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Capsis Beach Hotel on the Island of Crete, Greece, location of the 26th Sea Turtle Symposium, 3-8 April 2006 (see Margaritoulis pp.16-18).

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## GUEST EDITORIAL:

# Wild and Head-started Kemp's Ridley Nesters, Eggs, Hatchlings, Nesting Beaches and Adjoining Nearshore Waters in Texas Should Receive Greater Protection

Charles W. Caillouet, Jr.

106 Victoria Drive West, Montgomery, Texas 77356 USA (E-Mail: CWCaillouetJr@aol.com)

The Endangered Species Act of 1973 (<http://www.fws.gov/ endangered/esa.html>) requires development and implementation of recovery plans for the conservation and survival of threatened and endangered species. The U.S. Fish and Wildlife Service's (USFWS) and National Marine Fisheries Service's (NMFS) recovery plan for the Kemp's ridley sea turtle (*Lepidochelys kempii*) lists four recovery criteria that must be met before this endangered species can be considered for downlisting to threatened status (USFWS & NMFS 1992). The first recovery criterion is to continue complete and active protection of the known nesting habitat and the waters adjacent to the nesting beach, concentrating on the Rancho Nuevo, Tamaulipas, Mexico area, and continuation of the bi-national (Mexico-United States) protection project. The fourth recovery criterion is to successfully implement all Priority 1 recovery tasks. Priority 1 recovery tasks focus on protection and management of nesting and marine habitats, not only in Mexico but also at Padre Island National Seashore (PAIS) near Corpus Christi, Texas, and other nesting beaches in Texas.

The Turtle Expert Working Group (TEWG 1998; 2000) showed that numbers of Kemp's ridley nests laid at Rancho Nuevo and adjoining beaches, as well as hatchlings released, are increasing exponentially. Increasing numbers of nestings by wild and head-started Kemp's ridleys have also been documented on North Padre Island, including PAIS, and on other Texas beaches (Shaver & Caillouet 1998; Shaver *et al.* 2004). In 2005, a new record of 51 Kemp's ridley nestings on Texas beaches was reached (D.J. Shaver, personal communication, July 2005). Most of the eggs collected from nests laid on Texas beaches have been incubated and resulting hatchlings released at PAIS (D.J. Shaver, personal communication, August 2005). Recently some nests on North Padre and Mustang Islands were found when eggs were hatching, and eggs in nests found on South Padre Island and Boca Chica Beach in Texas have been incubated there (*ibid.*). Releases of hatchlings from Texas beaches should have a multiplicative effect on future nestings in Texas as survivors mature and nest, contributing their offspring to future generations. In the context that nests numbers at Rancho Nuevo and vicinity reached a low of 740 in 1985 (TEWG 2000), the 51 documented nestings in Texas in 2005 represented 7% of that Rancho Nuevo low, so the Texas nestings are not trivial. I believe that Kemp's ridley nestings at Padre Island and other Texas beaches have reached levels warranting designation of these beaches as known nesting habitats under the recovery plan, making them worthy of additional protection. This additional protection should not be limited to the nesting beaches, nesters, eggs, and hatchlings, but should also include Kemp's ridleys in the adjoining near shore waters which are important migratory routes (Renaud 1995; Renaud *et al.* 1996) and foraging habitats (Landry & Costa 1999; Landry *et al.* 2005) for juveniles, subadults and adults. In 2001, the Texas

Parks and Wildlife Department took a bold step by implementing new, seasonal closures to shrimping in nearshore waters of south Texas, not only to protect shrimp stocks from overfishing, but also to protect sea turtles and other marine life from shrimp trawling.

In 1977, the primary nesting beach at Rancho Nuevo lacked manpower and funds for protection, it was unclear whether protection would continue there, and there was no requirement for use of turtle excluder devices (TEDs) in shrimp trawls to allow escapement of incidentally caught sea turtles (USFWS & NMFS 1992). In response, a head-start experiment was undertaken in 1978 as a last ditch effort in the face of the alarming decline in turtles nesting at Rancho Nuevo (*ibid.*). Kemp's ridleys were maintained in captivity for a period following hatching, then released when they had outgrown threats from avian and the majority of non-avian predatory species (*ibid.*; Caillouet 2000).

