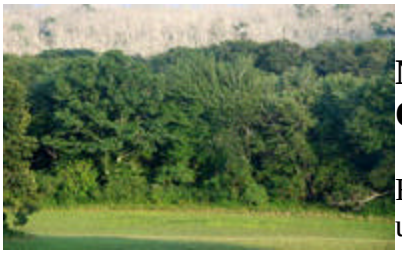

New NSF Funding to Study the Catastrophic Mortality of Oak Forests on Martha's Vineyard

Five thousand years ago, New England forests experienced a tumultuous upheaval. Across the region's interior occurred an abrupt and massive decline of hemlock, a dominant tree that was replaced by hardwood species. Simultaneously, on Cape Cod and the Islands, oak experienced heavy mortality and was replaced by beech. The driver of these coincident changes was climate change to warmer conditions and periods of severe drought. How did other species and people respond? How did the forests recover from these events? And how did the sudden replacement of one dominant tree species by another with very different characteristics affect forest ecosystem processes? Answers to these questions are elusive and yet would provide important information about basic ecological processes. They might also yield critical insights for us today in a world that is subjected to rapid changes due to climate change and outbreaks of introduced and native pests and pathogens.

It was with these questions in mind that Harvard Forest Researchers – David Foster, Dave Orwig, Aaron Ellison, Jonathan Thompson, Wyatt Oswald and Audrey Barker Plotkin – are applying a $100,000 grant from NSF to study the catastrophic death of oaks in forests on Martha's Vineyard. The funds come from a special RAPID fund at NSF. Following three years of defoliation across the island, primarily by the native Fall Cankerworm, and a severe drought in the third year, many tens of thousands of oaks died abruptly. The researchers began their studies this summer, hosted by the Polly Hill Arboretum, and will investigate the pattern and cause of the mortality the nature of the dead forest, and the short and long-term changes to forest ecosystems.

Read recent Boston Globe and Martha's Vineyard Gazette coverage of this research and study.