Biologists with the Florida Fish and Wildlife Conservation Commission (FWCC) reported that 2003 was the second year in a row of record low loggerhead sea turtle nests in more than a decade.

Sea turtle nests in Florida are counted each year by a network of volunteers who monitor nesting beaches and report their findings to FWCC. During 2003, the total number of loggerhead turtle nests documented was just over 63,400 nests, up slightly from last year's decade record low. Green turtles deposited over 2,250 nests in Florida, a record high number for the biannual low year. Leatherback sea turtles deposited over 840 nests, the second highest year on record!

Researchers at CCC and elsewhere have learned that sea turtle population trends can not be predicted by looking at nesting numbers for a single year. A lot of factors influence turtle nesting patterns in any given year (weather, temperature, ocean currents, etc.), so nesting numbers must be monitored over long periods of time in order to estimate trends.

In Florida, nesting trends are monitored by systematically counting nests on the state's index nesting beaches utilizing a standard methodology that allows for accurate comparisons from year to year. The Florida Index Nesting Beach Survey (INBS) is administered by the FWCC and has been in operation since 1989. During the 109-day-long nesting season 396 km of nesting beach, divided into zones averaging 0.8 km in length, are monitored every day. For

continued on page 3
The 24th Annual Symposium on Sea Turtle Biology and Conservation was held recently in San Jose, Costa Rica. This year marked the first time that the conference was held in Costa Rica. In a fitting tribute to Costa Rica’s role in the history of sea turtle conservation, the President of Costa Rica addressed the audience and applauded the efforts of people like Archie Carr who have done so much to save these magnificent creatures. Immediately following the President’s address, CCC Executive Director David Godfrey took the podium to honor one of the pioneers in the now global movement to study and protect sea turtles. Text of David’s speech is available at www.cccturtle.org/ists.

Guillermo “Billy” Cruz was presented with the Archie Carr Lifetime Achievement Award in recognition of his vital role in the formation of the Caribbean Conservation Corporation and the establishment of the long-term sea turtle monitoring program at Tortuguero. Billy Cruz was CCC’s first Vice President, and he tirelessly worked for 30 years to promote turtle conservation in his country.

“Don Billy was savvy enough to know that one of the key steps to saving sea turtles would be to get the decision-makers out on the beach to see the turtles up close...So, he brought the President of Costa Rica and his family to Tortuguero to see the turtles with Archie Carr. On one fateful night, they encountered poachers who ran off in the middle of butchering a large green turtle...That event put the power of the Presidency firmly behind the cause of sea turtle conservation in Costa Rica – a tradition that continues to this day,” said David Godfrey during the presentation. “And by applauding Billy Cruz, we acknowledge one of the pioneers in the now global effort to study and save sea turtles from extinction.”

During the course of the week-long symposium, CCC staff and associate researchers presented scores of papers and presentations about ongoing research and conservation projects. Sebastian Troëng, CCC’s Scientific Director, gave three presentations on topics ranging from the history of the Tortuguero monitoring program to the economic value of saving sea turtles versus consuming them. Reports were also given on the new hawksbill and leatherback protection program coordinated by CCC at Chiriquí Beach, Panama. And our partners at the Bermuda Aquarium gave a status report on the long-term, in-water study carried out by CCC and the Aquarium in the waters around Bermuda.

Following the Symposium, CCC hosted a field trip to Tortuguero for about 35 conference attendees. Field trip participants were excited to stay at the CCC field station and to walk the black sand beaches where sea turtle conservation first began. While it was too early in the year to spot nesting turtles, the group still managed to spot virtually all other manner of beast inhabiting Tortuguero National Park, including a two-toed sloth, toucans, an ant eater, iguanas, crocodiles, monkeys, bats and red-eyed tree frogs.
from cover

2003, the INBS program monitored 64% of loggerhead nesting, 48% of green turtle nesting and 33% of leatherback nesting in Florida.

