

A brighter future for turtles in the Turks and Caicos Islands

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After years of working closely with Government and local communities, I was delighted when brand new fisheries legislation, designed by MCS and our partners, came into force in the UK Overseas Territory of the Turks and Caicos Islands (TCI) on July 1st 2014. The centuries-old, traditional turtle fishery in the TCI is now bound by new regulations that came about through our cutting-edge biological and social research. These new laws will create a durable fishery and ensure a future for TCI's turtle populations, so they can be enjoyed by the islands' communities and visitors, now and in the future.

Why turtles in the TCI?

I first visited the TCI in 2002, after MCS had joined forces with the University of Exeter and North Carolina's Duke University in a UK Government-funded study to better understand the status and use of marine turtles in the Caribbean UK Overseas Territories (UKOTs). Bermuda had banned turtle fishing in 1973, while Anguilla had introduced a series of temporary moratoria on their fishery in 1995 (the latest expires in 2020). By contrast, the British Virgin Islands, the Cayman Islands, Montserrat and the TCI still allow turtle fishing today.

TCI fishermen initially viewed us with great scepticism and suspicion. They associated our interest in the TCI turtle fishery with the regional protectionist conservation movement coming from the USA, which had resulted in many Caribbean states criminalizing turtle fisheries. Eventually, through the course of several field trips to TCI, our team built a good rapport with some of the turtle fishers, particularly Gilbert Jennings and Dave Clare from South Caicos.

Our early work in TCI showed that while there were abundant juvenile green and hawksbill turtles foraging in the TCI's waters, the nesting populations were heavily depleted and restricted to remote cays, having been wiped out on the inhabited islands. Furthermore, the ongoing turtle fishery was probably hindering any chance of recovery. By 2004 our project team had completed the assessments in all the Territories and made country-

specific recommendations for further research and conservation action. Three years later the TCI Government's Department of Environment and Coastal Resources (DECR) invited us back to follow up on the recommendations. We were asked to help them improve the management of the turtle fishery, and help protect the dwindling green and hawksbill turtle populations still breeding on remote cays and beaches.

TCI Turtle Project

By 2008 we had secured a research grant and in November that year we launched the TCI Turtle Project, and sent newly-recruited TCI Turtle Project Officer, Amdeep Sanghera, to start work with the DECR.

Amdeep, a social scientist by training, was tasked with getting to know the islands' fishing communities and developing a thorough understanding of the social, economic and cultural value of the fishery. Amdeep also met with deep cynicism from TCI fishermen. Some wondered why he was so interested in the turtle fishery when the lobster and conch fisheries were more economically important and suffering apparent declines. Some even suspected he was a spy for the UK Government!

But Amdeep's natural charm and disarming curiosity soon settled him in amongst the fishers, and with the help of DECR Officer Tommy Phillips, as well as Gilbert and Dave, within a couple of months Amdeep considered the South Caicos fishing community as a home from home. Amdeep and Tommy monitored and sampled the turtles landed at the dockside (Fig.1) and visiting University of Exeter PhD student Tom Stringell regularly joined the team to catch, sample, measure, flipper-tag and release turtles in order to assess stocks on the reefs and sea grass beds. Tom, Tommy and Amdeep also visited remote cays with fishers so they could document any turtle nesting activity.

By now we had raised funds to start the TCI's first satellite tracking project, and to date we have tagged and tracked 19 green and hawksbill turtles, including males, nesting females and sub-adult turtles. A couple of the tags attached to green turtles (including a young female named Dave!) were funded by generous donations from the British Chelonia Group.

Tommy and Amdeep promoted the online tracking, and posted the turtles' tracking maps at shops and bars around South Caicos, where people followed their epic migrations with amazement. Some fishers told Amdeep that the turtle tracking had allowed them to understand that their turtles were, in fact, a regional resource and made them realise they had a shared responsibility to manage their turtle populations wisely.

What did we find out?