In 1989, a "Blue Ribbon Panel" was assembled by NMFS to evaluate the head-start experiment's progress (Wibbels *et al.* 1989). The panel recommended that, to effectively evaluate head-starting, the experiment be continued for a 10-year period following the installation of TEDS on all shrimping vessels in U.S. Gulf and Atlantic waters, based in part on the time taken for Kemp's ridleys to mature in the wild. The panel also recommended three provisional criteria for assessing success of head-starting:

1. Apparent competence of head-started turtles at and after release, as indicated by their survival and growth in the wild and comparability to wild Kemp's ridleys in body weight, feeding behavior, orientation and reactions,
2. Ratio of recoveries (tag returns and strandings) of head-started turtles to naturally occurring Kemp's ridleys, taking into consideration the number of hatchlings produced at Rancho Nuevo and the number of head-started hatchlings (taking into account the possibility of biased sampling due to the presence of tags on head-started turtles), and
3. Comparison of recovery locations of head-started and wild Kemp's ridleys.

The panel further recommended, as an ultimate criterion for evaluating success of the experiment, that the proportion of nesting head-started females should increase relative to the proportion of nesting wild females. The panel considered that a gradual increase in this proportion over a 5-year period would be an indicator that head-starting is an effective conservation technique. Because it had not yet become obvious that recovery of the wild population had begun, the panel did not anticipate the nullifying effect of general recovery on its ultimate criterion.

Magnuson *et al.* (1990) stated that before evaluating the head-start experiment and determining whether the technique should

become a conservation practice, consideration should be given to whether four sequential milestones are reached:

1. Growth and survival of head-started turtles once they are introduced into the wild,
2. Nesting of some head-started turtles on a natural beach,
3. Nesting of enough turtles to contribute to the maintenance or recovery of the population, and
4. Demonstration that a head-started turtle is more likely to survive and reproduce than one released as a hatchling.

The recovery plan (USFWS & NMFS 1992) reiterated these milestones, but with slight modifications that made them more stringent. The first two milestones (Shaver *et al.* 2004) have been achieved, but the last two have not. However, it is emphasized that these milestones reflect evaluation of head-start as a conservation practice, not as the experiment it was intended to be.

In May 1992, Taubes (1992a) criticized the head-start experiment in a very negative article that was rebutted in July 1992 by Wibbels (1992) and Shaver & Fletcher (1992). Taubes (1992b) then responded, but only to Wibbels (1992) rebuttal, with still further criticism. In September 1992, at the request of NMFS, Eckert *et al.* (1994) reevaluated the head-start experiment and fashioned a new and more general goal, expressed as a two-part, testable hypothesis:

1. Head-starting can produce Kemp's ridley juvenile sea turtles which are able to join the natural, wild population, find their way to nesting beaches, procreate and hatch viable offspring of their own, and
2. Head-started turtles demonstrate equivalent or superior biological fitness (defined as equal or better survival rates from egg to reproductive adult, and equivalent or better fecundity) when compared to wild Kemp's ridleys.

Since then, the first part of this hypothesis has been proved (Caillouet 1998; Shaver & Caillouet 1998; Shaver *et al.* 2004; Shaver & Wibbels in press). To test the second part of the hypothesis, Eckert *et al.* (1994) suggested that several year-classes of wild Kemp's ridley hatchlings be tagged with internal wire tags and released over several years at Rancho Nuevo to provide a "control group" for comparison with head-started turtles. NMFS, in collaboration with its Mexican counterpart, wire-tagged 43,885 wild Kemp's ridley hatchlings over four years (1996, 1997, 1999, and 2000) at Rancho Nuevo, and released them there (Caillouet 1998; Ben Higgins, personal communication, August 2005), but these turtles have not been recaptured in numbers sufficient for a valid comparison with head-start turtles. Even if greater numbers of the wire-tagged turtles had been recaptured, confounding effects prevent valid statistical comparisons between the wire-tagged wild turtles and head-started turtles, since these two groups were not tagged and released in the same years, nor were the head-started turtles released as hatchlings. Furthermore, TEDs regulations were not fully implemented until 1992, so the wire-tagged wild turtles were afforded greater protection from shrimp trawling than most of the head-started turtles.