Between 1989 and 2003 the annual number of loggerhead nests has varied widely. Even though nesting in recent years has been low, the overall trend for loggerhead nesting has been stable. In contrast, nesting trends in Florida for green turtles and leatherbacks have increased over the same period. The dramatic rise in green turtle nesting has caught the attention of CCC and others in Florida working to recover this species. Most sea turtle conservationists are now cautiously optimistic that green turtles are showing signs of a recovery in Florida.

For sea turtle conservationists, a stranded turtle is a sea turtle that has washed ashore dead or injured. Just as there is a network of volunteers monitoring turtle nesting around Florida, these same volunteers participate in a coordinated Sea Turtle Stranding Network, which responds whenever someone reports a stranded turtle on the beach or in the nearshore waters. More than 1,800 dead or debilitated sea turtles were found in Florida in 2003, the greatest numbers since monitoring began in 1980! The Atlantic coast had 1,187 strandings, much higher than the average of 672.

While over half of all stranded turtles are loggerheads, there was an overall increase in the number of strandings for all species. Collisions with watercraft, disease, and drowning in fishing nets are among the most likely causes of death for loggerheads in Florida.

News from the Archie Carr Refuge

Beach Cleanup in the Carr Refuge

On Saturday, Feb 7th, 2004, CCC staff and members joined with staff and volunteers from the Brevard County Environmentally Endangered Lands Program, Keep Brevard County Beautiful, Sebastian Inlet State Park, Surfrider Foundation and Earth Day Foundation to conduct a beach cleanup within the Archie Carr National Wildlife Refuge in South Melbourne Beach, Brevard County, Florida.

Forty participants helped clean approximately three miles of beach centered at the site of the future Barrier Island Ecosystem Center. A total of 20 cubic yards of trash was removed from the beach, much of which was lumber. About five cubic yards of the trash collected was recycled, with the majority being comprised of plastic bottles. Thanks to all who took part in cleaning this important nesting beach as the turtles are about to return.

Fewer Nests Lost to Raccoons

The Archie Carr National Wildlife Refuge on Florida’s central Atlantic coast provides nesting habitat for approximately one-fourth of all sea turtles nesting in the United States. In 2003 CCC began working with the Refuge to address the high annual loss of eggs resulting from raccoon predation.

Historical average rates of raccoon predation, thought to be between 5 and 15% of nests, is common on nesting beaches and generally poses only a mild threat to the nesting population. However, in some sections of the Refuge predation rates were between 50% and 75% in 2001. In the worst one-kilometer section, 92% of all nests were depredated, primarily by raccoons.

To put the problem in perspective, in 2001 in just a 3-kilometer section of the Refuge more nests (806) were lost to predation than the total number of nests reported to have experienced hatchling disorientations from artificial lights in the entire state of Florida! Raccoon predation is the single greatest cause of sea turtle mortality on Florida’s nesting beaches.

Research and experience has shown that most sea turtle nest predation by raccoons in any given area is accomplished by a small fraction of the overall raccoon population. In areas of high predation there are often public facilities or businesses that are not adequately securing garbage and, in some situations, people feeding and attracting raccoons.

In 2003 the Refuge implemented a Raccoon Predation Management Program aimed at reducing predation in the hot spots. CCC, and its members living in the Refuge, actively supported the Management Program. CCC also produced and locally distributed thousands of brochures alerting the public to the predation problem, informing them that it is illegal to feed raccoons in Florida, and explaining how the public can discourage raccoons by properly securing and disposing of garbage.

As a result of the Refuge's and CCC's activities, raccoon predation in 2003 dropped dramatically along targeted sections of beach. For the entire Refuge, in 2003 there was a 49% decrease in the number of nests depredated by raccoons, dropping from 1,103 in 2002 to 558 in 2003! Taking into account the lower nesting numbers in 2003, the rate of depredated nests dropped by 43%. With relatively minimal effort, tens of thousands of sea turtle eggs were saved in the Archie Carr Refuge.
Make a difference and have the adventure of a lifetime by taking part in a hands-on conservation field project.

