

# CROCODILE SPECIALIST GROUP

## NEWSLETTER

VOLUME 21 No. 4 ● OCTOBER 2002 – DECEMBER 2002



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IUCN–The World Conservation Union  
Species Survival Commission

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COVER PHOTO. Professor Harry Messel,  
Chairman CSG, opening the 16<sup>th</sup> Working  
Meeting. October 2002, Gainesville, Florida.  
F.W. King 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](mailto:prosscsg@flmnh.ufl.edu)>.

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S. & J. Puglia, Alligator Adventure at Barefoot Landing, Myrtle Beach, SC, USA.

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Biodiversa S.A Cartagena, Colombia.  
Dr. Michael Allen, Oxford UK.  
St. Augustine Alligator Farm, Florida USA.

## Editorial

This issue is taken entirely by reports and products of the highly successful 16<sup>th</sup> Working Meeting held in October 2002.

## CSG 16<sup>th</sup> Working Meeting Report

Between 7 and 10 October 2002 over 270 CSG members and supporters convened in Gainesville, Florida, USA, for a very successful working meeting. The meeting was hosted by United States Geological Survey (USGS) – Biological Resources Division, Florida Cooperative Fish and Wildlife Research Unit, and Florida Caribbean Science Center, Florida Fish and Wildlife Conservation Commission (FWC), Florida Museum of Natural History, University of Florida, and Florida Wildlife Federation (FWF).

The organizing committee comprised of H. Franklin Percival (USGS, Chairman), Ken Rice (USGS, program), Kristina Sorenson (USGS/UF, volunteer coordination), Harry Dutton (FWC registration management and treasurer), Allan Woodward (FWC, program) Dwayne Carbonneau (FWC, social), Steve Stiegler (FWC, audio-visual coordination), Pat Linehan (FWC, program and social), Perran Ross (FLMNH, CSG liaison), Manley Fuller (FWF, Fiscal Services), John Thorbjarnarson (WCS, program).



Ken Rice moderating session "New Findings in Crocodilian Biology." H. Suzuki photo.

Crocodile Specialist Group and the meeting hosts and committee are very grateful to the many donors and sponsors listed below for their support of the meeting. We particularly appreciate the support of Phil Steel and Jake Puglia for providing the initial seed support beyond their normal CSG donation and to Gene and Dennis Pella for their support of the hospitality room. The University of Florida supported sign language translation enabling the participation of a hearing impaired crocodile enthusiast. The Gainesville Sheraton Hotel, overlooking Biven's Arm lake and its wild alligators provided a comfortable setting, facilities and amenable and flexible staff for the meeting.

The meeting was opened with a welcome address from Vic Heller, Assistant Executive Director FWC and Russ Hall representing USGS. The first session on market driven conservation presented an overview of the complexities of the relationship between conservation and commercial use by John Hutton and then critical evaluations from several perspectives by John Thorbjarnarson, James MacGregor and Tommy Hines. The afternoon was occupied by reports on alligator conservation and management throughout the USA, one of the success stories of sustainable crocodilian use. Sessions on the following days included wild crocodilian harvest programs; presentations on current conservation action on the Chinese alligator, Siamese crocodile, Philippine crocodile, Orinoco crocodile and Cuban crocodile; advances in crocodilian physiology, techniques; disease and health in both captive and wild populations; human-crocodile interactions and crocodilian DNA studies. Two workshops were conducted on Wednesday afternoon, one on Latin American issues and the other following up on the opening session on trade issues. Published accounts of these presentations were presented as abstracts for the meeting and will appear in the meeting proceedings.

This meeting introduced several innovations to the working meeting format. Participants received a printed collection of abstracts of the presentations on registration and each session concluded with drawing for a door prize, to encourage a good audience for the later papers of each session. A highly popular feature was the meeting hospitality suite, a dedicated room where participants could gather after hours to socialize, converse, discuss issues, and partake of the

beverages generously donated by CSG members Gene and Dennis Pella and beer brewed by Harry Dutton. As has become customary at CSG working meetings, the social and personal interactions during the meeting provided a rich medium for friendship and professional connections. An opening cocktail welcome set the standard for good food and copious refreshments. The evening poster session was enriched by the presentation of snacks and drinks, ensuring nearly 100% turnout and spirited discussion of the many projects presented. A dedicated group of cigar smokers inaugurated the Harry Messel Cigar Olympics, activating hotel smoke alarms and requiring industrial scale ash disposal. Reports that the executive officer's evil twin induced a selection of the younger and better looking participants to disport in the hotel pool without the benefit of bathing suits are unfounded.



