

CROCODILE SPECIALIST GROUP

NEWSLETTER

VOLUME 22 No. 4 • OCTOBER 2003 – DECEMBER 2003



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IUCN–The World Conservation Union
Species Survival Commission

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COVER PHOTO. *Crocodylus siamensis* at a farm in Siem Reap, Cambodia, just north of Tonle Sap. J. Thorbjarnarson photo.

The CSG NEWSLETTER is produced and distributed by the Crocodile Specialist Group of the Species Survival Commission, IUCN – The 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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Correction

In the previous issue of CSG News (Vol. 22, No. 3), the animal being weighed in the photo on page 15 is a *Paleosuchus trigonatus*, not a black caiman as stated in the caption. We regret the error. — *Editors*

Editorial

NEW YEAR RESOLUTIONS. To start the new year and focus our thoughts, I offer the following list of current activities that need to be addressed in the next several months. This has been assembled from the Steering Committee, recent correspondence, and member inputs.

- CSG Mission to Colombia, 26 Jan. - 1 Feb. Alejandro, Alvaro, Perran, Bernardo, and Miguel.

**** RESCHEDULED! (see next page)**

- Review and comments on Draft Australian Code of Humane Practice for Crocodiles.

- Review of ranching programs for CITES, Jan.-May. Richard, Alejandro, and Perran. Report due 16 April; for CITES Animals Committee, on 5 May.

- Report on captive breeding of *C. siamensis* for CITES Animals Committee Task Force. Perran.

- 17th CSG Meeting, 24-30 May, Darwin. Registrations, calls for papers, and arrangements for Steering Committee meeting on Monday, 24 May.

- International Congress of Zoology, 23-27 August, Beijing. Special symposium on crocodilian conservation. Perran co-coordinating with Dr. Wu Xiaobing.

- CITES meeting in Bangkok, Oct 2-14. Croc proposals from Cuba on *C. acutus* ranching will require review by 30 March (CITES Animals Committee) and final recommendations back to Parties, CITES, and IUCN prior to the CITES proposal submission deadline, 5 May.

- Fundraising to secure the approximately \$75,000 for our core operational budget and additional funds for special projects.

- IUCN General Assembly, 17-25 November 2004, at which time all SSC Specialist Group members and chairmen are reviewed and re-appointed.

- *Tomistoma* Task Force, fundraising and activities.

- Possible change of Red List status of *Tomistoma*.

- Siamese Crocodile Task Force—Cambodian issues.

- Crisis with gharial in Chambal River, India (50% population drop since 1995). See article on page 12.

- Re-building caiman management capacity in Paraguay.

- Re-building caiman management capacity in Bolivia.
- Human-Crocodile Conflict Task Force. Richard Fergusson, coordinator. There is increasing international attention to this issue, and IUCN is proposing an integrated group to examine the issue.
- Crocodilian Economics study, 2nd Phase: James McGregor, consultant, in partnership with TRAFFIC International. Steve Broad.
- All the usual stuff: four newsletters, membership management.

No doubt I missed a couple and new crises will arise. The list also does not reflect the numerous individual projects and goals of members. Looks like a busy year ahead. I look forward to seeing many of you in Darwin in May and many fruitful and productive contacts throughout the year. — Perran Ross, *Executive Officer*.

***** STOP PRESS!! *****

The Colombian Mission has been rescheduled for 1-6 March 2004 at the request of the Colombian Ministry of Environment, Housing, & Land Development

Regional Reports



Africa

Namibia

MISSING NILE CROC TURNS UP. A Nile crocodile, which went missing while being transported to the Windhoek Show Snake Park, has been recaptured. The crocodile, dubbed "Dundee" after the incident, had been missing for

nearly a week when it fell off the back of a bakkie (truck) transporting it to the Windhoek Showgrounds from Cape Town's Ratanga Junction.

Retired conservationist Peter Mostert thought he had seen it all, but when he came across a crocodile on the side of the national road near Grunau, he was certain he'd lost his marbles. Mostert and his wife Tess were returning from a holiday in the Cape when he drove past what looked like a torn tire on the roadside.

"I told her it looked like a crocodile and turned around to go back. She told me I was crazy. And sure enough, there it was," he added.

Mostert went to a nearby farm, owned by Andre Lotter, in Goibib, a town 110 km south of Keetmanshoop. Help was summoned to transport the tired and hungry reptile, by bakkie, safely to the farm. There, its owner, Bryan Vorster, collected it and brought it to the Windhoek Show's Snake Park.

For his assistance, Mostert received the N\$1,000 reward that was offered when the reptile went missing. "That is the strangest thing that has happened to me in all my living days," Mostert said.

Vorster was amazed that the animal was returned to him, as he was certain it would not survive the dry conditions in the Keetmanshoop area. "I had no doubt in my mind that Dundee would not survive...the heat and lack of water and food would have killed him, but miraculously he survived, with only had a few scrapes under his feet which probably happened when he jumped out," said an elated Vorster.

The 2.5-meter Nile crocodile is still recovering from the ordeal and can be seen resting under a thorn bush in the Snake Park at the Windhoek Show. — Erica Gebhardt & Carmen Honey, *The Namibian*, 10 March 2002. Submitted by James MacGregor, *Environmental Economics Program, International Institute for Environment & Development*, 3 Endsleigh St., London, UK WC1H 0DD <James.MacGregor@iied.org>.



Eastern Asia, Australia and Oceania

Australia

AUSSIE GROUP PLANS CROC PARKS. If you are interested in building a crocodile park, but want something new...the ultimate in crocodile parks has been designed and is looking for a home!

Paul Sexton and Nick Stevens have combined their knowledge and sought a lot of professional input in the planning of a new age Crocodile Exhibit and Education Center. The center was designed by creative people with experience in theme park and exhibit management, construction, and personnel staffing. Involved in the design process were crocodile farmers and researchers, who have an understanding of how these creatures should be integrated and exhibited in an entertaining environment. The staff of the center will be specially trained in everything from feeding and catching crocodiles to serving as tour guides.

The park has been designed with *C. porosus* in mind; however, the park would suit other crocodile species as well. The group creating this concept has brought crocodile exhibits into the 21st century. The goal is for each guest to enjoy a highly interactive and educational experience, and to leave the park with a feeling of being part of the evolution of this great animal. — *For more information on this unique park, contact Paul Sexton <paulsexton@ozemail.com.au> & Nick Stevens <nick_croc@bigpond.com>.*

Cambodia

CROCODILE FARMING WORKSHOP. From 27-28 November 2003 the Cambodian Fisheries Department, the Cambodian Crocodile Association, and the Wildlife Conservation Society sponsored a National Workshop on Management and Conservation of Siamese Crocodiles (*Crocodylus siamensis*) in Cambodia, in the town of Siem Reap.

Under the direction of Nao Thouk, the Director of the Fisheries Department, this workshop was the first meeting of crocodile farmers from all relevant provinces in Cambodia.

The meeting's main objectives were: (1) to improve the cooperation between farmers, traders and government; (2) to inform the crocodile farming industry and provincial fisheries of the importance of conservation of wild Siamese crocodiles; (3) to share information about management and rearing techniques; (4) to persuade all farmers in the industry to register with the Department of Fisheries; and (5) to discuss the concerns of the industry. Presentations were made on a variety of topics, including the relevance of CITES to the crocodile farming industry, the status, management, and conservation of wild crocodiles in Cambodia, and the status of crocodile farming in Cambodia.

Group discussions allowed farmers, middlemen, and Fisheries Department staff to address a variety of issues together for the first time in the history of the industry in Cambodia. Topics discussed include the conservation of wild crocodiles, management of farming operations, and the Crocodile Association. The crocodile farming industry is presently composed of many small operators, and the management techniques are variable and often poor. Both the operators and the Fisheries Department would like to see the industry become more professional, adopt consistent standards, and start taking responsibility for regulation and research. The financial supporters of this workshop were thanked for their support, but it was suggested that future meetings of this kind should be the responsibility of the industry and should be held annually.

