

sea turtles and COVID-19



Introduction

By David Godfrey

Almost as soon as COVID-19 began forcing people into their homes, locking down travel, and changing human behavior in unprecedented ways, these headlines started to appear: “Sea Turtles Booming Thanks to Pandemic,” “Sea Turtles Thrive as Beaches Lock Down,” and “Room to Roam: Wildlife Responds to Pandemic.”

Looking for any kind of feel-good story as humanity grappled with a once-in-a-century pandemic, media outlets around the world latched onto early images and anecdotal reports of wildlife being spotted in unusual places, of air quality improving in the world’s most populated cities, and of sea turtles supposedly nesting in places and in numbers not seen before. Photos of wildlife walking in deserted city streets and aerial views (some later found to be fake) of clear water in the canals of Venice fueled people’s collective imagination that the swift change in human behavior was miraculously causing wildlife and the environment in general to thrive during humans’ brief absence. On some level, we probably all wished it were true, thus making it easy for the press and a public looking for silver linings to buy into the hype.

Because the human species is the primary cause of threats to sea turtles globally, it stood to reason that a massive lockdown may well have resulted in some relief for chelonians. This author certainly saw the potential for the pandemic to benefit sea turtles, especially in a place such as the U.S state of Florida, where most major threats originate from human behavior on overdeveloped nesting beaches. Just as sea turtles were returning to nest in Florida (where more than 90 percent of the country’s sea turtle nesting occurs) in spring 2020, beaches had been largely closed to the public. Tourism to the Sunshine State had vanished, and even Disney World had been forced to shut its magical gates. For a time, nearly all beachfront hotels were dark, creating the potential for fewer turtle disorientations from artificial lights. Beaches were deserted both day and night, so fewer turtles were likely to be disturbed as they emerged to nest. And most public marinas in Florida were closed to recreational boating, giving hope that vessel strikes, a major cause of sea turtle mortality, might also be reduced for a time.

Alas, the willingness of Americans to stay indoors and curtail their social and recreational activities to help get the pandemic under control was very short lived. Beaches were opened well before 2020’s first turtle nests started to hatch, boats were back on the water conducting political flag parades, and any real hope that the pandemic might improve sea turtle survivorship had pretty much vanished. Even so, early reports indicated that nesting numbers in Florida and elsewhere in the world were in fact a bit higher than expected last year. Of course, nothing about the pandemic could produce adult, nesting turtles, but the uptick helped continue the romantic notion that sea turtles and other wildlife flourished as the pandemic raged.

The reality is far more complicated and, unfortunately, not as optimistic for sea turtles. The hope that sea turtles in Florida and elsewhere in the southeastern United States might benefit from the pandemic was at one time based on a semblance of real possibility. However, conditions for sea turtles in many other parts of the world always pointed to threats being exacerbated by negative impacts on ecotourism, international volunteerism, economies of remote coastal communities, and governments’ abilities to sustain the presence of resource managers and law enforcement as public budgets took a major hit.

What follows are brief essays and anecdotes by different authors from around the world that examine the ways in which sea turtles were actually affected during the COVID-19 pandemic, with the perspective of hindsight.

AT LEFT: Gary Stokes, co-founder of OceansAsia, finds surgical masks that have washed up on the beach of Soko Islands, Hong Kong, China, following the outbreak of the novel coronavirus in early 2020. © Naomi Branna courtesy of Gary Stokes/OceansAsia

