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The Status and Conservation of the Turtle Population

One of the biggest environmental issues facing the world today is the preservation of our land, oceans, and wildlife. Among some of the most endangered wildlife remains a variety of species of turtles, whose environment is consistently damaged and threatened by human activities. In order to fully understand the scope of and develop solutions that are aimed at the root of the issue, detailed research and data analysis is needed. By conducting studies that explore the factors that negatively affect turtles in depth, data can be collected that can depict trends and patterns within a growing environmental issue. As a result, I plan to use a dataset that contains data about individual turtle growth and the population of turtles in St. Joseph Bay, Florida to better understand trends in the rapidly declining population,

This issue is imperative; to illustrate, an estimated 30,000 turtles are killed from poaching annually in Baja, California alone ("Sea Turtles."). The endangerment of these turtles not only affects the species itself, but extends to affect a variety of plant and animal life in the ecosystem, including humans. The World Wildlife Fund emphasizes the need for turtles in our environment, stating that "health of seagrass beds and coral reefs that benefit commercially valuable species" ("Sea Turtle…"). They actively support the health of the Earth's oceans and are one of the oldest, most critical species in maintaining our natural resources. Without turtles to promote existing cycles in the ecosystem, many other species will be interrupted and harmed, needing to find new strategies to support themselves. In order to make a difference and start working towards protecting the turtle population, scientists need to better understand the cause of rapid decline. There are several causing factors for this issue: commercial fishing, marine debris, coastal armoring, beach erosion, and more (Mazaris, Schofield, Gkazinou, Almpanidou, Hays).

To develop solutions and discover new information about the causes of environmental issues, data must be collected and analyzed to make conclusions. Understanding how to help requires that there are

more “quantitative studies of the situation on particular beaches,” as well as “on the locations where juveniles live, how they behave, and where they go throughout the year” (Spotila, Tomillo 211). These quantitative studies currently provide and will continue to provide valuable patterns, connections, and conclusions that can be used to find new solutions in helping the turtle population. To effectively address the concerns regarding turtles, it is critical to have updated, accurate information about the population itself. Researchers have done in-depth studies investigating sea turtle populations, including the utilization of modern technologies such as sonar point cloud processing. For example, the Institute of Electrical and Electronics Engineers published a study in April 2023 that took advantage of “pattern-analysis-based detection” and cloud computing to identify common movements of sea turtles (Kipnis, Dror, et al.). This study and similar ones continue to make a difference in how scientists understand conservation efforts.

This research study places an emphasis on the relationship between the sex, age, and growth rate of sea turtles, further discovering patterns over time to make a conclusion about the sea turtle population. The dataset has origins in St. Joseph Bay, Florida, and provides data from an “analysis of skeletal growth marks in humerus bones collected during necropsies of turtles” in January, 2010 (“Green_sea_turtle_age_growth.CSV.”). Understanding the relationship between sex, age, and growth rate is essential for assessing the overall health and sustainability of turtles. Through connecting data-points together, this study focuses on the general conclusions that can be drawn from the relationships between characteristics of the turtle population.

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