

Guest Editorial

The impact of the COVID-19 pandemic on the conservation of sea turtles in Trinidad and Tobago

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A history of sea turtle conservation in T&T

Five species of sea turtles can be found in Trinidad and Tobago; all are listed as globally Threatened (Vulnerable, Endangered or Critically Endangered) by the IUCN and all have been designated as Environmentally Sensitive Species (ESS) under national legislation¹. However it is important to remember that we have a history and culture of harvesting turtles for meat, eggs and shell, with a seasonal legal fishery that persisted until 2011, alongside annual illegal take during the closed season on land and at sea. Despite the closure of the fishery in 2011 and the subsequent strengthened legal protection of these species as ESS since 2014 (which carries a maximum penalty of TT\$100,000 and two years' imprisonment for taking, possession or trade of sea turtles and other activities likely to cause harm), poaching persists annually on nesting beaches and at sea.

Sea turtle conservation efforts began locally in 1965, with the initiation of the first formal sea turtle nesting monitoring programme by Peter Bacon of The University of the West Indies, with the participation of the Trinidad and Tobago Field Naturalists' Club. Many other individuals, NGOs and staff of the Forestry Division have been involved over the years. Bacon (1973) estimated that 30% of turtles nesting at Matura Beach and 100% of turtles nesting near villages on the north coast of Trinidad were killed in 1970. In 1989, the Wildlife Section of the Forestry Division developed a co-management partnership with rural communities, resulting in several Community Based Organisations (CBOs) emerging over the years to share the responsibility for sea turtle conservation and provide what some might deem an "essential service" – patrolling the nesting beaches to ensure the safety of nesting females, eggs and hatchlings, and collecting valuable data to enable monitoring of the turtle nesting populations. With the declaration of Matura and Fishing Pond beaches as Prohibited Areas and the initiation of comprehensive community-based patrol programmes, the poaching of leatherbacks at Matura was reduced to zero by 1993 (Forestry Division *et al.* 2010).

In Tobago, beach patrols in 1982 revealed high levels of poaching and the leatherback population declined

precipitously (Forestry Division *et al.* 2010). Regular beach patrols starting in 2000 significantly reduced poaching at Grand Courland Bay, with poaching becoming largely restricted to more remote beaches (Forestry Division *et al.* 2010).

In addition to the major reduction in poaching at nesting beaches that can be directly attributed to the consistent patrol efforts of the various CBOs, the community involvement has allowed for daily collection of data that would have been impossible otherwise (Forestry Division *et al.* 2010).

Trinidad has been considered a pioneer in the development of successful co-management arrangements, and the first such initiative at Matura has been recognized internationally and served as a model for similar initiatives elsewhere (Brautigam and Eckert 2006). As the community-based programmes have developed, new capacity has been built for entrepreneurial activity and the communities have been empowered (Brautigam and Eckert 2006, Forestry Division *et al.* 2010). Many of these groups started with a core team of dedicated volunteers patrolling the beaches without pay, but over the years they have been compensated for their efforts through a combination of government stipends, donations from the private sector, and income generated by tours and other programmes such as reforestation. In Matura and Grande Riviere in particular, turtle tours have become a thriving business, with each beach attracting some 10,000 -15,000 visitors annually, who not only participate in tours, but also support other community-operated businesses. This generates TT\$200,000 - TT\$300,000 annually, for each community.

Since 2011, sea turtle monitoring and conservation within Trinidad and Tobago has been primarily undertaken by some 28 CBOs under the umbrella of the Turtle Village Trust (TVT) and through the financial support of the Green Fund, Atlantic and BHP Billiton and in partnership with the relevant government agencies.

Poaching – a persistent threat

Prior to the closure of the seasonal fishery in 2011, it was well known that sea turtles were routinely harvested illegally on nesting beaches and at sea during the closed season (Forestry Division *et al.* 2010), with meat readily available at community celebrations such as "Harvest"

¹ Legal Notices No. 88, 89, 90, 91 and 92 of 2014 under the ESS Rules, 2001 of the Environmental Management Act, Chapter 35:05, 2000.

or “Fishermen’s Fete” often during the closed season, particularly in Tobago (Eckert and Herron 1998, Forestry Division *et al.* 2010).

The species typically targeted on land is now the hawksbill turtle (Fig. 1). This species is far less abundant than the leatherbacks on our beaches, but it can be regularly observed and is more widely distributed along the coasts of Trinidad and Tobago. Hawksbill meat is preferred over that of leatherbacks and their smaller size means that butchering the animal is an easier process. Nesting hawksbills (typically weighing between 100-175 lbs) can even be quickly moved off the beach by a group of poachers for slaughter and butchering elsewhere, as I have observed myself in Tobago, leaving little evidence behind. Walker *et al.* (2015) compiled available hawksbill nesting data over a period of eight years (2005 –2012) across 55 beaches in Tobago, and documented 112 nesting hawksbill poaching events at 15 nesting beaches. This is likely a significant underestimate, given the low survey effort at many of these beaches over this time period.

