Effects of Nutria (*Myocastor coypus*) on Land Change within Marshes across Coastal Louisiana, USA

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ABSTRACT

Over the past century, the coastline of Louisiana has experienced substantial land loss. This loss has been attributed to a variety of factors, such as subsidence, hurricane damage, and herbivory damage. One of the most notable sources of herbivory damage is grazing by *Myocastor coypus*, also known as nutria. The objective of this project was to determine the extent nutria-bases herbivory contributed to land loss in coastal Louisiana. This involved spatial analysis of preexisting datasets from a variety of sources in geographic information systems (GIS) software, as well as the application of statistical techniques used in further analysis of the resulting data. Results produced showed an increased rate of loss at 3.55 x 10^{-2} km^2/day for study areas containing nutria activity, while study area that did not contain nutria active only showed a rate of loss of 9.62 x 10^{-4} km^2/day. This demonstrates that nutria herbivory may contribute to an over 3500% increase in land loss.