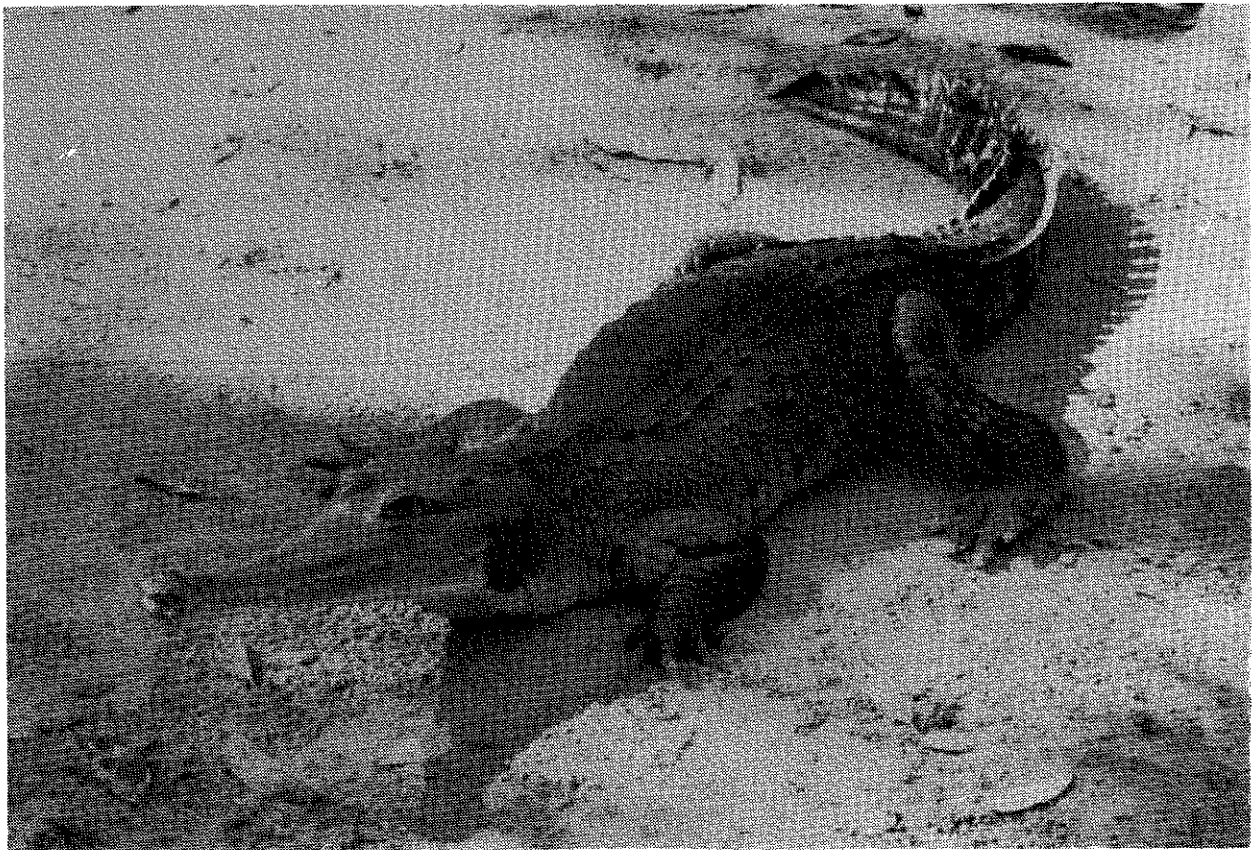


CROCODILE SPECIALIST GROUP

NEWSLETTER

VOLUME 10 No. 1 ■ JANUARY 1991 - MARCH 1991



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: *Crocodylus cataphractus*,
Gator Jungle, Dover, Florida, USA. The
biology and conservation status of this species
remains poorly known and is classed as high
priority for conservation in the draft CSG
ACTION PLAN. R.S. Funk photo.

PATRONS

The following Patrons of the CSG have contributed more than U.S. \$500.00 during the past 12 months and are listed by size of donation, largest first. The funds donated have been deposited with University of Florida Foundation, Inc., and are used to support the CSG program:

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JLIA 'CITES' Promotion Committee, Tokyo, Japan.

Dr. I. Lehr Brisbin, Savannah River Ecology Laboratory, Aiken, South Carolina, U.S.A.

Utai Youngprapakorn, Samutprakan Crocodile Farm, Samutprakan, Thailand.

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IUCN-World Conservation Union, Gland, Switzerland.

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Prof. Harry Messel, School of Physics, University of Sydney, Sydney, Australia.

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Armand Bennett, Colombia Impex Corp., New
York, NY, U.S.A.
Jonathan Politano, Miami Beach, Florida, U.S.A.

