

FAU Harbor Branch Scientists Use Genetic Testing to Uncover New Information on IRL Dolphins

FORT PIERCE, Fla. (April, ? 2014) – Scientists at FAU’s Harbor Branch Oceanographic Institute believe genetic testing may be the key to solving many mysteries surrounding dolphins in the Indian River Lagoon (IRL) and beyond. Their research, involving the genetic testing of over 600 dolphins sampled both within the lagoon and along the adjacent Atlantic coastline, sheds new light on the population structure and dispersal patterns of the dolphins that inhabit the IRL.

The study, conducted by FAU Harbor Branch research biologist Sarah Rodgers under the guidance of principal investigator Gregory O’Corry-Crowe, Ph.D., examined two different types of genetic markers, or parts of the genome, in dolphins – one from the mother and the other from both parents. Scientists found distinct genetic differences between dolphins in the IRL and those in the Atlantic Ocean.

Researchers also uncovered discrepancies in the theory that the IRL dolphin population is a “closed population,” meaning all IRL dolphins stay in the lagoon and do not interact with Atlantic dolphins. Several of the dolphins sampled in the IRL had full Atlantic genetic profiles, despite, in some cases, being sighted and tracked within the lagoon for over a decade and sampled during lagoon health assessments. Further, scientists discovered several dolphins with a genetic background likely indicating one IRL parent and one Atlantic parent. The DNA also revealed dramatic differences between dolphins in Mosquito Lagoon and the IRL proper. Moreover, it appears that movements of dolphins between Mosquito and the Atlantic Ocean may be highly dynamic verses that of movement between the IRL proper, suggesting the Mosquito Lagoon estuary functions differently than the rest of the IRL.

The findings from this study, coupled with other genetic and genomic dolphin research being conducted by O’Corry-Crowe’s group, could help to provide new answers for health and management issues surrounding the recent mass die-off of dolphins spanning the entire Atlantic eastern seaboard. Rodger’s current genetic research is focused on investigating the Mosquito Lagoon phenomenon.

For more information, contact Carin Smith carinsmith@fau.edu (772) 242-2230.

About Harbor Branch Oceanographic Institute:

Founded in 1971, Harbor Branch Oceanographic Institute at Florida Atlantic University is a research community of marine scientists, engineers, educators and other professionals focused on Ocean Science for a Better World. The institute drives innovation in ocean engineering, at-sea operations, drug discovery and biotechnology from the oceans, coastal ecology and conservation, marine mammal research and conservation, aquaculture, ocean observing systems and marine education. For more information, visit www.hboi.fau.edu.

About Florida Atlantic University:

Florida Atlantic University, established in 1961, officially opened its doors in 1964 as the fifth public university in Florida. Today, the University, with an annual economic impact of \$6.3 billion, serves more than 30,000 undergraduate and graduate students at sites throughout its six-county service region in southeast Florida. FAU's world-class teaching and research faculty serves students through 10 colleges: the Dorothy F. Schmidt College of Arts and Letters, the College of Business, the College for Design and Social Inquiry, the College of Education, the College of Engineering and Computer Science, the Graduate College, the Harriet L. Wilkes Honors College, the Charles E. Schmidt College of Medicine, the Christine E. Lynn College of Nursing and the Charles E. Schmidt College of Science. FAU is ranked as a High Research Activity institution by the Carnegie Foundation for the Advancement of Teaching. The University is placing special focus on the rapid development of three signature themes – marine and coastal issues, biotechnology and contemporary societal challenges – which provide opportunities for faculty and students to build upon FAU's existing strengths in research and scholarship. For more information, visit www.fau.edu.