CROCODILE SPECIALIST GROUP

NEWSLETTER

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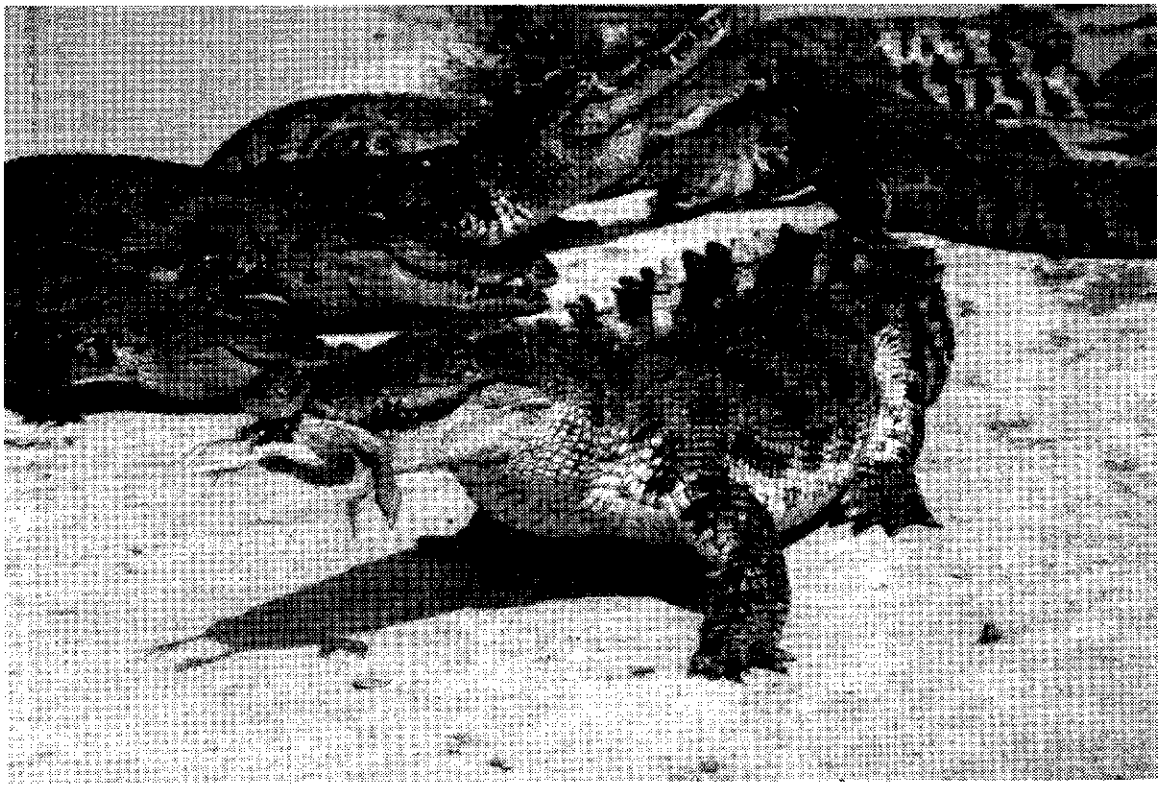

IUCN - World Conservation Union ■ Species Survival Commission

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IUCN--The World Conservation Union
Species Survival Commission

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COVER PHOTO. *C. siamensis* feeding on chicken carcasses, Utairatch Crocodile Farm, Thailand. R. Sommerlad photo (see page 9).

The CSG NEWSLETTER is produced and distributed by the Crocodile Specialist Group of the Species Survival Commission, IUCN - World Conservation Union. CSG NEWSLETTER provides information on the conservation, status, news and current events concerning crocodilians, and on the activities of the CSG. The NEWSLETTER is distributed to CSG members and, upon request, to other interested individuals and organizations. All subscribers are asked to contribute news and other materials. A voluntary contribution (suggested $40.00 US per year) is requested from subscribers to defray expenses of producing the NEWSLETTER. All communications should be addressed to: Dr. J. P. Ross, Executive Officer CSG, Florida Museum of Natural History, Gainesville, FL 32611, USA. Fax 1 352 392 9367, E-mail prosscsg@flmnh.ufl.edu

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Obituaries

DR. ELVIRA CARRILLO CARDENAS (1941-2001). On 20 February 2001, Dr. Elvira Carrillo Cardenas - the champion of Cuba's sea turtle conservation and management program - died. She had the best medical attention possible, but her heart failed. Her premature loss is mourned all over the world by those who came to know her, those who appreciated her valiant efforts to gain international support for Cuba's sea turtle program, and those touched by her unique charm.

Her vision was simple. That trade based on the sustainable use of Hawksbill turtles by local communities in Cuba, which was providing real and tangible incentives for conservation, should be maintained. She pursued her vision with a spirit that was uniquely Elvira - courage, honesty, compassion, dedication, determination. Always ready to break into a broad smile, to welcome warmly a new person she met, or to speak proudly of Cuba and all things Cuban. Always transparent, she was simply a great person and personality, a great Cuban, a great "Latina". A person with an awesome capacity for work and an uncanny ability to charm and motivate those around her. She genuinely loved people and life, and this love was molded into all aspects of her professional life. The world is a much sadder place without Elvira.

Born on 25 January 1941, in Habana, Elvira studied at the University of Habana and gained a Ph.D. in mathematics. Her involvement with marine turtles began seriously in 1981, when she was an advisor to the Minister of Fisheries, with specific responsibility to the Department of Experimental Raising of both crocodiles and sea turtles.

In her supervision of the crocodile farm at Zapata swamp she provided administrative support for the field surveys led by Toby Ramos, opened discussion with CITES for the registration of that farm, and provided vital

logistic and technical inputs to the crocodile survey of 1993. As a result of this work the farm was registered as a CITES captive breeding facility and Cuba's crocodile research and conservation program became well known to the world and CSG.

In 1981, Elvira created the Center for Experimental Raising of Marine Turtles, in Cocodrilo, formerly Jacksonville, on the south coast of the Isle of Pines. This is a remote and isolated community, which was settled by turtle fishermen from the Cayman Islands (the Jacksons) in the late 1800's. It remains one of two communities in Cuba today that practice turtle fishing.

Elvira initiated the first monitoring programs on nesting beaches, at the Isle of Pines and in other parts of the Cuban archipelago. Through her efforts, the Center for Fisheries Research initiated the Marine Turtle Project in the early 1980's, implementing a formal program of monitoring the species, size, sex and reproductive condition of turtles caught in Cuba's commercial turtle harvest program. The monitoring program led to a series of other research studies, and to a sound scientific basis for introducing closed seasons and establishing annual harvest limits.

In 1990, Cuba joined CITES and Elvira began the rather difficult task of representing Cuba's interests - particularly with sea turtles - at various conferences of the Parties. When Japan withdrew its reservation on Hawksbill turtles (1992), and the ability of Cuba to trade with Japan ceased, Elvira represented Cuba's interests in many international meetings designed to find a pathway through.

In 1996, the Department of Experimental Raising was integrated into the Marine Turtle Project, with Elvira at its head. She became Coordinator of the National Program on Marine Turtles in Cuba, a position she maintained until her death.

Between 1995 and 1997 Elvira's efforts were directed at the Cuban proposal to the 10th Conference of the Parties to CITES.