The Fisheries Department estimates that there are only ten farms that are large enough to export, and all the rest are satellite farms that supply these ten. If this is the case, only another four farms still need to be registered with CITES for export permits. The only CITES registered farms are for the export of skins and meat; therefore, any live crocodile export is illegal. However, there is a large overseas market (China, Vietnam, and Thailand in 1999, but only Vietnam in 2003) for live crocodiles, and no stable market for skins or meat. Additionally, there are no factories within Cambodia for processing—a company from Singapore started operations a few years ago, but went bankrupt. This lack of a stable market for skin and meat puts pressure on the industry to enter into illegal trade of live animals.

China is regarded as a good future market for meat and skins. Chinese buyers like Cambodian crocodiles because they are raised naturally, without chemicals/hormones. However, at the moment the Chinese market is depressed because of SARS.

Hatchling success is variable if farmers use only natural methods. Incubation using electric incubators will produce greater success; however, no farms are currently using them. The Fisheries Department currently is testing incubators from Vietnam, and if successful, the methodology will be recommended to the industry, and training will be provided.

A large amount of fish is required to support the crocodile farming industry. In the Siem Reap province alone, 4,000 tons of fish are used every year. Additionally, considerable numbers of water snakes are still harvested from Tonle Sap for crocodile food. The industry should be thinking of other food sources—for example, chicken or aquacultured carp and other fish. Another solution is for the Fisheries Department to only allow a limited number of farms and heads per farm.

The Cambodian Crocodile Association, established in 1995 with a draft policy, was given approval to operate in 1997. The Association currently has 20 members, and the membership fee is US\$50/year. The low membership numbers reflect the fact that most farmers do not understand the benefits of belonging to the Association, and do not believe that it is providing anything to them. The Association, on the other hand, needs members to be effective. Finding stable overseas markets, providing information and research, and ensuring that the industry complies with CITES regulations are three main objectives of the Association. Farmers believe that the organization should and can play an extremely important role in the industry, and want to see it reformed so that it can provide benefits to the industry and conservation of Siamese crocodiles. They believe it should develop a more comprehensive policy, be actively involved in finding markets and advertising internationally, and be prepared to inform Fisheries Department about reports of illegal capture of wild crocodiles.

During the workshop, there was considerable discussion about the status of wild crocodiles. Southwestern Cambodia houses the most important habitat in the country for wild Siamese crocodiles. A wild female can be sold for

US\$700–\$800, which is a large amount of money for poor hunters and rice farmers. This price is attractive to crocodile farmers because it is cheaper than a captive-bred female, which will cost approximately US\$1,000–\$1,500. Additionally, some crocodile farmers believe that wild crocodiles produce more, better-quality eggs, and that wild male crocodiles are stronger genetically.

The industry is concerned about how to identify wild vs. captive-bred crocodiles, and how the Fisheries Department inspectors will know the difference. The value of microchips in identifying captive-bred animals was explained during the workshop, but microchips are expensive and the industry cannot afford them. Thailand already uses microchips in its captive-bred farms. Both the crocodile farming industry and the Fisheries Department are greatly concerned that if exported animals or products are not adequately identified as captive-bred, other countries will not want—or be allowed—to import from Cambodia. There is a need for an education campaign to teach crocodile farmers, local villagers, and fishermen about the conservation status of Siamese crocodiles in the wild, the importance to the industry of not buying wild-capture crocodiles, and the penalties for those caught selling or buying wild animals.

The Fisheries Department policy is to release confiscated wild-capture crocodiles back into the wild once they have been positively identified as *C. siamensis*, and if they are fit for release. If the wild populations do not appear to be recovering, the plan is to release crocodiles back into the wild from captive stock that is known to be genetically pure *C. siamensis*. This would be done through genetic testing of blood samples, which is vital because there are some hybrids of *C. siamensis* and *C. rhombifer* in many of the farms.

Cambodian Fisheries officials have not set an export quota because they are still uncertain of the size of the wild populations in the country, and they are still trying to determine the number of captive-bred crocodiles that Cambodian farms can produce. Before setting a quota, the Fisheries Department needs to have a stable overseas market in order to estimate the demand. At the same time, however, the industry wants to have a quota to work against. The Fisheries Department recommends that the market be restricted to skin and meat, and that it not include live animals.

Solutions and next steps that were identified during the workshop include:

- Strengthen and improve techniques of hatchling success—including through more collaboration with technical experts from CSG.
- Strengthen technical ability of farmers—including training and extension provided by Fisheries Department and technical/operational guidelines and standards in association with international organizations.
- Better cooperation of farmers, traders, and local authorities—including the strengthening of the Crocodile Association and links with the government.
- Registration of all farms with provincial fisheries agencies and the Department of Fisheries.
- Registration of remaining export farms with CITES, through Scientific and Management Authorities.
- Establish protected areas for wild crocodiles, following more surveys of Cambodia in conjunction with international conservation organizations. Suggested areas are Sre Ambel, Cardamom Mountains, and Sre Pok River.
- Education and extension about the importance of conserving wild crocodile populations. Possibilities include partnerships between the Crocodile Association, Fisheries Department, and international conservation organizations.
- Find more affordable microchips. One opportunity is through the Crocodile Specialist Group meeting in Australia in May 2004.

— Heng Sovannara, *Dept. of Fisheries/Wildlife Conservation Society, Phnom Penh, Cambodia*. Edited and submitted by John Thorbjarnarson, *Wildlife Conservation Society, 4424 NW 13th St., A-2, Gainesville, FL 32609 USA* <jthorbjarnarson@wcs.org>.

STATUS OF THE SIAMESE CROCODILE IN THE CENTRAL AND SOUTHERN CARDAMOM MOUNTAINS: FINDINGS OF RECENT "KROPEU PHNOM" SURVEYS. This report describes the first surveys to assess the conservation status of the Siamese or mountain crocodile, *Crocodylus siamensis*, in the Central and Southern Cardamom Mountains of Southwest Cambodia. Relict populations of these crocodiles were first discovered in the Cardamom Mountains in 2000. Recognizing that Siamese crocodiles were not secure even here, Fauna & Flora International (FFI) and the Department of Forestry & Wildlife

(DFW) formed the Cambodian Crocodile Conservation Program to promote their survival.

As part of this program, FFI hosted a training workshop in crocodile biology and survey techniques for DFW staff in January 2002. Eight participants subsequently spent three months conducting field surveys along 12 major rivers and associated tributaries, ponds, and wetlands. They were variously assisted by local fishermen, military police, Cardamom Conservation Program rangers, and volunteers. Training, equipment, and fieldwork were sponsored by the Association for Cultural Exchange, Columbus Zoo and Aquarium, Disney Wildlife Conservation Fund, FFI, National Geographic Expeditions Council, The Cardamom Project, and Wildlife Reserves Singapore.

The main objectives of the 2002 surveys were

to:

- Survey the distribution of Siamese crocodiles in the Central and Southern Cardamom Mountains and provide estimates of population size.
- Gather baseline data on diet, habitat use, and reproductive behavior.
- Gather baseline data on threats to crocodiles in the Central and Southern Cardamom Mountains and recommend appropriate conservation actions.
- Identify priority areas for protecting Siamese crocodiles.
- Give Department of Forestry & Wildlife staff theoretical and practical training in crocodile survey techniques, from survey design to data collection and analysis, and report writing.
- Devise and test straightforward methods for monitoring crocodile numbers in key areas.