Despite the strengthened legal protection of these species as ESSs since 2014 and the efforts of the CBOs, poaching of sea turtles continues annually both at sea and on nesting beaches, as can be confirmed by the CBOs, the government authorities, and many concerned citizens. Turtle remains



Fig. 1. A hawksbill turtle cruises over a reef at Speyside, Tobago. Photo Ryan P. Mannette. May 2014.

are often found especially at remote beaches, nets are placed close to shore to target sea turtles foraging along the coast, and turtles can be observed being landed by fishing boats or being removed from nesting beaches. While turtle meat may no longer be offered as openly as in the past, environmentalists Aljoscha Wothke of Environmental Research Institute Charlotteville (ERIC) and Pat Turpin of Man of War Cottages and the new Tobago Alliance for Resilient Communities, have both reported that poaching in Tobago is still an annual occurrence with a minority of people who engage and support it. Mark Gibson of the Nurture Nature Campaign also suggests that turtle meat is still relatively easy to source, and the cooked meat is openly offered at “harvest” in Tobago.

The COVID-19 pandemic

The World Health Organization announced that the COVID-19 outbreak was characterized as a global pandemic on 11 March 2020. The pandemic has led to an unprecedented significant reduction in human movement. With many countries closing borders international travel was significantly reduced, and most countries experienced various government restrictions at a national level. Logically then, associated anthropogenic threats such as emissions of pollutants including greenhouse gases declined. Various positive spin-offs for the environment have been experienced as a result, as documented by Bates *et al.* (2021), including reduced pollution, and wildlife “rebounding” in various places in response to reduced human activity. While these positive impacts have received widespread media coverage, less publicized have been the detrimental effects of the pandemic such as disruption of conservation management and research efforts, challenges to enforcement of wildlife laws, reduced conservation budgets, and economic insecurity leading to increased unregulated and illegal hunting and fishing (Bates *et al.* 2021).

The pandemic saw the implementation of regulations which restricted the activities of the various sea turtle conservation groups in Trinidad and Tobago and elsewhere around the region. The first confirmed case of COVID-19 in Trinidad and Tobago was reported on 12 March 2020, and the government took swift action via the implementation of new Public Health Regulations under the Public Health Ordinance Ch. 12 No. 4. Schools were quickly closed. Borders were closed effective midnight 22 March 2020. “Non-essential workers” were required to stay at home beginning 30 March 2020. Since then, restrictions have changed frequently and have included the closure of beaches from 6pm to 6am; complete closure of beaches; closure of restaurants, cinemas, gyms, places of worship; group size restrictions for public gatherings; and the implementation of a curfew under a State of Emergency for a six-month period between 16 May

and 16 November 2021. Borders remained closed to non-nationals until 17 July 2021.

The leatherback nesting season runs from March to August annually, and this is the period that most CBOs conduct their nightly patrols. Some CBOs extend their efforts later into September to record hawksbill nesting and/or to conduct day patrols for the protection of hatchlings emerging from their nests. In 2020, beaches were closed completely for the period 31 March through 20 June (80 days), and 16 August to 29 August (14 days), while beaches were opened for the period 21 June through 15 August (56 days). From 30 August through 24 October, a subtle change was made to the regulations which specified that “it is an offence for any person to be found at or in any beach, bay, river, stream, pond, spring or similar body of water, including the waters around any island off the coast of Trinidad or Tobago, or any public pool *for recreational purposes*”. As the primary nesting season is from 1 March through 31 August, the beaches were closed for 51% of the nesting season (94 days of 184 days). Frequent changes were made to the regulations over this time period, and little notice was given, so there was little time to anticipate and plan for patrols when beaches opened, and no way to anticipate how long the beaches would remain open. Approvals to conduct patrols on the nesting beaches despite the beach closures were made available to some groups, but reportedly late in the season. Coupled with this, the CBOs found themselves with little to no funds to support their patrols and monitoring efforts; the Green Fund grant that TVT had acquired and used to pay stipends for patrols and data collection over several years had expired. Tours were also not possible for most of the season, between beach closures and restrictions in group size, which meant a significant loss of income for Nature Seekers and Grande Riviere Nature Tour Guides Association (GRNTGA). While some groups indicated that they did not conduct any patrols or data collection after the closure of beaches on 31 March, some groups indicated they were able to get unofficial permission from officers at their local Police Station to be on the beach and largely operated with limited numbers voluntarily or with much reduced stipends.

