

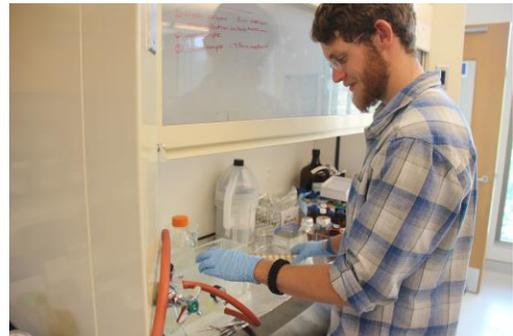
Chemical Contaminants Found in Alligators and Crocodiles

Elevated levels of perflourinated compounds found at NASA site in Cape Canaveral, Florida and outside of Kruger Nt. Park, South Africa

Ian Christie, a visiting student from Lewis and Clark, participated in a summer research program funded by the National Science Foundation at the College of Charleston. His work was part of a National Institute of Standards and Technology (NIST) project at the Hollings Marine Lab (HML) to better understand the relationship between environmental contamination and physiological health of sentinel species such as alligators and crocodiles.

The project focused on understanding the effects of perflourinated compounds (PFCs) on under-researched species including these reptiles. Elevated levels, high enough to pose serious health risks, were found in alligators at NASAs headquarters at Cape Canaveral, as well as in crocodiles at Flag Boshielo a location outside of Kruger National Park in South Africa. Average levels were to found to be as high, or higher, than previously reported analysis of PFCs in reptiles.

PFCs are a class of industrially produced chemicals. Chemically and thermally stable, these compounds are valued as useful ingredients in stain repellents such as Scotchguard, non-stick products such as Teflon, and in fire fighting foams. For these very same reasons PFCs have been shown to be chemically persistent in the environment and to resist the natural processes of degradation. Growing concern revolves around PFCs as evidence indicates that PFCs transfer across generations, as well as accumulating up the food chain and across an organism's lifespan. The persistence, accumulative potential, and toxic nature of these chemicals have contributed to a push for a greater understanding of PFCs ecological and physiological effects.



Christie in the laboratory

The project used mass spectrometry to determine PFC concentrations in alligator and crocodile plasma. NIST researcher John Bowden said, " Our research on crocodilians has focused on assessing the overall health of the populations and impacts to development and/or reproduction. We hope to characterize for the first time the total PFC burden within animals at test sites".

Ian Christie
Lewis & Clark College
978-660-2888
ichristie@lclark.edu

John Bowden
NIST
941-716-4431
john.bowden@noaa.gov

Jessica Reiner
NIST
jessica.reiner@noaa.gov