Australia’s Natural Biodiversity And Fire Management

Biodiversity is the massive variety of all living organisms on earth or of a particular area (Ave, 2020); a rich biodiversity is important for an ecosystem because it increases the productivity within the ecosystem and supports a much larger variety of vegetation which can provide food and shelter for a greater number of animals (Gautam, 2007). Large plant abundance and variation also helps promote climate stability by reducing carbon dioxide in the air as well as providing us with a larger number of medical resources such as pharmaceutical resources (Ave, 2020). Over the years Australia’s biodiversity has dramatically decreased due to human impacts such as land clearing which leads to habitat loss, the introduction of invasive species which outcompete the native species and poor fire management which leads to extreme and out of control bushfires. These are the biggest threats to Australia’s vast and beautiful biodiversity; if something does not change we will see dramatic consequences.

The biggest influencer in habitat loss is the highly increased population growth in humans since arriving in Australia; with our ever-growing population there becomes a demand for more space, land, and facilities, to deal with this demand humans resort to land clearing for urbanization (Keil, 2009). Human population growth is the greatest threat to biodiversity; everyday, more people need more space, consume more resources and generate more waste as world population continues to grow at an alarming rate (Australian Museum, 2018). Humans clear land for agricultural use, industrial development and exploit natural resources to meet the never-ending demand for resources and facilities. During this process we continue to pollute the natural environment’s soil, water, and air which negatively impact plants, animals, and humans; we also tend to dramatically overharvest all resources both natural and man-made which heavily reduces the population and genetic diversity of the resources (Australian Museum, 2018). With Australia's growing population creates a demand for space, facilities and resources; to meet this demand we resort to extreme amounts of land clearing to create space for housing and facilities; grow crops and farm animals for food (Dow, Downing, 2011). Clearing this land destroys the homes of countless animals; it destroys their food source and shelter resulting in death. (Australian Museum, 2018). Land clearing also releases extreme amounts of stored carbon dioxide and other gasses into the atmosphere, which alters the levels of these gasses in different ecosystems (Lagasse, 2018). Even slight changes in gas levels is enough to negatively impact ecosystems; an example of this is coral bleaching, this occurs when the ocean temperature rises above the tolerance of the coral, resulting in coral bleaching (Nichols, Williams, 2017). Coral provides a source of food for both sea creatures and people; protect the coastlines from the effects of storms and erosion, they are an essential habitat for fish as they provide nursing grounds and they create income in the form of jobs and tourism, these are just some of the benefits they hold (Institution of oceanography, 2019). Australian biodiversity is essential for both the natural world and people; if people would switch to reusable energy this would eliminate the need to clear land for fuel which would stop the destruction of habitats and animals (Palmer, 2007).

Humans introduce new species into Australia for purposes such as farming, sports, pleasure, economical gain, etc. These invasive species are brought into a completely new area resulting in little or no natural predators; with no natural predators there is nothing there to control their population growth, which means they will likely outcompete native species for food and shelter

(Kulczycki, 2008). These invasive species may likely also bring deadly diseases with them and pass this on to our native species which will have no natural immunity to these new diseases which will also damage their population even more (Australian Museum, 2018). Some introduced species such as feral cats have directly destroyed many native species such as reptiles, birds, small mammals, and rodents. (Gorton, 2019). Feral cats threaten over 100 native species in Australia; they have caused extinctions and failed reintroduction programs for many endangered animals (Gorton, 2019). This makes invasive species an extreme threat to Australia's natural biodiversity; a way to deal with this would be to put in place protection and rehabilitation programs for these endangered animals, create more national parks to increase the populations of these endangered species and create a program to remove some of these invasive species to give the native species a fighting chance (Rice, 2015).

Fire management in Australia has gone downhill in recent years; for thousands of years fire was used by the Indigenous people as a hunting strategy and as a method to reduce the impact of bushfires. These controlled burns in relatively small areas of land helped to prevent larger fires from occurring, rejuvenate local flora that requires fire and smoke for reproduction and protect native animal habitats. (Higgins, 2020). Since these controlled burns were stopped the vegetation in bushland has increased tremendously; this excessive overgrowth results in catastrophic and uncontrollable bushfires that destroy masses of bushland, kill countless animals and destroy miles of peoples homes. People argue against controlled burns in small quantities due to the loss of habitat and animals, however, it is a necessary practice as it highly benefits native wildlife in the long run (Butler, 2017). The negative effects of not using controlled burns were seen in the recent 2019 - 2020 Australian bushfires; the catastrophic event began in June 2019 with a series of uncontrollable bushfires, as the summer progressed the fires continued to spread and multiply until there were hundreds of fires burning across the southeast part of Australia. These fires burned approximately 186000 square kilometers of land, destroyed over 5900 buildings including 2779 homes and killed at least 35 people; as well as an estimate of over one billion animals were killed and many endangered species may have been driven to extinction (ABC News, 2020). Catastrophic fires like this are a direct result of the poor fire management we currently have in place; since we stopped controlled burns the excessive overgrowth of bushland lead to this mass destruction if Australia continued controlled burns we could have avoided events like this and therefore protect Australia's precious biodiversity (Evans, 2018). Therefore the solution would be to bring back routine controlled burns around Australia's bushland to lower the risk of extreme bushfires like this, benefiting the land, people and animals.

Australia's natural biodiversity is decreasing due to land clearing which leads to habitat loss, the introduction of invasive species which outcompete the native species and poor fire management which leads to extreme, out of control bushfires. Habitat loss causes the deaths of countless plants and animals, invasive species continue to kill off our already endangered species and our poor fire management has further pushed many species towards extinction; these are the biggest threats Australia's biodiversity is seeing today and unless we convert to renewable energy (Paolini, 2010), remove invasive species and utilize controlled burns the problem will persist and see the extinction of many beloved species of Australia's plants and animals, destroying our biodiversity.