357 km of waterways were surveyed, or 25% of the watercourses draining the southern slopes of the Central and Southern Cardamom Mountains. The principle survey methods were: informal interviews with local people, spotlight surveys at night, and visual searches on foot for tracks, dung, and other signs. In each site where the presence of crocodiles was confirmed, we calculated their minimum number by distinguishing between different individuals according to their size.

At least 113 individuals were confirmed in 13 sites. This estimate is likely to be a gross underestimate of the actual number present, however. (Subsequent surveys in 2003 increased

these figures to at least 140 individuals in 18 sites).

The Cardamom Mountains still form a vital area for the Siamese crocodile, due to their relative inaccessibility and because many of the indigenous people there revere the crocodiles and consider it taboo to hunt or harm them. Even there, however, the wild populations were badly damaged by a wave of illegal poaching in the early- to mid-1990s, allegedly by people from other parts of Cambodia. The most accessible colonies were eradicated at this time and some, perhaps most, of the surviving groups may now be too small and isolated to persist without intervention. Commercial hunting continues in the Central and Southern Cardamoms today, albeit at a lower level, mainly to supply live animals to crocodile farms.

Other threats to the crocodiles, in decreasing

order of importance, are: accidental capture or killing by fishermen, habitat modification (logging, clearance for farmland), killing of crocodiles for bush meat, pollution of waterways by yellow vine factories, and egg collection. Serious potential threats include several proposed hydroelectric dams in the Cardamom Mountains. Without urgent, concerted action, the Siamese crocodile could disappear from even the most remote parts of this mountain range within a few years.

The following recommendations are presented and explained in more detail in this report. Many of these are now being put into practice by FFI, DFW and our partner organizations.

Summary of Conservation Recommendations:

(*** = First priority; ** = Second priority;
* = Third priority)

Law Enforcement

- Ensure that hunters, dealers, and buyers involved in illegal trade in wild-caught crocodiles are seen to be prosecuted, and strictly enforce laws prohibiting civilians from possessing guns, explosives, or other hazardous equipment for hunting and fishing. ***
- Raise awareness among people living and working within the Cardamom Mountains of the penalties for illegally hunting or trading crocodiles. ***
- Clarify the specific roles and responsibilities of all agencies involved in protecting and managing crocodiles and the Cardamom Mountains, and promote full cooperation between them. **
- Establish a visible protection presence in the Cardamom Mountains in areas where no such groups currently exist. **
- Identify and monitor the illegal trade in crocodiles. *
- Cambodia should seek international co-operation,



This t-shirt was specially designed for O'Som Comune, an indigenous community that is setting up a sanctuary for Siamese crocodiles in Cambodia's Cardamom Mountains. The phrase above the croc was chosen by the villagers after much deliberation: "Together We Can Save Ta Jiruk's Crocodiles." Ta Jiruk is a local forest spirit who apparently watches over crocodiles & will harm anybody who tries to kill one. The text & logos below depict the name of the sponsoring program: Cambodian Department of Forestry & Wildlife and Flora & Fauna International (DFW/FFI). J. Daltry photo.

particularly with Thailand, Laos, and Vietnam, to stamp out the illegal cross-border trade in crocodiles. *

Habitat Protection

- Support active management of crocodile habitats in the existing wildlife sanctuaries and protection forests in the Cardamom Mtns. ***
- Halt additional inward migration to the Cardamom Mountains and reduce army presence to the minimum necessary for national security purposes. ***
- Halt logging in critical parts of the Southern Cardamoms and establish a new "protection forest" under MAFF administration. **
- Outside of the existing wildlife sanctuaries and protection forest, commercial forestry operations should be conducted sustainably to the highest international standard and be compatible with preserving crocodile habitats. **
- Major development activities in the Cardamom Mountains, such as roads, dams, and resettlement schemes, should be subject to an independent, transparent, and thorough Environmental and Social Impact Assessment. **
- Explore the possibility of establishing Veal Veng Marsh as a Wetland of International Importance. *

Crocodile Farms

- Crocodile farms in Cambodia must be brought up to international standards and prevented from accepting and "laundering" unsustainably-collected wild-caught crocodiles or skins. Farms that are unable or unwilling to comply should be closed. ***

Education and Awareness Raising

- Ensure that all local communities are fully aware of the laws protecting crocodiles and their habitats, and understand how and why it is necessary to conserve the crocodiles. ***
- Promote cooperation between biodiversity conservation agencies and development agencies operating in the Cardamom Mountains. ***
- Raise the awareness of policy makers at district, provincial, and central government levels of the relevant legislation and the special importance of conserving this species. **
- To help raise national pride, Cambodia may choose a different common name for the Siamese crocodile. ("Kropeu Phnom" or "mountain crocodile" is already used locally). *
- Develop an award system for individuals or groups who set a good example to others. *

Essential Community Participation

- Work with local communities to develop local procedures for crocodile protection and a community-based enforcement system, and mitigate against human-crocodile conflict. ***
- Prioritize local communities in awareness-raising efforts, and as far as possible ensure that they see tangible benefits to conserving crocodiles and wetlands. **

Capacity Building

- Train national and provincial government staff in crocodile biology, survey techniques, and conservation management skills, and provide them with the necessary equipment and other resources to monitor and protect crocodiles effectively. ***
- Encourage and enable Cambodian students to become involved in longer-term crocodile research projects as part of their degrees. *

Strategy for Captured Crocodiles

- Prepare guidelines and training on handling and temporary housing for crocodiles and a "decision making key" for deciding what to do with confiscated and rescued individuals. **

Research Priorities

- Conduct further baseline surveys of the status (distribution, numbers) and autecology of Siamese crocodiles in the Cardamom Mtns. ***
- Develop and implement monitoring programs for all known crocodile sites. **
- Conduct further consultations/interviews with local people to understand their attitudes towards, knowledge of, and impact on crocodiles, and monitor human numbers, distribution, & impact in the Cardamom Mtns. *
- Conduct rapid surveys of other parts of Cambodia to identify other remaining crocodile populations. **

— Jenny C. Daltry, Dany Chheang, Em Phal, Poeung Mora, Sonn Pisith, Tan Thara, & Boyd K. Simpson, *Fauna & Flora International (FFI) Cambodia Program, & Dept. of Forestry & Wildlife (DFW), Phnom Penh, Cambodia. Written by DFW staff & translated into English. For a copy of the report, contact FFI-Cambodia Program: PO Box 1380, 8B, Street 398, Phnom Penh, Cambodia, Phone: 023-211-142 <fficambodia@online.com.kh>.*



Don't catch or trade crocodiles

Crocodiles are fully protected under Cambodian law. It is illegal to kill or catch crocodiles, or have in your possession, any parts of a crocodile or their eggs. Offenders face heavy fines and jail terms. The forest spirit may also be

crkarBarkK

Protect Cambodia's C

Text on poster: ***Don't catch or trade crocodiles.*** They are fully protected under Cambodian law. It is illegal to kill or catch crocs, or to have in your possession any parts of a croc. Offenders will face heavy fines and jail terms. The forest spirit may also be angered if you harm or kill a croc. ***Crocodiles are an important part of the environment.*** They help keep waterways and fish stocks healthy by clearing channels and canals. They also eat many snakes and rats. ***Help protect the last remaining Siamese crocodiles.*** Cambodia is now the only country in the world where significant populations of Siamese crocs. still occur. Most of the Siamese crocs. in Vietnam, Laos, and Thailand have been destroyed by hunting, fishing, and habitat destruction. ***Use responsible fishing practices.*** Do not fish with electric, poisons, or bombs, as they can kill crocs and destroy their habitat. Do not use fishing nets in areas where Siamese crocs live. Immediately release any crocs caught in fishing gear. ***Siamese crocodiles pose little threat to humans.*** They are not aggressive and pose little threat to humans if left alone—unlike the saltwater croc, which can be very dangerous. ***Protect Cambodia's heritage.*** Cambodia has a long historical association with the Siamese croc, which was protected & revered by the ancient Khmer civilizations. Help maintain Cambodia's heritage for future generations by protecting the Siamese croc.

