affected areas are subsistence farms and very small commercial activities, therefore even small losses can have high impact on the economy of these

households and on sentiments towards bears.

Ph. 1 – Bear proof metal door protecting a stable in Sulmona.

Ph. 2, 3 – Bear proof metal doors protecting a stable in Pettorano sul Gizio.

2.4 Organize at least three meetings

Meetings with farmers, landowners and citizens of Pettorano sul Gizio and Rocca Pia occurred on the 17th of June 2017, during the *Road Ecology Experiences: research, planning and design for the ecological sustainability of infrastructures* seminary (Ph. 4) in Pettorano sul Gizio. On these occasions, NRMGAG and SLO presented their work to prevent roadkill, and enhance the bio-permeability in the area of study.

The NRMGAG and SLO agreed to postpone the next two meetings, planned for August and December 2017, to 16th of January and in March 2018. The January meeting was dedicated to entrepreneurs (bar and restaurant, B&B owners) and representatives of local institutions (police officers, priest, town councillors) in the municipalities of Pettorano sul Gizio and Rocca Pia. On the occasion, the participants followed a two-hour BSCG course on the best practices of coexistence with bears in order to pass correct information onto their customers and dispel false myths about bear biology. SLO and NRMGAG awarded all participants at the end of the course with a wooden frieze (Ph. 5). The meeting in March was a convention in which the NRMGAG and SLO present to the public and scientific world the results of the BSCG.

Ph. 4 - Meeting on road ecology in Pettorano sul Gizio on June 17th, 2017.

Ph. 5 - Wooden frieze to award all participants at the end of the BSCG course on 16th of January 2018.

2.5 Reimbursement of losses caused by bears in areas equipped by electrified fences

SLO and NRMGAG did not give any reimbursement because no real damage occurred.

2.6 Pruning and caretaking of the fruit trees in abandoned orchard in extra-urban areas

On March 16th-18th, November 24th-25th 2017, March 10th-11th and 17th-18 and April 14th-15th 2018, SLO and the NRMGAG pruned **204 trees**, thanks to Patagonia & Tides and EOCA's sponsorships for the projects "Wildlife corridors" and "Let's take action for the Bear" respectively. They treated the following species of interest: *Malus sylvatica*, *Pyrus pyraster*, *Prunus avium*, *Sorbus aria*, *Sorbus domestica*, R*ubus idaea*, *Rosa canina*, *Cornus mas*, in order to increase food sources for the Marsican brown bear and steer bears away from towns. These fruit tree groves are situated in wild areas of the Monte Genzana Nature Reserve. Signs of presence prove that the bears attended this area and fed on fruit, including Peppina and her three cubs.

2.7 Maintenance of two underpasses used by wildlife and other soft road ecology measures

Recovery of underpasses in the study area was extremely successful. In March and October, SLO and the NRMGAG recovered three passageways, two in the municipal territory of Rocca Pia (Ph. 6 and 7) and one in the territory of Pettorano sul Gizio (Ph. 8), where another underpass was identified for further recovery. The intervention took two working days in the summer time, when clearing them of hindering vegetation and waste was necessary to promote their use and prevent wildlife-vehicle collisions. SLO and NRMGAG carried out this action before the red deer rut and the period bears fatten before dormancy, when the risk of roadkill is higher.

2.8 Purchase of camera traps and continued monitoring of bear activity

In January 2018, SLO spent USD 645 on three camera traps to monitor bear movements in the study area in agreement with the NRMGAG, which took footage of the female bear Peppina and other wildlife species in the nature reserve.

Trail cameras proved the use of the recovered underpasses by wildlife (red deer, roe deer and wolves in particular – Ph. 9). Cedric Rocholl, a German volunteer for SLO, studied the wildlife usage of two underpasses and two overpasses in the BSCG area. Four camera traps were set up over a period of 74 days to get an idea of what kind of animals use the passes and on what frequency they are being used at what time. The data showed that all observed corridors were used during the research period. Most frequently recorded animals making use of the corridors are red deer, followed by roe deer and foxes. The highest rates of under and overpass utilization were observed to be at night, while roe deer showed higher frequencies during the day. No differences in the utilization between under and overpasses was detected. The number of animal crossing did not significantly increase or decrease during the 74 days. All wildlife corridors showed no fencing along the roads. Therefore, animals are not funnelled towards the safe passes and still cross roads at risk of being run over by vehicles. Consequently, the effectiveness of these corridors is limited and we will lobby for a full fencing along these roads, which would prevent animal crossing and would increase roads safety.

