



LOGGERHEADLINES

Sea Turtle News from South Carolina

July, 1999

Greetings

Well, this has certainly been an interesting sea turtle season as you will see in this issue of *Loggerheadlines*.

Strandings

Thirty carcasses were reported by the network for July. This is slightly below the past four years. There were 27 loggerheads and three Kemp's ridleys. This brings the season total of Kemp's ridleys to 13 which is the highest ever. As reported last month, the islands near Charleston Harbor and Hilton Head Island account for over 50% of the strandings. But this month there were also six strandings in the Cape Romain National Wildlife Refuge.

Of the 27 loggerheads, nine (33%) were adult-sized animals. This is more than double the number of adults that died in June.

Staff conducted post mortem exams on two loggerheads. A loggerhead, found near the Folly Beach pier, contained three fishing hooks. One was in the mouth. The second one was in the external neck area. And a third, small hook was found in the lower intestines. This turtle was a fishing pier beggar and consumed large amounts of fish. A recreational fishing line with two hooks caught a 40 cm shark which was then

eaten by the turtle. The second hook was embedded outside the turtle's mouth in the throat skin. This prevented the turtle from swallowing the shark. The cause of death appeared to be drowning from an obstruction (either the shark or the fishing line) which held open the glottis resulting in drowning since water was found in the lungs.

A juvenile loggerhead turtle was found alive on Seabrook Island on 20 July by the morning turtle patrol. It was very weak and both the carapace and plastron were covered with barnacles and other sea life. It died within hours of being found. A post mortem exam revealed crab parts, vegetation and tunicates in the digestive tract, but also round worms of various sizes. There were also leeches on the body and in the nostrils and mouth. The turtle was both emaciated and anemic to the point where muscles and bones were compromised.

Nesting News

Preliminary hatching results

There were reports of larger than average clutches laid this season. It is also reported from some projects that the percent hatching success appears to be lower than expected. Projects on Edisto Beach, Harbor, Hilton Head, Seabrook, Prichards and Kiawah islands have noticed higher than normal mortality in a variety of categories during nest inventories.

the sand, "large" numbers of eggs that died early in development, and "poor" nest success. For volunteers that have walked the beach morning after morning, such happenings are most disappointing. Hatching time and evaluating the success of nests is the opportunity for volunteers to enjoy the fruits of their dedicated efforts. It is therefore understandable that there is some frustration when responses to these observations and questions have no concrete answers. This by no means is a reflection of the issues raised by the volunteers, but rather emphasizes the lack of adequate scientific information to answer these valuable questions.

Most obviously, we do not know everything about sea turtles, especially about embryonic development and what happens in the nest. The weather changes experienced this summer, including record high temperatures, may be the cause of some of the negative impacts reported. Individual beaches have their own characteristics that may influence success as well. While adaptive management is certainly necessary, making quick changes based on little scientific documentation could have greater repercussions.

The legal mandate that allows such projects to operate comes from a Section 6 Cooperative Agreement between the US Fish and Wildlife Service and the SC DNR. The main goal of the program is to recover the population by implementing the Loggerhead Recovery Plan.

The statewide protocol currently in use was developed based on the general conditions and common experiences across the state, with input from adjacent states. Such a protocol assists in providing the volunteers participating in turtle projects with the basic information necessary to carry out management efforts as scientifically as possible and with minimum human interference. At the same time, the protocol needs to be responsive to new scientific information on sea turtles which in part comes from the scientifically accurate records provided

by those using the protocol.

Having a protocol ensures that there will be a standardized methodology to ascertain a statewide picture. This makes individual changes to the protocol to match individual beaches or groups of people problematic. Even with a protocol in place, it is difficult to ensure that all the 19 projects, with over 700 volunteers participating in them, are carrying out the same procedures.

What is possible, however, is to determine if similar results are being seen from other nests, across the season, and on several beaches across the state. If such observations can be carefully documented, and included with the project report, they provide data for determining if this concern warrants further investigation. Repeated documentation over several years, provides even more validity for looking at a particular beach more carefully. Similar observations documented in the reports of several projects can raise the issue to a statewide level.

Collecting the necessary data can prompt a review of the statewide protocol. For this to take place we need accurate data. Volunteers are encouraged to observe what is happening and record the information as accurately and in as much detail as possible. Exact numbers are required. The method of collecting the information has to be scientific and include multiple occurrences. Subjective accounts are unusable.

Please contact us if you have questions about data collection or methodology to document unusual events. We thank all the volunteers and staff who have shared concerns and raised questions. We encourage all projects to continue sharing such observations and keeping copious notes on them. Through collaborations between the sea turtle projects and DNR, applicable solutions can be found for legitimate concerns.

These included: died post-deposition/relocation, pipped dead, dead hatchlings in the nest and dead hatchlings on the surface. We inquired through an e-mail correspondence to all SC projects to see if others had similar results. State sea turtle coordinators in NC, GA and FL were also contacted.

Meg Hoyle (Botany Bay Island) reported seeing a large proportion of "died early" in some *in situ* nests that are well placed in the dunes. Ruth Boettcher, the North Carolina coordinator, stated, "I haven't heard of unusually large number of hatchlings dead in the nest, but I have had reports of hatchlings emerging during the day (late morning to late afternoon) on sunny, clear days when the surface of the sand has warmed up."

