Impacts of Climate Change: Terrestrial Wildlife
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Introduction
Our team has been investigating the effect of climate change on terrestrial wildlife, from amphibians and reptiles to birds and mammals.

Figure 1 (left) illustrates the maximum and median elevations that are environmentally suitable for mammalian species (286 in total) in Southeast Asia. The dashed line represents the median for oil palm whereas the solid line represents the maximum. Increasing temperatures encourage more agricultural land conversion in some parts of the world. This impacts biodiversity in terrestrial wildlife as well as current mammalian habitats.

Figure 2 (above) shows that there is definite biological impact on avian species and reveals that 22% of critically endangered and endangered species are being affected by tourism and commercial developments. Tourism directly impacts birds because the endangered species lose their habitat to tourist attractions. In addition, tourist spots draw large amounts of people increasing the amount of pollution produced by transportation and waste in those areas. The more pollution the greater the climate change leading to endangered and critically endangered species. There are 251 bird species in Passeriformes order that are endangered or critically endangered and 37% are threatened by tourism.

Figure 3 (above) shows the biological impacts of winter climate change. Some species are positively influenced by the changes in climate, specifically Arctic vertebrates that depend on long winters for reproduction and survival. Other species that hibernate during the winter, however, experience greater mortality rates and lower reproductive ability. Additionally, longer winters translate to longer periods of time which these animals must go without food, because they hibernate in cold weather.

Figure 4 (above) shows projected hospitable areas of California in 2050 for three species of special interest: “(A) Ascaphus truei - Tailed Frog (B) Rhyacotriton variegatus - Southern Torrent Salamander (C) Taricha rivularis - Red-bellied Newt.” The scale refers to the number of GCM’s (General Circulation Models) that predict an area will be a suitable habitat. Evidently most of the region of California will not be very hospitable in 2050 due to projected climate change. Generally, amphibian and reptile species with the smallest relative habitats will face the greatest risk as a result of climate change.

Bibliography: