



Turtles have herpes too?

PROJECT NAME: Testing ways to collect DNA from turtles and investigating green sea turtle disease on the Great Barrier Reef. Reef HQ Aquarium provides tissue samples of turtles to test the collection method of DNA and investigate turtle disease.

PROJECT DATES: April 2013 – April 2018.

PROJECT LEADER: Karina Jones, James Cook University, Townsville, Australia.

PROJECT FOCUS: This project focuses on Fibropapillomatosis, a condition which leads to the abnormal growth of tissue (tumours) on the skin, mouth, eyes and internal organs of sea turtle. It is caused by a herpes virus and in severe cases can result in death, but scientists still don't know how or why sea turtles get this disease. The aim is to identify any variations of the virus on the Great Barrier Reef and to resolve whether there is a correlation between prevalence of the virus and regions of poor environmental quality. It also aims to resolve whether leeches could be helping to transmit the disease.

In order to investigate the disease in the wild population, researchers are collecting turtle DNA samples. This is ideally done by tissue or blood sampling, but these methods are rather intrusive and require specialised skills. Instead, researchers are trying to establish whether a simple swab in the mouth or cloaca (posterior opening that serves as the intestinal, reproductive and urinary tract opening for reptiles) of the turtle could be sufficient for DNA investigations. To this end, they collect blood samples and swab simultaneously from turtle in Reef HQ Aquarium's turtle hospital, and compare if the DNA information match between blood and swab. If they do, the test will validate the method for collection of DNA extracts in the wild.



A severe case of *fibropapillomatosis* in "Roxy" a green sea turtle. © Dr Ellen Ariel – James Cook University.

PROJECT OUTCOMES: Researchers and Reef HQ Aquarium staff also collaborate in the field when handling sea turtles is required, sharing their respective experience on how to catch, measure and collect samples from the turtles.