She coordinated the efforts of a team of national and international researchers, who reviewed all the historical data and initiated a series of new research programs. Cuba's COP10 proposal represents one of the most comprehensive reviews of Hawksbill turtle population dynamics yet undertaken and is a credit to Elvira. But opposition from some conservation circles was unabated, and despite majority support, it failed to get the two thirds support it needed for success.

COP10 was devastating to Elvira's small team and Cuba's program. Always under-resourced, trying to maintain high standards in science and management, and operating against a backdrop of economic hardship and stiff competition for limited funds. But Elvira never veered from the course she had set. COP10 and each subsequent new barrier and setback, was followed by a determined rally of spirit, that overcame problems and cranked enthusiasm back into those around her.

In April 2000, she was once again the architect of a Cuban proposal the 11th Conference of the Parties to CITES. Again the proposal was comprehensive and transparent: her case strengthened by more data confirming the positive population trends reported previously. There is no doubt that COP11 should have seen her vision realized. It should have seen her efforts rewarded, nationally and internationally. It should have seen the stresses she worked under, lifted once and for all. But it was not to be.

Despite the majority of Parties supporting Cuba at COP11, the proposal failed, this time by 4 votes. The future of Cuba's turtle program was cast into jeopardy and the future of the resources needed to maintain the program became shrouded in uncertainty. Elvira was once again faced with the challenge of motivating those around her, which in her normal style, she did with understanding, compassion and sensitivity.

But a decade of unbelievable stress, and the prospect of more in the future, finally took it's toll on Elvira. For those who knew her well and availed themselves of her hospitality in Cuba, there is a loss that cannot be replaced. No more trips in the aged "blue rocket" that wielded its way around Habana. No more nights dining on Elvira's skilled cooking, with liberal dashes of Cuban rum to make everyone feel warm and welcome. No more of her infectious smile and humor. It is simply hard for those close to Elvira to accept that this great Cuban is no more.

There is clearly something Elvira would expect of her friends and colleagues. A legacy left behind. Strengthened resolve to push even harder to see her vision implemented. Determination to ensure her life's efforts were not in vain. — Grahame Webb, *Wildlife Management International, Darwin, Australia.*

LAST OF THE RULING REPTILES! Wilfred T. Neill, Jr., herpetologist, linguist, archeologist, author and cartoonist died on 19 February 2001, of pulmonary pneumonia. He was 79. Neill was born in Augusta, Georgia, on 12 January 1922. He received a B.S. from University of Georgia in 1941 at age 19. After serving in the Army Air Force in W.W. II, where he served in the South Pacific and New Guinea, he taught at Richmond Academy and Augusta Junior College. From 1949 to 1962, he was Research Director at Ross Allen's Reptile Institute, FL, where he began his extensive research and publications in herpetology. He did some graduate work at University of Florida in 1964 and worked as an associate curator of collections at the Florida State Museum. He deposited type specimens of several new species he described including the Everglades Rat Snake *Elaphe obsoleta rossalleni* and a Garter Snake *Thamnophis preocularis*. In addition, Wilfred T. Neill described *Amphiuma pholeter* (1964), *Pseudobranchus striatus lustricolus* (1951), and *Farancia erytrogramma seminola* (1964). He continued to publish research articles and books through the 1960s and 1970s, yielding a cumulative total of about 300 articles and six books.

Neill was best known in crocodilian circles for his book, THE LAST OF THE RULING REPTILES: ALLIGATORS, CROCODILES, AND THEIR KIN, 1971. In this comprehensive work, Neill combined an overview of what was known at the time about crocodilians with his own insightful and sometimes visionary, appreciation of their biology and significance. The book has been an inspiration to two generations of crocodile biologists and remains as readable, factually correct and inspirational today.

Wilfred T. Neill was, like the crocs he wrote about, a larger than life figure, renowned for his colorful lifestyle, iconoclastic pronouncements and unconventional career path. He was reputed to have bitten by venomous snakes more than 40 times, a figure he did not refute. In addition to crocodilians, he was widely recognized and admired for his work with snakes and with his general contributions to knowledge of the Seminole Indians, archeology and Indonesia. He was a prolific writer producing hundreds of scientific and popular articles, writing a regular column for his local newspaper and drawing wildlife cartoons that were syndicated to newspapers across the country.

His health declined steadily after a near-fatal snakebite in 1978. He was a resident at Meadow View Life Center in Lakeland, FL, since 1985 and withdrew from scientific work, although in recent years he enjoyed visits by numerous herpetologists. He is survived by his son, W. Trammell Neill, III, and his grandson, Daniel B. Neill. "A Biographical Sketch and Bibliography of Wilfred T. Neill" was published in 1993 by the Smithsonian Herpetological Information Service (No. 95). In 1966, Sam Telford honored Neill by describing a new subspecies of snake for him, *Tantilla relicta neilli. — From materials published by the Center for North American herpetology*
<http://www.naherpetology.org/news.asp?id=I>
Roy Pinney and Jeff Klinkenberg (St. Petersburg Times, 29 Mar 2001) and Dr. W. Tram Neill III..

Editorial

NATIONAL GEOGRAPHIC TV- CSG PARTNERSHIP. In February, after a period of discussion and consultation with the CSG Chairman and Steering Committee, an agreement was signed between National Geographic Television and the CSG to establish a formal advisory relationship between the two. National Geographic Society, and numerous other wildlife documentary makers, have come to recognize CSG as an authoritative source of information and advice as they create documentaries on crocodiles. Several inquiries a month are received at the CSG office seeking information on current topics, contacts with crocodile researchers and advice on program content and facts. Many CSG members have also participated in documentary filming and several are involved directly in the documentary business.

In recent years our relationship with National Geographic has become extensive and we have worked closely with several NGS producers. As NGS launched its new TV channel, and began filming for a definitive new series featuring crocodiles - Crocodile Chronicles - producer Charles Poe and NGTV Vice President, Maryanne Culpepper, agreed that we should place the relationship on a more mutually productive basis. Our current trial agreement for six months is to provide monthly consultations on potential crocodile program content, contact

information to CSG members, and check facts and advise on scripts as needed, in support of the Crocodile Chronicles program. In return NGTV has donated $3,000 to CSG and we will receive credit as advisors for the series.

Crocodile Chronicles is a 13 part series featuring CSG member Brady Barr as the scientific host who visits and assists crocodilian research projects around the world. Series episodes have already been filmed in Cuba, Belize, India, Mexico and USA.

While this new and experimental relationship is expected to be mutually rewarding, discussion prior to the agreement revealed several areas where caution and clarification were needed. CSG recognized that we have no control over the activities of our members, and that our services must be restricted to advice and referral. Members are free to accept or decline invitations from NGTV. National Geographic is a household name that includes a large number of virtually independent subunits operating without close coordination, so that the NG Explorer TV series has already duplicated several Croc Chronicle themes. Researchers may become confused when approached by documentary makers representing 'National Geographic', who appear unaware that National Geographic was filming here last week! It is also common for independent documentary makers who hope to sell material to National Geographic to represent their association with NGS as stronger than justified.