Controversy, criticism, and confusion surrounded the head-start experiment from its inception (Caillouet 1999), and contributed to an evolution of reviews and changing criteria to evaluate it,

not only as the experiment it was intended to be, but also as a conservation technique. The PAIS imprinting phase of the experiment was terminated with the 1988 year-class. The Blue-Ribbon Panel evaluation quickly followed (Wibbels *et al.* 1989). Another evaluation was conducted in 1992 (Eckert *et al.* 1994) and concluded that NMFS had released sufficient numbers of juvenile Kemp's ridleys over the years and recommended that resources be concentrated at sea and on nesting beaches, rather than on growing more turtles. They stated that success or failure of the experiment could not be evaluated unless survivorship and nesting success of both head-started and wild turtles in the wild could be measured. Finally, USFWS and NMFS terminated the captive-rearing phase of the experiment in 1993, the year after TED regulations were fully implemented. Providing rationale for this action, Byles (1993) emphasized that the experiment was not over, and that NMFS, USFWS, National Park Service (NPS) and Instituto Nacional de la Pesca (INP) of Mexico were committed to seeking evidence of marked nesting females on beaches of the western Gulf of Mexico. Williams (1993) justified the action by stating that NMFS scientists and some managers recommended ending the rearing of hatchlings and concentrating instead on learning more about Kemp's ridleys in the wild. Williams (1993) indicated that NMFS would place special emphasis on detecting tagged turtles in the wild and would work with USFWS to establish a control of wild turtles and measure their survivorship and fecundity, to learn the fate of head-started turtles and to provide information about the status and survivorship of wild Kemp's ridleys. However, premature termination of the PAIS-imprinting and captive-rearing phases of the head-start experiment served more to undermine it than to facilitate it.

Priority 1 tasks of the recovery plan (USFWS & NMFS 1992) require protection and related activities aimed at Kemp's ridleys in Texas. Byles (1993) and Williams (1993) were additional commitments on the part of USFWS and NMFS to document survivorship, fecundity and nestings so that wild and head-started Kemp's ridleys could be compared. However, support by USFWS and NMFS has not lived up to expectations. Nevertheless, much has been accomplished by Donna Shaver, her staff and volunteers who have patrolled North Padre Island, including PAIS, and have documented nestings of wild and head-started Kemp's ridleys. Without these efforts, little if anything would be known concerning nesting of head-started Kemp's ridleys in the wild. In the last three years, USFWS personnel and a group of volunteers have patrolled Matagorda Island, Texas, searching for nesting Kemp's ridleys (D. Shaver, personal communication, August 2005). On South Padre Island and Boca Chica Beach, Texas, a program of patrolling and egg collection has been ongoing since 1999, led by the USFWS in cooperation with Gladys Porter Zoo (during some years), with assistance from Sea Turtle Inc. volunteers and staff (*ibid.*). Also, personnel of the NMFS Galveston Laboratory have recently collected Kemp's ridley eggs from nests laid on Galveston Island, and transferred them to PAIS for incubation. During the nesting season, participants in NMFS' Sea Turtle Stranding and Salvage Network have looked for nesting sea turtles and nests, incidentally to patrolling beaches in search of stranded sea turtles. All these efforts are very important, but do not fulfill the recovery plan's priority 1 task of protecting and managing nesting habitats in Texas or additional USFWS and NMFS commitments (Byles 1993; Williams 1993) to this task.

A new Kemp's ridley recovery team has been assembled, and the process of revision of the Kemp's ridley recovery plan is now underway (<http://kempstridley.fws.gov>). USFWS and NMFS are conducting a 5-year status review of sea turtles as required by the Endangered Species Act (Federal Register, Vol. 70, No. 76, p. 20734-20736, 21 April 2005). These processes provide excellent opportunities for the two agencies to review the expansion of the wild and head-started Kemp's ridley nesting colony on Padre Island and other beaches in Texas, to give the head-start experiment a fair evaluation, and to live up to commitments elucidated above. The new recovery plan should recommend funding by USFWS and NMFS for these activities, with a focus on PAIS and protection of Kemp's ridleys in adjoining near shore waters along the Texas coast.