On 7 February 2021, access to beaches was limited to between the hours of 6am to 6pm under the Public Health [2019 Novel Coronavirus (2019-n CoV)] (No. 4) Regulations, 2021. With the nesting season approaching and no exemptions forthcoming for the CBOs to conduct their patrols of sea turtle nesting beaches, there was an outcry from the various CBOs and other environmental stakeholders as well as the general public. Appeals were made directly to the Minister of Health by Nature Seekers, Fishermen and Friends of the Sea, Council of Presidents of the Environment and the Environmental Management Authority at least. An online petition garnered 9,296 signatures. The appeal was

successful in getting the attention of the Minister of Health and on 18 March 2021 it was announced that the CBOs would receive an exemption. Patrols, data collection and tours with restricted group size were possible as a result, but it took some time to roll out and little flexibility was given as exemptions were provided to each group for specific beaches. Save Our Sea turtles (SOS) Tobago for example regularly patrols three beaches in Grand Courland Bay, but would have also been able to do checks at other beaches had the exemption given them more freedom of movement. Limited funding for personnel was made available to most groups via Forestry Division and sponsorship from Atlantic, so groups operated at reduced capacity and/or personnel received a reduced stipend.

On 14 April, beaches were once again closed for the purposes of recreation so tours were no longer possible, and this regulation remained in effect until 19 December 2021. On 16 May 2021 a State of Emergency was declared (The Emergency Powers Regulations, 2021), and an overnight curfew was in effect, which remained in place throughout the rest of the nesting season, though the hours varied a little. The CBOs then required curfew passes for their personnel to legally conduct their nightly patrols. This caused an interruption for some of the groups while waiting to receive curfew passes from the Commissioner of Police. Curfew passes were provided in the name of specific individuals, and each group received passes for a limited number of individuals, which further restricted their ability to cover the beaches. Most groups were able to operate patrols and data collection at their beaches for most of the season in 2021, however with limited funds and staff, resulting in lower coverage than normal.

Resulting impact of the pandemic on sea turtle conservation in T&T

The primary effect of the various COVID-19 regulations and the curfew under the State of Emergency coupled with limited funding, was to disrupt and reduce the presence of these CBOs on the beaches to conduct their essential service for sea turtle conservation. The knock-on effects include the loss of valuable monitoring data and increased poaching. If it were not for the dedication of the members of these CBOs, who in some cases worked for a reduced wage or in some cases for no wage, the effect may have been even worse.

Monitoring and data collection at some of our nesting beaches has been conducted consistently since the 1990s or early 2000s. Over time the monitoring of sea turtle beaches and associated tagging of turtles has led to the identification of the nesting season, an improved understanding of nesting frequency and patterns of sea turtles including movements between nesting beaches, and allows for the detection of population trends. Further, nesting beach patrols provide

the opportunity to conduct research in a multitude of areas including hatch success and genetic studies. Important international collaborations have also allowed for research on the offshore habitat use and migration routes of leatherbacks. Long term annual data collection allows for the close monitoring of the leatherback nesting population in particular, and detection of any changes or trends. Such monitoring is especially important at this time, since the North West Atlantic Leatherback population to which our leatherbacks belong, is currently in decline and has been listed as Endangered by the IUCN, while the global status remains as Vulnerable. The decline has been principally driven by an exponential decline in French Guiana, but the data suggests declines across many other sites and a small decline in Trinidad also (Northwest Atlantic Leatherback Working Group 2018). Considering that Trinidad hosts the largest remaining leatherback rookery in the region (Northwest Atlantic Leatherback Working Group 2018), we play a significant role in conserving this sub-population and any local decline is of international concern.

Poaching is difficult to quantify due to the clandestine nature of event, especially given the growing practice of removing live nesting turtles from the beach, leaving little evidence behind. Furthermore with the inconsistent and low patrol coverage of many of the nesting beaches in 2020 and 2021, chances are higher that poaching could go undetected. Angela Ramsey (Wildlife Biologist, Division of Food Production, Forestry & Fisheries, Tobago) confirmed poaching of hawksbills is an annual occurrence on nesting beaches in Tobago, and highlighted the arrest of one individual for poaching of a hawksbill in 2020. She noted an increase in the number of turtle remains detected at some locations in 2020/2021, yet suggested it was difficult to confirm an overall increase in poaching due to the low patrol effort and lack of data. However, reports from the turtle CBOs and other local environmentalists suggest that a significant increase in poaching did occur in 2020 and 2021, especially in Tobago. Concerned environmentalists Aljoscha Wothke of Environmental Research Institute Charlottesville (ERIC) and Pat Turpin of Man of War Cottages and the new Tobago Alliance for Resilient Communities, have both reported that there was a significant increase in poaching events observed in northeast Tobago in 2020 and 2021 reported to them by concerned villagers. SOS was also able to note about five poaching events in 2020 within Grand Courland Bay based on random day checks of the beaches, and two in 2021 (when patrol efforts resumed but with reduced coverage). SOS typically record no poaching events within Grand Courland Bay when they achieve regular nightly coverage, so this represents a significant increase and is likely an underestimate due to their limited coverage in 2020/2021.

