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UGA researcher awarded National Science Foundation Rapid-Response Grant to assess effects of oil leak, dispersant on coastal plant populations

Athens, Ga. – University of Georgia geneticist Mike Arnold has received a National Science Foundation Rapid Response Grant to assess the affects of crude oil and dispersant on native plant populations in the Gulf Coast region. The $175,000 grant will allow Arnold and two postdoctoral researchers to gather baseline information about the spill's immediate effects on coastal iris populations in and around bayous and marshes, including the effects of the dispersant applied to breakup the oil.

"We already know that many of these iris species can withstand extreme stresses, including drought, hurricanes and high-saline waters," said Arnold, a professor in UGA's Franklin College of Arts and Sciences. "How well they can withstand incursions of crude oil is another question. The irises we'll be surveying are different because of so much hybridization."

Arnold has been studying hybridization, crossbreeding in plants and animals, for more than three decades. He began researching the genetic variability of coastal irises some 20 years ago as a postdoctoral research associate at Louisiana State University.

While at LSU, Arnold established multiple research sites along the Gulf Coast from Florida to Louisiana, which he maintained after coming to UGA in 1989. In July, he began surveying at the various sites, which range from inland, fresh water habitats to brackish creeks and saltwater tidal marshes.

Arnold has already identified DNA markers in the hybrid coastal irises that provide clues about where and how the plants evolved and hybridized. For example, some species show resistance to high-saline waters while others thrive only in fresh water. Other species grow well in sun while others survive only in shade, and so on.

"We'll look at the genomic characteristics of the irises that survive," said Arnold~~,~~. "There are certain hybrids that might withstand this onslaught of oil. Those have the genetic diversity that's key to possible future reintroduction."

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