BRAZIL

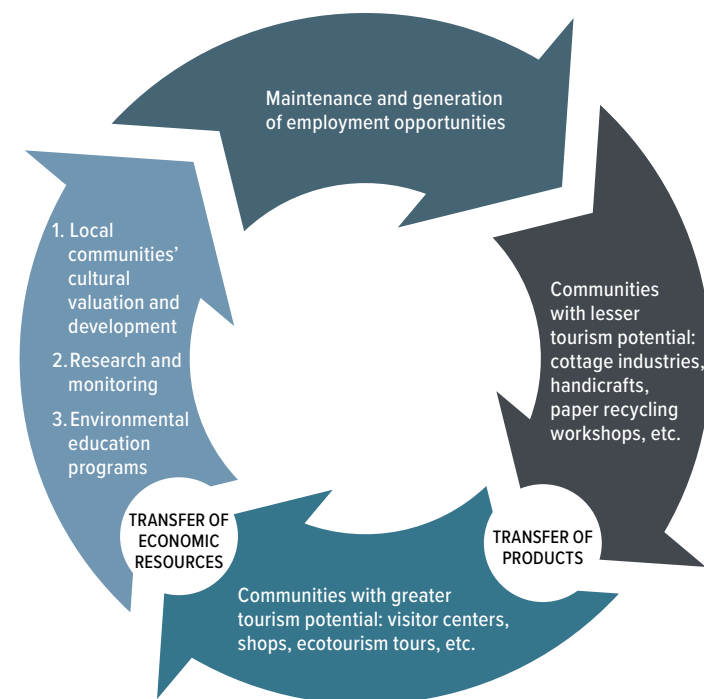
Fundação Projeto Tamar

By Neca Marcovaldi and Joca Thome

COVID-19 (the coronavirus) hit Brazil even harder than it did the rest of the world in 2020, leading to the suspension of Fundação Projeto Tamar’s research and environmental education activities; the closure of 10 retail stores and six visitor centers; and the disruption of the social production cycle that is tied to the jobs, incomes, and survival of thousands of community partners—all of whom are essential to the deep sense of social inclusion upon which the success of this four-decades-old sea turtle conservation program depends. To make matters worse for turtles during the pandemic, many Brazilians left cities and moved to seaside properties, thus increasing beach use, artificial lights, and vehicle traffic in nesting areas, as well as creating an even greater demand for the services normally provided by Tamar’s already beleaguered staff.

Fundação Projeto Tamar is a private nonprofit institution that uses revenue from visitor centers and stores located near significant sea turtle nesting and foraging sites to sustain the lives of local community members and to maintain research and environmental education programs. Through a circular economy model, Projeto Tamar generates job opportunities in communities with low tourism potential by engaging community members in the production of turtle-themed clothing and accessories. Those products are then sold in communities with high tourism potential, where awareness and education programs reach tens of thousands of tourists from all over the world. Prior to the pandemic, this business model supported fully 1,800 people and provided more than 500 jobs, a number that was cut by two-thirds during the initial days of the pandemic.

Meanwhile, on a national governmental scale, Centro Tamar (Brazil’s National Center for Sea Turtle Research and Conservation) was also delayed in pursuing major components of its National Action Plan for Sea Turtles. The researchers’ access to federally protected lands was curtailed; the field professionals were forced to work from home; the monitoring of fishing fleets, environmental education in schools, and other activities came to a near standstill; and the administrative



processes underway to prevent the adverse impacts of port projects and other forms of habitat alteration had all local inspections postponed. Nonetheless, hundreds of virtual meetings allowed the office work to continue and ensured that the legal and administrative processes that protect nature in Brazil did not stop altogether.

Projeto Tamar’s reaction to COVID-19 was to do what they do best—to *reinvent themselves* in the face of seemingly impossible challenges—a slogan that has become their mantra over time. Starting in August 2020, little by little they began to resume activities and reopen some of their centers, stores, and T-shirt factories—but the road ahead is still long. They are optimistic that the knowledge they have accumulated over four decades of social engagement, sea turtle conservation, policy advances, and business development will allow them to reinvent yet again and to continue the critical work that has contributed to the recovery of Brazil’s five sea turtle species.

COSTA RICA

Latin American Sea Turtles (LAST)

By Didiher Chacón

The year 2020 began like any other for LAST’s sea turtle projects in Pacuare and Osa, Costa Rica, with high expectations of hosting more than 1,000 volunteer beach workers and serving an estimated 2,000 visitors, mostly primary school children coming to Moín Beach on field trips. But when COVID-19 came to Costa Rica in March, LAST’s entire volunteer force—the free labor made up of international and Costa Rican volunteers who enable its projects to run sustainably—collapsed from one day to the next! To make matters worse for LAST, the government closed beaches, restricted vehicular movements, and froze LAST’s research permits. By April, LAST was left with no workforce and no funding.