**Leatherback Turtle Program**

Each Year During March - May

Leatherback sea turtles (Dermochelys coriacea) need your help. Although they once traveled our oceans in vast numbers, they now face extinction. As part of CCC’s research team you will help unlock the life mysteries of the leatherback turtle and provide the baseline data used in developing turtle conservation plans.

The largest and widest-ranging of the seven sea turtle species, leatherbacks are known for their leather-like shells and gentle nature. From March to May each year on the black sand beaches of Tortuguero, Costa Rica, huge leatherbacks lumber ashore in the darkness to lay their eggs. Nesting is the only time leatherbacks climb onto dry land, which makes seeing one a rare and wondrous experience. The effort required to drag themselves out of the water and onto the beach is tremendous considering these giants can measure nearly ten feet in length and weigh up to 1,200 pounds.

Once far enough on shore, a leatherback excavates a nest and deposits about 80 billiard-ball sized eggs into the warm volcanic sand. After burying the eggs and disguising the nest, the exhausted leatherback shuffles back to the welcome coolness of the sea. About 65 days later leatherback hatchlings, adorable miniatures of their mother, break through the sand to scurry headlong into the sea.

As a participant in CCC’s Leatherback Program you will witness the remarkable nesting process while helping scientists apply identification tags, make observations, take measurements and record data. Caribbean Conservation initiated the Tortuguero Leatherback Program in 1995 to determine the extent to which leatherbacks use the beach for nesting, learn more about their life cycles, and develop management plans to protect them. Tag return information is helping scientists understand the leatherback’s migratory patterns. The presence of tagging teams on the beach is also a deterrent to poachers and egg collectors.

When not collecting data with scientists, you will have the opportunity to explore Tortuguero National Park in search of wildlife or join a weekly guided boat tour.

**Neotropical Bird Program**

Spring Migration During March - June

On the Caribbean coast of Costa Rica lies a magical place called Tortuguero. While over 300 species of birds can be found in the Tortuguero region, its future as a thriving environment for birds is threatened by deforestation and development. Ornithologists are concerned for the survival of the many species that depend on increasingly fragmented natural habitats.

In an effort to help ensure the survival of neo-tropical and tropical birds, the non-profit Caribbean Conservation Corporation has launched a major study in partnership with scientists from the U.S. Forest Service, Point Reyes Bird Observatory and Partners in Flight to collect data that will determine species diversity and abundance, and help assess the effects of habitat loss and disturbance. The data gathered from this long-term research will help formulate conservation plans, and will also alert policy makers about the need to conserve this unique area.

Project participants are needed to assist the scientists with several important research tasks. As a participant, you will receive specific training in mist-netting, walking transects, and point-counts and will work in various settings, including the rainforest, rivers and canals, and near the beach. Highly trained ornithologists head up the work teams for each site. Whether you are a seasoned birder looking to add some rare species to your list, or a newcomer with a strong interest in conservation, you can be an integral part of our research team.

Field study goes from dawn until dusk, with a few hours break during the warmer part of the day, when you may explore jungle nature trails, boat the intricate river systems or climb the remnants of a nearby ancient volcano.

For more information about either of these programs, visit CCC’s website at [www.cccturtle.org/program.htm](http://www.cccturtle.org/program.htm) or call Dan Evans at 1-800-678-7853.
CCC Station Hosts Bird Monitoring Training Workshop in Tortuguero, Costa Rica

As a partner of the Tortuguero Integrated Bird Monitoring Program, CCC recently hosted a workshop designed to empower Latin American biologists with the skills needed to conduct state-of-the-art bird monitoring research. The Program was established by the CCC, the Universidad Nacional de Costa Rica, the U.S. Forest Service’s Redwood Sciences Laboratory, and the Point Reyes Bird Observatory in 1994 at the John H. Phipps Biological Station in order to serve as a model bird monitoring station and education program for Latin America and the Caribbean. Since that time the Program has conducted several workshops to further these objectives as well as conducting annual migration monitoring during the spring and fall months at 8 stations near Tortuguero.

