

Factors increasing extinction rates in giant panda populations



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Ailuropoda melanoleuca otherwise known as the “ Giant Panda” is categorised as an “ endangered species” on the IUCN Red List of Threatened Species (IUCN, 2007a). This means that this is an animal which is at a very high risk of facing extinction, i. e. the species will die off. This has been a main concern for conservation since the 1950’s, as at present there are approximately one thousand and six hundred giant pandas living on earth today (Yiming et. al, 2002). There are many reasons which have caused a such decline in populations of Giant panda such as their reliance on mainly bamboo, low reproduction rates, hunting and most importantly habitat destruction. All of these factors have played a key part in pushing our much loved animals to smaller and smaller numbers. WWF, (2011a) states that 30, 000 sq km of forest in China is solely protected for pandas. This means that 80% of wild panda are highly protected by the Chinese government (WWF, 2011a), but why are numbers still decreasing? This essay will discuss what these factors are and how they are affecting the populations and communities of *A. melanoleuca*. Currently there are programmes being carried out to help conserve this species and increase numbers but are these really working? Why are there still so many few Giant pandas living on earth today? And can our conservation efforts help prevent this species from going in to extinction? To answer these questions we must look at each factor and how these are being dealt with.

The Giant Panda inhabits South Central China and ranges from six isolated mountains in the Gansu, Sichuan and Shaanxi Provinces (IUCN, 2007b).

Currently, this species is on the Appendix 1 CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) List

(CITES, 2011a). This means that giant pandas cannot be traded internationally except in circumstances in which the reason for trading is for scientific research (CITES, 2011b). This is because this species is critically endangered and is at a high risk of extinction. The prohibition of trade will prevent giant pandas being removed from their natural habitats and reduce extinction rates in this species.

Despite being biologically carnivorous, *A. melanoleuca* has an herbivorous diet consisting primarily of bamboo (Dierenfield et. al, 1982). In fact it is estimated that 99% of the Giant Pandas diet comprises of this food source (Schaller et. al, 1985, cited in Carter et. al, 1999). Therefore, habitat locations are very dependent on the distribution and availability of bamboo (Xuezhi et. al, 2008).

There is a wide variety of bamboo which is consumed by the giant panda which consists of sixty different types with thirty-five of those containing their primary food sources (Hu, Wei, 2004, cited in IUCN, 2007b). By limiting their diet to mainly bamboo, the giant panda is at risk of eventual starvation. This is because in every fifteen to one hundred and twenty years, there is a “bamboo die-off cycle” which naturally occurs (Calhoun, 2005). Once this die-off occurs in the bamboo (depending on which species), the time it takes to grow to a level which can feed a full population of giant panda can be up to twenty years, thus many pandas are starved and may die due to this (Calhoun, 2005). Examples of this would be two of the main species of bamboo which are eaten by the giant panda; Arrow and Umbrella. It takes on average between forty and fifty years for Arrow bamboo to flower and for Umbrella bamboo this process takes approximately one hundred years
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(Franzen, 2003). Once these species and others eventually die off, giant pandas will need to search for a replacement and if unsuccessful, will starve to death and may face extinction.

In the event of certain types of bamboo species dying off, conservation plans must be in place. In recent years, conservationists have been putting in place ‘corridors’ between panda populations and areas which have bamboo which is not being fed on which can be suitable for feeding (Carter et. al, 1999). This type of programme is also being done to create corridors between different populations of panda also (Carter et. al, 1999). It was also suggested by Carter et. al, 1999, that these corridors should be a long term solution as the carrying capacity (the maximum population size a species can reach) of the giant panda can take up to two hundred years!

