Endangered Greater Bamboo Lemur

The island of Madagascar is located on the east coast of Africa, which is home to a variety of lemurs. Most of us are probably not aware of how we damage their habitat and environment. The primary focus of this research is on the prolemur simus also known as the great bamboo lemur. This lemur has been classified as endangered by the IUCN and on the list as an explanation as to why they are critically endangered, you will see humans. These lemurs are being researched so we can come up with different types of solutions to help their population grow back. Throughout this paper I will explain why they are endangered, how many of them are still alive, what conservation efforts we can enact, and what it is that researchers are doing to help us be more knowledgeable about the case.

The prolemur simus is the largest bamboo primate and usually move around over quadrupedal groups. They have different distinct colors that distinguish them like olive green, red, and a cream brown. The female prolemur simus weighs about 5.1 pounds and males weigh about 5.4 pounds. Their primary food they eat is bamboo, they chew up the outside parts of it and nutrient themselves with the inside. There are many threats that affect the living style of the prolemur simus and many of these threats are caused by humans. There are three major threats are deforestation, climate change, and viruses that are easily spread to these primates.

The deforestation of their habitat is mainly because of high demand on agricultural land. Most of the land is used for annual and perennial non- timber crops which are needed to supplement people globally. In addition, most of these crops are planted for food, fodder, fiber and fuel.Once the fields are done they are used for wheat farms, rice paddies, banana or pineapple plantations, sugar cane plantations and coca plantations. When deforestation happens the habitat of these lemurs are lost and eventually have to migrate to other parts of Madagascar. Most of these lemurs have moved towards the East and central part of Madagascar to repopulate and find new ways to find their food. It is much harder for them to move around since they are unfamiliar with the space and new predators are around. Only about one to four percent of these lemurs populate their original habitat.

A site survey that was conducted by researched revealed that prolemur simus have been wondering around. We visited 4 of these sites between June 14 and 21, 2009 (Table I), finding feeding remains at each one, most of which were very fresh. Feeding signs were particularly numerous along the Sahavolo River, along which continuous stands of giant bamboo were found, and which runs through the Lazasoa Lovasoa, Ravinala I, and Belanonana sites. During a brief follow-up visit to Ravinala I on February 6 and 7, 2010, we recorded 15 fresh feeding signs within an area of ca. 35 ha, but there was no direct sighting (Ravaloharimanitra 2011, 785).

Climate change has also had a great impact on the ecosystem of the Greater Bamboo lemur. With climate change increasing the foods for these lemurs is hindered, such as bamboo and fruits. The reason why these foods are hindered are because of massive droughts that are beginning to happen more frequently. Meaning that some of these plants can not reproduce at the time they are needed or some are only found in some places. In a long-term study of three species of bamboo lemur at Ranomafana, Tan (1999, 2000) found that the diet of greater

bamboo lemurs is almost exclusively bamboo, and in fact 95% of the diet is just one species of bamboo...Between July and November, P. simus opens the tough, woody stalks, or culms of the large bamboo by using premolars to strip the outside in order to consume the inner pith, but in December–March, it feeds on the new shoots and leaves of this same species (Wright 2008, 13). The lemurs have to travel a certain distance to get to their food. They typically feed in a small area, travel about one to two kilometers to feed on what they find and keep moving.

Since these lemurs have to migrate to other places in search of food, they are exposed to humans. Humans can fight back viruses but not animals that are in the wild. Studies were done by a group of researchers in Ranomafana National Park, only a few prolemur simus were tested because of low population. About two of the lemurs were tested to see if they were infected in some way, samples of there feces were taken to a laboratory. We screened a total of 84 lemur and 107 human fecal samples for five viral groups known to have diarrheal potential in humans (adenovirus, enterovirus, norovirus GI and GII, androtavirus). Of the seven lemur taxa we tested, all were positive for one or more diarrhea associated virus and humans were positive for all viral groups (Table III) (Zohdy 2015, 147).

Some methods that have been used to understand these primates more are site surveying, field data collection, sample collection and genome sequencing, and statistical analysis. All of these methods have been used to see how they move around and what their diet consists of. The prolemur simus most consumed food is bamboo, which is usually all they eat. In order to see where these lemurs were headed, there were cameras installed in different transects to see where they were headed. We considered 18 transects as primary forest (although some were heavily degraded) and eight as secondary. We classified nine areas as low anthropogenic disturbance, eight medium, and nine high. Out of the few nine of them were in low disturbance, eight were medium and nine were high.

The places that were highly disturbed were closer to human populations so these lemurs can benefit from them (Olson 2013, 491). In order for researchers to know how fast these lemurs were maturing genome sequencing was done. These lemurs were captured by a CO2 projectile rifle, tissue biopsies were collected from the ear pinna and its maturity was exposed. About most prolemur simus have reached their maturity at the age of three and a half years. Meaning that they are able to reproduce at a younger time and not wait until they are older. Some benefits are that the prolemur simus can reproduce faster.

In order for us to help out these lemurs the human population can start taking action on climate change and deforestation which are the greatest impacts towards them. There has to also be a decrease in the hunting and trapping of terrestrial animals, gathering of terrestrial plants, and logging and wood harvesting. Once people start taking action on these threats, once can start protecting areas where these primates can go and reproduce. Another way humans can help is by keeping them in captivity, there they face no threats and have it easier to reproduce. Once the population has grown they can be released into the wild to go with some of the other lemurs.

Creating sanctuaries for these primates will also help them develop and reproduction faster and will also keep them away from any predators. In captivity primates tend to live up to eighteen years of age. Taking action for climate change has many benefits for species and globally. Humans can find better ways to produce energy, like solar panels instead of burning fossil fuel. Greenhouse gases should be reduced way more since it makes the globe warmer and affects

plants and resources we need for our survival. Climate change leads to there being a possibility of longer dry season and shorter wet season; or simply there being harsh weather conditions like floods or heat waves.

In conclusion, there are many ways in which we could prevent the extinction of the Greater Bamboo lemur. Being more informed about the prolemur simus humans can start activist groups to stop deforestation and other habitat destruction. In addition, researchers can do more research on them since research has not been done in a long time. That way we can see if the populations have grown or have been the same. In addition, by protecting their habitat and starting activist groups people could combat deforestation and Madagascar can be the place it what once was for these primates.