Among the many goals of LAST’s projects are to reduce the illegal extraction of eggs and the slaughter of turtles for food, so closing the beaches might seem a good thing. However, soon after the closures, the police and other authorities changed focus to concentrate more on quarantine measures, thus ignoring beach protection.

Despite this dire situation, LAST staff members and partners did not ignore any turtles or nests that needed protection. While staff members on the coasts continued doing their jobs by forging alliances with local community members to assist with patrols, LAST’s office staff members dedicated themselves to seeking support for its basic needs from national and international partners and to

negotiating with local authorities for special permission to continue night patrols.

Because of a lack of employment caused by closures and restrictions, many people in developing countries have necessarily thrown themselves into their roles as providers for their families by seeking food or goods with which to barter by any means possible; not surprisingly, they hunt, fish, and collect turtle eggs just to survive. All socioeconomic sectors on Costa Rica’s coasts suffered greatly, but LAST’s beach projects were hit especially hard by a drastic increase in illegal activities involving sea turtles.

Thanks to several generous donors, LAST was fortunate to stay afloat. It was able to protect at least half of all turtle nests on the beaches and to ensure that more than 70 percent of females were

returned safely to the sea. While most citizens were sheltering in place at home, LAST’s staff members, at great personal risk, were kept very busy relocating nests doomed by erosion, saving turtles from hunters’ machetes, and protecting eggs from illegal harvest for the egg trade. LAST also kept its staff and partners safe by being one of the first organizations to put biosecurity protocols in place at the work sites.

As LAST begins the 2021 nesting season having exhausted its financial and human resources, its plan remains the same: go to the beaches to give nature a helping hand, respect Costa Rica’s laws and protocols, and continue to bring Costa Rica’s youth safely into nature to create future generations of sea turtle and ocean conservation ambassadors.

GREECE

ARCHELON

By Aiki Panagopoulou

In February 2020, ARCHELON—The Sea Turtle Protection Society of Greece—was preparing for another season at the turtle nesting sites of Zakynthos, Peloponnesus, and Crete. Activities at the Rescue Center were in full swing, with several turtles under treatment and an almost fully booked schedule of school visits. Then COVID-19 arrived, bringing with it travel restrictions that canceled the participation of 80 percent of ARCHELON’s volunteers, school shutdowns that forced the closure of ARCHELON’s environmental education program, and an anemic tourist season that left the organization in unprecedented financial strife. ARCHELON’s very survival came under challenge, and tough decisions needed to be made.

ARCHELON sprang into action to ensure its survival. Urgent expenses were met with the help of emergency grants from private groups such as MAVA Foundation and public agencies such as the Greek Ministry of Environment’s Green Fund. Monitoring protocols at nesting beaches were revised to accommodate smaller teams, and Greek volunteers from decades ago dusted off their field clothes and kept ARCHELON’s projects staffed—one day at a time—during what turned out to be one of the busiest years ever for sea turtle nesting in Greece.

Fully 7,600 loggerhead nests were recorded in the 2020 season. Although those high numbers were not related to COVID-19, the pandemic did result, initially at least, in fewer tourists and tourism-related disturbances for nesting females (e.g., less beach furniture, fewer people on the beach at night, less harassment at sea by speedboats). However, as the country reopened to tourism later in the season, anthropogenic pressures returned, and many hatchlings were lost because of light pollution.

ARCHELON adapted to the challenges and is now preparing for a new season. With the arrival of vaccines, it is hoped that the pandemic is receding just as the 2021 turtles are returning to their nesting sites. But there is also pressure from many sectors for a fast-paced economic recovery in Greece, pressure that may prioritize the economy over protection of the environment. Already a bill has been passed that will open a window for development projects within protected areas; the projects may have an impact on turtle nesting sites. The real COVID-19 challenges for loggerhead turtles in Greece may lie ahead, not behind.

INDIA

Dakshin Foundation

By Muralidharan Manoharakrishnan and Kartik Shanker

The year 2020 will forever be etched in people’s collective memory as the time when life practically came to a standstill; yet the year somehow went by before anyone noticed. Working in a developing nation on environmental issues and with charismatic species such as sea turtles had its own particular set of challenges during the pandemic. The Indian government made tough decisions to curb the virus through a lockdown that halted all modes of transport (air, rail, road, and waterways) except for essential commodities, and even those required elaborate documents and permissions.