Ph. 6 – First underpass

Ph. 7 – Second underpass

Ph. 8 – Third underpass

Ph. 9 – A wolf using the underpass (courtesy of MGAGNR)

2.9 Quantitative spatial analysis of bear activity in the study area to quantify the impact of the project in terms of shifting bear activity-patterns away from human properties

This year also, SLO could not perform any quantitative spatial analyses of bear activity in the study area based on the fixes from the radio-collared bear. The PNM scientific team is managing the collar data, and has yet again not made them available for our analyses. However, anecdotal evidence from bear sightings and signs of bear presence suggests a noticeable reduction of presence in urban areas compared to previous years, in line with our intended goals. Even in the non-protected neighbourhood, the radio-collared bear was reported no longer than a week around the 13th September 2017[8].

2.10 Quantitative analyses of changes in human perception of bears since the start of the project (surveys conducted in 2015 and replicated in 2017)

The questionnaire (see the end of this chapter) consists of 23 mixed (open, multiple) questions. We distributed the questionnaire in the last week of October 2015 and in the last week of October 2017, at the end of the "bear damage season".

We obtained 89 responses in each year, all from Pettorano sul Gizio. The distribution of respondents was slightly biased towards middle-aged, relatively to the population of the small town (Table 5.1).

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[8] https://www.ilgerme.it/orso-torna-visita-pollai-pettorano/

Table 5.1. Comparison of age distribution of the population of Pettorano sul Gizio and the respondents to the questionnaire from that small town. Source ISTAT[9].

Age group	Census data	Respondents
<18[a]	18.7%	6%
18-30[b]	10.3%	12.5%
31-50[c]	26.9%	45.8%
51-65[d]	21.5%	22.6%
Over 65[e]	25.1%	13.1%

[a] Census data from 10 to 19 years
[b] Census data from 20 to 29 years
[c] Census data from 30 to 49 years
[d] Census data from 50 to 64 years
[e] Census data equal or higher than 65 years

Before proceeding to the analyses, we had to exclude those questionnaires where the respondents did not disclose their age (1 questionnaire), or whether they knew about the project (3) or the manual of best practices (3) or whether they valued or not bear conservation (1).

Due to the anonymity of the questionnaire, we were not able to perform a before-after-control-impact analysis on individual respondents to test the impact of the project on people knowledge and perception of bears. Rather, we grouped all answers together and analysed statistically the relationship between knowledge of the bear, perception of its value for conservation and perception towards the coexistence of bears with humans.

Due to the extremely high prevalence of positive attitude towards the bear: 100% of analysed questionnaires from 2015 and 92.3% from 2017, we did not attempt to identify factors correlated with positive attitude.

Instead, we sought to identify drivers of knowledge of bear ecology and knowledge of options to mitigate human-bear conflict and perception of human-bear coexistence.

To investigate the drivers of knowledge of bear ecology we summed the number of correct answers to 4 questions of bear ecology and human-bear interactions and performed a linear regression of this knowledge score (values from 0 to 4) against the following factors: age group, having read the best practice manual published and distributed by SLO and the year of the project in which the questionnaire was answered: 2015, 2016 and 2017. We included all single terms, as well as two-level and the three-level interaction terms and performed a step-wise variable selection procedure using Akaike Information Criterion to identify the most parsimonious model (having the lowest AIC score, Table 5.2).

Similarly, we investigated the perception from citizens of human-bear interactions (question 19) as a binary response variable (positive thanks to mitigation measures and best-practices versus negative) which we regressed against all variables included in the knowledge models + the knowledge score itself. We included also all two-variable and three-variable interactions as well single terms and selected the best model as in the bear-ecology knowledge model.

The best model of knowledge of bear ecology was the one including only an intercept, and whether the respondent had read the manual or not. Having read the manual had a positive influence on the knowledge score of bear ecology and appropriate behaviour in presence of a bear.

Table 5.2. Coefficients of the most parsimonious model of knowledge of bear ecology and appropriate behaviour in presence of a bear.

Variable	Coefficient	p-value
Intercept	2.41	<<0.05
Read manual = Yes	0.66	<<0.05

The best model of positive Vs negative perception of human-bear interactions included intercept, having read the manual age group and knowledge score (Table 5.3). All age group above 18 years old had better perception of human-bear interactions and the most positive attitude was found among the age group 51-65. Knowledge of the best practice manual and higher knowledge of bear ecology also had a positive effect on perceived perception of interactions with bears.

Table 5.3. Coefficients of the most parsimonious model of positive perception of human-bear interaction.

Variable	Coefficient	p-value
Intercept	-1.15	0.18
Read manual = Yes	1.94	0.069
Age 19-30	1.68	0.07
Age 31-50	2.01	<0.01
Age 51-65	2.48	<0.01
Age over 65	0.86	0.31
Knowledge score	0.40	0.07

These results together suggest that the vast majority of the population supports bear conservation, 96.4% of the questionnaires across the two years agreed that it is important to protect bears and 79.2% stated that the local extinction of bears would be a loss for the small towns of Pettorano sul Gizio and Rocca Pia.