EDITORIAL

WEAK MARKET ENDANGERS CONSERVATION GAINS. The Newsletter has now heard the bad news from Florida, Louisiana, Zimbabwe, South Africa, Papua New Guinea and Australia. Prices for classic skins crashed in September and have continued to decline. In South America caiman prices are also severely depressed. One European tannery closed temporarily to save money and hide product shows have been notable by the absence of buyers. The consensus of our informants is that the probable causes of this decline include a worldwide slowdown in the economy and the high production of small skins from farms and ranches. Those groups of producers who are working cooperatively to market their product have been able to buffer their members to a degree and some farsighted farmers were able to predict the over supply of small skins and adjust their production to larger sizes. However, the effects of this downturn in the market are being felt by many producers and it is likely that this will be a shake out period for the industry with weaker operators failing.

The gravest danger that we see is that the disruptions of this weak market will undo some of the excellent work that has been done to stabilize the world market for crocodilian skins and develop legal trade based on sustainable use. The illegal producer poaching wild skins has little overhead and can more easily suspend activities for awhile. The farmer with high capital investment and constant operating costs will have to hang tight to survive. We hope that the various sectors of the industry can act creatively to preserve the structure of the industry and its commitment to conservation of the resource. Some possible options are to work together to extend credit, and cooperatively tan skins to wait

out the market. We hope all our readers can see that the eventual recovery of the industry will be based on a continuing source of stock, mostly from conserved wild populations. There is a particular responsibility on the part of the buyers and tanners not to take advantage of present conditions to destabilize the production sector. All participants in the industry must take a longer term view that involves survival for the industry and the wild resource on which it ultimately depends. -- *Editors.*

STEERING COMMITTEE

11TH WORKING MEETING OF THE CROCODILE SPECIALIST GROUP WILL BE HELD AT VICTORIA FALLS IN ZIMBABWE HOSTED BY CROCODILE FARMERS ASSOCIATION OF ZIMBABWE between 2 August and 8 August, 1992. Chairman of the Organizing Committee, Kevin van Jaarsveldt, informed us that an elaborate complex of new hotels is now operational at Victoria Falls and extensive facilities for meeting and recreation are available. Watch future newsletters for updates and registration information.

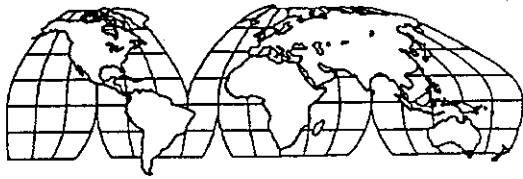
REGIONAL MEETING FOR SOUTH AMERICA, WILL BE CONVENED IN SANTA MARTA, COLOMBIA HOSTED BY PROEXPO AND THE COLOMBIAN CROCODILE FARMERS ASSOCIATION. Dates have yet to be finalized but will be in November 1991. This special regional meeting has been convened by the CSG in response to strong interest in caiman farming in the region. The meeting will focus on regional issues of Conservation, Husbandry and Trade.

EL CONGRESO REGIONAL PARA SUD AMERICA SE REALIZARA EN SANTA MARTA, COLOMBIA , AUSPICIADO POR PROEXPO Y LA ASOCIACION COLOMBIANA DE CRIADORES DE COCODRILOS en Noviembre de 1991. Este Congreso especial fue acordado por el CSG en respuesta al gran interés regional por la crianza de caimanes. Se considerarán aspectos regionales sobre Conservación, Crianza y Comercio de cocodrilos.

***** STOP PRESS.*****

PRELIMINARY REGISTRATION FOR BOTH MEETINGS ENCLOSED.

AREA REPORTS



AFRICA

Botswana:

TRANSPORTATION OF LIVE CROCODILES. Transporting live crocodiles is something most farmers eventually face and this article is a description of our experience with numerous tips that will make the task easier and safer. In our opinion a lot of unnecessary losses occur during transportation due to lack of knowledge and carelessness.

Preparation. Try to move crocs in summer or autumn rather than the beginning of winter. Crocs should be dewormed and not fed for few days prior to being transported. This will minimize the chance of regurgitation. Pumps and lights to allow continuing capture and packing operations after darkness should be placed and all transportation documents, export permits, vet permits, etc., should be in hand.

Vehicles. A closed unit truck with adequate ventilation allowing air circulation is necessary. If crocs are to be moved a long distance over dusty roads an open truck and tarpaulin are not satisfactory. The back of the truck must be well lit so you can see what is going on and a 200 litre drum with water and a stirrup pump to water down crocs is essential. On our farm we use about 40 cm of papyrus packed on the floor of the truck to insulate from exhaust heat as well as absorbing shocks. A second loading rack about 1 m above the truck bed can be built to increase capacity. We can load about 15 three meter crocs in truck bed 3m x 6m and another 15 on the upper rack. Tools, spare parts and first aid kit including pole syringe and Flaxadil, Neostigmine, etc., should be available.

After capture the eyes are covered with a sanitary towel secured by electrical tape, the snout is taped separately and a short length of wood secured between the jaws so that they remain partially open in case the animal regurgitates. We then measure and sex them using standard techniques and for large crocs we

administer 2 ml of vitamin B and 2 ml vitamins A, D & E intra-muscular. If the animals are restless 1 ml of Flaxadil calms them down. [Great caution is advised when using this potent narcotic drug -- *Eds.*]

To pack and load the crocs, the legs are drawn back tight against the body and the animal rolled in strong hessian bags which act as straight jackets. We pack the heaviest crocs up front and facing backward to minimize injury by chafing as when the truck moves the crocs tend to shuffle forward. The remaining crocs face the front. We then strap them all down using wide tie downs rather than rope to prevent rope burn. With crocs secured like this you would think there was little chance of movement but they are better than Houdini at wriggling out, so keep checking them.