The tricky question of remuneration has also caused us much discussion and concern. It is clear that the wildlife documentary industry is a lucrative one and that field researchers, in many cases are 'the product'. While some are thrilled to have their work featured, others require payment for their time, expertise and disruption of their research work. Conflict between research and scientific integrity and film makers desire for 'spectacular' footage' is widely reported. Some researchers have pre-existing relationships with other filmmakers that may be cooperative, or in some cases a condition of research funding. It is clear that there are many variations and that no one format will fit all needs.

However, it is evident to me that the participation of CSG members in the creation of factually correct and interesting documentaries is a valuable component of our conservation activity. We have the opportunity to showcase our work and our perspective on conservation (and particularly our confidence in sustainable use) to a global audience in a way far beyond our own direct means. We have a responsibility to use the available outlets to promote our conservation message. I am sure that there will be problems, and that conflicts will arise as we negotiate, individually and as a group, through this new medium. I believe that this trial relationship with National Geographic TV, a globally recognized maker of documentaries, is an opportunity for us to clarify how this will operate, and for the diversity of interests within CSG to find a satisfactory way to participate at an effective level. More feedback and thoughtful comment on this issue will be gratefully received. — Perran Ross, *Executive Officer CSG.*

Views and Opinions

ANOTHER RESPONSE. Dagangon and Burgin (CSG Newsletter Vol 19 (4)), raise a very interesting point. If the focus of the conservation message is to obtain funds, it may be time to rethink the approach to selling crocodile conservation. They reach this conclusion after assessing questionnaires completed by a sample of science and non-science students at the University of Western Sydney, who also indicated that their primary source of information was television rather than the internet, movies, books, live displays, radio etc.

Notwithstanding the caution necessary when compiling questionnaires, and the ease with which biases can be introduced, I have no doubt that the results are true. However, I would strongly challenge the conclusions and three implicit assumptions:

1. That this is a "new" situation reflecting changing attitudes;

2. That "conservation" will be best served by making raising funds the primary focus of conservation; and,

3. That the primary focus of the CSG is in fact raising funds for conservation rather than achieving pragmatic and sustainable conservation outcomes

Up until the late 1980's, the CSG was itself a highly protectionist organization that spent most of its time and effort promoting the non-economic values of crocodilians. An approach that reflected the depleted state of many

crocodilian populations and which, at that time, was politically correct. It was a message that the growing body of urban conservationists warmed too. The CSG raised a reasonable amount of money on the basis of this approach – enough to sustain its activities.

As crocodilians started to recover in many countries, negative values began to rise. Regardless of their environmental value, which was often based on pseudoscience, myths and legends (Gorzula 1987), crocodiles were in direct conflict with rural people, the majority of which had no television, but had very clear ideas about any wildlife that impacts directly and negatively upon them. Sort of like cockroaches in the city.

That the CSG began to support conservation programs based on sustainable use - programs generating commercial benefits from the consumptive use of crocodiles - was a reflection of its determination to pursue conservation rather than fundraising as its first priority. CSG deliberately went against the prevailing, urban, conservation doctrine of the day, despite the potential for earning money. That doctrine was simply not working in the field and had no chance of doing so in many areas. History has shown that the pragmatic approach taken by the CSG has resulted in a string of conservation success stories, despite problems associated with the supply of skins outstripping demand.

The assumption that the attitude of the average person in an urban setting has changed over time remains unsubstantiated, and is probably wrong. More people in the public arena are now aware of the fact that use of wildlife can generate conservation advantages than was the case 15-20 years ago. But it's a little complex for the average television program to portray.

Had the CSG gone the other path, placed "fundraising" before conservation, and enlisted a large membership of television-educated supporters, I suspect that their ability to pursue conservation would have been seriously compromised. There are many multinational conservation NGO's today that would like to embrace sustainable use programs, but are constrained by the fact that many of their urban members may resign (cutting off income) and join other NGO's that will not budge (increasing their political power).

If it is not already clear, the third assumption can be rejected. The primary focus of the CSG is not fundraising, but rather conservation. There has clearly been an economic cost to maintaining this stance, and many CSG actions, are not popular with those who consider themselves mainstream conservationists. For example, the CSG has long advocated changes to the IUCN Red Listing Criteria so that the results realistically and scientifically reflect the real global status of species. Sadly, others who know the "fundraising" potential of endangered species listing are always pushing in the other direction, with full knowledge that television rather than science, honesty or real education dominates urban attitudes to conservation. — Grahame Webb, *Wildlife Management International, Darwin, NT, Australia.*

RESPONSE TO JENKINS AND WEBB. I read with interest the recent responses to our article (Daganon & Burgin, Newsletter 19(4): 2-3) 'Is it time to rethink the conservation message and how we deliver it?' I agree most of what our two critics (Jenkins and Webb) said. While acknowledging that attitudinal surveys are fraught with difficulties and they may 'reflect the ideologies of the individuals' who constructed them, techniques should always be incorporated to minimize this bias.

The primary focus of our study was to determine student's perceptions of the environment and if there were differences between students studying ecological courses and those with a focus elsewhere. We imagined that the strongest differences (if any) would be elicited by questions of perceptions of 'large dangerous animals' and incorporated appropriately targeted questions. After analyses I gleaned snippets that I thought were worth reporting to the 'crocodile world'. Despite deliberate strategies to minimize bias, I doubt that our outcomes were a reflection of ideology. If they were I would have been advocating more of the same since there is no doubt in my mind that CSG has played a pivotal role in sustainable management of crocodile resources and this could only have occurred through economic incentives at the local level. I have never doubted this, despite being outspoken about the approach taken in Papua New Guinea in the late 1970s. The concept of a sustainable industry was in its infancy then and much has been learned since with success stories worldwide.

The efforts of Jenkins and Webb have undoubtedly contributed to such outcomes.

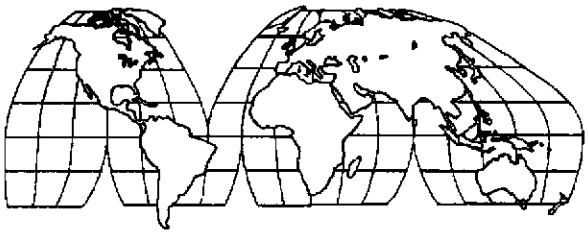
In our article we did not mean to imply that we advocated a change in focus from conservation to fund raising. Our point was that when targeting funds to ensure the on-going viability of the crocodile industry at the local level, our small sample of the forthcoming generation has stated interests that would indicate that they are more concerned about conservation than other drivers, such as economic and educational values. This is worth keeping in mind as one aspect of the complexity of the issue, if as Ross suggested, there had been a drop off in donations from the private sector and non-government organizations.

Our observations simply indicate what a group of young educated Australians (tomorrow's decision-makers and potential high-income earners) are thinking. Grahame's assertion that we are 'probably wrong' about changes in attitudes is as least as unsubstantiated as our implication that there has been change. Both of us, however, draw on wide experience in different spheres to come to our individual conclusions. I remain convinced that it is timely to address the issue of attitudinal change.

Finally it would have been my assumption that today's university students would have accessed the internet and other literature for their information on environmental matters, particularly those who are studying in the area. I was frankly amazed that they are still apparently relying so heavily upon television for their information and I work among these people all of the time. I thought that this information might be of interest to those who have to make decisions about how best to target the broader community.