Over the years, Dakshin Foundation has been monitoring sea turtle populations as part of its Flagships program at index sites in the

country, including an olive ridley mass nesting (or *arribada*) beach in the state of Odisha on India’s east coast, as well as nesting beaches of leatherbacks in the Andaman Islands and of green turtles in the Lakshadweep Islands. Dakshin also coordinates a national grassroots network of sea turtle nongovernmental organizations (NGOs) as part of the Turtle Action Group.

Just as the first lockdown was imposed, the *arribada* in Odisha commenced; Dakshin’s leatherback monitoring camp had just closed for the season, and its researchers were still waiting to head to Lakshadweep for the start of that season. Although they initiated the *arribada* census at Rushikulya, they had to abandon work after a few

days because of lockdown constraints. At the same time, they started to receive news about stranded laborers and disenfranchised communities stuck without access to income, food, resources, or any opportunity to travel back home.

In addition to the organization's work on flagship species conservation over the years, Dakshin has worked on governance and community well-being in coastal communities. Thus, it was decided that pandemic efforts would be best directed toward assisting government and NGOs in coordinating relief efforts. Dakshin staff set up several task forces to provide relief and transport for stranded fishers, food and sanitation supplies for coastal communities, improved awareness about community health and COVID-19, and fundraising. Thanks to the diverse backgrounds of Dakshin's staff

members and active projects in different parts of the coast, Dakshin was able to assist many communities in Odisha, Andaman, and Nicobar Islands, and elsewhere.

Although the world was buoyed by exaggerated stories of environmental recovery, of turtles nesting during the day, and of whales returning to coastal waters, the harsher impacts of the pandemic on the already marginalized worker classes around India (and in other parts of the world) were a far more serious consequence. Even for Dashkin Foundation, an organization rooted in social justice, this experience had an impact on its team (especially those working in the areas of ecology and conservation) and on how members of the team view the people who live alongside the turtles, sharks, and other species in the marine ecosystems they work to conserve.

INDIAN OCEAN

Olive Ridley Project

By Claire Petros and Jillian Hudgins

The Olive Ridley Project (ORP) is a U.K.-based charity that operates sea turtle-related projects in several Indian Ocean countries. ORP's ability to remove ghost nets from the ocean, to rescue and treat injured turtles, to work with local communities, and to promote conservation awareness about the importance of sea turtles was drastically hindered by the COVID-19 pandemic.

In Maldives, Kenya, and Oman, ORP partners with tourist resorts and relies heavily on donations to fund its work and on volunteers to help staff its rescue center. As such, when those countries closed their borders to tourism in March 2020, ORP was forced to suspend most operations. Moreover, the rescue center was left without a veterinarian for six months because of visa complications, a difficult period that lasted until late 2020 during which ORP did not take in any new patients in Maldives. Fortunately, this period coincided with what is normally the low season of patient admittance. Presumably

because of a reduction in tourist boat traffic, the ORP staff also noted a dramatic drop in sea turtle entanglements.

In Pakistan, ORP works closely with the fishing community of Abdul Rehman Goth to provide alternative incomes through the production and sale of dog leashes fabricated from recycled ghost net plastic. Effects of the lockdown were felt acutely in Abdul Rehman Goth because of restrictions that limited fishers' access to both food and income, since the production of dog leashes also came to a standstill. In response to this problem, ORP was able to raise funds to help cover food rations for more than 150 families. The ORP staff also pivoted to producing an educational platform for homeschooling called e-Turtle School, which provides lessons about sea turtle biology and conservation free of charge to anyone around the world.

The pandemic brought human relationships with the natural world into sharp focus and showed the true extent to which human

activity can be detrimental to the health of the planet, as well as how vulnerable societies and systems are in the face of rapid global change. Conservationists now face a new set of challenges for which protecting natural spaces will require a new strategy that is able to evolve with a changing world. For the types of conservation work conducted by charities such as ORP to be effective, the work will require a broad

PHILIPPINES

Ten Knots Group

By Jamie Dichaves

Leah Sabanal, like most of the locals in El Nido, lost her steady income when the spa she works for had to stop operating because of the pandemic. No one in the tourism industry was spared from COVID-19 impacts, and the Philippines suffered estimated losses of USD \$4 billion from March to July 2020. This happened just as the Ten Knots Group received recognition as "the world's first certified Sea Turtle Friendly™ tourism operator." But the company and staff did not let the pandemic dampen their spirits; instead, it hardened their resolve to confront the challenge.