During transit we think it very important that the crocs are watched at least for the first 50km to straighten out problems as animals shift over each other, block nostrils or become constricted by tie downs. After that a check and water down every half hour or hour should be sufficient as we have found most crocs settle down after a while. Our truck has a sleeper compartment that allows one of us to watch them throughout the journey and prevent problems.

On arrival be sure that adequate staff, lights and facilities have been prearranged to immediately unload them. Many a croc has been lost because of additional stress of being left overnight in the truck. Unload them and release immediately into water after removing eyemasks and washing off tape residue with mild soapy water to prevent later rash and skin peeling. This information is summarized from the experience obtained at the Okavango Swamps Crocodile Farm and I appreciate the assistance of John and Ursula Seaman who helped put all the material together. Shane Seaman, *Okavango Swamps Crocodile Farm, Pvt Bag 47, Maun, N'gamiland, Botswana.*

ASIA

Cambodia:

CROC TRADE REPORTED IN CAMBODIA. Crocodiles bring big money to the Cambodia's state run Fisheries Import/Export Co. (Kamfime). About 1000 to 1500 baby crocodiles are sold to Thailand at about \$300

each said vice director Chea Son in the capital Phnom Penh. But he added smugglers also do a brisk trade smuggling them across the northwest border. At the provincial center of Kompong Chhnag crocodiles are kept in small farms near Tonle Sap lake. One farm holding 70 adults claimed to produce 1700 eggs per year and export about 700 survivors a year to Thailand. Exported crocodiles are in the size range of 50 - 60 cm. Leo Dobbs, *The Fiji Times*, December 12 1990. [Submitted by Lehr Brisbin who comments "Is anyone aware of such a croc breeding operation in Cambodia, 1700 eggs/yr from only 70 adults seems a bit suspicious." These are presumably *C. siamensis* and this trade into Thailand, a CITES signatory, is illegal as there are no CITES certified farms registered in Cambodia. See also the article below by Scott Frazier on Thailand. -- Eds.]

India:

CROCODILE MANAGEMENT IN MADHYA PRADESH. Two of the three species of crocodile found in India occur in Madhya Pradesh, the gharial and the mugger. Since 1978, under the crocodile conservation project assisted by FAO/UNDP, the Madhya Pradesh State Forest Department has taken suitable measures for crocodile conservation. The Department has undertaken a rehabilitation project for the highly endangered gharial, identifying important habitats and protecting them as sanctuaries. Three sanctuaries for gharial have been established on the Chambal River, Son River and Ken River. A grow and release program has been established in which wild gharial eggs are collected from the Chambal river for captive rearing at the headquarters of the Chambal sanctuary. A total of 75 captive reared gharial (1.2m length) have been released, their progress in the sanctuaries monitored, and population trends assessed to evaluate the success of the program. Future programs include the release of 15 captive raised muggers into Chadpata Lake in the Madhav National Park. -- R. J. Rao, *School of Zoology, Jiwaji University, Gwalior, India.*

GHARIAL SURVEY OF CHAMBAL RIVER. During February - March 1990 a survey was carried out in the 425 km stretch of the National Chambal Sanctuary. The objective was to assess the

present status of the gharial (*Gavialis gangeticus*), Mugger (*Crocodylus palustris*), Smooth Indian otter (*Lutra perspicillata*) and gangetic river dolphin (*Platanista gangetica*) in the sanctuary.

During the survey 982 gharials were counted, an estimated increase of 20% since our last survey in 1988. Table 1 shows the distribution of size classes in the 1988 and 1990 surveys

Table 1.

Size Class in m.	Number of 1988	gharials seen 1990
< 1.2	285	254
1.2 - 1.8	306	410
1.9 - 2.7	115	205
> 2.7	114	113
Total	820	982

Since the initiation of restocking gharial in 1979 up until March 1990 at least 1735 captive reared gharials have been released in to the Chambal River in the Sanctuary. In this period the number of natural nests in the Sanctuary has increased and 57 nests were located in 1989. The gharial population in this stretch of the Chambal River appears to be on the increase and a detailed study report is in preparation. -- B.C. Choudhury, *Wildlife Institute of India, New Forest Post, Dehra Dun 248 006, India*, and S.A. Hussain, *National Chambal Sanctuary, Post Box 11, Morena 476 001, India.*

MORE NEWS FROM MADRAS CROCODILE BANK. First Morelets crocodiles; 20 hatchlings emerged from 27 eggs laid by a four year old female originally sent to the Bank by Howard Hunt from the Atlanta Zoo. One of the mature female African dwarf crocodiles is constructing a nest and we anticipate its first breeding this year.