In closing, I would like to refute that two of our explicit assumptions were "that 'conservation' will be best served by making the primary focus of conservation raising funds; and that the primary focus of the CSG is raising funds for conservation rather than achieving pragmatic and sustainable conservation outcomes" (see Webb's response). I am happy to concede that I see that attitudes towards the environment are changing with time. However, I may be biased in this regard since it has been my life's work to encourage such change. — Shelley Burgin, *Center for Integrated Catchment Management, University of Western Sydney, Richmond, Australia, 2753.*

Regional Reports



Africa

Chad

LAKE'S RAPID RETREAT HEIGHTENS TROUBLES IN NORTH AFRICA. Near the dead center of North Africa, where water has long been scarce and long-term drought is making it scarcer yet, one of the last large water bodies, Lake Chad, has shrunk by 95 percent since the 1960's and new research points to irrigation as a major cause.

The rapid retreat of the shallow lake threatens fish stocks and crops and could raise political tensions because the lake and the rivers that nourish it are shared by four countries, say the scientists who conducted the study, which was published last month in The Journal of Geophysical Research. "The problem is feeding on itself, as a three-decades-and-counting dearth of monsoon rains that normally swell the region's rivers has prompted the construction of irrigation projects that divert ever more water from the same rivers," said Dr. Michael T. Coe, a hydrologist at the University of Wisconsin, and a co-author of the study. The drop in precipitation and the rise in irrigation appear responsible for equal parts of the extraordinary shrinkage of the marsh-fringed lake, which has shriveled from an area of 9,700 square miles in 1963 to less than 580 square miles now. "We've shown that people are as big an influence as natural variability," Dr. Coe said. The relative contributions of human activities and natural climate shifts were determined using computer models set up to simulate the natural water cycle in the region.

The cycle starts from June to August, when an annual burst of monsoon rains falls in the mountains of Cameroon hundreds of miles south of the lake. This happens just as the lake reaches its shallowest, smallest size for the year. It takes about six months for the pulse of rainwater to

reach the lake, which then blossoms in January over the parched land, growing sixfold in area as it does so. Using 40 years of data on regional climate and water flows, the scientists found that the model closely replicated the actual changes measured in the lake level and extent at least from the early 1960's until 1980 or so. From then on, though, the shrinkage far outpaced what was predicted.

The early 1980's also saw the start of a burst of construction of internationally financed irrigation systems diverting water from the Chari and Logone rivers, which carry 90 percent of the runoff that enters the lake. Together, the change in weather patterns and a fourfold rise in irrigation have since reduced the flow in the two rivers by 75 percent, the study said. The model consistently showed that about half the loss of lake water was due to the rise in irrigation.

In centuries past, the lake has varied enormously in area under natural influences alone, Dr. Coe said. Satellite photographs show submerged sand dunes that were once sculptured by wind. And, he added, ancient shorelines carved 60,000 years ago show that Lake Chad was once the size of the Caspian Sea, about 150,000 square miles.

But in time spans relevant to the people living in the region today, he said, it is clear that trouble looms. The population around the lake, in Nigeria, Niger, Cameroon and Chad, stands at about 750,000 people and is growing quickly, even as the water supply steadily drops. "The future there now depends on what people do," Dr. Coe said. — Andrew C. Revkin, *NEW YORK TIMES 27 March 2001. <http://www.nytimes.com/2001/03/27>* [The Chari river and Lake Chad marshes are reported as once being significant habitat for Nile crocodiles and this large scale habitat modification probably impacts them. - Eds.]

The Gambia

CROCODILE EATS RARE SCOTTISH OSPREY. One of Scotland's ospreys will not be returning home this summer... it has been eaten by a crocodile. The bird was ringed on the shore of Loch Awe, Scotland, in the summer of 1998 and met its end during the annual migration to West Africa.

A fisherman killed the crocodile near the village of Missirah Nding, 200 miles inland on the Gambia River late last year. When he cut it open he found the ospreys ring, number 1351673, in the stomach and sent the details to the return address. The bander, Dave Anderson, said: "It is usually a thrill to hear about one of the birds we have ringed so far away, but this is very sad news." The fish catching ospreys with a wing span up to four feet became extinct in Scotland nearly 100 years ago, mainly because of egg collectors. They re-appeared in 1954 and there are now reckoned to be 150 pairs. — Daily Telegraph, UK 5 February 2001, Submitted by Jon Hutton, *Africa Resources Trust, 219 Huntingdon Rd., Cambridge CB3 0DL, UK.*

West Asia

India

MASS MIGRATION OF MUGGERS IN GIR FOREST. Mugger crocodiles (*Crocodylus palustris*) of the Gir forest are known as a single largest wild population of the species in India. During the last census, 288 muggers were counted from the Gir forest of which 201 muggers are recorded only from the Hiran Dam (also known as Kamaleshwar Dam). All major water bodies of the forest became dry by the end of November 2000, due to scanty rainfall in last two years.

A very interesting phenomenon was recorded during the first week of December 2000. Over 50 adult-sized crocodiles migrated from Hiran Dam and reached a water pool named 'Muggeri Ghuno' in the Hiran river. The Muggeri Ghuno' (a deep permanent water pool in the riverbed is locally known as 'Ghuno') is about half a kilometer from the Dam and is surrounded by very steep slopes of rocky hard land.

On 5th December 2000, I visited the site for study of the phenomena. The entire Hiran Dam (area 764 hectare) was totally dry, except a small water channel 50 x 200 meters long. in the empty reservoir. Fresh signs of mass migration of crocodiles were noticed in between the water channel and 'Muggeri Ghuno'. Large numbers of crocodiles' footprints were noticed on the twenty feet wide wet mud bed. Further, it was noticed that a wide area of vegetation, a long bed of grasses and shrubs, was pressed and disturbed and also signs of sliding/ dragging of crocodiles were noticed on steep slopes of rocky land.

Finally, the same day I visited the 'Muggeri Ghuno', where I counted 32 crocodiles approximately over eight feet long, which were basking on the edge of the water body.

According to local forest guard and Mr. B. P. Pati, Deputy Conservator of Forest, Wildlife Wing, Forest Department, Sasan, Junagadh, this migration had started from the last week of November 2000. At night, a small number of muggers came out from the water channel of dam, walked through the dam, climbed the steep earthen bundh, the reached other side, traveled through the scrub land and slid on down the slopes of rocky land and finally jumped into the deep water pool.

This type of mass migration is unusual and first time recorded in the species. The harsh environment not only forced them to dig burrows for resting, thermal regulation and aestivation but also it further forced them to migrate elsewhere to the safest habitat.

The migration has increased trouble for forest management and there are more chances of increasing conflict with human beings & animals in future. The prolonged drought condition may cause the population to migrate further down stream and pass outside the protected area. I am thankful to Mr. B. P. Pati, Dy. C. F. Sasan for arranging trip and facilities during the stay at Gir Forest, Gujarat. — Raju Vyas, *Sayajibaug Zoo, Vadodara-390018, Gujarat, India.*

East Asia, Australia, And Oceania

Indonesia

RECORD OF ESTUARINE CROCODILE GROWTH RATE WITH POULTRY OFFAL AS ITS FEED. Every poultry farm around the world has the same problem, they need to destroy the poultry offal that is the by-product of their production process. This offal includes Culling Day Old Chicken (DOC), Culling Chicken, Dead Chicken, etc. This offal could be used as a crocodile feed thereby creating a mutualistic connection between poultry farming and crocodile farming, using crocodiles as a "disposal" for poultry offal.