Tom's analysis of the turtles landed at the docks showed that young animals made up most of the catch. His genetic analysis indicated that most of these



Fig. 1. Amdeep samples a hawksbill landed by fishermen in Providenciales. Photo by Amdeep Sanghera/MCS.

turtles originated from large, protected nesting populations elsewhere in the Caribbean, most of which were either stable or recovering. We therefore believe that the regional turtle populations can sustain the 500 or so green and hawksbill turtles that the fishery was catching each year.

While very few adult green turtles were ending up on the dockside – they are very large, heavy and fast, and take a lot of fuel to chase down, plus their meat is considered ‘tough’ – a number of sub-adult and adult hawksbills were being caught. Eleven per cent of the hawksbill catch were adults – they are smaller, slower and much easier to catch, even though their meat was not most people’s favourite.

Our tracking of adult turtles landed by fishers, bought by the project, then satellite tagged and released, showed that some of these captured adult hawksbills were breeding in TCI, and then residing in TCI waters. Clearly the fishery was impacting on regional hawksbill nesting populations, as well as the dwindling local breeding populations.

We found that most hawksbills were caught during the lobster open season, when fishers were free-diving on the hawksbills’ preferred reef habitat. These turtles were rarely sold, and mostly caught and consumed by Haitian immigrant families. During Amdeep’s interviews with the Haitian

fishers, they generally attached little importance to this use, and did not foresee major problems if the hawksbill fishery was restricted.

Our nesting surveys suggested that as few as 150 hawksbill nests are laid around TCI each year, and even fewer green turtle nests. Tiny populations compared to the tens of thousands of green turtle nests in places such as Costa Rica and Florida, and thousands of hawksbill nests in Mexico, Puerto Rico and Barbados. But Tom's genetic analysis of the turtle nests revealed that some of them had genetic 'fingerprints' found nowhere else in the Caribbean – meaning they are unique, contribute to the genetic diversity and resilience of the regional turtle populations, and so are definitely worth saving.

Seeking the Voice of the Community – on film

Collection of biological data was not enough to bring about change. We started the project with the intention of ensuring that the turtle fishers were involved in the development of future fishery management. In order to achieve this we needed to know what they felt, and so the TCI Turtle Project needed to take a multi-disciplinary approach. In 2010, Dr Gabe Cumming of Duke University introduced the Community Voice Method (CVM) to the TCI project. Gabe had developed CVM in North Carolina as a novel method that uses film to reach into communities and engage stakeholders in developing solutions to environmental conflicts. Filmed interviews were used to collect opinion from South Caicos community members, which were then analysed and edited resulting in a 30-minute documentary about community views on fishing and turtle fishery management (see <https://vimeo.com/80982426>).

The film was screened around the islands, where potential turtle fishery management measures were loudly and robustly discussed! This new approach was widely enjoyed, with hundreds of fishers keenly watching friends and family on TV giving their opinion on all things turtle. Importantly, the CVM project offered many fishers their first opportunity to contribute to the design of fishery management and law.

The workshop discussions, knowledge we had gained from the socio-economic and cultural assessment of the fishery, the dockside monitoring, and Tom's turtle stock assessment through flipper tagging, genetic analysis (Fig. 2) and nesting beach monitoring were then considered as a whole. From all that information we drafted a set of regulations that promised to radically change the way the turtle fishery would be managed.

In 2011, Amdeep returned to the TCI and asked 75 turtle fishermen for their response to the draft regulations and it became clear that our ongoing, inclusive approach was really appreciated (Fig. 3). One fisherman, who had been particularly hostile to Amdeep when he first arrived in TCI, told him: 'Thanks. Respect. You did a nice thing. You care. People trust you now.'



Fig. 2. Amdeep and turtle fisher release a hawksbill caught, measured, sampled and flipper-tagged as part of the TCI Turtle Project research at turtle feeding habitat. Photo by Peter Richardson/MCS.