Last year we produced a full length feature film, funded by the Children's Film Society of India, called the **BOY AND THE CROCODILE**, about a tribal boy who befriends a big crocodile when it moves into his jungle fishing pond.

The film has now been dubbed into English and should be available on video cassette for sale by early 1991.

Besides maintaining and studying the 6000 plus crocs in the Bank we have restarted our field programs on muggers in fisheries and reservoirs in Tamil Nadu and on saltwater crocodiles in the Nicobar and Andaman Islands. We have started preliminary surveys and purchased a 20 foot fibre glass boat with outboard motors. We also have a new postal address. -- Romulus Whitaker, *Director, Madras Crocodile Bank, Post Bag 4, Mamallapuram, Tamil Nadu 603104, S. India.*

Nepal:

WORLD HERITAGE SITE IN DANGER. The Royal Chitwan National Park (RCNP), has been listed as a "Threatened Protected Area" by the National Parks and Protected Areas Commission of IUCN. An irrigation project on the Rapti River, one of the three major systems in the park, is proposed. The project is expected to divert 75% of the base flow of the river. The pristine ecosystem of RCNP, home of endangered gharials, tiger, rhino, mugger crocodiles and Indogangetic dolphin is under threat. Oxbow lakes, marshes and riverine forest and floodplains that are major components of the parks ecology will be affected by damming the river. Additional threats are experienced from industrial effluents from rubber, paper and beer manufacture that threaten the aquatic fauna and recent heavy flooding in the park is thought to be the effect of continued deforestation outside the park. From WILDLIFE NEPAL, January/February 1991, *Dept. of National Parks and Wildlife Conservation, P.O. box 860, Kathmandu, Nepal.*

Thailand:

SIAMESE CROC FARMS. After Rudi Maturbongs and Scott Frazier happened upon some unexpected captive *C. siamensis* in Kalimantan (see CSG NEWSLETTER 9(4) 1990) Scott routed his leave through Thailand and at Sumatprakan Crocodile Farm, graciously assisted by Mr. Charoon Youngprapakorn, he observed the highly variable pure *siamensis* that appeared superficially similar to the Kalimantan animals.

He also visited two smaller farms in central Thailand. One farm near Nakhorn Sawan combined a domestic tourist attraction with half-hearted breeding. The farm was said to hold 160 adult crocodiles allegedly obtained from the captive stock of local small farmers. These were

said to be captured from farm ponds by immobilization with a 220 volt generator, after which the animals simply floated to the surface(!?!).

The crocodiles are fed waste chicken and produced 500 surviving hatchlings that were sold last year. Hatchlings are sold to local farmers at the unbelievable price of 7000 baht (about \$280 US). They are then raised for 6 years and sold back to the farm as breeding stock for 60,000 baht (\$2400 US). The informant said crocodiles are not harvested for skin or meat but those dying naturally were sometimes skinned or stuffed.

Another farm near Nong Kean also reported very high prices both for hatchlings sold (8000 baht each) and adults purchased (100,000 baht / breeding pair) and these high prices were confirmed by a store selling stuffed hatchlings for 8000 baht each.

These farms are located near a vast swamp that has undergone a lot of development in the last four years. There used to be a small population of crocodiles in the swamp but the swamp is now said to be devoid of crocs. No informants would concede that the farms ever received wild stock but the implication was that some small farmers had at one time captured wild crocodiles. -- Scott Frazier, *110 Dudley Drive, Sikeston, Missouri 63801, USA*

CROCODILE MANAGEMENT GROUP OF THAILAND. Around one hundred people involved in crocodile farming in Thailand have joined the newly formed Crocodile Management Group and Dr. Parntep Ratakorn has been elected the first President of the Group which will be based at Kasetart University in Bangkok. The Group has immediately begun activities with a seminar on crocodile breeding, the future of the crocodile market, and conservation laws and CITES regulations affecting farming. The new Group is in close contact with Dr. Grahame Webb, Vice Chairman for East Asia, Australia and Oceania. Dr. Ratakorn expects that the group can provide information and bring together farmers, management and CITES authorities, and researchers to develop an reasonable course for farming, trade and conservation for crocodiles in Thailand. -- Parntep Ratakorn, *Wildlife Research Laboratory, Dept. of Zoology, Kasetsart University, Bangkok, Thailand.*

AUSTRALIA/OCEANIA

Indonesia:

FAO CROCODILE PROJECT IN IRIAN JAYA HALTED. Despite vigorous efforts to prevent a suspension of activities, the FAO crocodile farming and conservation project on Irian Jaya is under instructions to wrap up operations and terminate the project because funding from the Japanese sponsors has not been renewed. Concern was expressed late last year that FAO had not received confirmation of continued funding of the project although it was hoped that funds could be made available by May of 1991. It is now the case that the earliest funds would be released is June and even they are not certain at this time. As a result this valuable project is in peril of premature termination before the substantive results and successes have been secured. The termination of the project calls into serious question the future of crocodile management and conservation in Indonesia. Without a functioning management project, support for concessions allowing trade in crocodilians from Indonesia is doubtful and in all likelihood all Indonesian croc populations will be proposed for listing on Appendix I of CITES until adequate protection and management is in place. It is greatly to be hoped that interim funding for this project can be obtained to maintain immediate operations and that long term, stable funding be procured. -- H. Messel, *Chairman CSG, School of Physics, University of Sydney, NSW 2006, Australia.*