The workshop completed the training of 16 Latin American students and biologists in current standardized bird monitoring techniques. Participants were primarily students from the Universidad de Costa Rica but also included individuals from Guatemala, El Salvador, Nicaragua, and Panama. At no cost, participants were provided with 5 days of hands-on training to: operate Constant Effort Mist-netting Stations (such as those we operate at Tortuguero), conduct migration counts, as well as area search and point count census surveys. Participants also received in-depth Spanish language reference materials that cover a wide variety of bird monitoring techniques and tools for analyses.

Since the workshop, participants have made many contributions to conservation with the training they received: three new monitoring stations are now being operated in Nicaragua, one graduate student is completing his thesis on aquatic foraging birds in Costa Rica, one student is assisting with data collection for a thesis on hummingbird morphology and habitat selection in Costa Rica, and one is assisting with population size research on the Black-faced Solitaire in Turrialba Volcano National Park in Costa Rica.

Plans have already been made to conduct another workshop in the spring of 2004, and biologists from several countries have already expressed interest in attending.

The Program thanks the following cooperators for providing instruction and funding for the recent workshop; Anna Thaler of the Klamath Bird Observatory; Gabriel David of the Canadian Organization for Tropical Education and Rainforest Conservation; Jim Zook, a freelance Ornithologist, Costa Rica; Maria Maglianesi of the Universidad Nacional, Heredia, Costa Rica, Steve Latta of the Point Reyes Bird Observatory; the Caribbean Conservation Corporation, and especially the Richard and Rhoda Goldman Fund.

For more information about the Workshop, including a checklist of the birds of the Tortuguero region, visit www.fs.fed.us/psw/rs/landbird/tortuguero/tort_index.htm or contact Pablo Herrera at paherrera@fs.fed.us. Donations for support of the TIBMP can be sent to: PRBO, Costa Rica Project Fund #1601, c/o Steve Latta, 4990 Shoreline Hwy, Stinson Beach, CA 94970.

Marine Turtle Conservation Act

For the last year CCC has actively supported passage of the Marine Turtle Conservation Act, H.R. 3378. The U.S. Senate unanimously passed the Act in late 2003. In the Senate it was called the Jeffords Bill, after its sponsor, Senator James Jeffords of Vermont. CCC is currently coordinating its efforts with a coalition of national and local conservation groups to ensure the Act’s passage in the U.S. House of Representatives.

H.R. 3378 is similar to other multinational species conservation bills (e.g., Rhino-Tiger, Great Apes). It directs the Secretary of Interior to establish a program to review, approve, and fund qualified marine turtle conservation projects in foreign countries to conserve nesting turtles and to prevent illegal trade. H.R. 3378 should be very successful in building partnerships and leveraging millions of dollars from other sources of funding to support projects critical to species conservation.

The bill authorizes $5 million in annual appropriations to be deposited in a Marine Turtle Conservation Fund established for this purpose.

Please contact your U.S. Representatives to support the bill! Look for updates in the next Velador.
Chiriquí Beach Season Report

Hawksbill Turtle Recovery & Research at Chiriquí Beach, Panama

Chiriquí Beach, Bocas del Toro Province, Panama, was once described as the most important nesting beach in the Caribbean for the Critically Endangered hawksbill turtle (*Eretmochelys imbricata*). In 2002, a series of meetings were held between Drs. Anne and Peter Meylan, local authorities, conservation groups and communities to determine interest in establishing a long-term hawksbill conservation program at Chiriquí Beach and nearby nesting localities. Meetings continued into early 2003, funding was secured, and the program began under the direction of CCC in April 2003.

Monitoring Methods and Preliminary Results

Markers were placed every 500 m along the 24-km long Playa Chiriquí beach. Natural markers (land features) were used to delimit zones on the Zapatilla Cays. Daily track surveys by foot or horse (Chiriquí Beach only) to record hawksbill nesting activity were initiated on all beaches by June 12, 2003. Observed nests were marked and a GPS location recorded. Nesting on Playa Chiriquí dropped to very low levels by early November and track surveys were subsequently reduced. Nesting on the Zapatilla Cays dropped off by September (only one nest in November). Periodic surveys were continued on the Zapatilla Cays.