These questionnaires also suggest that while people generally value bears, their average knowledge of bear ecology and interactions with humans is limited (2.5 correct answers out of 4), but it improves substantially upon reading the manual (3.1 correct answers versus 2.4). However only 38 questionnaires were from people that read the manual (22% of the total). This suggests that a priority action for the near future is to disseminate further the best-practice manual, continue engaging the community via public meetings and activities to establish and maintain mitigation measures such as electrified fences and removal of easily accessible food.

Further analyses of this questionnaire will focus on investigating predictors of people's concerns about losing the local population of bears, and people willingness to collaborate with SLO on bear conservation to identify priority actions for increased engagement of the population and support for the project. We will also analyse

the extent of satisfaction of the local population for the institutional management of bears and will use these results to identify key lobbying activities to increase people's trust of public institutions responsible for managing wildlife and human-wildlife conflicts in the area.

QUESTIONNAIRE "BEAR SMART COMMUNITY GENZANA"

The association **Salviamo L'Orso** and **the Nature Reserve Monte Genzana Alto Gizio** prepared the following questionnaire to understand how much you know the **Marsican brown bear** and what you are willing to do, individually or together with other people, to promote the coexistence between the bear and human activities. We ask you to spend only 5 minutes of your time, giving only one answers to each question. This questionnaire is completely anonymous.
Your participation is important!

1. **Gender:** □ Male □ Female

2. **Age:** □ ≤ 18; □ 19 – 30; □ 31 – 51; □ 52 – 65; □ ≥ 66

3. **Where are you from?** □ Pettorano sul Gizio □ Rocca Pia □ Other: - _____

4. **Do you know the project "Bear Smart Community Genzana"?** □ Yes □ No

5. **If yes, how?** □ Word of mouth □ Internet □ Public events □ Press

6. **Did you read the Bear Smart Community Genzana Best Practices Manual?** □ Yes □ No

7. **Yes yes, are its contents effective?** □ Yes □ Enough □ No □ I don't know

8. **Have you ever seen a Marsican bear in the territory of Pettorano and Rocca Pia?** □ Yes □ No

9. **If yes, which was you feeling?** □ Fear □ Wonder □ Happiness

10. **What have you seen exactly?** □ Bear in your property □ Signs of presence in your property □ Bear and signs of presence in the Nature Reserve □ Damage in the neighbourhood

11. **Do you know what the 90% of the bear's diet consist of?**

□ Fruit □ Wild and domestic animals □ Human food waste □ I don't know

12. **Why does the bear sometimes frequent urban centres?**

□ Bears do not find enough food in nature

□ the bear is an intelligent animal, and looks for food where it may find it more easily (gardens, farms)

□ the bear has learnt that the man allows it to eat near the houses

13. **To-date, how many cases of Marsican brown bear attack to people were reported?**

□ No one □ One □ Five □ I don't know

14. **Do you think that today to protect the Marsican brown bear is important?** □ Yes □ No

15. **If yes, please rank from 1 (most important) to 4 (the least important) the following responses. The conservation of the Marsican brown bear is necessary for:**

__ preserve the ecological balance of the environments in which it lives

__ not lose the symbol of a wonderful and wild area

__ attract tourists to the small towns and areas in the bear home range

__ allow next generations to coexist with an animal which has always been here

16. Do you know people who would harm the bear because they do not accept it?   □ Yes   □ No

17. Do you think that losing the bear would negatively affect Pettorano sul Gizio and Rocca Pia?

□ No, I don't think so. Actually, farming would benefit from it

□ No, I don't think so. Actually, the attractiveness of the place prevails on the general interest in the bear

□ Yes, it would be a serious loss!

18. What would you do if you found yourself near a bear?

□ You would run away to shelter yourself in a closer and safer place

□ You would begin screaming and moving your arms to scare the animal away

□ You would keep still, then calmly walking back without turning your back to the bear

□ You would speak loud, calmly moving aside and giving the animal an escape way

19. Considering the presence of the bear in the territory of Pettorano and Rocca Pia, from your own perspective, which is the truest of these statements? (Only one answer please)

□ A bear in my community is a problem, because it may attack the people

□ A bear can cause serious material damage (gardens, farms, buildings, etc.)

□ You can keep bears away by using measures to protect gardens and small farms (for instance electric fences), picking up fruit on time and managing food waste properly

20. Do you think that local institutions and organizations (for instance National Parks, the Nature Reserve, environmental organizations) are doing enough to make possible man-bear coexistence in Pettorano and Rocca Pia?