In Trinidad, Nature Seekers and GRNTGA didn't report

a significant rise in poaching, though there was one possible hawksbill nest lost to poachers at Matura. Similarly the Wildlife Section (Forestry Division) indicated they received no reports of poaching on nesting beaches in Trinidad in 2020 or 2021. However, the Las Cuevas Eco Friendly Association did report nine poaching events in 2021 (three leatherbacks and six hawksbills). They indicated this is the first record of poaching at this beach since they began patrols in 2004. It is perhaps unsurprising that poaching didn't occur at Grande Riviere and Matura, given that these communities have become reliant on turtle tourism and recognize the value of the sea turtles. I was unable to contact any of the smaller groups that patrol other beaches in Trinidad that I might expect to be more vulnerable to increased poaching when patrol coverage was reduced.

We must remember that poaching of sea turtles has never been completely eradicated and has been recorded annually prior to the pandemic. There is still a portion of the population that engages in this illegal activity regardless of the risk. It is possible that these same individuals saw the lack of patrols in 2020 and 2021 as an opportunity to increase their efforts with reduced risk and took full advantage of the situation. There are many people experiencing economic hardship as a result of the pandemic and may be seeking out new sources of food and income, and this may be an additional driver of the increased poaching observed. This is perhaps especially the case in Tobago where many persons rely on the tourism industry which has come to a virtual standstill as a result of border and beach closures. Indeed Pat Turpin indicated that there was as an overall increase in poaching of other species on land in Tobago as well as sea turtles.

What can we learn from this experience?

CBOs have made great strides when it comes to sea turtle conservation efforts at our nesting beaches over the last 30 years and we are internationally recognized for our efforts. However, these last two years have been particularly challenging and the CBOs need support to continue their vital work. The Game Wardens in both islands are limited by numbers and resources and the government has come to rely on the CBOs for their role in patrolling our nesting beaches. Yet they cannot be expected to continue this demanding work, walking great distances on sandy beaches at night, without remuneration and basic supplies required (batteries, headlights etc.).

Trinidad and Tobago is not the only country that has experienced negative impacts to sea turtle conservation efforts as a result of the pandemic, and sustainability is an issue that sea turtle conservation organisations continue to struggle with internationally. Many rely on grants from external funding sources and some rely on volunteer tourism as a human resource. With the disruption of international

travel and the economic downturn, many organisations are facing very uncertain times. While it is certainly a worthwhile goal to strive towards developing a self-sustaining sea turtle conservation programme, we may need to accept that this is simply not possible. Sea turtle tourism may be the best available option to help support the patrols and data collection, but is simply not feasible on most beaches (due to accessibility, low numbers of turtles, risk of disturbance etc.). Furthermore, the pandemic effects in 2020 and 2021 show us that tourism is subject to many external factors and may be disrupted from time to time.

Trinidad & Tobago is in a unique position with the existence of the Green Fund, a national grant facility operationalised in 2008, capitalised by the Green Fund Levy, which is pegged at 0.3 percent of the gross sales or receipts of companies operating in the country. Turtle Village Trust was able to access nearly TT\$30 million from the Green Fund for the National Sea Turtle Conservation Project which ran from 2013 through 2018 and allowed for a significant increase in nesting beach patrol coverage. However, the Green Fund has been severely underutilized to this point, with some TT\$7billion accumulated and only an estimated TT\$392 million disbursed towards the financing of 27 environmental initiatives as at September 2020. The Green Fund has been repeatedly criticized by members of civil society for its onerous application process and lengthy review process; even after project approval, there can be lengthy delays before the disbursement of funds. A commitment, of say TT\$5 million per year, towards the continuation of the National Sea Turtle Conservation Project would be an effective and worthwhile use of the Green Fund towards one of its focal areas – conservation of the environment – and towards meeting T&T’s many international commitments towards the conservation of sea turtles.

How you can help

As full financial support for the 2022 nesting season is looking unlikely, I urge you to consider making a contribution to support the essential work of these dedicated organisations

Nature Seekers: www.natureseekers.org

Las Cuevas Eco Friendly Association: <https://www.facebook.com/Las-cuevas-eco-friendly-association-302082766647810>

Save Our Sea Turtles (SOS) Tobago: <http://sos-tobago.org/how-you-can-help/donate>

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