



Hurricane Charley Canopy Damage Study

Under a grant from the Florida Division of Forestry, Wildlands Conservation has completed an assessment of the impact Hurricane Charley had to the tree canopy cover of forested areas of Charlotte County. This project was funded by a grant from the Urban and Community Forestry Grant Program the Charlotte County Government, Information Technology-GIS Department.

The Urban and Community Forestry Program grant funds are provided by the U.S. Department of Agriculture Forest Service and administered by the Florida Division of Forestry. The purpose of the program is to provide assistance to local governments, nonprofit organizations, educational institutions, and volunteer groups to develop or enhance local urban and community forestry programs, and improve the urban environment. The goal is not simply beautification through tree planting, but to develop and enhance forestry programs. In 2005, an Emergency Hurricane Supplemental was issued by the program, and it was under a grant from this supplemental to the program that our project was completed.

Hurricane Charley struck Charlotte County in August 2004, causing widespread destruction in Port Charlotte and the City of Punta Gorda. In our research study, we utilized photointerpretation of aerial photography, ground-truthing, and a geographic information system to assess and quantify canopy damage to forested areas throughout the County that resulted from the hurricane.

Our results revealed that an estimated 4,651 acres of forests were severely damaged (63% of which were mangrove forest) with 40-100% mortality, and 6,720 acres were moderately damaged (nearly 100% of which were mangrove forest). An additional 15,172 acres (89% of which were upland forest types) received some discernable canopy damage; most of these forests have since recovered. Mangrove forests along the eastern shoreline of Charlotte Harbor—subjected to the windward side of the hurricane—received the most widespread severe to moderate damage, extending inland by more than 1,000 meters from open water in some locations. Conversely, mangrove forests along the western shoreline had severe to moderate damage for only 150 meters inland, on average.

We hope that the results of our study will prove useful, and will be shared between interested organizations. We also hope that it may serve as impetus for long-term monitoring of the recovery and status of the impacted mangrove communities around Charlotte Harbor.