□ They do very little   □ They try, but they are disorganized   □ They would like to do, but they meet local resistance   □ They are doing a lot

21. Would you be keen to collaborate with institutions and environmental organizations to help preserving the Marsican brown bear from extinction?   □ Yes   □ No

22. If yes, in which way? Please, <u>rank from 1 (the most important) to 4 (the least important)</u> the following actions:

__ supporting with a donation the organizations helping the bear in a practical way

__ reporting to the institutions (for instance the Municipalities, the Nature Reserve) any observations of the bear

__ implementing the measures recommended by the experts to prevent any direct conflict with the bear (i.e. electric fences)

__ informing friends and relatives about the best practices of behaviour not to disturb the bear

23. Would you like to leave any comment or suggestion? Please, write here:

_____

_____

Thank you for your time!
Now we know better who lives in our Bear Smart Community Genzana!

2.11 Other environmental actions

In October, SLO volunteers and the NRMGAG cleaned three dumping places in the nature reserve: 1) 41°57'20.6"N 13°57'47.5"E; 2) 41°57'03.8"N 13°57'46.7"E; 3) 41°57'42.3"N 13°58'12.2"E.

3. Project expenditures

The project costs for 2017 are summarised in Table 6.1 in relation with the USD 1,490 grant from IBA, while Table 6.2 reports the non-monetary or "in-kind" contributions planned for 2017.

Tab. 6.1 NON-MONETARY OR "IN-KIND" CONTRIBUTIONS in 2017 (assumed 1 man*hour = 20USD)				
Type of contribution	**Amount or Value (USD)**	**Source**	**Requested**	**Committed**
Voluntary work for installation of electrical fences maintenance of all 16 fences installed in 2014-2015	2,000 (100 men*hrs)	Salviamo l'Orso		X
Management of bear-proof trash collection		Municipalities of Pettorano sul Gizio and Rocca Pia		X
Meetings with local population to raise awareness on the bear conservation issue	All costs of organizing 3 meetings	Salviamo l'Orso, Regional Nature Reserve Monte Genzana-Alto Gizio		X
Camera traps	600 USD (300 each for 2 camera)	Salviamo l'Orso		X
Field Surveys	4,000 (200 men*hrs)	75% Salviamo l'Orso, 25% Regional Nature Reserve Monte Genzana-Alto Gizio	X (Nature Reserve)	X (Salviamo L'Orso)

Tab. 6.2 OVERALL PROJECT BUDGET FOR CALENDAR YEAR 2017 (ASSUMED 1 € = 1.06 USD)		
Categories	**Requested from IBA**	**Salviamo L'Orso and NRMGAG matching fund**
	Requested	**Committed**
Equipment (year purchased) ➤ Monitoring by camera traps, pruning and care-taking of the fruit trees in abandoned orchard in extra-urban areas	645 USD (215 USD * 3 camera traps)	• Cost of salary of Mario Cipollone (SLO) for the role of project leader full-time over the whole summer 2016. 6342 USD – (1500 €/month * 4 months)
Publication costs Printing of best-practice manual	530 USD (0.53 USD *1000 copies, for estimated 8 pages + soft cover)	
Publication and installation of information panels in public places to inform residents and tourists about best practices	315 USD (105USD*3 panels 70x100 cm)	➤NRMGAG provides with three more panels (105USD*3 panels 70x100 cm) graphic and installation work (2men*20 hours = 800 USD)
TOTALS (USD)	**1,490**	**6,342** SLO **800** NRMGAG

4. Conclusions

The uptake and extension of best practices thanks to an additional grant from IBA (USD 1,490) allowed a 99.8 % reduction of bear damage in the Community compared to 2014's data. As expected, the protection of vulnerable farm animals and beehives led to a dramatic reduction of damage in the intervention area, but prompted food conditioned bears to seek food from unprotected farms in neighbouring unsecured areas, in 2017 and 2018 compared to 2016. This evidence has strengthened the reliance of local farmers and beekeepers on the best practices we promoted in the last three years. Other people from the Genzana area have offered to collaborate to the project goals, due to their friendship with our members and the English volunteers from Plymouth University. As our latest quantitative analyses of changes in human perception of bears suggests, one of the priorities for the BSCG is further dissemination of best practices and involvement of local stakeholders, to maintain momentum on bear conservation and strengthen the local capacity of villagers to maintain the BSCG in the long-term, as well as further increase knowledge of bears, support for its conservation and adoption of best-practices for co-existence with bears.

These positive results were possible thanks to IBA's grant, the strong commitment of a small group of highly-motivated volunteers, the local community and a network of partner organizations and institutions, which have finally been able to build a Bear Smart Community in the Genzana Valley.

5. References

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Mario Cipollone wrote this report with the contribution of PhD Piero Visconti.

Date

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