China

CLEVER CROC NAMED HONG KONG'S "PERSONALITY OF THE YEAR." Still on the loose after two months of eluding capture, a crocodile has been named Hong Kong's Personality of The Year 2003. The 1.5-meter-long croc beat a host of politicians and celebrities to win the contest on government-run radio station RTHK. From a shortlist of 19 nominees, the crocodile won nearly 36% of the online vote, ahead of Hong Kong hospital workers in collective second place with 25%. "We only put the crocodile on as a bit of fun," said RTHK presenter Hugh Chiverton. "We didn't realize it was going to sweep the board. I suppose it is the way he has evaded everyone that has made him so popular. He has gotten away with it, and it has made him a kind of people's champion."

First spotted on 2 November in a suburban creek in central Hong Kong, the crocodile became a local media sensation after Hong Kong officials, initially worried that it might bite someone, tried in vain for two weeks to capture it. Because Hong Kong has no native crocodile species, the origin of the animal is a mystery. Officials believe it might be a former pet that had been kept there illegally, or an escapee from a mainland Chinese crocodile farm.

Hong Kong conservation officers first sought to bag the reptile using tranquilizer darts, but as they approached in small boats, the croc slid into the water and got away. Then traps, baited with chicken, were set. The crocodile stepped into at least one of them, but soon stepped back out.

In mid-November, Australian crocodile expert John Lever offered to try his hand at catching the animal. Before arriving in Hong Kong, Lever—who owns the Koorana Crocodile Farm in Queensland State, Australia—said he planned to "just walk in and grab it." But after taking a look at the big, weedy creek that the croc calls home, Lever devised a more complex plan, putting chicken heads on the end of sturdy fishing lines in the hope that the animal would take the bait. He then planned to grab it with his hands. But though he caught glimpses of croc from his small boat and even touched it with his hand, it vanished in the murky water before he could get ahold of it. After spending more than three hours in the boat, scouring the creek with a light, Lever decided to call it a night.

The next three nights, Lever continued his efforts to catch the elusive reptile. Hunting had

to be done at night, because while the crocodile could be spotted from a distance in the daylight, it too could see the hunters and disappear in the water. Night-time never seemed to be dark enough, however, thanks to the constant presence of some 600 spectators and 200 journalists with big spotlights for filming the event. "The reflection of the lights made it nearly impossible to get close to the croc. I could find it easy enough, but the crocodile could see me coming every time," said Lever.

By the end of November, the Australian hunter eventually conceded defeat in his quest to nab the stray crocodile. "I've come here and done my best," said Lever. "Someone had to have a try for this crocodile and I put my hand up."

Hong Kong officials then brought in a team of new hunters to try their luck. Team leader He Zhanzhao, a hunter from the town of Panyu in the neighboring Guangdong Province, spent two days searching the swampy creek with a colleague, but failed to catch sight of the crocodile. When the croc was spotted briefly the following morning, Zhanzhao and the rest of the team—11 Chinese experts in all—returned to set net traps. They hoped to confine the reptile to an area of marshland close to the border with mainland China. All to no avail, however. Nothing seemed to work!

By early January, the wily reptile's continuing

escape act had made headlines around the world. In Hong Kong, the crocodile has become a local celebrity after thwarting all attempts at capture. It has shown up in countless newspaper photos, paddling in the murky creek waters or resting on the bank, jaws wide open. Crowds of people lined the creek bank, hoping to catch a glimpse of the star—now Hong Kong's "Personality of the Year 2003." [Editors' note: To our knowledge, as of this writing, the famous Hong

Kong croc still has not been caught....]

—Compiled from the following news sources
Associated Press, 14 Nov. 2003, submitted by
Phil Hall, CIV-FLARNG, Environmental
Specialist III, Camp Blanding Joint
Training Center, Route 1, Box 465,
Bldg. 4540, Starke, FL 32091
USA <phil.hall@fl.ngb.army.mil>; Dirk
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www.news.com.au/common/story_page/0,4057,8002134%255E401,00.html; Ananova, 29 Nov.

2003, www.ananova.com/news/story/sm_842674.html, & 5 Jan. 2004, www.ananova.com/news/story/sm_852485.html; Ian Townsend, *The World Today*, 1 Dec. 2003, www.abc.net.au/worldtoday/content/2003/s1001093.htm; BBC News Online, 7 Dec. 2003, news.bbc.co.uk/2/hi/asia-pacific/3298043.stm.

Indonesia

SURFING WITH CROCODILES. In mid-November, Australian surfer Matthew Goodall was attacked and rolled by a large saltwater crocodile in Indonesia. Fifteen-year-old Matthew, the son of Australian missionaries, said he was heading to a beach with friends near Jayapura in West Papua (formerly Irian Jaya) when they came to a muddy river. He was the first to start paddling across on his surfboard and was halfway to the opposite bank when the animal attacked.

"I saw in the left corner of my eye a large shape come out of the water," Matthew said by telephone from West Papua. "It was very quick. I didn't see all the details, but I knew it was a crocodile straight away. It got my arm and the board at the same time and it kind of slipped me over with the board. It was on top of me and was trying to roll me a bit. But I felt myself (become) loose and I swam back to shore."

Only one of his friends witnessed the entire attack; she thought the object was a log until she saw its eyes and realized it was a crocodile. She estimated the animal was about 3.5 meters long.

The others laughed when Matthew told them about the crocodile until they saw blood on his arm and huge teeth marks on his board.

Matthew said he was too stunned to be afraid. "I was just thinking 'what on Earth is going on'," he said. "I was calm and just swam to shore and stepped out of the water and sat on the log and felt a bit dizzy." He said the board probably saved his life. — *From The Age, on-line: www.theage.com.au/articles/2003/11/19/1069027185640.html. Submitted by Scott Frazier, Conservation International Papua Program, Jl. Bhayangkara, No. 33, Jayapura 99112, Papua, Indonesia <s.frazier@conservation.or.id>.*



South Asia

Bangladesh

DHAKA'S REQUEST FOR INDIAN MARSH CROCODILES IS GRANTED. According to Mustaq Ahmed of Reptile Farms Limited, the new year has brought good news for *C. palustris* in Bangladesh. In late April 2004, eight male and 32 female marsh crocodiles and 50 fertile eggs will be shipped to Bangladesh from India's Madras Crocodile Bank Trust, a center for captive breeding of marsh crocodiles. The new animals and eggs will greatly facilitate efforts to preserve this rare reptile in Bangladesh, where the species currently is on the verge of extinction. P.R. Sinha, member-secretary of India's Central Zoo Authority (CZA), was quoted as saying, "We are in favor of marsh crocodiles, as it will help the IUCN with its efforts to preserve this reptile in Bangladesh." Sinha added that India has expertise in preserving the species and is willing to extend the same to Bangladesh.

The request was made in December 2003, when the Chief Forest Conservator of Bangladesh wrote a letter to the Indian Ministry of Environment, asking for help with efforts to save the marsh crocodile from extinction. The letter pointed out that the number of marsh crocodiles in the country has diminished to three, due to the lack of a successful breeding program in the last 15 years. The critical situation was first brought to light by Romulus Whitaker, CSG's Vice Chairman for South Asia, who visited Bangladesh in late 2003. The skin of the species sells for a high price in international markets, and poaching is cited as a key reason for the sharp decline in their numbers.