The best poultry offal for crocodile feeding is culling chicken or dead chicken, but Culling DOC may be used for feeding hatchlings. The important point is this: crocodiles must be given only a carcass. They cannot digest the keratin in the feathers and the visceral of the chicken contains to much fat, which will make the crocodiles ill.

Some of my experiments have shown that chicken carcasses or DOC carcasses gave the best growth rate. In Indonesia, many crocodile farms use poultry offal for crocodile feed. Using poultry offal as crocodile feed will make crocodile meat smell good (crocodile meat will have different smell depending on their feed).

Table 1. Growth rate and relationship between parameter for *C. porosus*

AGE (Months)	Total length (cms)	Commercial belly width (inches)	Body weight (kgms)
1	30.0	2.5	0.10
2	35.0	2.8	0.16
3	40.0	3.1	0.23
4	45.0	3.5	0.30
5	51.0	4.3	0.40
6	57.0	5.0	0.50
7	63.5	5.5	0.90
8	70.0	6.0	1.30
9	77.5	6.5	1.55
10	85.0	7.0	1.80
11	89.5	7.5	3.40
12	94.0	8.0	5.00
13	96.5	8.5	5.50
14	99.0	9.0	6.00
15	106.2	9.7	6.70
16	113.3	10.3	7.30
17	120.5	11.0	8.00
18	127.6	11.6	8.60
19	134.8	12.3	9.30
20	142.0	13.0	10.00
21	145.3	13.5	10.50
22	148.5	14.0	11.00
23	151.8	14.5	11.50
24	155.0	15.0	12.00

With good sanitation a very fast growth rate can be reached. At Mr. Rachmat Wiradinata's farm (Ekanindya karsa, Crocodile Integrated Farm – Cikande, Serang), crocodiles slaughtered at 24 months of age have an average total body length of 155 centimeters and commercial belly width of around 15 inches. This farm uses

poultry offal (dead chicken carcasses) for crocodile feed.

Food is offered every second day and in the intermediate day, the pens are cleaned and crocodiles fast. Many crocodile farms in Indonesia have poor sanitation and a poor management system and, of course, the crocodiles are in poor health, but there are a still few farms trying hard to do their best. — Johan Purnama, *DVM Indonesia Study Group for Amphibian and Reptilian (ISGAR) Jalan Raya Serpong, Tangerang. Indonesia. Fax : +62-21-5372722*

Hybrid *C.porosus* x *C. siamensis* eating chicken carcasses. Utairatch Crocodile Farm, Thailand. R. Sommerlad photo

Thailand

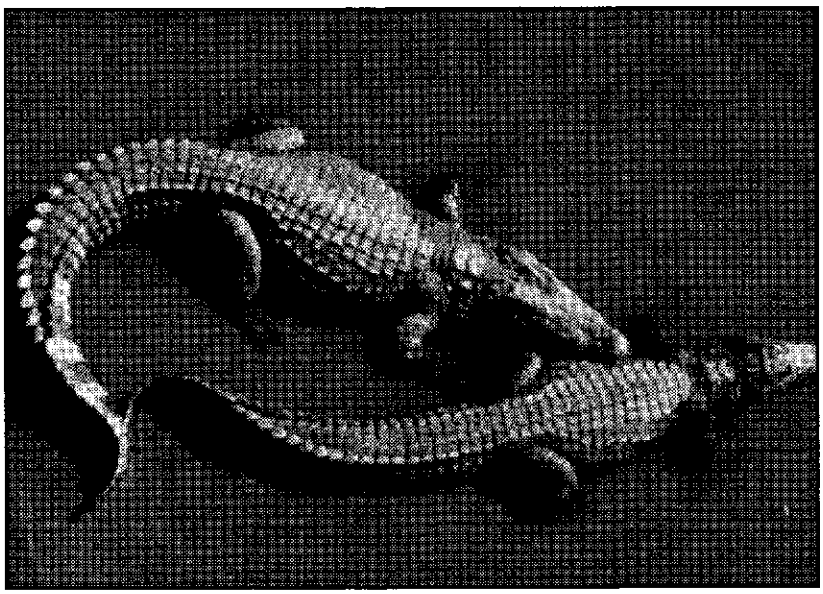
REINTRODUCTION OF THE SIAMESE CROCODILE. The Management Association of Thailand (CMAT) launched its strategy for re-introducing Siamese crocodiles into wild habitats in hopes of partial restoration of these crocodiles in their historical range in Thailand. We conceive that appropriate wildlife conservation comprises not only of preserving species, but also helping animals exist within their own natural habitats.

Crocodilians around the world have been threatened by unavoidable human activities. To alleviate the situation, several conservation and management programs were launched and proved successful in many countries. Unfortunately, not all species receive the same treatment. The Siamese crocodile (*Crocodylus siamensis*) in Thailand is the most critical species in term of need for conservation. It has been considered an endangered species based on the small number of specimens remaining in the wild. In 1996 IUCN Red List, *C. siamensis* is categorized as CR: Critically Endangered, Criteria A.1.a. and c. severe decline in numbers and areas more than 80% decline in three generations (Ross 1998). It is also included in Appendix I of CITES. They appeared to be reduced to non-breeding remnants in marginal habitats. The principal threats are habitat destruction, illegal hunting, and killing as vermin. During a survey in November 1993, Ratanakorn *et al.* (1994) confirmed the presence of at least one wild adult *C. siamensis* in Pang Sida National Park and another in Ang Lue Nai Wildlife Sanctuary. Although wild populations are scarce, *C. siamensis* is abundant in captivity. Tens of thousands of captive populations of pure *C. siamensis* provide a significant resource for restoration.

To return crocodiles into their historic and protected habitats is a major step toward conservation of species. The long term goal is to establish a viable, free-ranging population of Siamese crocodiles in the wild of Thailand, which requires a multidisciplinary approach involving a team of persons drawn from a variety of backgrounds. It also requires an understanding of the effect of the re-introduced species that will have on the ecosystem in order to ascertain the success of the re-introduced population. In addition, a model must be studied for building-up the released population under diverse sets of conditions, in order to specify the optimal number and composition of individuals to be released per year and the numbers of years necessary to ensure establishment of viable population. Positive public relations derived from commercial participation in the program will strengthen perceptions of Thailand's active conservation action and therefore reduce international criticism that can result in inhibitions to trade. The CITES regularization of international trade achieved by approving registrations greatly promoted the economic incentives on which conservation can be based. Therefore, it is a time for those who benefit from

trade to provide a structural and policy platform for restoration.

Many conservation and management programs could be applied to conserve *C. siamensis*. Why reintroduction? Reintroduction was defined by the IUCN/SSC Reintroduction Specialist Group as an attempt to establish a species in an area which was once part of its historical range, but from which it has been extirpated or become extinct. The reintroduction of species has been used successfully in many animals and plants, including some crocodilians such as a mugger crocodile (*Crocodylus palustris*). Other alternative conservation actions are inappropriate, for example, additional surveys to locate wild animals, enhancement of wildlife protection laws, reduction of illegal hunting, banning of imports and exports, and improvement of protection in national parks. All of these actions are either time-consuming or unnecessary. Moreover, they do not address the problem.



Crocodylus siamensis, G. Webb Photo.

