

VELADOR

Using Science-based Conservation to Protect Sea Turtles and Their Habitats Since 1959

Issue 4, 2009

An Open Letter from CCC's Executive Director

Friends,

By the time you receive this issue of the Velador, the Caribbean Conservation Corporation will have reached the 50th anniversary of its founding—making CCC the oldest and, I believe, most accomplished sea turtle conservation group in the world. In fact, the Smithsonian Natural History Museum recently honored CCC's program at Tortuguero, Costa Rica, for being one of the world's greatest marine conservation success stories. Now the longest and most successful program of its kind, our Tortuguero research and conservation program has saved Caribbean green turtles from immediate extinction and helped increase the population by over 500%. CCC's longevity as an organization and our many important accomplishments on behalf of sea turtles would not have been possible without the sustained support of our members and donors.

As you no doubt recognize, despite the great progress made in protecting nesting beaches and reducing threats to turtles in the ocean, sea turtles remain in peril throughout much of the world. Some threats, like those posed by climate change and coastal development, are actually increasing. It is more important than ever that CCC remain vigilant in its defense of sea turtles and their habitats.

Meanwhile, it is no secret that economic conditions over the last year have caused significant declines in donations to non-profit organizations like CCC. Although our organization has faced substantial challenges during the last 12 months, CCC is a fiscally conservative organization and was not overextended when the financial crisis began. We have worked very hard to keep all of our programs fully functional throughout 2009. Because

each staff member fills one or more vital roles, we have focused on keeping everyone employed. Thus, at a time when many conservation organizations have instituted layoffs and cut back their activities, CCC has kept its entire staff and programs intact through voluntary pay reductions and other cost-saving measures.

As we celebrate our 50th anniversary, I am grateful for the dedication of our Board of Directors, staff, volunteers and members during this trying time. Our staff continues to be enormously successful; our activists remain active; and the Board has made special

efforts to assist and support CCC. We anticipate that members who have had to reduce their giving or let their membership lapse will return as economic conditions improve, and foundations that have been unable to fund us or had to reduce grant amounts will soon be able to provide their critical donations in full.

On behalf of CCC, I want to appeal to each of you to make an extra commitment to sea turtle conservation at this time. If you have never recruited a new member to the Caribbean Conservation Corporation or made an extra contribution in support of our programs, now is the time to act! You can also support our work by doing some of your holiday shopping from the enclosed gift catalog. And remember that sea turtle adoptions make great gifts, while also helping introduce new people to the cause of saving sea turtles.

Thank you all for your support!



Plastics-at-Sea Catastrophe

In the mid-1980s, CCC's founder Archie Carr was one of the first scientists to sound the alarm about the threat non-degradable debris posed to sea turtles and other marine life. Dr. Carr's publications in the journals *BioScience* and *Marine Pollution Bulletin* highlighted the problem of buoyant plastic debris in driftlines formed at the borders of ocean currents

where young turtles spend their early years as passive migrants. Because driftline communities consist of numerous invertebrate and vertebrate species, the presence of so much persistent pollution in this critical habitat prompted him to describe the problem as "a progressive disruption of the ecologic organization of marine systems."

Dr. Carr suggested that of all the inhabitants of driftlines, little sea turtles appear to be the most vulnerable to the pollution found there. His observations from the Atlantic coincided with work undertaken half way around the world by researcher George Balazs on the impact of plastic on larger sea turtles in the Pacific. Balazs documented plastic entanglement and ingestion in 79 turtles, including consumption of fishing line, net, plastic bags, beads, and vinyl film. One dead turtle had swallowed a sheet of heavy plastic that measured 10 by 12 feet. Taken together, this early work provided compelling evidence of the effect of plastic pollution on sea turtles throughout their lives.

Today, marine plastic pollution has assumed catastrophic proportions and is a pervasive problem in even the most remote and pristine seas. In the last 25 years, billions of tons of plastic have been purposefully dumped or accidentally swept into the oceans from rivers and coasts. And, despite prohibitions on the ocean disposal of plastics by Annex V of MARPOL, the international Marine Pollution Treaty, this practice continues. In the vast Central Pacific gyre (rotating ocean currents), unfathomable quantities of plastic circulate on and below the surface and to a depth of at least 100 feet. Researchers with the Algalita Marine Research Foundation found recently that each square nautical mile in this region had over 1.1 million plastic bits, which outweighed plankton in the area six to one. Similar vast "garbage patches" lie near the centers of gyres in each hemisphere of all three major oceans.