CZA Scientific Officer Bipul Chakrabarty said marsh crocodiles help prevent the rivers from pollution, and that ecosystems in Bangladesh might be disturbed if an expeditious reintroduction of the species is not met. Chakrabarty said under the IUCN norms, India is bound to help Bangladesh in the conservation of the species. India also faced an alarming fall in the number of marsh crocodiles in the 1970s, but now has more than 1,000 of the species. India received assistance from Britain, he added. —

Adapted from an article by Pallab Bhattacharya, The Daily Star, Web Edition, Vol. 4, No. 217, front page <www.thedailystar.net/2004/01/04/d40104011818.htm>. Submitted by (and update provided by) Mushtaq Ahmed, Reptiles Farm Limited, 2-B,

India

GHARIAL REACH A CRISIS IN CHAMBAL RIVER. Information accumulating through last year has raised the possibility that the gharial population in the National Chambal River Sanctuary, in India's Madhya Pradesh State, may be in the process of a catastrophic decline. Unverified reports suggest that the number of non-hatchling individuals may have declined by approximately half since the last detailed reports were provided in 1997.

A Gharial PHVA conducted in 1994 indicated about 1,200 gharial—100 adults and 60-80 nests—in the sanctuary, and modeling indicated this was the most secure and only self-sustaining population in India. However, the group concluded that long-term survival of gharial could not be assured without continued supplementation. Surveys conducted by R.K. Sharma between 1993 and 1997 and reported in ENVIS (Vol. 2, No. 1) indicated that 1,100–1,200 gharial could be sighted in annual surveys and that both survey and nesting trends were slowly increasing. A site visit by CSG Steering Committee members Rom Whitaker, Val Lance, and Perran Ross in 1997 during the regional CSG meeting also confirmed that large gharial were readily seen in the Chambal. At that time, however, early reports of changes in the surrounding hinterlands of the Chambal sanctuary already were surfacing.

The Chambal owed much of its protected status and effective crocodilian sanctuary to its inaccessible location and limited nearby development and population. The activities of India's crocodile reintroduction programs ensured regular scrutiny and surveys by scientists. But progress and modern development have reached the Chambal. It is now subject to intense pressure from riverside development, mining of sand for building materials, and high-intensity net fishing, both at the boundaries of the sanctuary and illegally within it. These activities are reported to have reduced and disturbed nesting areas, and increased mortality of gharial both by entanglement in fish nets and direct persecution from fear. At the same time, elimination of funding for crocodile rehabilitation centers by the Indian government has crippled

crocodilian biologists and severely limited their activity.

Now, recently received reports indicate that the situation is becoming serious. CSG member Dhruvajyoti Basu wrote late last year, "The results of the most recent surveys of the Chambal estimate that there has been a sudden decline in the Chambal River population by ca. 50%. It is not just the closure of the Rehab. Center; it is the future of the project and the species that is disturbing. I recall a comment during the CSG West Asia meet that it didn't seem as if the gharial is going to disappear from the Chambal within the next twenty years. I personally wouldn't speak confidently about a time frame very much longer. There was great emphasis on the increased probability of extinction faced by small populations at the Gharial PHVA at Gwalior and the Chambal population is approaching this size." A visiting group from the AZA, which included Rick Hudson, reported that local biologists had similar dire concerns. Said Hudson, "The situation is bleak in that the Indians are aware that the situation is deteriorating (50% population decline since 1998; five-year hiatus with no surveys till 2003) but the three primary headstart facilities are not responding due to a lack of government funding. They need to step up egg collection, hatching and rearing, and release—but they have not. Though the sanctuary is 425 km long and should support more gharials, the fact is that they move long distances—and once outside the Sanctuary, they get killed in fishing nets. Though we saw lots of gharial on the river in two days, they were all female or young animals. Reduction of prey fish species by excessive fishing may have reduced the prey base for gharial, further speeding decline."

Rom Whitaker consistently has called our attention to the need for addressing the problems generally in India and specifically at Chambal, formerly the "jewel in the crown" of Indian gharial conservation. The CSG will move this issue to the forefront of its conservation agenda and develop, with our Indian members and colleagues, a coherent and firm response. The Chambal Sanctuary has been proposed as a UNESCO Natural Heritage Site. It stands a good chance of being declared as such because it comprises five protected areas. This was discussed with the Natural Heritage Section of the World Heritage Center, UNESCO, Paris in a special session of the IUCN regional meeting in

Sri Lanka in December 2003. CSG member R.J. Rao is developing the idea with local Forest Department officials. This may form the basis for future action. — *From correspondence and contributions from D. Basu, Endangered Species Program, 17 Ram Pratap Mag, Lucknow UP, 226022, India <dhrubasu@rediffmail.com>; R. Hudson, Fort Worth Zoo, 1989 Colonial Dr. Fort Worth TX 76110 USA <RHudson@fortworthzoo.org>; and Rom Whitaker, CSG Vice Chairman for South Asia, P.O. Box 21, Chengalpattu, India 603001 <draco@vsnl.com>.*



A 12-foot mugger crocodile, rescued by the Gujarat Society for the Prevention of Cruelty to Animals (GSPCA) at Ajawa Lake in the city of Vadodara, India. R. Vyas photo.

Latin America & Caribbean

Argentina

YACARE RANCHING PROGRAM IN ARGENTINA. Dr. Félix Alfredo Martínez of Argentina's National University of the Northeast, School of Veterinary Sciences, is coordinating a project devoted to the survival of caiman in his country. The project, entitled "Egg collection and rearing of young *Caiman latirostris* and *Caiman crocodilus yacare*," is supported by a grant from the university's Secretariat General of Science and Technology.

Between December 2001 and February 2002, Dr. Martínez and his team collected 1,063 eggs from 33 nests in the Departments of San Cosme and Santa Ana. The eggs were weighed, measured, and examined with an ovoscope to determine their degree of development and viability. Infertile eggs were removed, and the remaining eggs were placed in an incubator at a temperature of 30-32° C and relative humidity greater than 90%. The eggs were inspected frequently, and when the embryos began to vocalize, they were removed from the incubator and placed in an environment conducive to hatching. The young measured an average of 24.4 cm in length and weighed between 43.2 and 49 grams. The hatch rate in relation to the number of eggs per nest was highly positive, creating a strong argument for controlled reproduction of caiman via artificial incubation. — Dr. Félix Alfredo Martínez, *Zoology & Wildlife Resources Program, School of Veterinary Sciences, National University of the Northeast, Sargento Cabral* 2139, (3400) Corrientes, Argentina <zoologa@vet.unne.edu.ar>.

Brazil

CAIMAN FEEDING BEHAVIOR IN THE MAMIRAUÁ RESERVE. In 2001, I conducted a study of the feeding behavior of *Melanosuchus niger* and *Caiman crocodilus* during the dry season (Sept.-Nov.) in the Mamirauá Sustainable Development Reserve, Amazonas State, Brazil. Caiman populations of Lake Mamirauá are protected from hunting for at least ten years, permitting a study of the behavior of these species with a minimum of human interference. The objectives of the study were: (1) to describe the feeding behaviors of the two species; (2) to test the effects of population density, water and air temperature, and water depth on feeding behaviors, and (3) to verify the differences between the species in their feeding behaviors.

After 20 hours of *ad libitum* observation, I identified three categories of feeding behavior: (1) Trapping: the caiman holds its body immobile and perpendicular to the shore and captures prey swimming near the shore with a rapid, lateral movement of the head; (2) Jumping: the caiman jumps, launching nearly 1/3 of its body out of the water (Fig. 1). Most of the time the jumps were isolated events, but up to three

consecutive jumps were observed; and (3) Searching: the caiman moves slowly along the shore, searching for prey on the bottom of the water body. When prey is encountered, the caiman rapidly submerges its head. Sometimes the animal will stay submerged for 10 to 20 meters at a time, sometimes emerging with mud in its mouth.