Chairman Prof. Harry Messel with his signature cigar & Deputy Vice Chair for Latin America, Alvaro Velasco. A. Velasco photo.

A high point of the social agenda was the evening barbecue banquet. Served under canvas at the rustic Austin Cary Memorial Forest, and dramatically backlit by a circle of pick-up truck headlights, participants reveled to local traditional music and enjoyed barbecued pork, shrimp, alligator in several forms, and a dramatic strawberry dessert in a setting of rural-chic and great camaraderie. At the banquet the Castillo prize for crocodilian conservation, a handsome silver pitcher, was presented to John Thorbjarnarson in recognition of his multiple and long-term efforts in global crocodilian conservation.



The banquet: barbequed pork, shrimp and alligator enjoyed at Austin Cary Forest. F.W. King photo.

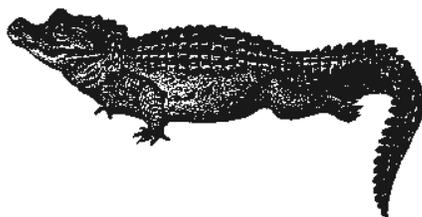


Welcome cocktails. Identifiable are: L to r: Kristina Sorenson, Brandon, Bob Godschalk, Luis Sigler, Dennis David, Jenna McKnight, Perran Ross & Manuel Muñiz. F.W. King photo.

The CSG Working Meetings are the primary international meeting dedicated to crocodylian conservation and have become the forum where current events, recent discoveries and new directions are presented. Each meeting has its special highlights, but participants were effusive in their praise for the 16<sup>th</sup> Meeting for the venue and facilities, excellence of presentations and a very rich and productive social organization. The Chairman, Steering Committee and all members express their thanks to the meeting organizers and sponsors.

**Sponsors of the 16<sup>th</sup> Working Meeting:**

- United States Geological Survey – Biological Resources Division, Florida Caribbean Science Center, Ft. Lauderdale, FL.
- Institute of Food and Agricultural Science (IFAS) Office of the Vice President for Academic Affairs, University of Florida.
- Florida Alligator Marketing and Education Council (FAME).
- Louisiana Fur and Alligator Council.
- Alachua County Tourist Development Council with the Alachua County Board of Commissioners.
- Jake Puglia, Alligator Adventure at Barefoot Landing, North Myrtle Beach, SC.
- Phil Steel, Crystal River Alligator Farm, FL.
- Center for Natural Resources, University of Florida.
- Florida Museum of Natural History, Office of the Director and Natural History Department.
- Department of Wildlife Ecology and Conservation, University of Florida.
- Gene and Denis Pella, Sebring, FL.
- Robert Young, Alligator Bob’s Premium Meat Snacks
- Allen Register, Gatorama, Palmdale, FL
- Brian Wood, All American Gator Products, Pembroke Park, FL.
- Mark Glass, Glass Enterprises Inc., Moultrie, GA.
- Zackary Casey and Penny Mathews, Pelts and Skins Inc., Kenner, LA.



**CSG Steering Committee**

MINUTES OF CSG STEERING COMMITTEE MEETING, 6 OCTOBER 2002, GAINESVILLE, FL, USA. Present: Prof. H. Messel, P. Ross, W. King, A. Velasco, R. Fergusson, J. Hutton, D. Ashley, A. Woodward, P. Stobbs, O. Menghi, G. Webb, Y. Takehara, B. Ortiz, A. Larriera, J. Thorbjarnarson, F. Huchzermeyer, V. Lance, R. Elsey, L. Brisbin. Observers: T. Dacey, J. Daltry, P. Hall, J. Saieh, H. Zambrano, L. Martinez, R. Xiandong, J. Hongxing, N. Thuok, J. Caldwell, J. MacGregor, P. Siroski, C. Pina, A. Matsuda, C. Adams, K. Vliet, H. Dutton, L. Sigler, M. Lopez, R. Ramos, I. Torres, M. Muniz, R. Soberon, M. Tabet, F. Watlington, P. Wilkinson, C. Wilkinson, E. Espinosa, A. Llobet.

The chairman opened the meeting at 9:20 am with comments on the excellent attendance and very broad experience represented in the room.



Steering Committee, l to r: Don Ashley, Allan Woodward, Paul Stobbs & Leon Roiter. F.W. King photo.