From the end of May through October, 495 hawksbill nests, 874 leatherback nests and nine green turtle nests were observed.

Hawksbill Satellite Tracking

In addition to nest monitoring, the project included the satellite tracking of post-nesting female hawksbill sea turtles. In July, 2003, two hawksbills, named Señorita Beche and Töbü Señorita Caña, were satellite tagged after they nested on Chiriquí Beach. After almost two months of staying offshore of Chiriquí Beach, Señorita Beche took a deep water route to the coast of southern Nicaragua then continued north along the coast to an area of coral reefs off the northern coast of Nicaragua. In contrast, Töbü Señorita Caña quickly headed in a different direction, north to waters just south of Jamaica. Migration maps may be viewed on CCC’s website at www.cccturtle.org

Local Threats to Marine Turtle Survival

Although the Zapatilla Cays are part of the Bastimentos Island National Marine Park and are essentially unoccupied, both nesting turtles and their eggs are still threatened by poachers. The threat to turtles and their eggs from poachers is much greater on Playa Chiriquí, which is bounded by two communities. The data collected so far suggests that the nearly continuous presence of surveyors on these beaches during the entire nesting season was a deterrent to poachers and helped protect nesting females and their nests.

Anecdotal information suggests that a major threat to hawksbill survival is harpooning by members of the Kusapin, Tobobe and Playa Roja communities. In the latter community, hawksbills are occasionally taken from the nesting beach. In the vicinity of the Palo Blanco, San Pedro and San Pedrito communities, marine turtles are caught with nets. It is estimated that at least five green turtles and 12 hawksbill turtles (some reportedly carrying tags from Playa Chiriquí) were harpooned from Kusapin and as many as ten turtles with Playa Chiriquí tags were caught at the other sites. If these numbers are correct, local fishing may represent a major threat to the Playa Chiriquí hawksbill turtles. Similarly, turtle harpooners are visible from the Zapatilla Cays daily after June 1, 2003. While the primary target of hunters is the green turtle, hawksbills are taken whenever found.

In addition to the threat from poachers and hunters, preliminary results suggest that predation of nests by domestic and wild dogs represents a major threat to sea turtle hatchlings. In some cases, hatchling tracks indicated that dogs had not dug up the nest until after the hatchlings had emerged. On the Zapatilla Cays, erosion was the only recorded cause of nest loss. Since nest predation by dogs is a major concern, Research Coordinator, Cristina Ordoñez, held meetings to discuss dog predation. While various control approaches were suggested, a consensus could not be reached.

by Cristina Ordoñez, CCC Field Coordinator
Drs. Anne & Peter Meylan, Wildlife Conservation Society
Argelis Ruiz, Smithsonian Tropical Research Institute
Sebastian Troëng, CCC Scientific Director

CCC staff and local villagers watch as Senorita Beche crawls back to the ocean after being tagged with a satellite transmitter at Chiriquí Beach, Panama.
BTP Completes 35th Year of In-water Sea Turtle Research

The Bermuda Turtle Project continued in its thirty-fifth year, committed to the goal of promoting the conservation of marine turtles through research and education. Project activities during 2003 included field and laboratory research, participation in Caribbean regional conservation issues, training of international and local students, and public education via the media, the Internet, and classroom activities.

Sampling of sea turtle populations in Bermuda was carried out by Jennifer Gray (Project Coordinator & Head Aquarist at the Bermuda Aquarium, Museum and Zoo), Drs. Anne and Peter Meylan (Principal Investigators), staff members of the Department of Conservation Services and the Department of Environmental Protection, and 47 volunteers.

A total of 107 green turtle (Chelonia mydas) captures were made in nets at 17 sites around the island. The turtles ranged in size from 23.3 – 71.8 cm straight carapace length. Eight hawksbills (Eretmochelys imbricata) were handled as part of the project this year, ranging in size from 21.3 to 75.7 cm. Five were strandings and three were live captures made by a recreational diver. All turtles captured in 2003 were immature.