Mark Dodd reports from Georgia that there is no significant amount of mortality when compared to their record nesting season. The incidents he has been notified of refer to dead hatchlings found near the surface. These incidents correlate with nests that were relocated higher on the dune field where conditions are drier than where the majority of the other nests are laid.

The weather pattern in July may have contributed to some of the results being reported, such as the dead hatchlings in the nests. There were 20 days in July that had above average temperatures. Seven of the last ten days in July had maximums above 95 °F.

Tagging returns

A tagged, adult loggerhead was found in a tidal pool on South Island (Tom Yawkey Wildlife Center). This turtle was originally tagged on South Island on 10 June, 1997 and taken from South Island to Myrtle Beach as a control in a magnetic orientation study. The turtle made the 60-km return trip to South Island in less than 48 hours as determined by radio telemetry.

Another tagged loggerhead was observed nesting at Folly Beach on 29 July. It was another Wassaw Island, Georgia turtle. She

was tagged on 30 May as a neophyte (no tags or tag scars).

And finally, we have received information from the University of Florida regarding a leatherback turtle that washed ashore dead on Kiawah Island in May. It was tagged at Gandoca-Manzanillo, Costa Rica in 1998. It nested five times during that season: May 10, 19, 29, June 8 and 21.

The National Marine Fisheries Service and the University of Florida (UFL) have merged the two major sea turtle tagging programs. The cooperative program will be coordinated by UFL. DNR will obtain information from UFL and pass that information to the respective project that reports the tag number. Permission has to be obtained from the researcher who originally tagged the turtle before any information can be released by UFL.

Reports from the field

Marilyn Laserna, project leader at Edisto Beach, reports that a loggerhead went into the state park campground and attempted to nest. The ground was so hard that she was unable to excavate a large enough cavity, even after digging for over an hour. She had been dropping eggs for only a few minutes when the cavity was filled. Marilyn and park naturalist Elaine Freeman caught the remainder of the eggs, placed them in a bucket and relocated the nest to the beach. This part of Edisto Beach was recently renourished with "beach compatible sand". Obviously this was not the case.

Special Feature

OBSERVE AND RECORD: MAINTAINING SCIENTIFIC ACCURACY

With nests hatching and volunteers conducting inventories, there have been reports and questions on a variety of nest content observations. They include, "large" numbers of hatchlings found dead just below the surface of

Notes on Folks

Thanks to the Charleston Natural History Society (CNHS), there's a new turtle enthusiast in South Carolina. Daemond Burnell is a rising junior at Baptist Hill High School in Hollywood. This summer he received a grant from CNHS to participate in the sea turtle research and management project on Botany Bay Island, working with DNR Biologist, Meg Hoyle. Daemond learned to probe, screen, and inventory nests in addition to learning how to operate a boat and ATV. Daemond and his family are Edisto Island residents, but this was his first opportunity to observe sea turtles nesting and hatching.

South Carolina is fortunate to have a dedicated group of sea turtle volunteers along the coast. However, the majority of the volunteers are retired and only a very small percentage are under the age of 18. If we entertain the hope that the next generation is going to do better at environmental stewardship, then we need to start teaching them how to accomplish this. It only took \$1000 from CNHS to employ Daemond for 10 weeks and this investment is well worth it. As Daemond puts it, he'll "have a lot to talk about" when he gets back to school. His enthusiasm for sea turtle conservation will go further with his peers than a slide show from a DNR employee or adult turtle volunteer.

If your project does not have the funds available to employ a local youth, there are other options. Nest inventories are great opportunities for volunteer teens. Since inventories can be scheduled in the evening and don't require a daily commitment, they allow more teens to be involved.

As this nesting season starts winding down, and the school year begins, please explore if your project has room for a new group of volunteers. If recruitment can start before

school lets out next year, you may find some new energy for your project.

Resources

Marine Turtle Newsletter: This newsletter is published quarterly and received by more than 2000 persons in over 100 countries. It contains articles, meeting reports, announcements, news and legal briefs and recent publications on all aspects of sea turtle biology and conservation. The newsletter can be downloaded electronically from the website <<http://www.seaturtle.org/mtn/>>. It can be viewed with Adobe Acrobat Reader (which is available through the same site). This newsletter is available free-of-charge.

CTURTLE Listserv: This electronic listserv is a discussion forum on sea turtles and is available free-of-charge to all interested persons. An e-mail address is required to subscribe. Any message sent to the listserv is automatically distributed to all persons subscribing to the list. It carries information on a variety of topics, and can often generate several e-mail messages each day from several discussions taking place at the same time. (One can unsubscribe from the list if one chooses to at a later date.) To subscribe send the message "subscribe CTURTLE [your name]" in the body of the message to <listserv@lists.ufl.edu>. No subject heading is required.