FINANCES. CSG accounts through September 2002 were presented, showing revenues totaling \$79,149 and expenses totaling \$84,670:

Donations	\$59,185
Newsletter subs	2,381
Sales	1,150
Project grants and contracts	16,433
Bank charges	1,779
Equipment	1,777
Mail	4,029
Project and grant expenses	13,260
Publications and printing	4,344
Salaries and fringe *	54,393
Supplies	705
Telephone	1,000
Travel	2,380
Misc. other	994

\* Includes prepayments to salary account through March 2003

With funds carried forward from previous years the CSG current balance is \$61,000. The chairman accepted the report and offered thanks again to all the CSG donors both present and absent.

Allan Woodward reported on behalf of the organizing committee that 262 preregistered participants were expected and the draft program of presentations and events was submitted. The Chairman thanked Woody and the committee for their excellent organization and the high quality of presentations in the program.

RELATIONSHIP WITH NATIONAL GEOGRAPHIC TELEVISION. The executive officer presented a report detailing a series of issues and difficulties arising from the retainer relationship between CSG and NGTV. This included non-payment of fees, complaints from field researchers and an overall concern about the quality and content of documentaries made with CSG input and member participation. Responses of the committee were mixed, some expressing great satisfaction and others with similar problems. After discussion it was recognized that such a relationship with a commercial entertainment company should be expected to not completely meet CSG needs. The committee concluded that CSG needed to communicate to NGTV administration and producers that we expected completely professional treatment by them regarding payments and agreements, but that CSG members also needed to be realistic about the needs of documentary filming. A solution would be to advise CSG members about to participate in such ventures of the need to make clear written arrangements about responsibilities



The hospitality suite & free beverages were very popular. Foreground, r to l: L. Sigler, R. Soberon, T. Ramos, M. Tabet & John T. F.W. King photo.

and expectations prior to the activity. Following the Committee meeting a representative of NGTV presented CSG with a check for outstanding payments and showed sample documentaries from their current series, inviting critical comment. In the following discussions a clearer basis for continuing the arrangement was achieved.

CSG NEWSLETTER. A proposal to diversify editorial input and production capacity for the newsletter was presented by P. Ross and J. Thorbjarnarson. Recent newsletters run around 1000 copies printed and 800 - 950 copies distributed, vary between 18 and 26 pages of content and cost \$1,798 - \$2,717 to print. Estimated effort of production was 100 person hours per issue, four times a year. The current editors P. Ross and F. W. King have discussed with J. Thorbjarnarson outsourcing elements of production and assembly to his office in Wildlife Conservation Society. Committee members raised issues of loss of editorial control to an external organization, duplication of costs, conflicts in editorial policy. After discussion the committee concluded that a complete transfer of editorial responsibility was risky and premature. The chairman ruled that on a trial basis Dr. Thorbjarnarson should be added to the editorial board and diverse procedures for optimizing assembly and production with his assistance, under the direction of the current editors, could be attempted.

CROCODILE ATTACK DATABASE. Suggestions have been made that CSG should compile statistics on crocodile attacks on people worldwide. A similar program for shark attacks is a model. After brief discussion, the issue was deferred to the agenda item on crocodile-human conflict for discussion there.

REPORT OF THE VETERINARY SECTION. Fritz Huchzermeyer reported that procedures for pre-disease screening of crocodylians developed by members of the veterinary group had been included as a chapter in a publication on such procedures distributed widely by the SSC Vet Specialist group (Huchzermeyer, F.W. 2001. *Crocodylia*. Pp. 71-73 in: M.H. Woodford ed. *Quarantine and*

health screening protocols for wildlife prior to translocation and release into the wild. Office International des Epizooties, Paris, 104 p.). The very high cost and limited production of the immobilizing agent gallamine had led to development of alternative curare based agents that were currently being tested and a brief technical discussion of immobilizing and anaesthetic agents for crocodilians followed. Fritz offered the idea that most mortality of captive crocodilians was due to non-contagious agents and represented management and husbandry problems rather than disease or infectious agents and the vet group should pursue this idea.

REPORT FROM THE ASIAN AND OCEANIA SECTION. G. Webb reported on the recent publication of a detailed work on anatomy of crocodilians based on *C. porosus*. In Australia, the Department of Primary Industry continues to be a primary focus of research in Queensland. In the northern Territory, recent political changes raised expectations of a renewal of the program there following recent inactivity. The issue of effects of dispersal of exotic, toxic cane toads into the range of crocodiles and other reptiles was discussed. High mortality of crocodiles on initial exposure to toxic toads and their tadpoles is reported. Dr. Webb's group is conducting baseline studies in advance of the invasion front in the McKinlay River area and considered that the issue was not extinction of crocodiles, but rather large numbers of crocodiles being killed, and baseline survival rates and ecological relationships (on which current management is based) being altered permanently. This study is being funded largely by WMI, in what appears to be an absence of institutional interest.