Of the 107 net-captured green turtles, 26 (24%) were recaptures. This compares with 35.1% in 2000, 16.4% in 2001, and 22% in 2002. The recapture rate is greatly affected by the extent to which we sample the exact same sites as in previous years. Nineteen of the recaptures represented the second captures of the individual turtles; six represented the third captures; and one represented the fourth capture. The recaptures included one turtle tagged ten years prior, three tagged seven years prior, and the remainder had been tagged six years prior or fewer. All but three of the 26 recaptures were made at the same site at which they had been originally tagged; the other three had moved only slightly to adjacent sites.

During 2003, the Bermuda Turtle Project offered its International Course on the Biology and Conservation of Sea Turtles for the eighth time. The course was taught by Drs. Peter and Anne Meylan and Jennifer Gray. Guest lectures were given on sea turtle anatomy and disease by Dr. Robert George of the Virginia Institute of Marine Science and the Virginia Marine Mammal and Sea Turtle Stranding Program, and on cultural and socioeconomic issues regarding sea turtles by Peter Richardson (Marine Conservation Society). This year’s nine participants were drawn from Anguilla, the British Virgin Islands, the Cayman Islands, the Turks & Caicos Islands, Grenada, St. Lucia, and the United States. Five were conservation officers from U.K. Caribbean Overseas Territories; the other four included a government natural resource manager from St. Lucia, a high-school teacher from the U.S., an intern from the Bermuda Aquarium, Museum and Zoo, and the director of an NGO involved in field projects with sea turtles in Grenada. Over the eight years during which the Biology and Conservation of Sea Turtles course has been offered, it has served 79 students from the Caribbean and North Atlantic including Belize, Bonaire, Canada, Costa Rica, Cuba, India, the Netherlands, Nicaragua, U.K. and Venezuela.

To learn more about the Bermuda Turtle Project visit www.cccturtle.org/bermuda.

By Dr. Anne Meylan, Dr. Peter Meylan and Jennifer Gray
In the early afternoon of January 7th, 2004, United States Coast Guard Cutter (USCGC) RESOLUTE (WMEC-620), home ported in St. Petersburg, Florida, was on patrol in the North-Central Caribbean Sea. A watch stander on the bridge spotted a piece of floating debris. As the debris passed down the side of the cutter, a sea turtle could be seen, helplessly caught in a small net attached to a tree branch and a piece of Styrofoam. The sea turtle’s ability to swim was severely hindered and clearly would not have survived in its current condition. USCGC RESOLUTE maneuvered next to the sea turtle and deployed its Rescue Swimmer, Seaman Jason Bodell, to attempt to free the turtle from the net. Seaman Bodell was successful in safely cutting the sea turtle free, and it quickly turned and swam away.

By Ensign Luke M. Slivinski
USCGC RESOLUTE Public Affairs Officer

A Great New Way to Give!

CCC founder Archie Carr observed that, while all members of a sea turtle colony are invaluable, nesting females achieve the highest level of importance when they become what he labeled “Old Faithfuls.” These are the matriarchs — the nesting females that return like clockwork to the beach year in and year out to renew the cycle of life. Their steady deposits in the sand offer the greatest hope for sea turtle survival.

CCC is proud to announce a new monthly membership giving program, which provides a simple way for you to make valuable, steady contributions toward CCC’s critical efforts to save sea turtles. By making small monthly donations, you can provide CCC with a steady flow of revenue to support sea turtle conservation.

Monthly donors will have their credit card charged an established amount ($5 min) on the first business day each month. CCC will provide you with an end of the year statement that summarizes your year’s donations. As a monthly donor, you will receive special benefits, including an update letter from CCC’s Executive Director, a copy of CCC’s annual report, and a $100 gift certificate good towards our popular Research Participant program in Costa Rica.

Please consider becoming one of CCC’s growing fleet of “Old Faithfuls.” By joining CCC’s monthly-giving program, you will improve CCC’s effectiveness and help us give sea turtles a better chance at survival. To learn more, please visit our website or phone Tracie Vida at (352) 373-6441.

By Ensign Luke M. Slivinski
USCGC RESOLUTE Public Affairs Officer