The 'Big Fish Network': Using new technology to incentivise citizen science engagement in the Maldives

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Background

The use of citizen scientist contributions is a cost-effective approach that can provide valuable information, usually at scales larger than those attainable by individual researchers. The challenge, however, is to motivate contributors to continuously supply data when doing so can be time consuming and monotonous and where the results of the contributions they make are part of long term studies with infrequent outputs. When studying a highly mobile animal in a geographically disparate location such as the Maldives, a widely spread network of contributors submitting encounter information on whale shark (*Rhincodon typus*) sightings is vital to providing information on spatial movements and residency patterns.

Approach

The Maldives Whale Shark Research Programme created a prototype of a mobile device friendly version of the identification software I3S and linked it to an established, custom made interactive online portal called the Big Fish Network, designed to provide a platform for data exchange. Tour operators were invited to submit standardised data logs from their excursions. In return, operators were openly provided access to a photo-identification database of whale shark individuals and 8 years of corresponding encounter data. Outputs from the portal for the operators include an interactive map, a customised trip report, social-media bulletins and a mobile app. These features were designed to aid tour guides in planning and marketing their excursions and informing and engaging tourists, during and after the excursion.

Results

Since the launch of the Big Fish Network in July 2013, 834 stakeholder data submissions were received from external contributors; equivalent to 59.8% of the total encounters recorded in the same period, as compared to 23.4% between April 2006 and July 2013. In addition, utilising this network produced evidence for 5 instances of inter-atoll movements using sightings submitted from locations that are outside the main survey areas.

Conclusions

We believe that this example of using appealing technology and open data as tools to produce carefully tailored incentives may strengthen stakeholder commitment to citizen science initiatives and increase the catchment of data from a wider range of stakeholders. Employing similar models at a regional level in whale shark hotspots around the world may improve data flow to global databases for this species.

Keywords: Maldives, citizen science, engagement, technology