CENTRAL AMERICA AND CARIBBEAN

Costa Rica:

CAIMAN HUNTING INCREASES IN NORTHERN COSTA RICA. After a ten year hiatus it appears that caiman are once again being hunted for their skins. During April and May 1990 an estimated 1000 large and medium sized caiman were killed by local campesinos. Buyers, thought to be from Nicaragua, removed over 5 shipments of skins, including one shipment of over 500 square feet of hide. The increased hunting of caiman in Caño Negro National Wildlife Refuge indicates that

the exploitation of crocodilians in Nicaragua may threaten populations in northern Costa Rica also.

-- John Allsteadt, *Department of Biology, University of North Dakota, Grand Forks, ND 58202, USA.*

Nicaragua:

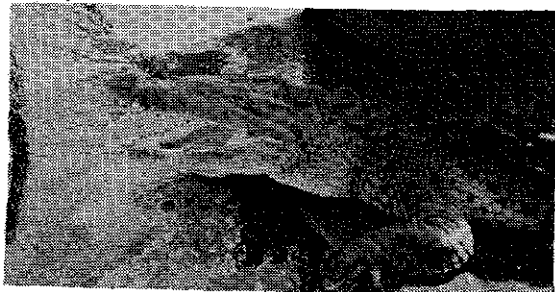
MOSQUITO COAST PROTECTED AREA PROJECT. Occupying 12,950 km² of coastal lagoons, mangroves, offshore coral reefs and sea grass pastures along the northeast coast of Nicaragua, the Mosquito Coast Protected Area (MCPA) will be the largest and biologically richest coastal reserve in Latin America. This area is thought to hold the largest populations of crocodilians in the region. The Mosquito region is an autonomously governed area within Nicaragua and faces serious problems from resource depletion by foreign 'Resource Pirates' who took advantage of the cessation of military coastal surveillance to illegally harvest spiny lobsters, shrimp and sea turtles. The 1980's wars in Nicaragua reduced pressure on wildlife populations and habitats and some species numbers began to rebound. Crocodilians probably benefited in this period as hunting and export pressure was greatly reduced when people left many lowland riverine areas. Currently hunting pressure has increased again along the Rio San Juan and its tributaries.

Key to success of this giant protected area will be the participation of more than 15,000 residents in the 23 coastal communities who control access to much of the area. They will be trained to manage and defend the coastal region. The MCPA will develop the economy of the region through locally managed fisheries and ecotourism. Sustainable development of environments and resources in the region will be a basic concept and the prospects for sustainable use of crocodilians are being examined. -- Bernard Nietschmann, *Department of Geography, University of California, Berkeley, CA 94720, USA.*

POOR TREATMENT OF CAPTIVE CROCODILIANS. An article in LA PRENSA, Managua, Oct. 1990, describes that in the Edgard Lang Zoological Park located near kilometer 16 on the Managua-Masaya Highway there is a captive crocodile that is completely blind. The crocodile, that appears to be *C. acutus*, is known as 'El Roco' and was captured some years ago on the shores of Lake

Managua. At the time of capture the animal lost one eye from the blows received in its tenacious struggle to retain its liberty. After some years in captivity a visitor to the Park threw a rock that damaged the other eye. 'El Roco' resides in a small dirty pool in the Park accompanied only by a dozen turtles, without the company of a mate or other crocodiles.

There is great interest in the future for Caiman farming in Nicaragua but young Caimans held in captive situations are often poorly nourished and stunted. Maybe we could do something about these poor animals because I am sure there are many more throughout Nicaragua held under the same poor conditions. -- Alberto Aviles, P.O. Box 163013, Miami, FL 33116, USA.



Captive *C. acutus* 'El Roco' Edgard Lang Zoological Park, Nicaragua. A. Aviles Photo

EUROPE

France:

CROCODILES ON THE COTE D'AZUR. A crocodile farm is planned for development near Nice on the southeast coast of France. The emphasis will be display for tourists and many species will be displayed for the public in surroundings reconstructed to a natural biological form. The facility is planned to open in 1992. -- *Reptel Madagascar*, B.P. 563, Antananarivo, Madagascar.

USSR:

BACK IN THE USSR. In a newspaper report on changes in press freedom in the USSR, a correspondent reports "... the topics of the show PRESS CLUB are chosen by the audience from a menu of video shorts. The topics ranged from a report on a crocodile breeding farm near Moscow to a satiric piece on a booth where citizens gripe for one minute before a TV camera...." It was not reported if the studio audience chose to

discuss crocodile farming. [Perhaps this was also a political satire? -- Eds.] From TIME MAGAZINE Jan. 1991.