We propose a program to reintroduce Siamese crocodile into wild habitats in hopes of partial restoration of these crocodiles in their historical range in Thailand. The three main objectives of reintroduction feasibility study are: to determine historic habitat availability in protected areas, examine the genetic integrity of potential release stock, and assess the people's acceptance of wild crocodiles at proposed release sites. The first two objectives will be immediate actions to initiate.

The ideal habitat proposed for restocking of endangered species ought to be both historic and protected areas. A limited number of papers describe the historical distribution of the species making it more difficult to locate potential release sites. More research of historical distribution, then, is the first step of this program. Once we know where past crocodile populations existed, we can match our data with present national parks or wildlife sanctuaries. A recent study by Ratanakorn (1994) identified two potential release sites in southeastern Thailand, Ang Runai Wildlife Sanctuary and Pang Sida National Park. Because Siamese crocodiles are thought to be "generalists", they can flourish in a wide variety of habitats. However, insufficient habitat and habitat destruction may hinder the process. The price of reintroduction goes up as the suitable habitat goes down. At no time has this been more apparent than today.

A number of species have been bred in captivity to provide a basis for recovery. However, the quality of animals is disputable, especially hybrids and their descendants. Recently, there is a concern about the genetic integrity of released animals. Should we release whatever animals are available right now or should we verify genetic integrity of animals before release? No genetic analysis exists for any of the captive populations; the degree of heterozygosity within populations and the degree of relatedness between isolated populations are completely unknown. Apparently, there are two reasons that could harm the purity of stock. First, importation of hatchling crocodiles from Cambodia to Thailand has occurred for almost 20 years. A study to identify subspecies – if it does exist – is expected, since individuals should preferably be the same subspecies as those that were extirpated. The best approach to the problem is to compare morphological characteristics of both

populations, such as skull dimension, body measurement, and other indications. Another alternative approach would be to conduct a microsatellite analysis of DNA samples from a number of participating crocodile farms in Thailand and Cambodia, and compare results with known pure samples. Contact has been made with Dr. Nancy Fitzsimmons of the University of Queensland and Mr. Win Chaeychomsri of Kasetsart University who will develop microsatellite markers for the study. Second, some captive operations still keep hybrids of Siamese and saltwater crocodiles. And to the greater extent, some may accidentally merge these two species in captivity due to inappropriate handling of animals. This issue will no longer be a problem since those animals will not be used to restock. Through careful management of individual gene pools, culture of endangered species can greatly enhance a recovery effort.

The above suggestions can be readily accomplished whenever funding is available, but social culture and political climates are often difficult to foretell. It is expected that environmental groups will express both praise and criticism over the plan, which seeks to establish a viable Siamese crocodile population in a region where the animals have not thrived for more than 60 years. The reintroduced crocodiles will be designated as an experimental population. The special designation will be issued which will allow for more flexibility in the management of the wild crocodiles. In accordance with that special designation, a citizen management committee will be established in order to insure that the Siamese crocodile reintroduction effort does not override the needs of the public. The crocodile management committee will be established in the first crocodile reintroduction workshop. Local residences and employees from various government agencies will be represented on the committee. Decisions made by the committee will serve as guidance for the government officials involved in crocodile management.

Some environmental groups, who see things differently and think that this is perhaps the first CMAT action in history likely to result in injury or death of members of the public, may oppose the reintroduction program. They also think this reintroduction will return crocodiles under circumstances that they feel are inadequate. Conversely, the sooner the project starts, the better habitats in Thailand we will have to offer. We will take all possible precautions to reduce the risk of human/crocodile conflicts. Only crocodiles that have no history of conflicts with people or livestock will be considered candidates for reintroduction. Moreover, all released animals will be fitted with radio transmitters so that their movements can be monitored. During the first decade of the reintroduction effort, the chance that a crocodile will injure a human is exceedingly small, due to the low density of crocodiles in the areas. However, we plan to replace animals that are bigger than a certain size with a smaller one.

We expect to find out the historical information about the loss and fate of individuals from the reintroduction areas. We also anticipate distinguishing genetic variation within and between populations of this taxon. This program will also be a milestone for other related programs that await aides for continuation of species, and for future community and landscape approach to conservation in Southeast Asia. We hope this program will establish linkage between the economic benefits and the long-term conservation perspective. If this program never launches, can we admit the possible extinction of Siamese crocodile in Thailand? — Yosapong Temsiripong – *Crocodile Research Laboratory, Crocodile Management Association of Thailand <yos_t@yahoo.com>*

EUROPE PLACES FIRST CROCODILE MEAT ORDER. A leading exporter of Thai crocodile meat says the country's commercial crocodile industry has bright prospects for exports this year to Europe, where outbreaks of mad cow and foot-and-mouth diseases have hurt demand for beef and pork.

"We got our first-ever order for one ton of crocodile meat from Germany earlier this month," said Kamthorn Temsiripong, marketing manager of Sriracha Farm. It is one of Thailand's largest crocodile farms and exporters of crocodile products. While Europe has been a good market for crocodile skins in the past, the farm has never before received an order for crocodile meat, for which China is traditionally the main market.

"European customers are now asking us to speed up our deliveries, and make sure we have the proper certificates from the Fisheries Department and the Convention of International Trade in Endangered Species of Wild Fauna and Flora," Mr. Kamthorn said.

There are 12 registered crocodile farms in Thailand, raising an estimated 170,000 of the giant reptiles for their skins, meat and internal organs. Sriracha Farm, which exported about 10,000 animals last year, said that each crocodile fetched about 5,000 to 6,000 baht on the export market. — Bangkok Post, 6 March 2001, *submitted by* Yosapong Temsiripong– *Crocodile Research Laboratory, Crocodile Management Association of Thailand <yos_t@yahoo.com>*

Caribbean and Central America

Cuba

POPULATION SURVEY AND STOMACH CONTENT ANALYSIS. A pilot project to study the diet of the Cuban crocodile (*Crocodylus rhombifer*), in the Zapata Swamp of Cuba was undertaken between 11 Nov. and 27 Nov, 2000. The research expedition was funded by National Geographic Television, and operated under the direction of CSG members Toby Ramos, Roberto Soberon, and Brady Barr. Existing diet data for *C. rhombifer* are little more than qualitative accounts, therefore a comprehensive stomach content analysis for this threatened species is sorely needed. The main objective of this project was to familiarize and demonstrate stomach-flushing procedures in the field to the Cuban scientists.

Field work was conducted in the southeastern portion of the Zapata swamp, one of two remaining localities for the species. A total of 20 crocodiles were captured over a five day period, ranging in size from 101 cm TL to 205cm TL (mean 150cm TL). Seven of these crocodiles (four females, three males), all adults ranging in size from 140 cm TL to 205 cm TL (mean 169cm TL), had their stomach contents removed by utilizing the hose-Heimlich maneuver. This technique was adapted for use in the field by utilizing an electric water pump powered by a 12 volt battery, which allowed animals to be processed at the site of capture.