Next, I conducted observations in 42 plots chosen randomly on the shores of the lakes and canals of the study area. Each plot was 50 m wide and 13 m long (10 m in water and 3 m on land) and was prepared 2-3 days before the observation. I conducted two 20-minute observation sessions in each plot, for a total of approx. 25 hours of observation.

The behavior identified as trapping represents 42.1% of the *M. niger* feeding behaviors, while searching and jumping represent 28.5% and 29.4%, respectively. For *C. crocodilus*, searching represents 50.8% of the observed feeding behavior, while jumping and trapping represent 15.4% and 33.8%, respectively. Using a multiple linear regression, I found that the water temperature has a negative effect on trapping in *M. niger*. During this feeding behavior, the caiman remains immobile, with the entire dorsal part of its body exposed to the sun. During the hottest hours of the day, it is likely to be difficult for the caiman to maintain an ideal body temperature. The other factors investigated (air temperature, water depth, and population density) do not have any effect on the described behaviors of *M. niger*, although I found that the density of the species was proportional to the frequency of the feeding behaviors exhibited.

A Chi-squared test indicates differences between the frequencies of the feeding behaviors of the two species. It could be that *M. niger* and *C. crocodilus* do not use the resources in the same way in time and/or space. This difference in feeding behavior is likely to be one of the factors permitting the coexistence of these two very ecologically similar species (Herron 1994; Da Silveira 2001; Da Silveira et al. 1997).

This research was funded by the Conselho Nacional de Desenvolvimento Científico e Tecnológico/Ministério da Ciência e Tecnologia (CNPq/MCT), Sociedade Civil Mamirauá (SCM), Instituto de Desenvolvimento Sustentável Mamirauá (IDSMA), the European Union, and the Wildlife Conservation Society (WCS). In Switzerland, the Wüthrich Fund assisted in the purchase of the plane ticket and some equipment.

Thanks to Ronis Da Silveira, Bill Magnusson, John Thorbjarnarson, and all the inhabitants of Mamirauá for their precious help. — Boris Marioni, *Campo dei fiori* 7, 6942 SAVOSA (TI), Switzerland <sambruschetta@mac.com>.

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Cuba



Figure 1. Caiman jumping in Lake Mamirauá, Brazil. Caiman there have been observed launching as much as 1/3 of their bodies out of the water. B. Marioni photo.

CUBA SUBMITS *C. ACUTUS* PROPOSAL TO CITES. The Republic of Cuba has submitted a draft

proposal to the CITES Secretariat requesting the downlisting of its population of *Crocodylus acutus* to Appendix II for a program of ranching, following the requirements of CITES Resolution Conference 11.16. The proposal will receive consideration at the 13th Conference of CITES Parties (COP) in Bangkok, 2-14 October 2004. Advance drafts of the proposal were provided to CSG, and advice on the proposal was sent to Cuba. We now have received a copy from the CITES Secretariat with a request for us to review the proposal and submit comments and recommendations back to the Secretariat for official transmission to Cuba. We will complete this first review by mid-April so that our comments can be received by Cuba prior to the final submission date for proposals (5 May). This will require review by interested CSG members prior to our meeting in Darwin. However, at Darwin we will be able to consider the final submitted version, and there is ample precedent for additional adjustments to proposals up to and including the COP.

The proposal is soundly based on the recent surveys and reports of American crocodiles in Cuba, much of which was reported and published in the Proceedings of the 15th Working Meeting of the CSG in 2000. Additional information from recent surveys is also included. Information on the wide distribution of the species around Cuba's coast, as well as a detailed examination of concentrations in Isla de Juventud and the Río Cauto estuary, are provided. Data on nesting, incubation, and nest survival also are provided.

The proposal also details the captive breeding program for crocodiles in Cuba, currently comprising six facilities where *C. acutus* has been bred successfully. Technical and operational details that will support raising ranched specimens are provided, as well as a detailed account of successful control of illegal trade. CSG reviewers will be examining the proposal for adherence to CITES requirements and making constructive recommendations to the Secretariat and Cuba, to ensure that the proposal meets the criteria for approval. — Perran Ross, *Executive Officer, from correspondence.*

Ecuador

C. ACUTUS IN THE GULF OF GUAYAQUIL BIOREGION: CURRENT STATUS AND CENSUS OF CAPTIVE INDIVIDUALS. The American crocodile

was at one time a common sight in Ecuador. Today, however, it is a rare species there, due to the conversion of its mangrove habitat to pools for shrimp farming, farmland, and urban areas. At the regional level, *C. acutus* is classified as "Vulnerable" (VU), criteria A.1.a.c., and is listed as an Appendix I (threatened or in danger of extinction) species under CITES. At the national level, this species is considered to be critically endangered (CR).

In recent years the unusual presence of *C. acutus* has been noted in mangroves and estuaries adjacent to the City of Guayaquil urban area, specifically the estuaries near homes on the outskirts of the city, 8-24 km from the road to the coast. The presence of these individuals, as well as the discovery of eggs in these areas near an urban residential zone, are related to the presence of favorable environmental conditions for the species, such as salinity, temperature, tidal patterns, and availability of food and shelter.

To obtain data on the specimens of *C. acutus* being maintained in captivity in the Guayaquil region, we mailed questionnaires and formal cover letters to wildlife rescue centers, zoos, and ranches. The questionnaires sought the following information: (1) number of American crocodiles in captivity; (2) sex and age of the individuals; (3) origin of the animals; and (4) if successful reproduction had occurred. The same questionnaire was sent to the Ministry of the Environment's (ex-INEFAN) Forestry Districts of the Guayas and Oro provinces to obtain official information on rescue centers and management units and the individuals kept in captivity.

General information collected through this survey, including personal communications with people in charge of managing these sites, is presented in Table 1. Data on the age and sex of crocodiles maintained by four of the Management Units surveyed are presented in the full report (available from the author).

This census of captive crocodiles in the Gulf of Guayaquil bioregion reveals which institutions currently are involved in supporting the conservation of *C. acutus* in Ecuador.

These entities could serve as genetic banks or potential sources of specimens for the reintroduction or relocation of the species in areas with favorable environmental conditions, such as the El Cancón Lagoon, the mangrove zone, and the canals and estuaries (Estero Salado) of the Gulf of Guayaquil. These areas, all

relatively close to the region's urban zone, have proven to be important *C. acutus* breeding areas. The argument therefore could be made for declaring this area a Wildlife Refuge zone.

Table 1. *Crocodylus acutus* individuals maintained in captivity in the Gulf of Guayaquil Bioregion.

Rescue centers/Zoos	Nº of individuals	Origin	Observations
<u>Jambelí Ecological Rescue Foundation</u> * (Joaquín Orrantía & Julio Baquerizo)	10 (5 ♀, 5 ♂)	Estero Salado (Puerto Azul, near Guayaquil) & Puerto Engabao-Playas	<ul style="list-style-type: none"> • Eggs maintained artificially, without positive viability. • Recent reproductive success in captivity in March 2002.
<u>Guayaquil Historic Park</u> * (Virgilio Benavidez)	3	----	<ul style="list-style-type: none"> • No reproduction in captivity.
<u>Pro-Forest Foundation (Fund. Pro-Bosque): Cerro Blanco Protected Forest</u> (Eric Horstman)	0	----	<ul style="list-style-type: none"> • Have two <i>Caiman crocodylus</i> individuals, both from Amazonía
<u>AQUALAB</u> : Lab for raising white shrimp, <i>Litopenaeus vannamei</i>	10 6 (3 ♀, 3 ♂) donated by Jambelí Rescue	Sabana Grande (Chongón) & Estero Salado, near Guayaquil	<ul style="list-style-type: none"> • No reproductive success in captivity so far. Eggs maintained in an incubator; none have been viable
<u>"El Pantanal" Zoo Nursery</u> *	25	----	<ul style="list-style-type: none"> • Reproductive success in captivity
<u>Farm (of Dr. Eduardo Gómez)</u>	1	----	----
<u>Teresita Ranch</u> * (Fausto Mantilla)	5 (1 ♀, 2 ♂, 2 undetermined)	3 from Los Ríos Province	<ul style="list-style-type: none"> • No reproductive success in captivity so far
<u>Wildlife Rescue Center "FRC" (Fundación Ecoturismo Cerro de Hayas)</u> (Sr. Federico Rodríguez)	0	----	----
<u>Guallabamba Zoo, Quito</u> **	0	----	----

* Management Units that are legally authorized by the Ecuadorian Ministry of Environment.