SOUTH AMERICA

Brazil:

Dr. Clarence "Ab" Abercrombie recently visited with Peter Bayliss, Bill Magnusson and Zilca Campos in Manaus and went on to spend some time in the Pantanal. He reports that Peter may do his dissertation on *Bufo marinus*; since he spent so many years working on the worlds largest crocodile, the only macho thing for him to do was take on the world's most fearsome anuran. He has been amply warned that the cable nooses used for *Crocodylus porosus* will not hold even a tadpole of the Giant Amazonian Cane Toad. As a rest from toad work, Peter expects to survey for *Melanosuchus niger* and will be interviewing folks up and down the Amazon. Peter has been discouraged to find that old time caiman poachers will not respect the finer points of his hard learned Portuguese subjunctive. The good Dr. Magnusson continues his old projects with unabated enthusiasm even as he establishes new ones. He has purchased a new locally made computer and is willing to accept donations of legal copies of SYSTAT. One of Bill's captive caiman nested and produced a bucket of hatchlings and his students are drafting a newsletter article entitled 'MAGNUSSON INITIATES PERSONAL CAPTIVE BREEDING ENTERPRISE'. Zilca Campos is working energetically on her thesis although anxious to return to field work in the Pantanal. She is eager to receive reprints, letters, etc., from anyone with croc related interests. Her colleagues refer to her with admiration as "Duracell" because she just keeps on working when in the field.

The Pantanal is purely wonderful - almost too much like a zoo. I had a fine time working with Guilherme Mourao and Marcos Coutinho. We drafted several papers at the EMBRAPA lab in Corumba then headed for the field. EMBRAPA wants to monitor caiman populations throughout this vast area (about twice the size of Ab's home state of South Carolina, USA) using aerial survey methods. To obtain an absolute measure of abundance we attempted a Mark - Recapture method recommended by the noble Dr. Woody Woodward of Florida Fish and Game

Commission. We captured caiman with nooses and painted their backs with bright colors. We then flew the study area in an ultralight aircraft and counted ratios of marked and unmarked animals. Despite my 700 hours flying experience this ultralight business made me nervous and the duct tape patches on the wings did nothing to reassure me. Fortunately the pilot was naturally good at his job and my precautions of stout walking shoes, knife and compass were not needed. We expect to present an account of this work at the next CSG meetings. 'Ab' Abercrombie, Associate Professor, Wofford College, Spartanburg, SC 29303. USA.

Museum of Natural History), Ron Heyer (Smithsonian Institution), Juan Rivero (University of Puerto Rico), Paulo Vanzolini (Universidade de Sao Paulo) and John Wright (Natural History Museum Los Angeles County) to each give a lecture. Andres Eloy, CSG Deputy Vice Chairman for Latin America, together with Mr. Rodriguez (INDERENA) chaired a session of papers on crocodilians and Carlos Rivero Blanco organized two workshops to discuss caiman management. -- Stephan Gorzula, 14 Ferry Road, Millport, Isle of Cumbrae, Scotland, KA28 OEG, United Kingdom.



Guilherme Mourao paints the back of captured *C. crocodilus yacare* in the Pantanal for aerial survey estimates. A. Abercrombie photo.

Venezuela:

THE II CONGRESSO LATINO AMERICANO DE HERPETOGIA was held in Merida, Venezuela from 21 to 27 October 1990. Jaime Pefaur (Facultad de Ciencias, Universidad de los Andes) and his staff did an excellent job organizing and running the congress. Together with Maria Jose Praderio (Museo de Ciencias Naturales, La Salle, Caracas), I coordinated a course on "Sistematica Herpetologica" that ran for 10 hours over five days and by popular demand was expanded from 15 students to 42. I was lucky in getting Adao Cardoso (Universidade Estadual de Campinas), Bill Duellman (University of Kansas), Darrel Frost (American

and references that might be relevant to their work and is eager to cooperate with other institutions. -- Roldan Pulido Perez (Director) & Martin Villa (Director of Research), Centro Rep. de Cocodrillo "El Tanque", Sierra de Alica #157, Fracc. Jardines de la Cruz, Tepic, Nayarit, 63168, Mexico.

United States:

SANIBEL ISLAND'S UNFORTUNATE ALLIGATORS. Sanibel Island, on the southwestern coast of Florida, is a remarkable area of scenic beauty and wildlife richness and has enjoyed special protected status since 1947 when a special protective Closure Order was

NORTH AMERICA

Mexico:

CENTRO REPRODUCCION DE COCODRILOS "EL TANQUE" EN SAN BLAS, NAYARIT. This institution comprises a group of people working in a farm for reproduction of *Crocodylus acutus*. The farm was established and listed in the CITES Crocodile Farm Directory in 1985. The main purpose of the farm is the breeding of *C. acutus* to conserve the species. In the past the people of the Nayarit coast could see crocodiles in many places but this is no longer the case. The farm is currently holding 75 specimens (2.5.68). The farm would like to solicit help from members of the CSG for reprints

signed by President Harry Truman. Since that time a broad coalition of residents has worked to maintain wildlife habitat on the island. The care and enhancement of marine resources and habitats were targeted concerns as well as many others, including maintenance of the island's alligator population. Problems faced by the alligators were poaching and the impact of increasing numbers of residents who complicated the alligator human interaction by feeding 'tame' alligators near their houses. There was a need for education and understanding of the alligator on Sanibel.