A total of 1643 g of food was recovered from the seven stomachs, with a mean of 234.7 g. All stomachs contained food. Five of the stomachs contained Hutia (*Capromys pilorides*), a large endemic rodent. Hutias were clearly the most important prey by mass, accounting for over 90% of the total recovered stomach contents. Two stomachs yielded whole adult Hutias, while another contained several large pieces of the body, indicating very recent ingestion. Hutias were the only mammals seen in the swamp and seem to play an important role in the diet of the crocodiles. Five stomachs contained crustaceans (crabs), both aquatic as well as land crabs. Recovered crab remains consisted of pieces of carapace, chelipeds, swimerettes, and legs. Five stomachs contained gastropod remains, exclusively apple snails (*Pomacea paludosa*). The vast majority of the snail remains were only of opercula. These snail parts are relatively impervious to the stomach acids of crocodiles and can accumulate over time. One stomach contained a small piece of an unknown bird.

The small sample size of this pilot project prevents a detailed diet analysis, however, Hutias seem to be an important food item for *C. rhombifer* in the Zapata swamp. A more comprehensive and extensive diet study is being planned for later this year. — Roberto Soberon, *Empressa Nacional para la Conservacion de la Flora y la Fauna MinAg, Havana Cuba*, Roberto Ramos, *Min. Ciencias, Tecnica y Media Ambiente, Havana, Cuba* & Brady Barr, *National Geographic Television, 1145 17th St NW, Washington, DC 20036, USA.*

USA

FLORIDA GATOR MAN MEETS PUERTO RICO CAIMAN. A recent visit by alligator researcher Louis J. Guillette to Puerto Rico may help naturalized caiman (*Caiman crocodilus fuscus*) obtain a reprieve from extirpation as an exotic species decreed in the mid-eighties by the local Department of Natural and Environmental Resources (DNER).

Guillette is a professor of zoology at the University of Florida, whose path-finding studies of environmental endocrine disruption by contaminants in alligators have led the way toward the recruitment of crocodilians as 'sentinels' for monitoring pollution of water resources.

Students and faculty at the University of Puerto Rico, Rio Piedras, were mesmerized by professor Guillette's lively lecture in October 2000. He met separately with research biologists, clinicians and wildlife specialists. On

an inspection tour of Bayamon Zoo, Parque de las Ciencias, a major holding facility for wayward caimans, he demonstrated the correct technique for obtaining blood samples from caimans with minimal trauma.

To conclude his visit, Dr. Guillette went on a nocturnal cruise of Lake Tortuguero, the main area of caiman population, courtesy of DNER manager Eileen Ortiz and the Hon. Daniel Pagan, Secretary of DENR. Although adults managed to elude the expedition, enough hatchlings were spotted by spotlight and some captured to reassure the project leaders that the parent population appears reproductively active. Exclaiming, "This is just like Florida!" an enthusiastic Guillette indicated he would return for in-depth field work in the 224 ha lake and surrounding 1,500 ha marshes which is premier habitat for caiman, a modern ecological replacement on Puerto Rico for the crocodilians that became extinct in prehistoric times.

Professor Guillette's visit was organized and funded by the Departments of Biology (Magda Morales) and Geography (Francis Watlington) of UPR. — Magda Morales, <mmorale@upracd.upr.clu.edu>

Trade

CSG GLOBAL TRADE ANALYSIS IN FULL SWING. Following receipt of special project funding of $10,000 from the Louisiana Fur and Alligator Council and a matching grant of $10,000 from the Florida Alligator Marketing and Education (FAME) Council, an economic analysis of global crocodile and alligator trade is now underway. The program is being coordinated by Jon Hutton at Africa Resources Trust (ART), Cambridge, UK, and he has engaged the services of resource economist James MacGregor to collect and analyze data. Terms of reference for the study provide for integration of data, analytic capability and interests of CSG, World Conservation Monitoring Center, TRAFFIC and ART. James will develop a broad understanding of the global market and trade of crocodilian products, review and analyze trade volume and price information, develop case studies and prepare an economic model of the crocodilian industry and market. Specific outputs include preparation of a case study of crocodilian sustainable use for OECD (see next article), specific information on major species in trade with examination of the impacts of price, trade, regulation efficiency and industrial organization on producer incentives. CSG will provide this information to participating industry groups, IUCN, and the EU.

James initiated the project with a trip to the Pan-American Leather Fair in Miami in January where he was able to meet and question many prominent figures in the industry. Data on production, trade and price has been provided by several industry groups, who recognize the value of the activity and have accepted our assurance that proprietary interests in the data will be carefully masked in the analysis and remain completely confidential. James has already prepared preliminary models of the available data and is scheduled to produce his report by mid-year. — Perran Ross, *CSG Executive Officer.*

CSG CROCODILIAN CASE STUDY. A workshop was held by Organization for Economic Cooperation and Development on 25th and 26th January at its Headquarters in Paris. A CSG paper on crocodilians was presented by Jon Hutton in a 15 minute slot on the 26th as a case study of market-driven conservation.

The workshop was organized as part of a 'Study on the Creation of Markets for Biodiversity Products and Services' that is being undertaken by the 'Working Group on Economic Aspects of Biodiversity' which is itself part of the OECD Working Party on Economic and Environmental Policy Integration. The involvement of the World Bank appears to have been an afterthought. However, it was helpful as it exposed the crocodile case study to several key figures involved in natural resource management in the Bank.

These papers are to be edited and hosted on the OECD's website. Because funding has not yet been located it is not clear whether they will be published in their entirety, but that is the

intention. In any case, they will be summarized in an OECD policy paper that will be sent to all OECD countries in due course. In addition, the final document with the full case studies will be submitted to the CBD as a contribution to its 'Clearing House Mechanism'.

The meeting was well attended (it had to move from the planned meeting room to a larger venue) by national representatives from OECD Governments as well as specialists in the field – most economists. The crocodile case study was well received, but time was restricted and no questions were allowed! One thing, however, was clear. We fool ourselves that the crocodile situation is a well known example of sustainable use. That may be the case amongst biologists, but it is certainly not true amongst the economists! Many seemed amazed that there is a 30 year history that we can draw from for lessons from market-led conservation. I was also surprised at the quality of both the presentations and the state of their 'art'. In many ways I thought that their understanding of the issues was well behind that of members of the CSG Steering Committee - which was more than a touch alarming!!

On a more general conservation note, I have the impression that we are seeing the beginning of a strong movement away from sustainable use, and in particular the involvement of communities in conservation, in favor of a return of emphasis on protected areas. Some of this is doubtless due to a new awareness that all conservation solutions will not be found in ecotourism, eco-prospecting etc. But part of this is doubtless due to a backlash being driven by US (mostly) conservationists who believe that the little money there is for biodiversity should be used directly and not 'filtered' through communities, markets or rural development. Africa Resources Trust will probably develop a program of work around this issue in the near future and I met with Dr. Peter Bridgewater of UNESCO's Man & Biosphere Program to discuss cooperation in this regard.

The networking opportunities were good, both for CSG and ART, and one individual from Australia knew something about crocs as well as about Dr. Webb. Dr. Neil Byron is one of the Australian Governments 'Productivity Commissioners' and he presented a paper strongly critical of his governments approach to the conservation of native wildlife. — Jon Hutton, *Africa Resources Trust, 219 Huntingdon Rd., Cambridge CB3 0DL, UK.*

Publications

PROCEEDINGS OF THE 15TH WORKING MEETING OF THE CSG, VARADERO, CUBA, JANUARY 2000.

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Veterinary Science

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2.5cm x 7.5 cm electronic format GIF image files no larger than 10 KB preferred.
Please submit entries to the editors.

