

Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 2017-04
Project Title:	Filling the knowledge gap – Current status of endangered freshwater turtles
Principal Investigator:	Dr SUNG Yik Hei (from 1/3/2018 to 30/6/2018) and Professor Chris WONG Kong Chu (with effect from 1/7/2018), Department of Biology, Hong Kong Baptist University
Total Approved Grant:	\$497,720
Duration:	1/3/2018 to 29/2/2020
Project Status/Remarks:	Completed
Project Scope:	<p>Turtles are one of the most imperilled groups of organisms. The turtle populations in Hong Kong are of global importance owing to the rampant trapping pressure elsewhere. Basic information, such as distribution and population status, is lacking for lowland freshwater turtles in Hong Kong, which makes conservation difficult, if not impossible. The project team will conduct territory-wide surveys to determine the distribution and population status of freshwater turtles, which will allow identification of key conservation sites (i.e. where robust populations of native species remain). Moreover, the non-native red-eared slider is common in lowland aquatic habitats via deliberate release, which may pose negative impacts to the local ecosystem, including competing with native endangered freshwater turtles. With the use of stable isotope analysis, the project team will determine the impacts of red-eared sliders on the local ecosystem, and the ecological roles played by native turtles.</p>
Summary of the Findings/Outcomes:	<p>In this project, the project team investigated the distribution and population status of native and exotic turtles in lowland habitats, including reservoirs, marshes, fishponds and streams, throughout Hong Kong. All native turtle species were rare and only two of the five species, <i>Mauremys reevesii</i> and <i>Platysternon megacephalum</i>, were detected. This finding highlights the critical status of all native species of freshwater turtles in Hong Kong. Conversely, the exotic red-eared sliders (<i>Trachemys scripta elegans</i>) are widespread, particularly in reservoirs, with robust populations persisting in some reservoirs. Additionally, the team aimed to determine the impacts of red-eared sliders on the native ecosystem. To achieve this, the team applied two complimentary methods, fecal analysis and stable isotope analysis, to examine the diet of native Reeve's terrapins (<i>Mauremys reevesii</i>) and exotic red-eared sliders. Both species consumed a wide range of animals, with high contributions from fish. From the results of stable isotope analysis, the dietary niches of the two species overlapped considerably which reveals potential competition between the two species. The results of this project provide useful information to aid conservation of the native species of freshwater turtles and management of red-eared sliders in Hong Kong.</p>