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- BYLES, R. 1993. Head-start experiment no longer rearing Kemp's ridleys. *Marine Turtle Newsletter* 63:1-3.
- CAILLOUET, C.W.,JR. 1998. Testing hypotheses of the Kemp's ridley head-start experiment. *Marine Turtle Newsletter* 79:16-18.
- CAILLOUET, C.W.,JR. (Compiler). 1999. *Marine Turtle Newsletter* articles on status of the Kemp's ridley population and actions taken toward its recovery. MTN Kemp's Ridley Compilation. Special Online Anthology, [http://www.seaturtle.org/mtn/special/MTN\\_Kemps.pdf](http://www.seaturtle.org/mtn/special/MTN_Kemps.pdf)
- CAILLOUET, C.W.,JR. 2000. Sea turtle culture: Kemp's ridley and loggerhead turtles. In: R.R. Stickney (Editor). *Encyclopedia of Aquaculture*. John Wiley & Sons, Inc., New York. pp. 786-798.
- ECKERT, S.A., D. CROUSE, L.B. CROWDER, M. MACEINA, & A. SHAH. 1994. Review of the Kemp's ridley sea turtle headstart program. NOAA Technical Memorandum NMFS-OPR-3, 11 p.
- LANDRY, A.M.,JR. & D. COSTA. 1999. Status of sea turtle stocks in the Gulf of Mexico with emphasis on the Kemp's ridley, p. 248-268. In: Kumpf, H., K. Steidinger and K. Sherman (Editors), *Gulf of Mexico Large Marine Ecosystems*, Blackwell Science, Malden, MA.
- LANDRY, A.M., JR., D.T. COSTA, F.L. KENYON, II, & M.S. COYNE. 2005. Population characteristics of Kemp's ridley sea turtles in nearshore waters of the upper Texas and Louisiana coasts. *Chelonian Conservation and Biology* 4: 801-807.
- MAGNUSON, J.J., K.A. BJORN DAL, W.D. DUPAUL, G.L. GRAHAM, D.W. OWENS, C.H. PETERSON, P.C.H. PRITCHARD, J.I. RICHARDSON, G.E. SAUL & C.W. WEST. 1990. *Decline of the Sea Turtles: Causes and Prevention*. National Academy Press, Washington, D.C., 259 p.
- RENAUD, M.L. 1995. Movements and submergence patterns of Kemp's ridley turtles (*Lepidochelys kempii*). *Journal of Herpetology* 29:370-374.
- RENAUD, M.L., J.A. CARPENTER, J.A. WILLIAMS & A.M. LANDRY, JR. 1996. Kemp's ridley sea turtle (*Lepidochelys kempii*) tracked by satellite telemetry from Louisiana to nesting beach at Rancho Nuevo, Tamaulipas, Mexico. *Chelonian Conservation and Biology* 2:108-109.
- SHAVER, D.J., A.F. AMOS, B. HIGGINS & J. MAYS. 2004. Record 42 Kemp's ridley nests found in Texas in 2004. *Marine Turtle Newsletter* 108:1-3.
- SHAVER, D.J. & C.W. CAILLOUET, JR. 1998. More Kemp's ridley turtles return to south Texas to nest. *Marine Turtle Newsletter* 82:1-5.
- SHAVER, D.J. & M.R. FLETCHER. 1992. Letters: Kemp's ridley sea turtle. *Science* 257: 465-466.
- SHAVER, D.J. & T. WIBBELS. (In Press). Headstarting ridley sea turtles. Chapter 15, In: Plotkin, P., *Biology and Conservation of Ridley Turtles*, Johns Hopkins University Press, Baltimore, Maryland.
- TAUBES, G. 1992a. A dubious battle to save Kemp's ridley sea turtle. *Science* 256: 614-616.
- TAUBES, G. 1992b. Letters: Kemp's ridley sea turtle - response. *Science* 257: 466-467.
- TEWG. 1998. An assessment of the Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtle populations in the Western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-409, 96 p.
- TEWG. 2000. Assessment update for the Kemp's ridley and loggerhead sea turtle populations in the Western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-444, 115 p.
- USFWS & NMFS. 1992. Recovery Plan for the Kemp's Ridley Sea Turtle *Lepidochelys kempii*. 40 p. U.S. Fish and Wildlife Service, Albuquerque, NM, and National Marine Fisheries Service, Washington, D. C.
- WIBBELS, T. 1992. Letters: Kemp's Ridley Sea Turtle. *Science* 257: 465.
- WIBBELS, T., N. FRAZER, M. GRASSMAN, J. HENDRICKSON, & P. PRITCHARD. 1989. Report to the National Marine Fisheries Service: Blue Ribbon Panel Review of the National Marine Fisheries Service Kemp's ridley headstart program. Submitted to the Southeast Regional Office, NMFS, St. Petersburg, Florida. 11 p. Copy downloadable at [http://www.sefsc.noaa.gov/PDFdocs/UPR\\_Blue\\_Ribbon\\_Panel\\_1989.pdf](http://www.sefsc.noaa.gov/PDFdocs/UPR_Blue_Ribbon_Panel_1989.pdf)
- WILLIAMS, P. 1993. NMFS to concentrate on measuring survivorship, fecundity of head-started Kemp's ridleys in the wild. *Marine Turtle Newsletter* 63:3-4.