ASCORBIC ACID TREATMENT OF ULCERATED GINGIVITIS IN HATCHLING AND JUVENILE CROCODILES. Ulcerated gingivitis caused by fighting wounds in overcrowded conditions has been reported in young farmed crocodiles (De Vos 1997). Ulcerative stomatitis with bacterial complications is a common condition in captive snakes (Page, 1966; Ross and Marzec, 1984). The disease in snakes is known to respond to treatment with ascorbic acid (Wallach 1969; -1971; Marcus 1971; own unpublished observations).

In June 1989 two 5-month-old Nile crocodiles, one dead and one alive, were received from a crocodile farmer in the Eastern Transvaal (now Mpumalanga) Province of South Africa together with the report of apparently infected bite wounds in a large number of animals in the affected house. The two animals had bite wounds on their heads, particularly the jaws, as well as ventrally on the body. The jaw wounds had an inflamed appearance and

ulcerations were extending along the gingivae and the palate.

On bacteriological examination of the gingival ulcers, only contaminants were isolated: *Escherichia coli*, *Micrococcus variens*, *M. luteus*, and *Pseudomonas alcaligines*. The owner reported that antibacterial treatment failed to be successful and therefore was advised to treat with ascorbic acid, the clinically affected crocodiles by injection (50 mg i.m.), repeated after 48 h, while the whole group received ascorbic acid in the feed (1 g/kg) fed continuously. Within one week of the onset of the treatment a marked improvement was noted and within two weeks all lesions on the gingivae had disappeared.

Several similar cases in farmed Nile crocodiles have since been observed in South Africa and have responded to the same treatment. However, the case of ulcerative stomatitis shown by Youngprapapakorn *et al.* (1994) affects the tongue and not the gingivae and may have a different aetiology.

It is unlikely that a vitamin C deficiency is the direct cause of reptilian cases of ulcerative stomatitis as compared to scurvy in human patients and postulated by Wallach (1969). But there is increasing evidence that in stressed animals there is increased demand for vitamin C and that supplementation with ascorbic acid enhances the activity of the immune system and prevents specific infections (Chávez de Martínez & Richards 1991) or, as in these particular cases, helps the body to overcome non-specific infections.—F. W. Huchzermeyer, *PO Box 12499, 0110 Onderstepoort, South Africa, and* K. D. A. Huchzermeyer, *P O Box 951, 1120 Lydenburg, South Africa.*

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CSG On-Line

NEW PHILIPPINES ENDANGERED SPECIES SITE. Samir Aragon has produced a website featuring endangered species in the philippines at HTTP://WWW.PHILWILDLIFE.COM/

The site has information on 13 land mammal species, 52 bird species, 10 reptiles (including the Philippine crocodile), 6 frogs, and 3 marine species. For just the 4th week the website received 8,000 hits but more importantly we have had around 550 unique visitors to the site on that week. The site also encourages group discussion of conservation issues at philwildlife-subscribe@yahoogroups.com or www.groups.yahoo.com/group.philwildlife — Samir Aragon, <samirca@hotmail.com>.

Meetings

PRELIMINARY ANNOUNCEMENT

EAST ASIA, AUSTRALIA AND OCEANIA, REGIONAL MEETING OF THE CSG. A proposal is in an advanced stage of negotiation with authorities and sponsors in the People's Republic of China to hold a Regional Meeting of the CSG in late **August or September 2001**. The meeting is proposed as a follow-up to the technical workshop on Chinese alligator conservation. Final dates and location to be announced. In view of the short time available for planning, interested participants are requested to contact the Regional Vice Chairman, Grahame Webb, P.O. Box 530, Sanderson, NT 0812, Australia. Tel: (618) 8 992 4500 Fax: (618) 8 947 0678.

E-mail <gwebb@wmi.com.au> to receive meeting information as it becomes available.

PRELIMINARY ANNOUNCEMENT

16TH WORKING MEETING OF THE CROCODILE SPECIALIST GROUP. An invitation has been received from a consortium of agencies to hold the 16th Working meeting in Gainesville, Florida, USA 7- 10 October 2002. The host consortium of Florida Fish and Wildlife Conservation Commission, University of Florida Cooperative Wildlife Research Unit, Florida Caribbean Science Center, USGS-BRD and Florida Museum of Natural History have assembled a proposal for venue, services and costs. Further details will appear in the next Newsletter.

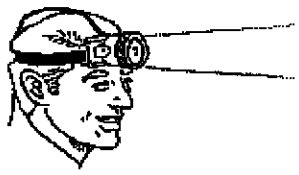
SECOND INTERNATIONAL WORKSHOP ON DNA IN CROCODILIANS, 7 – 10 November 2001, in San Diego, Zoo, San Diego CA, USA. The meeting is organized by Valentine A. Lance, Llewellyn D. Densmore, and Travis C. Glenn and hosted by San Diego Zoological Society.

Sessions are planned for discussions focusing on:

- Major Classes of DNA Markers
- Use of DNA Markers in Research and Management of Wild Crocodilians
- The Crocodilian Genome
- DNA Markers for Research and Management of Captive Crocodilians

For up to date information see: <http://baddna.srel.edu/CrocDNAWebPages/CrocDNAWorkshop01.html> If you lack internet access, you can obtain printed copies of the information from the web site by contacting — Travis Glenn, *Savannah River Ecology Lab, PO Drawer E, Aiken, SC, 29802 USA.*

Personals



GRAHAME WEBB WINS CLUNIES ROSS MEDAL. Grahame Webb received the Clunies Ross National Science and Technology Award for his outstanding commitment and contribution to the application of science and technology in Australia and for inspirational leadership of future scientists.

He was one of six awardees. His citation says: Grahame Webb has shown that conservation and farming can succeed side by side. His life's work with crocodiles and other reptiles has led to a new vision for wildlife conservation. In the 1970s, even though crocodiles were endangered in the NT, the community viewed them as dangerous pests. Grahame Webb's pioneering work on crocodile conservation has not only seen the NT population of these majestic reptiles recover to its past numbers, but also has changed community attitudes. Crocodiles are now treated as valuable wild animals that underpin tourism and crocodile meat and leather industries.

Crocodylus Park, a crocodile research and education center in Darwin, serves as the base for Webb's global activities. His company has provided assistance to more than 50 conservation management programs around the world, helping to protect crocodiles, turtles and other species. He advises many international organizations. Grahame Webb has demonstrated to the world that indigenous communities will readily support conservation when it is linked to a secure economic future.

For further information please visit <www.cluniesross.org.au/2001_award.htm> Photos of the awardees and the ceremony will be available on the website. — Niall Byrne - *For the Ian Clunies Ross Memorial Foundation Email <niall@byc.com.au>.* [*Also submitted by numerous CSG members, Congratulations Grahame! - Eds.*]

EDITORIAL POLICY - All news on crocodilian conservation, research, management, captive propagation, trade, laws and regulations is welcome. Photographs and other graphic materials are particularly welcome. Information is usually published, as submitted, over the author's name and mailing address. The editors also extract material from correspondence or other sources and these items are attributed to the source. If inaccuracies do appear, please call them to the attention of the editors so that corrections can be published in later issues. The opinions expressed herein are those of the individuals identified and are not the opinions of CSG, the SSC, or the IUCN-World Conservation Union unless so indicated.

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