** This zoo is located outside the Gulf of Guayaquil Bioregion, but was included in the survey because it houses a large number of Ecuador's most important wildlife species.

This argument would be strengthened if the American crocodile is categorized as a flagship species. — Juan José Alava, *School of the Environment, University of South Carolina, Columbia, SC 29205, USA* <jalva@environ.sc.edu>; Raúl Carvajal, *Fundación Natura, Capítulo Guayaquil, Casilla 11327, Guayaquil, Ecuador*; Julio Baquerizo, *Fundación Ecológica Rescate Jambelí, km 105 vía a Machala, Guayaquil, Ecuador* <marfrisc@marfrisco.com.ec>.

North America

Mexico

USE OF GEOGRAPHICAL INFORMATION SYSTEM (GIS) TO DEVELOP A LAND MANAGEMENT

MODEL THAT INCORPORATES VIABLE ALTERNATIVES FOR *C. MORELETII* CONSERVATION IN THE PANTANOS DE CENTLA BIOSPHERE RESERVE, TABASCO. Crocodiles in Mexico face potential overexploitation due to the captive-breeding models implemented in the country since the 1940s. Because *C. moreletii* is now classified as an Appendix I (threatened or in danger of extinction) species under CITES, the sustainable use programs established over the last 15 years must take on a new direction and conduct environmental assessments within the context of the new political climate. Environmental assessments must take into account national and regional planning and programs that incorporate modern conceptual frameworks, such as Sustainable Development and Ecological Economics.

The final objective of the project is to develop it within the context of a so-called Management Model that encompasses all biological, technological, and normative information on the Morelet's crocodile while at the same time incorporating Mexican land-use planning and development processes. Ideally this model would strengthen existing conservation programs by recognizing the natural habitat of the crocodiles as one of several criteria to consider when integrating the physical environment with planned activities.

The project consists of four phases: (1) collection of information on the biology, ecology, and breeding/production of *C. moreletii*; (2) search, selection, and analysis of information about variables related to the physical environment, through an inventory of the study site; (3) definition of the criteria that will be used to accurately evaluate the information obtained through GIS; and (4) creation of zones that meet the criteria for appropriate development in the area.

The final product was a series of maps that show the location of optimal sites for the establishment of farms, ranches, and area for the protection and recuperation of *C. moreletii*. It is also worth mentioning that the information generated during the study could serve as the methodological basis for the design and implementation of management plans for other natural resources in this region, as well as in other parts of Mexico. — Beatriz Figueroa Ocaña, *Biological Sciences Division., Autonomous Univ. of Juárez, Tabasco, Mexico* <fbo2003@usuarios.retecal.es>; Salvador

Hernández Navarro, Jesús Martín Gil, & Jesús María San Martín Toro, *Dept. of Agricultural & Forestry Engineering, Univ. Valladolid, Spain.*

USA

GATOR GETS LOOSE IN AIRLINER COMPARTMENT IN NEWARK, NJ. No, it wasn't just an alligator bag. Rather, a live alligator was captured inside the baggage hold of an airliner in late October after it escaped from a crate of four gators being shipped from Miami, officials said.

The alligator was a juvenile, 4-5 feet long and weighing approx. 10 pounds. It remained inside a burlap bag with its mouth bound shut. No one was reported hurt, and the alligator was placed back in its crate and claimed by its owners, said Tim Wagner, an American Airlines spokesman.

Authorities were looking into how the reptile got out of the box. The gators flew into Newark Liberty International Airport on American Flight 776 from Miami, a Boeing 767, which arrived at 10:28 am. "Upon arrival at Newark, when the cargo hold was opened, one of the alligators was outside of the crate," said Wagner. "Still in the burlap bag, still with his mouth bound properly. So they called the Port Authority, put the alligator back in the crate with its companions, and it has now been reunited with its owners."

Tony Ciavolella, a spokesman for the Port Authority of New York and New Jersey, which runs the airport, said the Port Authority Police emergency services unit was called in. Officers did not wrestle the alligator or use a tranquilizer gun, he said, but rather used a closing-loop device to capture it. Officers from the state Division of Fish, Game and Wildlife were called in, but were not needed, Ciavolella said.

Wagner would not release the owners' names. Neither he nor Ciavolella knew why the alligators were being transported. Their health certificates and other paperwork were in order, Wagner said. — Steve Strunsky, *The Associated Press*, 27 Oct. 2003.

HARD LUCK. The alligator below was caught and released on 1 October 2003 on the east side of Lake Monroe, in central Florida. Both its upper and lower mandibles were severed. The cause of the trauma is unknown, but seems likely that it either survived the bite of another alligator or escaped from trappers with a rubber band around its jaws. Fortunately, the gator appears to have healed quite well. — Submitted by Christian

Visscher, *Florida Fish & Wildlife Conservation Commission, 601 W. Woodward Ave., Eustis, FL 32726 USA* <Chris.Visscher@fwc.state.fl.us>.



Alligator mississippiensis with severed upper & lower mandibles. Caught 1 Oct. 2003 at Lake Monroe, Florida. C. Visscher photo.

Publications



FREE OR LOW-COST ACCESS TO SCIENTIFIC JOURNALS. Students, researchers, and academics in some of the world's poorest countries will gain free or low-cost access to a wealth of scientific literature. Announced in October by FAO and a range of public and private sector partners, the AGORA (Access to Global Online Research in Agriculture) initiative will provide access to more than 400 key journals in food, nutrition, agriculture and related biological, environmental and social sciences.

The demand for scientific literature in developing countries has gone unfulfilled for many years. Gaining access to current scientific information has become a daily struggle for thousands of students, researchers, and academics. While students are unable to access the literature and acquire the knowledge they

need, researchers and academics are confronted with mounting difficulties in publishing their findings in peer-reviewed journals, updating their teaching curricula, and identifying funding.

Founding publishers of AGORA are: Blackwell Publishing; CABI Publishing; Elsevier; Kluwer Academic Publishers; Lippincott, Williams & Wilkins; Nature Publishing Group; Oxford University Press; Springer Verlag; and John Wiley and Sons.

Funding and support is also provided by Cornell University Mann Library, Rockefeller Foundation, the United Kingdom Department for International Development and the US Agency for International Development.

Eric Swanson, Senior Vice-President of John Wiley and Sons, Inc, and Chair of the International Association of Scientific, Technical and Medical Publishers said: "There can be few things more satisfying to a scientific

publisher than to contribute to a practical program to make valuable information easily available in places where it will be used to improve health, nutrition, and education of the world's poor."