Past Symposium Proceedings: The US National Marine Fisheries Service (NMFS) is making available on the internet the proceedings from past Annual Symposia on Sea Turtle Biology and Conservation. These proceedings contain the many papers presented at each of the conferences. Each electronic document has an interactive table of contents, allowing for the selection of individual papers. The website address for the proceedings is <[http://www.nmfs.gov/prot res/prot res.html](http://www.nmfs.gov/prot%20res/prot%20res.html)>

Training Video Update

In the last issue of *Loggerheadlines* we discussed the development of a training video. A script has been finalized and footage has been shot at several locations. Topics include: crawl and nest characteristics, probing, relocation, screening and nest inventories. The video is being developed by SC DNR's Production Unit. We expect the video to be ready by the beginning of next year's turtle season. We welcome any suggestions in this regard.

Regional News

Georgia - Mark Dodd with Georgia DNR reports that they have a new nesting record since their monitoring was standardized in 1989. Their previous record was 1,378 nests in 1994. So far this year, they have 1,409. The eleven year average is 998 nests.

North Carolina - Ruth Boettcher, with the North Carolina Wildlife Commission, also reports that almost all of their beaches are recording above average number of nests. It's very possible that they may break 1994's record of 1,028. Strandings have decreased dramatically since 1 July.

Announcements and Events

Beach Sweep: The National Beach Sweep will be held on September 18th, 1999 on all beaches in the USA. During this event, volunteers comb the beaches to collect and remove trash items from our beaches. This is an important activity for sea turtle conservation, as it helps to remove items from the beach that may hinder nesting females and emerging hatchlings.

With the dynamic nature of most beaches, trash from beaches often get washed out to sea, where they may be consumed by turtles. Plastics are especially harmful. Items

such as plastic shopping bags can be mistaken for jelly fish and consumed by turtles, often contributing to their death. Other coastal and marine wildlife, such as shore birds and marine mammals, are also affected by litter.

Turtle projects can take the lead in organizing volunteers on their respective beaches for this event, which also provides an opportunity to publicize the projects' activities.

Annual Symposium on Sea Turtle Biology and Conservation: The 20th Annual Symposium on Sea Turtle Biology and Conservation will be held at the Delta Orlando Resort, Orlando, Florida, USA between 29th February and 4th March, 2000.

Each year the symposium attracts biologists, managers, policy makers, teachers, conservation organizations and enthusiasts from all over the world who share a keen interest in a fascinating, mysterious and threatened group of marine reptiles. We encourage all the South Carolina turtle projects to attend this meeting, as it provides a unique opportunity to hear the latest in research, management and conservation activities.

On-site registration for the symposium will begin on the afternoon on Monday 28th February. On Tuesday, 29th of February, a special one-day mini-symposium on the biology of the loggerhead turtle will take place followed by an evening social event.

Poster presentations and oral paper presentations will take place Wednesday, Thursday and Friday. The annual auction will be on Thursday evening and the concluding banquet with presentation of awards, entertainment and dancing will be on Friday evening.

If you are new to the symposium or your address has changed since you last attended, contact the symposium registrar, Chris Koeppel (Fax:1-407-674-1804 or by e-mail: y2ksts@aol.com).

(scroll down to *electronic reading room*, then on *turtles*, and then to *proceedings of the symposia*). They can be viewed with Adobe Acrobat Reader which is available through the same site.

Reminders

- ✓ Emergence date of a nest is when hatchling tracks are first visible on the beach surface. It is NOT when a saucer shaped depression is noticed on the surface of the nest. Accurately recording emergence date is crucial for determining incubation duration, which in turn, can assist in determining the sex ratio of the nest. Some nests may have emergences over several days. Please keep a record of the number of hatchling tracks visible each day. Also, record days that the weather may have obscured hatchling tracks.
- ✓ Please ensure that the revised nest inventory category definitions are being used. If there are any questions please contact DNR for on-site review of these definitions.
- ✓ The most scientifically accurate method for classifying whole eggs found during nest inventories is to open each egg to determine its category. Any other method results in errors, despite the experience of persons conducting the inventory. If one does not want to open eggs, please pair oneself with someone who is willing to open eggs, or contact your project leader for alternative arrangements.
- ✓ Hatch success is calculated by comparing the number of live hatchlings leaving the nest with the total number of eggs LAID by the turtle. Therefore, the number of eggs laid by the turtle has to include those depredated on by ghost

crabs and racoons as well as eggs broken during probing. Please make sure these calculations are correct.

- ✓ Please report incidences of hatchling disorientation caused by lights to project leaders for appropriate action. Most beaches are covered by lighting ordinances, therefore the local authorities should be informed of these violations.
- ✓ Call 843-762-5015 immediately if you have a fresh (code 1) stranding or any small turtles less than 20 inches.
- ✓ A separate e-mail address has now been established for all correspondence regarding sea turtles and sea turtle projects in South Carolina. This e-mail address is [<sccturtle@mrd.dnr.state.sc.us>](mailto:sccturtle@mrd.dnr.state.sc.us). This will greatly assist in a more coordinated effort to exchange information between the projects, DNR, and other collaborators. However, if you wish to reach individual persons, please continue to use their direct/personal e-mail addresses.

If you have questions please contact...

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Thanking all of you for your efforts...

Sally Murphy, *State Coordinator*
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