

Local perceptions of jaguars (*Panthera onca*) and pumas (*Puma concolor*) in the Iguacu National Park area, south Brazil

Figure 1 Iguacu National Park



Mustafa Farran
English Program, 1st Year
2007

It was noticed that there was a human-wildlife conflict in the area near the Iguaçu National Park (INP), which inhabits the last significant population of jaguars in southern Brazil, Parana state. The area borders some farmlands, where jaguars had been reported to be the cause of livestock mortality. As revenge, about 30 jaguars have been reportedly killed between the years 1995 and 1997. For this I found it interesting to better understand the point of view of the people living close to INP concerning jaguars and pumas.

The main and preferable prey for the jaguars and pumas in the INP has been the white-lipped peccary (*Tayassur pecari*), but unfortunately this is not the case anymore. Researchers have been speculating that the increase of predations on livestock near the INP is mainly caused by the disappearance of the white-lipped in that region. Now that the INP region lacks the white-lipped peccaries, the jaguars went off to find a new source of prey, this time though, domestic preys! In general, the Park borders, some ranches and private lands were plantations; this makes livestock raising the main activity there. This has been caused by a phenomenon called the “island-effect”. This effect is defined by the lack of a forest area between the INP and the private farming lands, which is mainly caused by deforestation and the destruction of habitats in that region. These two main factors allowed the jaguars easy access to the domestic livestock. In order to better understand the local views of the farmers towards the jaguars and pumas, a survey had to be conducted on selected farmers within a so called “study area”. Moreover, it would aid in learning about any possible suggestions on solutions that have to do with stopping such livestock predations by jaguars and pumas. In accordance to what had been reported concerning the livestock incidents by jaguars and pumas, two hypotheses were set. Firstly the farmers neighboring the INP have a negative perception towards both wild cats. Secondly they had a negative impression towards the ecological role played by these animals.

Methods:

Surrounding the INP are 14 towns, but only 9 were selected to base the survey on. 72 out of 150 households were selected based on how many years the residents have been living in the selected region, where a minimum of 5 years of residence was chosen. Only one person from each household was interviewed, while keeping in mind that all the participants were adults and livestock owners. To have a clear understanding whether or not the area of the land owned by these residents had an effect on the way they perceived jaguars and pumas, respondents were categorized into 3 groups according to the area they owned: small, medium, large. Respectively, according to the same category and intention, respondents were grouped according to the number of livestock holdings. To make sure that the people are picturing the right animals mentioned in the survey (jaguars and pumas), photographs and common names were used. The following questionnaire was used in the survey:

1. Origin of the family: (Where did your parents, grandparents, and great-grandparents come from?)

Brazil Italy Germany Poland Other

2. What is your educational level?

Illiterate Primary school incomplete Primary school complete

Secondary school incomplete Secondary school complete

Undergraduate course incomplete Undergraduate course complete

3. Please, indicate your attitude toward the following:

Like Indifferent Dislike Do not know

Puma

Jaguar

Nature

4. Have you ever experienced livestock loss due to predation in your property?

5. What is the origin of the jaguars living in this region?

Native Brought from other places Some are native, some are brought Do not know

Comments:

6. Who was the responsible for the relocation/releasing of jaguars?

7. What was the objective of the relocation/releasing?

8. Where did you hear about the relocation/releasing?

9. What is the role of jaguars and pumas in the wild?

To control prey population/ to keep the ecological balance

To destroy, subdue or eat other animals

Other:

None

Do not know

10. Do you think jaguars would attack humans without being provoked ?

11. Do you think pumas would attack humans without being provoked ?

12. Regarding the predation of livestock by jaguars and pumas, what would you suggest for solving the problem?

Using preventive methods in the property (use predator proof-enclosures during night, use electric fences to surround pastures and/or enclosures, keep herds away from the forest, etc.).

Killing the problem animal(s).

Financial compensation for livestock losses by predators.

Relocating the problem animal(s).

Removing/eradicating all jaguars from INP.

Restructuring the food chain (reintroduction of native species extinct locally).