To meet this need the Southwestern Florida Regional Alligator Association was formed in May 1974 with the purposes of teaching the value of alligators to residents, exposure and prosecution of those illegally killing alligators, field studies, and capture and translocation of problem alligators. A special permit was issued by the Florida Game and Freshwater Fish Commission to allow the Association to capture and relocate alligators, a unique situation in the days before the establishment of the current nuisance alligator control program.

As Sanibel became more crowded with people, problems of relocated alligators returning to their home range were experienced. Through experimentation based on similar studies on homing pigeons, George Campbell, President of the Association, determined that he could sabotage an alligator's homing ability by cementing a strong permanent magnet to the animals cranial shelf. By the time the magnet fell off the alligator apparently adjusted to a new location and remained.

Studied, measured and controlled, including relocation when necessary, Sanibel's alligator population was probably as intimately understood and safe as any in the State. However, with increasing numbers of residents, the problem of feeding 'tame' alligators remained. A 'no-feed-em' law was on the books due to the efforts of the Association, sponsoring this legislation at the local city and State wide levels in 1975, however this was rarely enforced. No feeding laws are an important component of reducing the potential (although rare) danger of alligator attack. Alligators that are accustomed to being fed become less wary of humans and, given the alligator's intellectual limitations, have difficulty distinguishing between a piece of fish and the hand that holds it. Increasingly, new residents of Sanibel with little appreciation of the

real wild Florida, felt threatened by alligators and agitated for more active removal.

Matters came to head in 1989 following the tragic death of small child in a nearby county and the with the development of the current Florida alligator management program. Licensing for control of nuisance gators was transferred from the voluntary Association to the City and the State trappers. A decreasing area of Sanibel is available for translocated alligators and many more alligators are killed. Since the time the Alligator Association was formed a great metamorphosis has occurred on this beautiful, unspoilt barrier island. The people whose vision it was to preserve the natural values of Sanibel through sensible paced development have had their vision blurred almost to obliteration. There is constant pressure to accomplish more building, more native plant and wildlife destruction, more draining, even chemical dyeing of natural ponds to make them appear blue and 'attractive'. The alligators of Sanibel will be only one of the victims of the rapid urbanization of this formerly unique preserve. -- George R. Campbell, Founder and Chairman, *Southwest Florida Regional Alligator Association, 12271 Coyle Road, Fort Myers, Florida 33905, USA.*

TEXAS. The Texas Parks and Wildlife Department authorized for the first time the issuance of alligator nest stamps to landowners in 1990. The Department issued 208 nest stamps to landowners representing approximately 24% of the nests on the properties for which stamps were issued. A total of 206 clutches containing 7,510 eggs were picked up by permitted egg collectors. Of the eggs collected, 7,400 eggs were placed in two approved incubation facilities. Although clutch size varied by marsh types, the average was 36.4 eggs per clutch. The first clutch was picked up 17 June 1990 and the last was picked up 15 July 1990. Of the nests collected, 105 were picked up during the last two weeks of June and 101 were collected in the first half of July. -- William C. Brownlee, *Program Director Alligators, Texas Parks and Wildlife Department, 4200 Smith School Road, Austin, TX 78744, USA.*

NUTRITION. Three recent papers by Staton et al. provide new information about alligator nutrition. The studies demonstrated that alligators can utilize artificial diets containing

various levels of fats, carbohydrates and protein. Digestibility of protein and energy was high. Increasing the level of fat in the diet improved weight gain, feed conversion and increased the level of body fat. Adding extruded corn to carbohydrate free diets resulted in equal or improved performance. The papers are all by Staton M. A., H. M. Edwards Jr., I. L. Brisbin, T. Joanen & L. McNease, and appear in J. Nutr. 1990, & Aquaculture 1990. Complete citations are given on pg. 16 and reprints should be requested from the authors. -- Daniel T. Hopkins, Purina Mills Inc., P.O. Box 66812, St Louis, MO 63166-6812, USA

TRADE



The following prices (in U.S. dollars) paid to hunters, farmers or other producers were reported to the editor since the last issue of the NEWSLETTER appeared. This information is provided as a service to our readers to allow an overview of the world market for crocodilian skins and products. The CSG cannot guarantee the accuracy of the reports submitted to us and makes no endorsement or advertisement of particular sales or prices.

Alligator mississippiensis in Georgia, USA:

October 1990, wild caught alligators, salted belly skins = \$51-\$52 per foot length, meat = \$5.00 per lb.

Crocodylus niloticus in Madagascar: December 1990 skins = \$1.00 per cm width. Meat = \$4.00 per kg.

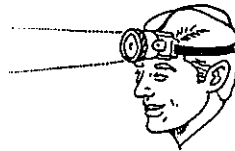
Crocodylus niloticus in South Africa: December 1990, meat on the bone local sale = \$4.00 per kg.

