Name:

**Assignment 3 GEOG 212**

*This assignment is worth 25 points and will be evaluated based on completeness, accuracy, and comprehensiveness, using the criteria, instructions, and the allocated points listed for each task in this document. Resources that may help you in completing this assignment include the course textbook, the modules and PowerPoints, and some on-line research (depending on the questions/tasks being asked of you).*

*Review this video on*[*How to Submit an Assignment in Blackboard*](https://bbaddins.schoolcraft.edu/addins/dl/help-videos/Assignment_Help_Video.html)*if you need assistance with this feature. See Calendar for due date. Please save your assignment as a Word document (don’t alter the format of this Word document) and type your name or initials at the end of the file name. Once completed and saved to a certain folder on your computer, go into the Assignment folder on Blackboard and upload your assignment accordingly.*

**Part 3.1 – Evolution and Extinction**

1. Explain and provide examples on how humans are contributing to the Bottleneck and the Founder effects: **[10 points]**

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| **Natural Selection Event** | **Explanation of how humans influence these events on other populations of organisms:** | **Example of a scenario where humans have/had an influence on an organism (or more); increasing or causing these events:** |
| **Bottleneck Effect** | The Bottleneck Effect occurs when there is a drastic drop in population due to evinermental factors or any type of catastrophic event. There are many ways in which humans can influence the Bottleneck Effect. A couple examples are habitat destruction (think deforestation), overhunting, and pollution are just a few. Furthermore, the individuals that survive are a small subset of the original population. This causes reduced genetic diversity. | An easy example of a scenario where humans influenced bottlenecking is with the Northern Code fishery off the coast of Newfoundland. It is a classic case involving exploiting fish populations, where only a small number of the original population survived. The remaining delt with reduced genetic diversity which led to more disesase and less adaptability. |
| **Founder Effect** | The Founder Effect occurs when a small group of animals break away from the main population. Similar to the bottleneck effect in that this also results in a loss of genetic diversity. Humans can influence this by transporting species to new locations either on accident or on purpose. | An example of the Founder effect that was influenced by humans would be the cane toad in Australia. Initially, only a few were introduced, and those few carried specific genes. Those few initial cane toads now represent the majority of can toads across Australia. |

**Part 3.2 – Biodiversity**

1. The main threats to biodiversity today come from humans. Activities such as habitat destruction, anthropogenic climate change, pollution, the introduction of invasive species, and overexploitation all play a role in decreasing the diversification of life on the planet. The textbook uses examples of organisms that are being affected by these activities. Please provide another example for each of these activities (examples that are not listed in the book).  
    **[15 points]**

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| **Main Threat to Biodiversity** | **Example of a specific activity (or activities) that fall under the Main Threat category:** | **Example of a species/organism/population that the activity is threatening and how:** |
| **Habitat Destruction and Fragmentation** | Deforestation for palm oil production in Indonesia and Malaysia. | The Sumatran Orangutan had their natural habitat decreased due to the large amounts of deforestation from palm oil production. |
| **Anthropogenic Climate Change**  *(can’t use polar bears or ringed seals)* | Rising sea temperatures due to global warming. | The coral reefs are experiencing bleaching events due to the increased temperatures. This is when the algae living with coral are expelled, thus weakening the corals and making the more susceptible to disease. |
| **Pollution**  *(can’t use the Mekong River dolphin)* | Industrial dumping of harmful chemical and metals into water systems. | The Northern Leopard Frog has been dealing with deformities and dwindling population numbers due to pollutants from Industrial dumping |
| **Invasive Species**  *(can’t use the Japanese kudzu vine)* | Accidental release of pet snakes into native ecosystems. | Native Birds and other small mammals are dealing with unnatural predators from pet snakes being released into unnatural habitats. |
| **Overexploitation** *(can’t use oyster reefs)* | Illegal poaching for ivory. | The African Elephant has dealt with poachers due to the demand for ivory. They have been overhunted, and the species survival has been largely affected. |