Visit the AGORA web-site at: www.aginternetwork.org/en/

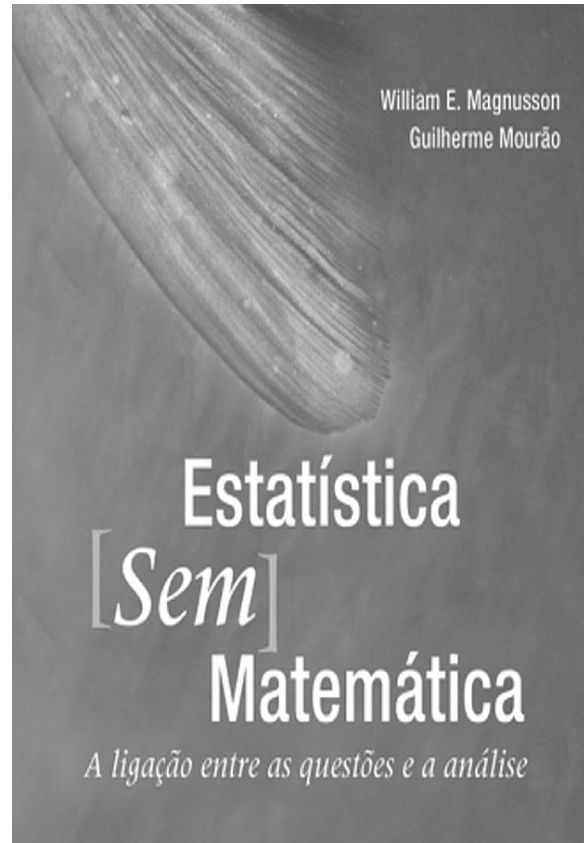
The web-site was developed in close cooperation between FAO and Cornell University, with funding provided by the Rockefeller Foundation, based on tools and systems developed by the World Health Organization (WHO). — Adapted from the FAO press release on 14 October 2003 at:

<www.fao.org/english/newsroom/news/2003/23019-en.html> Submitted by Grahame Webb, Wildlife Management International Pty Ltd P.O. Box 530, Sanderson NT 0813, Australia <gwebb@wmi.com.au>.

STATISTICS WITHOUT MATHEMATICS: THE LINK BETWEEN THE QUESTIONS AND THE ANALYSIS. Actual title in Portuguese: Estatística Sem Matemática: a Ligação Entre as Questões e a Análise. 2003. William E. Magnusson and Guilherme Mourão. Editora PLANTA, Londrina, PR, Brazil.

This statistics book is different. From the beginning, Bill and Gui establish a dialogue with the reader that strips statistical procedures of their arrogant wrappings, and shows how they can be used as simple tools of analysis and communication. Developed by the authors and their students during decades of teaching, *Estatística Sem Matemática* presents the concepts in a logical sequence, in a conversational tone that dispenses with the symbolism that is so familiar to the initiated, yet so obscure to novices. If you read this book from beginning to end, as recommended by the authors, statistics will cease to be an arrogant "science," and will become part of you.

Currently, the book is available only in Portuguese, but the publisher is working on an English version. For more info. and to purchase the book, visit: www.editoraplanta.com.br — Submitted by William E. Magnusson, CPEC/INPA, C.P. 478, 69011-970, AM, Brazil <bill@inpa.gov.br>.



New book: "Statistics Without Mathematics: the Link Between the Questions & the Analysis," by W.E. Magnusson & G. Mourão. Published in 2003 by Editora PLANTA, Londrina, PR, Brazil. An English version currently is being prepared.

Meetings

VI INTERNATIONAL CONFERENCE ON WILDLIFE MANAGEMENT IN AMAZONIA & LATIN AMERICA

5-10 September 2004 -- Iquitos, Peru

The National University of the Peruvian Amazon (UNAP), the Durrell Institute of Conservation & Ecology (DICE), and the Wildlife Conservation Society (WCS) announce the convening of the VI International Conference on Wildlife Management in Amazonia & Latin America. The conference will be held 5-10 September 2004 in the city of Iquitos, capital of the Peruvian Amazon.

A workshop on caiman and crocodile research and conservation is proposed. Researchers interested in organizing or participating in this workshop should contact the organizers.

To receive info. about the conference, submission of abstracts, workshops, and courses, as well as information on registration and hotels, please visit the conference web-site: www.vicongreso.com.pe/

For questions, please contact the conference organizers by e-mail: congresofauna@amauta.rcp.net.pe

Organizing Committee: Richard Bodmer, DICE; Lorgio Verdi, UNAP; & Pablo Puertas, WCS

ICZ 2004: 19TH INTERNATIONAL CONGRESS OF ZOOLOGY

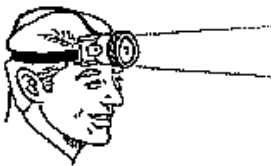
23-27 August 2004 -- Beijing, China

Organized by the China Zoological Society, Institute of Zoology, Chinese Academy of Sciences, China Wildlife Conservation Association, and the China International Conference Center for Science and Technology, this congress will include an opening ceremony, plenary session, symposium sessions, contributed paper sessions, and poster sessions.

A special symposium, "Conservation Biology of Crocodilians" (Special Symposium S5.5), is being convened by Dr. Wu Xiao-Bing (China) <wuxb@mail.ahnu.edu.cn> and Perran Ross (CSG) <prosscsg@flmnh.ufl.edu>. The focus of the symposium is on critically endangered crocodilians in Asia and elsewhere and general principles for crocodilian conservation. Persons expecting to attend the meeting and wishing to participate in this symposium should contact both of the convenors by e-mail indicating their interest and a potential topic.

For detailed & updated info, please visit the ICZ 2004 website at: <http://www.icz.ioz.ac.cn>
To register on-line, visit: <http://www.congress.com.cn/icz/register.htm>

Personals



FIRE STRIKES CSG
VICE CHAIRS. Both
Val Lance and
Grahame Webb
have lost extensive
libraries of

crocodilian materials, as well as data and personal belongings in recent fires. Val's house was burned in the disastrous San Diego fires of December 2003, and Grahame suffered an office fire that completely destroyed the building that houses his office as well as those of Charlie Manolis and Adam Britton. Both principals and their staffs and families are well, for which we are grateful.

Much that was lost cannot be replaced—research data, works in progress, and personal files and mementos. CSG is arranging transfer of full sets of Proceedings of Working Meetings, all of which were lost by both Val and Grahame.

The majority of Grahame's library was saved, and he has been contacting various CSG members about specific items lost. We hope that you can all respond as needed to assist him. Unfortunately, however, Val lost the majority of his library. Each of us probably has duplicate papers and reprints in our files that might make up Val's loss. Have a look in your files and please consider forwarding any of the following directly to Val (address on the Newsletter back

page):

- Copies of your reprints and reports
- Copies of recent reports, drafts, and manuscripts from Val
- Copies of Val's publications (received from him)
- Copies of major crocodilian works (best to e-mail Val prior to copying and sending them, to reduce duplication)

Loss of our research facilities and tools is a nightmare that I hope none of the rest of us ever face. Let us do what we can to reduce the impact for our two Vice Chairs. — Perran Ross, *Editor*.



RICHARD FERGUSON has relocated from Mombasa, Kenya, back to Zimbabwe with his family. He is now at 8 Maiden Drive, Highlands, Harare, Zimbabwe. Tel/fax: 263-4-776203; cell: 263-91-285103, & e-mail: <zeahco@zol.co.zw>. They are pleased that their container of personal possessions finally arrived after nearly four months delay and they can set up their new household.

MORAL OF THE DAY. One evening the old farmer decided to go down to the pond and look it over, as he hadn't been there for a while. As he neared the pond, he heard voices shouting and laughing with glee. As he came closer he saw it was a bunch of young women skinny dipping in his pond.

He made the women aware of his presence and they all went to the deep end of the pond. One of the women shouted to him, "We're not coming out until you leave!"

The old farmer replied, "I didn't come down here to watch you ladies swim or make you get out of the pond naked."

"I only came to feed the alligator."

Moral: Old age and treachery will triumph over youth and skill. — Submitted by James MacGregor, *Environmental Economics Program, International Institute for Environment & Development, 3 Endsleigh St., London, UK WC1H 0DD* <James.MacGregor@iied.org>.



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.

Steering Committee of the Crocodile Specialist Group

Chairman: Professor Harry Messel, School of Physics, University of Sydney, Australia.

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