Plastic marine debris affects sea turtles in numerous ways. Turtles caught in lost or abandoned plastic fishing gear may be injured or drowned. Those that mistake float-



Blair Witherington

ing debris for food are at risk from intestinal compaction or tearing, digestive suppression, and exposure to chemical toxicants adsorbed by (accumulated on the surface of) the plastics. Leatherbacks, for example, are believed to mistakenly eat floating plastic bags instead of jellyfish, a primary food. Miscellaneous debris, such as plastic rings, can cut, maim or amputate limbs and cause severe and sometimes lethal infections. At least 100,000 marine animals are estimated to die as a result of plastic marine debris each year, a number that may increase dramatically with better estimates of mortality from marine debris affecting difficult-to-observe neonate sea turtles.

Several decades ago, Dr. Carr was dismayed to encounter significant quantities of marine debris in the Gulf Stream as he searched for little pelagic (open ocean) turtles. In recent years, Dr. Blair Witherington of the Florida Fish and Wildlife Conservation Commission has documented this increasing threat while studying neonate loggerheads, green turtles, hawksbills, and Kemp's ridleys in their early, open-sea developmental habitat off Florida. In samples of ingested material collected from the mouths of these small turtles, he has found balloons, fishing line, plastic film, and a wide variety of rigid plastic shards that had undergone partial degradation in sunlight. In a separate group of post-hatchling turtles that were swept ashore following severe hurricanes, Dr. Witherington found that 71 of 87 green turtles had plastics in their gut contents, and that all of 94 loggerheads had ingested plastics. Although these turtles had been feeding out in the open sea for less than two months, this synthetic material made up more than a third of their diet by weight.

Perhaps the most insidious characteristic of plastic is its inability to biodegrade. As plastic photo-degrades in sunlight, it breaks into smaller and smaller pieces, becoming suspended over time in the water column as tiny particulate matter which remain plastic polymers. Unfortunately, this plastic attracts and accumulates non-soluble toxins such as DDT and PCB in high concentrations. Plastic

VELADOR {bel.a.dor}

In Caribbean cultures, *Velador* translates as "one who stands vigil" — originally referring to turtle and egg harvesters who waited at night for turtles to come ashore. Now CCC claims this title for its newsletter, and around the Caribbean CCC's researchers and volunteers are replacing poachers as the new veladors.

The *Velador* is published for members and supporters of the nonprofit **Caribbean Conservation Corporation**.

CCC is dedicated to the conservation of sea turtles through research, advocacy, education and the protection of the habitats upon which they depend.

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polymers have been implicated as hormone disruptors in a number of species and are believed to contribute to other health problems.

Our society has become dependent upon lightweight, versatile, and inexpensive plastics and these products are likely to remain a part of our world for decades to come. But all of us should aspire to consciously using less plastic and carefully recycling that which we need. For example, each year Americans throw away 100 billion plastic grocery bags, only 0.6 percent of plastic bags are recycled, which are produced by nearly 2,500 barrels of oil. Replacing plastic grocery bags with reusable bags not only reduces the plastic stream but also conserves oil.

Like many other environmental issues, making a difference means making a personal commitment to address the issue on land and at sea. For many years, maritime tradition worldwide has been to discard galley waste, fishing gear, and other garbage in open waters away from port. Although this practice clearly



The string of a swallowed helium balloon hangs from the mouth of this sea turtle.

Blair Witherington

• violates international agreements, it
• is one that takes place far from any
• watchful authority, save one's own
• conscience. 🌀

By Marydele Donnelly
Director of International Policy

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Turtle Tides

A school classroom from Shirakomachi, Chiba Japan recently contacted CCC to share its interest and enthusiasm for protecting loggerhead sea turtles. The North Pacific Ocean is no stranger to loggerhead sea turtles. In fact, all loggerhead nesting in the North Pacific occurs in Japan. But as loggerhead populations are declining around the world these students are doing their part to educate fellow students and protect their local beaches.

The students and teachers organized a beach clean-up (below left), watched educational videos, adopted an endangered sea turtle from CCC and shared sea turtle origami instructions with fellow students. CCC would like to thank Akihiko Takahashi's classroom for all their hard work and support!

You can download the sea turtle origami instructions, and find other downloads and activities, in the Turtle Tides section of CCC's website at www.cccturtle.org/turtleides. 