A sizable donation enabled them to launch the "Be G.R.E.E.N. (Guard, Respect, Educate El Nido) and GREAT" program, which was able to hire displaced personnel from four tourism industry projects: Coastal Cleanup, Wildling Rescue and Replanting, Mooring

base of financial support from individuals and businesses irrespective of the vagaries of tourism trends.

The key to adaptation must be greater capacity building of in-country conservationists. By empowering local communities, we can protect the world's vulnerable species and remain resilient to the volatile nature of a changing world.

Buoy Rehabilitation, and the Pawikan Patrol. Participants such as Leah Sabanal cycled through 10–15 days in each of the four programs and were paid with money and goods sourced from local suppliers. The Pawikan Patrol—one of several sea turtle conservation efforts deployed on sea turtle beaches with historically high levels of poaching as well as a risk of high tide inundation—put locals to work tagging and monitoring nesting turtles and relocating threatened nests to protected hatcheries. Those workers remain a valuable component of a broader local turtle conservation network founded in 2017, which has the full endorsement of Philippine government agencies.

With partners such as Leah, no pandemic can stop the local community from carrying out its mission to protect sea turtles while creating livelihoods that positively contribute to the environment.

GLOBAL

Oceanic Society

By Wayne Sentman, Christina Ullrich, and Roderic Mast

Plastic has many beneficial applications, but more than 40 percent of the world's virgin plastic produced each year ultimately takes the form of short-lived or single-use products that are readily discarded by consumers, often after mere minutes of use. This production has created an ever-rising tide of plastic pollution, much of which winds up in the world's oceans.

The tragic effects of plastic pollution in the oceans are now ubiquitous, affecting marine flora and fauna from zooplankton all the way up the food chain, including sea turtles of all species and age classes that ingest plastic or become lethally entangled in it. Recent studies suggest that sea turtles have a propensity to ingest marine plastic pollution and may even be attracted to plastic over their natural prey. And as plastics break down, they become microplastics that are a severe threat for filter-feeding animals ranging from barnacles and tubeworms all the way up to whale sharks, manta rays, and baleen whales.

The COVID-19 pandemic is worsening the plastic pollution problem because of the increased use of personal protective equipment—the World Health Organization estimates that 129 billion face masks and 65 billion plastic gloves are now used each month globally, and the conservation group OceansAsia estimates that as many as 1.56 billion face masks found their way into marine systems in 2020 alone.

Other lifestyle changes resulting from COVID-19 further exacerbate the problem, including the spike in takeout dining. With

restaurants pivoting from in-house dining to takeout, and with the mounting use of online ordering and home delivery services, plastic use (usually nonrecyclable packaging, cutlery, straws, and more) has ballooned. One estimate suggests that plastic waste generated per U.S. household has increased by at least 25 percent since the onset of COVID-19.

In addition to propelling plastic consumption, COVID-19 is contributing to the plastic pollution problem by altering attitudes and behaviors related to plastic use. Public health concerns around COVID-19 have reversed many of the gains communities had made in eliciting businesses to proactively reduce their reliance on single-use plastic products. Hard-fought advances in behavior change and adoption of sustainable alternatives to plastics were quickly lost in the name of hygiene. This usage is despite the fact that single-use plastic is not inherently safer than reusables and once discarded may cause additional public health concerns. Human reliance on single-use plastics, reinforced by the pandemic, will require even greater resolve, effort, and resources to reverse in the future.

Plastic pollution in the seas as a result of the COVID-19 pandemic is a poignant reminder that there is no "away" and that every plastic item prevented from entering the ocean is consequential. The interconnectivity between human health and ocean health cannot be overstated. Now more than ever, we must remember that we are all in this (ocean) together. •

A Projeto Tamar employee displays a sea turtle accessory produced by local community members. Projeto Tamar's workforce was cut by two-thirds during the initial days of the COVID-19 pandemic. © Fundação Projeto Tamar

