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Galapagos assigned readings/video summaries

Wildlife/conservation:

The videos both explain the Galapagos’ unique conditions that allow such an array of unique organisms to live there. In the Galapagos there are animals that both exist in tropical and even cold climates that all exist together in this one spot. This has to do mainly with converging currents. The Peru and Panama currents come from the south and norths and flow westerly towards the Galapagos while the Cromwell current flows easterly towards the Galapagos from the west. This mixing of currents creates a unique habitat with both warm water and cold nutrient rich water. This allows life to flourish in the Galapagos. The cooler waters, even though on the equator, creates a climate that has fewer extreme temperatures. Some of the unique animals that live in the Galapagos are Penguins, aquatic iguanas, flightless cormorants, tortoises, and several species of boobies. These are only some of the many species and endemic species that live on the Galapagos islands. These unique circumstances that exist in the Galapagos allows this area to be a biodiversity hotspot in the sense that there is a high level of biodiversity with most of the species being endemic only to these islands. It is very rare to see seals living alongside reptiles living alongside tropical fish living alongside whales and orcas. As the name of the one video suggests, the Galapagos really are an Eden that must be protected so that we can continue to allow this rare ecosystem to thrive. There is a threat to the well being of the islands because of our human impact on the islands. Many people flock to the islands as tourists each year and people even live and there are communities on the islands that all create waste. Wherever people go there goes environmental impacts with it and there needs to be measures taken to limit this unique and fragile ecosystem.

Geology:

The western Galapagos islands were studied with high resolution sonar technology. This study was done to understand how these islands grow and evolve over time. Just like the animals, the islands change too. Sonar systems were used in multiple studies to map and show the composition of the islands under water. There were five different types of geomorphic structures that were discovered and classified; submarine rift zones, large deep-water lava fields, shallow steep-sloped submarine flanks, mass-wasting and erosional deposits, and submarine terraces. It was concluded that the islands are formed by volcanoes of course, but mostly along active rift zones and on volcanic flanks. It is seen that many lava flows lie in rifts at the tips of a rift zone. The study concluded that there needs to be more data collection to conclusively determine the eruptive processes of the islands.

Goat eradication:

Worldwide, the introduction of goats on islands has been very detrimental to ecosystems. They wipe out the vegetation on the islands and this leads not only to the extinction of plant and animals species but also to erosion problems among many others. On the Galapagos the introduction of goats is particularly an issue because the islands have not evolved with the presence of such large herbivores. There are several approaches to eliminating goats on islands. Anywhere from hunting on the ground or helicopter to poisoning them. Studies show that in today’s age it is no longer that difficult to eradicate goats entirely from an island ecosystem. With larger islands there needs to be specialized hunters and gear and technology used in order to get the job done efficiently, using helicopters and hunters along with radio collar tracking for example. This tool is used as one of the most important forms of conservation and thankfully it is now a more easily attainable goal to remove an invasive islands species.

Evolution/finches/evolution of birds:

 Evolution on the Galapagos islands doesn’t happen how it happens in the rest of the world. Or at least we are not able to observe It the way we are in the Galapagos. Because the islands are so secluded and small, we can use the islands as a natural scientific study plot. Evolution has been seen in relatively recent years by scientists in Darwin’s finches. Over a period of time a study was don studying the finches and their beak sizes. It was concluded that when there were seasons of drought and the seed sizes changed, the birds that did not have the proper beak size died off. Over the course of time the birds that thrived were the ones with the best beak size for the size of the seeds. Birds were not growing beaks that fit in that short amount of time, but natural selection was at work meaning that the fittest birds were the ones surviving. In some definitions of evolution that is how it is described.