Crocodylus novaeguineae in Papua New Guinea: March 1991 salted belly hides from farm raised crocodiles < 30cm width = \$5.00 per cm width, > 30 cm width = \$6.00 per cm width. Tail meat delivered Brisbane, Australia = \$12.00 per kg.

Crocodylus porosus in Papua New Guinea: March 1991 salted belly hides from farm raised crocodiles < 30cm width = \$9.00 per cm width, > 30 cm width = \$10.00 per cm

width. Tail meat delivered Brisbane, Australia = \$12.00 per kg.

PERSONALS



Gregor Riese, P.O. Box 37866, Winnellie, NT, 0821, Australia, is

employed as a full time researcher for Crocodile Farms NT. in conjunction with a higher degree from the University of Queensland. The research program has just begun and early emphasis is on improving hatchling survival and growth of *C. porosus*.

Bill Kline, 3191 E. Rd., Loxohatchee, FL 33470, USA, has been building airboats since 1960 with the special needs of alligator workers in mind. Having worked airboats and hunted gators, and provided special airboats to Russell Gator Farm and St. Johns Water Management District, Bill wants to make his airboats available to the crocodile community. Contact him directly for details.

Dr. Tej Kumar Shrestha, Department of Zoology, Tribhuvan University, Kirtipur campus, Kathmandu, Nepal, is investigating impacts of deforestation, draining swampland, dam construction and pollution on major crocodile habitats of Nepal. The aim of the project is to analyze in detail abundance, status and distribution of crocodiles with particular interest in the feasibility of artificial habitat creation and management. One completed project on the Karnali river has been funded by the National Council for Science and Technology, Nepal. Dr. Shrestha is extending this research to other river systems in Nepal and seeking international funding for this work.

Dr. Jon C. Herron, Dept. of Zoology, NJ-15, University of Washington, Seattle, WA 98195 USA, has been an inactive subscriber to the newsletter but has reinstituted his active status informing us of his recent paper on Black Caiman in J. Herp. 24(3):314-316.

REQUESTS



BOTTLES OF BILE NEEDED FOR STUDY. Lee Hagey at University of California San Diego, School of Medicine, is studying the bile acids of birds and crocodilians. He has obtained bile from alligator, dwarf crocodile, New Guinea crocodile and false gavia. He is particularly interested in obtaining bile from all other crocodilian species. He will use the results to see if bile acids can be used as a taxonomic tool for crocodilians. He is able to identify species from a drop of bile. If any CSG members have animals that die please collect the bile. The entire gall bladder can be collected and placed in a small bottle or the liquid bile can be collected. No refrigeration is necessary if some isopropyl alcohol (rubbing alcohol) is added. The gall bladder is a small greenish sac like structure associated with the liver. Small screw cap bottles with alcohol and detailed collection information can be obtained from: Val Lance, *San Diego Zoo, P.O. Box 551, San Diego, CA 92112, USA.*

Dr. Timothy Rowe, Department of Geological Sciences, University of Texas, Austin, TX 78713, USA, is interested in all stages of skeletal growth in all crocodilians. He is seeking collections that include growth series over any segment of ontogeny from early pre-hatchling to adult. He is particularly interested in young specimens that have been (or could be) cleared and stained, and also in serially sectioned material. He has funding available for the assembly of a growth series by some captive breeding crocodilians.

Kobi Kagan, Claybrook Farm, 26205 E. Highway 50, Christmas, FL 32709, USA, is interested in specimens of crocodilians available to the farm for display and breeding loan. The farm has had some success with *C. acutus* and recently placed a female on loan to Central Florida Zoo, Sanford, FL. Loans and exchanges of all species are sought. Contact Kogi Kagan directly at the above address.

Dr. J. 'Jack' Frazier, CINEVSTAV, Apto. Postal 73, Cordamex, Yucatan, Mexico, C.P. 97310, is working with local residents on programs involving sustainable use and conservation of natural resources. He is hoping to coordinate and provide technical information on crocodile farming. He reports that SEDUE, the federal ministry responsible for conservation and ecology in Mexico, is very interested in obtaining captive *C. moreletii* and *C. acutus* to breed in captivity for rehabilitating decimated populations in the state of Yucatan.

PUBLICATIONS



The following list of recent publications on crocodylia was extracted from WILDLIFE REVIEW 1990. The designation WR and numeral refers to the volume of WILDLIFE REVIEW in which the citation appears. Provided courtesy of Mr. Terry N. Sexson, *US Fish & Wildlife Service, Office of Information Transfer, 1025 Pennock Place, Suite 212, Fort Collins, CO 80524, USA.*

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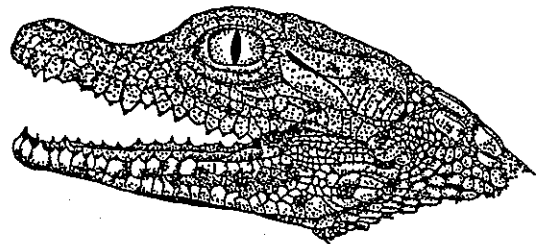
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