Fig. 3. Amdeep consults a Grand Turk turtle fishermen about the draft recommended fishery regulations. Photo by Amdeep Sanghera/MCS.

The new regulations

In early 2013 our amended recommendations were presented to the newly elected Minister of Environment, and by February 2014 the proposals had been considered and approved. The following new regulations finally came into force in July 2014.

- ❑ Existing protection of females nesting on the beaches and their eggs continues.
- ❑ New maximum size limit for captured green and hawksbill turtles of 24 inches shell length (TCI still uses imperial measurements) now protects sub-adult (teenage) and adult turtles at sea too.
- ❑ Minimum size limit prohibits the landing of green and hawksbill turtles smaller than 18 inches shell length, and it is now prohibited to catch and land any other marine turtle species likely to be found in TCI waters.
- ❑ New closed season for hawksbill fishing, which coincides exactly with the lobster open season from August to March, and also covers the peak breeding season of this species in TCI.
- ❑ Fishers are obliged to land turtles alive and unharmed, so they can be inspected by DECR officers, and confiscated and released if they have been landed in violation of the new laws.
- ❑ Export of turtle products from TCI prohibited to bring the country in line with the requirements of the Convention on International Trade in Endangered Species (CITES).
- ❑ Turtles are not allowed to be kept in captivity unless for rehabilitation and release.

Why no ban?

The TCI turtle fishery is nowhere near as economically important to TCI fishers as the more lucrative lobster and queen conch fisheries – its real value lies in its social and cultural importance. Many islanders use turtle meat, usually on special occasions when cooking and eating it is associated with happy gatherings of friends and family. There was no appetite for a ban amongst these communities, or indeed, the enforcement officers who are responsible for managing TCI's fisheries.

What next?

In some ways, changing the legislation was the easy bit. The challenge is to make sure there is compliance with new regulations, and enforcement where necessary. With our inclusive approach we have already initiated buy-in amongst some fishers, with some boat captains involved in the project already ordering their crews to return large turtles, even before the new regulations came into force (Fig. 4).



Fig. 4. A TCI fisherman (right) orders his crew to release an adult hawksbill that they had just brought back from a fishing trip, prior to the new regulations coming into force. Photo by Amdeep Sanghera/MCS.

But there is still much to do. We hope to secure funds to get Amdeep back to the TCI to work with fishing communities to ensure that the new regulations are widely promoted and understood in these first years. We also want to continue our research, particularly the satellite tagging. Working with Gilbert and Dave, and our local partners at the Amanyara Resort and Big Blue Unlimited, we have attached satellite tags to 13 sub-adult green turtles – a poorly studied age-group that is only accessible if you know how to catch them on their feeding grounds. This research is revealing new insights into teenage green turtle behaviour, including rarely recorded ‘developmental migrations’ whereby sub-adult turtles move from their juvenile stage feeding grounds to what may be their adult feeding grounds, sometimes hundreds of miles away.

Working with the TCI fishermen has resulted in the development of other ideas for projects to help them manage their precious wealth of other marine resources. We hope to continue to work with these communities and the TCI Government to ensure the marine environment there not only maintains its stunning beauty, but is also productive for local fishers.

This work still needs support

Our success in TCI was due to excellent staff working within innovative partnerships, as well as support from NERC, the Peoples Trust for Endangered Species, the British Chelonia Group, the National Marine Aquarium, Big Blue Unlimited, the Amanyara Resort and guests, and the generosity of Anne and Simon Notley who originally funded the core project work. If you know anyone who may be interested in helping us build on this success by supporting the work of the Turks and Caicos Island Turtle Project, and creating a better future for TCI's turtles and the people that enjoy them, please do let me know at peter.richardson@mcsuk.org.

The scientific papers arising from this work are by Godley *et al.* 2004, Richardson *et al.* 2006, Richardson *et al.* 2009 and Stringell *et al.* 2014 & 2015 and can be found at <http://www.seaturtle.org/mtrg/pubs/>