

Title: Physical and Biological Responses of Forests to Tropical Cyclones Affecting the United States Atlantic Ocean and Gulf of Mexico Coasts

Author: Krista Merry, Pete Bettinger and Jeffrey Hepinstall

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Abstract: Problem Statement: Natural resources within the southern United States have repeatedly been subjected to the impact of tropical cyclones. While the frequency of tropical cyclones hitting either coast varies from year to year, it is crucial for natural resource managers and land owners to be prepared for the damage resulting from such storms. The goal of this review paper is to synthesize previous research and assess how hurricanes impact coastal forests. Approach: In order to understand the impact on forests in this region, an extensive literature review was performed. The literature review focused primarily on the southern United States' forests but included information from other areas that was pertinent in understanding the impact of strong wind events on forests. Results: Although the literature is not entirely consistent in arriving at factors that can be used to describe or predict potential damage to forests, a number of trends were obvious. Forest damage was found to be a function of tree species, proximity to the eye of the hurricane, stand and site characteristics, species-specific responses to storm surges, and topographic exposure. Each of these factors was found to be critical in developing and understanding potential hurricane damage to forest and wildlife values. Conclusions/Recommendations: Such a review paper was found to be a valuable tool for informing natural resource managers and forest land owners of the potential impacts of hurricanes on the forest of the southern United States. This information will help land managers develop a response plan related to hurricane damage.