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**Baoling Ma\*** (baoling.ma@millersville.edu) and **Megan A McGee** (mamcgee@millersville.edu). *Study of the recovery of nesting bald eagle population in New Jersey by statistical and mathematical models.* Preliminary report.

By the 1970's New Jersey's eagle population diminished to just one known nest because of persistent pesticides, primarily DDT. Due to the ban of DDT and tremendous restoration efforts, New Jersey's eagle population has steadily increased to 185 active pairs by 2018. The Division of Fish and Wildlife's Endangered and Nongame Species Program (ENSP) have monitored nesting bald eagles since 1982. We used data collected over the monitoring period to quantify the recovery of the nesting population in New Jersey. Mathematical and Statistical models were built to analyze the growth of nesting population and productivity rate. The population's asymptotic growth rate was calculated and the carrying capacity was predicted. Our results indicate that bald eagle population in New Jersey grows on average by approximately 10.74% per year. However, human disturbance, habitat loss, and contaminants in the food web may negatively affect the continued stability and growth of the nesting population. (Received September 17, 2019)