



Phone 863.465.2571  
123 MAIN DRIVE ★ VENUS, FLORIDA 33960

To: Romona Washington and Allen Moody at Highlands News-Sun

From: Archbold Biological Station

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### **Archbold weathers Hurricane Irma**

Archbold Biological Station Executive Director Hilary Swain was up early in the morning of the 11th September, after the major winds from Hurricane Irma had passed through. She surveyed the scene from the water tower. The main Station buildings, constructed like a steel and concrete fortress, looked intact. Most other Archbold buildings survived with no major structural damage, although the whole campus was a disheveled mess of trees and twisted branches. Most of the trees that fell were large, old laurel oaks planted years ago, and not typical of the native Florida scrub at Archbold. Laurel oaks often have rotten centers and are very vulnerable to storm events. Amazingly very few trees fell on buildings. Archbold Biological Station was lucky!

She noted, "I wasn't surprised to see the extent of tree damage on the campus. I was watching, with growing concern, the radar plots on my laptop on the evening of September 10th from 7:30 PM onwards. The eye wasn't heading NNW as the hurricane forecast tracks predicted, it was clearly heading due north towards Highlands County. It became increasingly obvious that Archbold was going to lie in the ominous northeast part of the outer eye wall." Together with 64 other staff, students, and evacuees from the Florida Keys, Miami, and their family members, she hunkered down in the massive reinforced concrete Archbold buildings during the height of the storm. The Archbold weather station kept running, recording sustained winds of around 50 MPH between 8:30 and 9:30 PM. Throughout that same time, from 8:30 to 9:45 there were multiple gusts close to 100 MPH. The highest gust was 97.4 MPH between 9:00 and 9:15 PM.

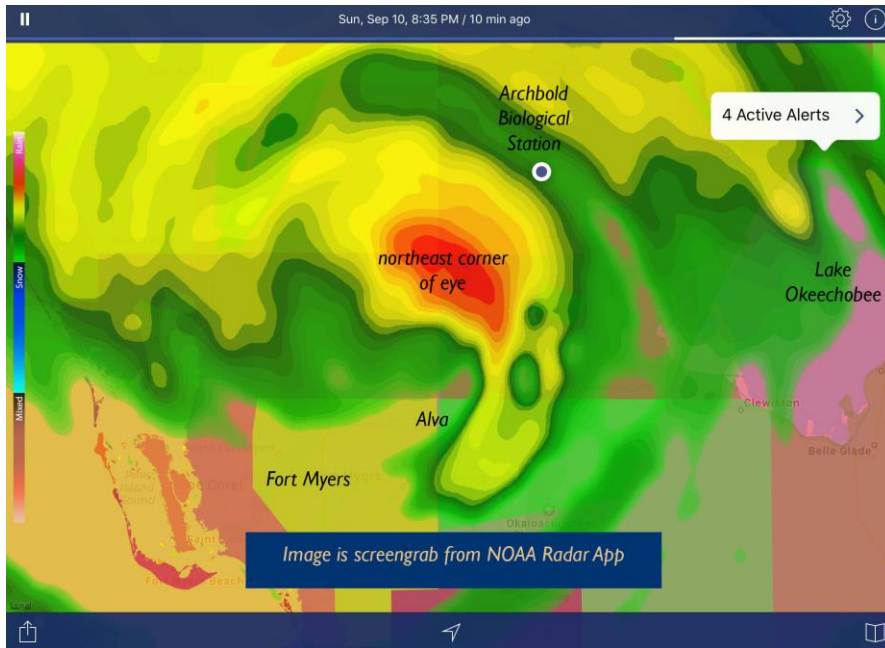
Archbold is grateful to have survived Hurricane Irma relatively unscathed. We extend our thoughts to all our neighbors and the community in Highlands County who went through this

storm, especially those who have suffered more severe damage. Even at Archbold Irma was a difficult and frightening experience.

In contrast to the tangled mess of trees below on the campus, Dr. Swain reported, "Looking out over the Florida scrub in the early morning hours, in the aftermath of Hurricane Irma, it was hard to see much damage. That low growth scrub vegetation seems well-designed for surviving hurricane force winds and rain. The pine trees that bent whipsaw-like in the wind gusts are largely standing, with only a few limbs missing." Dr. Betsie Rothermel, Director of the Restoration Ecology Program, reported, "Our small seasonal wetlands are holding 10" more water than they were before the hurricane. Water is flowing down sand roads that are acting as mini rivers." Dr. Amartya Saha, scientist at Buck Island Ranch, checked the sensor data from Lake Annie, at the north end of Archbold and reported, "The lake level in has risen 2 feet since last week, with rain and groundwater pouring into the lake." Dr Evelyn Gaiser from Florida International University in Miami, who sheltered from the hurricane at Archbold noted, "It's impressive how much the winds from the hurricane mixed the normal temperature profile of the lake from the warm surface waters well down towards the bottom of the lake at 67'." She plotted a graph showing that the warmer surface waters were almost completely mixed with the cooler waters deeper down after that 24 hour storm period. Dr. Swain added, "Events like hurricanes almost reset the clock for what happens to lakes in terms of temperature, color, nutrients and plankton communities and all other lake life in the coming months. It's like a giant experiment." The storm didn't bring so much rain to Archbold. Archbold intern Aliza Fassler braved the winds to record the data manually and wrote, "The morning of September 10th we had 2.89 inches in the previous 24 hours and the morning of September 11th we recorded 5.96 inches. So in total 8.85 inches over the course of the storm." The challenge is the groundwater was already high and many of our wetlands were already full, so there isn't anywhere for all this rain to go, even in the sandy soils of Archbold.

Dr. Swain stated, "One of the roles Archbold plays for this county is to be a guardian of knowledge, the data record keeper of what has happened in the past. We hold all the data from previous storms here in our archives going back to 1931. Donna, Frances, Jeanne, and Charlie are all plotted in our record sheets and preserved forever. Knowledge of the past helps us put natural and human experiences during storms into a historical context and perspective."

**Photo 1: The eye of Hurricane Irma, heading due north, lies southwest of Archbold Biological Station at 8:35pm on September 10<sup>th</sup>. Screenshot image from NOAA Radar App.**



**Photo 2: The early morning view over Archbold Biological Station after Hurricane Irma. The campus below had a lot of tree damage. The Florida scrub habitat beyond is wet but relatively unaffected by the winds. Photo by Hilary Swain.**



**Photo 3: After Irma the lake level rose rapidly to cover the dock at Lake Annie at Archbold Biological Station. Photo by Evelyn Gaiser.**