Other:

Do not know

13. Would you be willing to change your husbandry practices in order to minimize predation on your livestock?

Yes No

14. If so, would you pay for the management changes?

Yes No

Comments: _____

Results:

All respondents recognized the jaguar, but interestingly enough, 44.44% of them did not recognize the puma. The majority of the questioned people had a positive opinion towards the INP, because of the good quality of both the air and the water. Just as well, they also had a positive opinion about both jaguars and pumas. It was noticeable that the locals who had an optimistic interest in jaguars living in the Park also had an optimistic view towards pumas there, and the opposite is true. The views did not differ among the sexes of the participants. Moreover, the size of the properties owned by the locals has no effect on the view towards jaguars. The size of the herd did not show correlation with the farmers' views on jaguars; people with medium-sized herds had a positive perception, while the ones who owned small and large sized herds did not. The majority of the people did not think the puma to be dangerous to humans. On the other hand, the ratio of the people who had found jaguars to be a threat to humans to the ones who did not was 1:1. Most people suggested that the jaguars currently in INP originated from other regions, and the Brazilian Environment Agency was the one to blame for this. Many of those people with this opinion suggested that these jaguars were previously captives in zoos abroad, where they could no longer be kept. Most of the respondents had no idea of the ecological role of the carnivores in the INP. 24 and 30.98 were the respective percentages of the locals who thought that the jaguars and pumas had no ecological importance and do not know if they played any ecological role at all. 23.94% of the respondents thought that these carnivores destroy other animals, while the minority believed that they have a positive role in controlling the prey populations. Coming to what the locals thought was the right solution for preventing future predations by jaguars and pumas on their livestock; some were with the idea of using preventive methods in their properties, others suggested a relocation of the animals causing the predations, while the majority was with the idea of changing their husbandry practices while getting some financial support.

Discussion:

Keeping in mind that livestock predation was reported and jaguars and pumas were killed revengefully, the survey conducted showed that the majority of the locals had a positive view on both wildcats. This, of course, is opposite to what was predicted prior to questioning the locals. For this, one can assume that the killings that took place between the years 1995 and 1997 might have been caused by the minority of the locals. As a matter of fact most locals blame the jaguars for the livestock predations, although it was reported that pumas also contributed in such acts. Analyzing this mistaken idea of the locals, one can conclude that the pumas were by far spotted less than jaguars in the INP region. Evaluating the opinions concerning fearing jaguars and pumas, one could say that the answers were based on feelings rather than educational and solid facts; since there were rarely any unprovoked jaguar attacks on humans reported previously, on the contrary, pumas were responsible for such brutal attacks. Most of the locals believed that the jaguars were relocated to the INP from other regions (which is not true!). They backed up their answers with the explanation that native jaguars do not prey on livestock. Over here, one should point out the irony in the point of views regarding jaguars, where the majority of the people, as previously mentioned, believed that jaguars are a threat to humans in unprovoked cases, "but not with native jaguars on livestock"! But what makes livestock different than humans in such a case?

Most of the people surveyed lacked the basic knowledge related to the subject; an educational program should be provided for those locals especially for those who are children, in a way to help them build a positive educational perception towards native animals such as jaguars and pumas. For example, teaching them about the importance of these animals in preserving the ecology of the INP, and the importance of preserving them from extinction. On the other hand trying to change the way adults perceive such a case is hard to accomplish, especially when

education is introduced in late stages of life. For this, locals should be involved in conservation projects which can be held by governmental and non governmental organizations.

Predation by jaguars on unprotected livestock is a logical thing to occur. For this protective methods should be applied (such as electric fences) which seem to have more importance in solving the predation problem than reimbursements. This is since compensation for lost animals would be costly and would not be any help in getting the people to understand and fight the causes of predations. Re-introducing peccaries in the park could seem as a great solution for minimizing the predations on livestock, but the major concern would still be poaching(of both the peccaries and the jaguars). Therefore, in order to control this act, certain funds should be provided by private organizations who are utilizing the INP for profitable purposes.

And interestingly enough, not only are pumas and jaguars in the extinction zone, but also Amur Leopards are! As I was in the process of writing this review I bumped into a heart breaking event that led to the killing of one of the last seven female Amur Leopards living in Russia's wild, according to a Reuters news coverage. According to the WWF, "There are more male leopards in the wild than female because cats tend to breed males when under stress" (Reuters).



Figure 2 Puma



Figure 3 Jaguar

Sources:

Confortia, V.A & de Azevedo F.C.C. (2003). Local perceptions of jaguars (*Panthera onca*) and pumas (*Puma concolor*) in the Iguac u National Park area, south Brazil. *Biological Conservation*, 111: 215–221

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