Another factor which has had a negative impact on the population sizes of pandas is their vulnerability to poaching. This is when they are hunted (by humans) in the wild for their skins and skulls (Yiming et. al, 2002). To assess what effect poaching is having on the giant panda; population viability analysis (PVA) is required. PVA takes into account a range of ecological and environmental factors to evaluate the risks and threats to particular species. This allows planning for conservation and allows us to identify “levels” of threats to a given species (Yiming, et. al, 2002). By using PVA, Yiming et. al, 2002, found that even without the effects of poaching to giant pandas, population numbers were still very low. This is quite worrying as this means that although poaching is highly threatening, other factors are still pushing the species towards extinction. Results from Yiming et. al, 2002, experiments found that with the increase of poaching of the giant panda, a large decrease

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in population size and a higher extinction rate was the result. Their experiments also compared poaching between the two sexes. They found that poaching in females was found to have a more negative impact on the extinction rate as they would appear to have a higher extinction rate than males, despite the intensity of poaching being the exact same. This comparison was mirrored in the analysis comparing adult and young pandas (i. e. Adults had a higher extinction rate). Therefore, Yiming et. al, 2002, highlighted that although the giant panda is naturally facing extinction due to many factors, poaching can significantly increase the extinction rate in populations. However, in recent years, the market for panda skins and incidents of poaching has begun to decrease and is now no longer a key threat to the population of the giant panda (IUCN, 2007b).

Reducing illegal capture and killing of the giant panda has been very successful due to training conservationists to patrol areas in which pandas are at risk (WWF, 2011b). The WWF began this training in 1996 and had more than three hundred people trained within four years. Above this, cameras have been installed on sites in which the giant panda inhabits. This allows trained staff to see how the pandas live naturally and can plan ahead on useful conservation programmes to prevent extinction occurring (WWF, 2011b).

A. melanoleuca have a k-strategy approach when it comes to reproduction (Linderman et. al, 2004). This is because females do not begin to mate until they are approximately four or five years old and will only give birth to a small number of cubs (this can be as little as one or two young) (WWF China, 2011). If food is scarce (i. e. due to bamboo die-off) then the chance of the <https://assignbuster.com/factors-increasing-extinction-rates-in-giant-panda-populations/>

survival of cubs is very slim. Another factor which affects the reproductivity in the giant panda population is pandas in captivity. It has been found that giant pandas in captivity are not breeding well and it has been suggested that they find it difficult to mate in the presence of humans. This is because they are not in their natural environment (WWF China, 2011).

The major threat to giant panda communities which is increasing extinction rates is habitat loss. Habitat loss is due to human impacts in which the giant pandas habitats have been destroyed by logging, agriculture and the development of hydropower amongst many other things (WWF, 2011c).

Research published in 2008 by Xueuzhi et. al stated that agriculture was the most threatening human impact on reducing habitat sizes in panda populations. This is because farmland is usually located near human settlements which affect pandas directly. Also, as pandas are required to consume clean drinking water every day to survive, they tend to avoid large rivers. This is because large rivers are usually nearby to human settlements, in which the water will be highly polluted (Xueuzhi et. al, 2008). Therefore, human impacts are limiting where panda communities can live.

Fragmentation of the giant pandas habitat is also a factor contributing towards increasing the extinction rate. This has been due to again, human impact as the Chinese economy has been growing exponentially (WWF China, 2009).

As habitat destruction and fragmentation are the major issues impacting the giant panda population it is highly important that we try to 'reverse' these effects as human activity is responsible for this. An example of an area which has been badly affected is Jiuzhai ring road in the Minshan Reserve Region <https://assignbuster.com/factors-increasing-extinction-rates-in-giant-panda-populations/>

(Xuezhi et. al, 2008). This has a high number of traffic daily and has caused the nearby community of pandas to become remote (Xuezhi et. al, 2008). It was suggested by Xuezhi et. al, 2008 that in order to prevent further damage to panda communities, the amount of human activity had to be reduced. This same idea was suggested for the Jiuzhai ring road by reducing traffic daily.

In conclusion, it is clear to see that the future of giant panda populations and communities is critical and will remain so unless great changes are made. This is mainly down to human impacts which have negatively affected population numbers by destroying habitats, removing this species from its natural environment (captive breeding) and poaching. However, the giant panda's specialised diet is also pushing this species towards extinction as they are at risk of starvation. Despite this, programmes are in place to help restore habitats by creating corridors to new sources of bamboo and monitoring to prevent poaching. However, at the moment it is very difficult to determine whether or not the extinction of *A. melanoleuca* will be sooner rather than later. In short, the future of the giant panda is uncertain.