In Indonesia, recent WMI work by Mark Bezuijen on *Tomistoma* included a community workshop for *Tomistoma* conservation, involving all levels of Government and a resurvey of the Merang River and other nearby sites in Sumatra. The impact of illegal logging and burning is becoming very severe, and unless action is taken in the immediate future, this important site for *Tomistoma* will not exist. A catchment level forestry management plan is being developed with local communities and Government with assistance by WMI and local NGOs. However, the situation is grave and requires the

involvement of a major donor. It is now beyond what WMI can support with assistance of various small donors.

In Vietnam, initial indications are that the reintroduction of *C. siamensis* into protected habitat in Cat Tien National Park has been successful. A detailed report was expected at the CSG meeting. Six captive breeding farms have applied to CITES for registration, and protocols to monitor the farms are under development. The major trade continues to be one of live farm-raised *siamensis* (and *siamensis-rhombifer* hybrids) to China for food and to a more limited degree, possibly captive breeding in China. Prices are reported to be US\$ 200 for a 10 kg specimen up to \$1,000 for a 40 kg adult. The effects of trade on the wild population is virtually unknown, because the wild population appears to have been largely extirpated over time.

Cambodia: E-mail from John Thorbjarnarson circulated to SC in August expressed concern about the continued removal of wild crocodiles and their sale to local crocodile farms. Mr. Nao Thuok, Director of Fisheries, was present and responded that the Authorities continued to try and control this process and that a workshop on the issue had been conducted. Mr. D. Cheang, Director of Fauna and Flora was also present. A new law has been drafted, and is being implemented, which increases control over farms and improves regulation of crocodile movement between farms. A census of farm broodstock (adults) was proposed and the movement of wild adults into smaller farms was much reduced. There was a continuing need for technical training for enforcement personnel.

Jenny Daltry of FFI gave an update of the situation in the Cardamom Mts. where further surveys with local people had located 15 sites and a minimum population of 103 crocodiles in the region. Improved access was increasing human impacts and threat to the sites. Jenny and FFI continue to work with local communities to build conservation interest and hope to link this effort to major development projects in the region. A critical problem is the lack of trained technical personnel.

Nao Thuok then gave a short summary of current efforts by his office to control the situation. An ad-hoc working group on Siamese crocodile was to be convened at the meeting later in the week.

Chinese alligator: The conservation momentum initiated at the CSG meeting in 2000 and focused through the IUCN-World Conservation Congress had made great steps forward. Following the workshops held in September 2001, a Conservation Plan was adopted and official funding for reintroduction programs released for Anhui and Zhiangjiang provinces. Mr. Ruan Xiangdong, representing China's State Forest Administration (SFA), reported that Mr. Jiang Hongxing was appointed official contact and national coordinator for Chinese alligator conservation in the national Research Development center. In Anhui a pilot release project was underway and in Zhiangjing an experimental release into 400 ha was being planned. Technical support was being sought for monitoring wild populations, habitat evaluation, conservation and management of both existing wild and captive populations, and for commercial use. The final Proceedings of the 2001 workshops were officially presented to CSG and copies distributed. Professor Messel expressed his strongest congratulations and wishes for continued cooperation between SFA, Chinese interests and the CSG, to continue this important work.

Philippines: A short summary of the extensive history of CSG intervention in the Philippines crocodile was presented. However, current activity seemed paralyzed again by internal politics and economic difficulties, such that conservation action for the Philippines crocodile was currently stalled. The task force formed in 2000 was inactive and was not addressing current crises of managing and providing resources for the captive population. A detailed report from Chris Banks based on his visit to Philippines in May 2002 was presented for discussion. Concern was expressed by international zoo representatives and other conservation interests. One current bright spot was the Dutch project in Luzon, combining community development with crocodile conservation, and the discovery of several new sites occupied by small populations of Philippine crocs. The ongoing survey and genetic analysis by Fred Pontillas was recognized as a valuable component to future work with this species. A special meeting of interested parties was convened to discuss the problem (see report below, pp. 20-22). After some two decades of talk about restocking, and millions of dollars invested in producing stock through captive

breeding for restocking, one general perception is that some pragmatic action needs to be taken in order to establish confidence in the program by potential donors.

Papua New Guinea: The economic and political situation continued to deteriorate to the detriment of crocodile management. There are increasing concerns about loss of nesting habitat throughout the Sepik (river) systems, with the vegetation mats used for nesting being burned to improve fishing access. Jack Cox sent a report detailing current unofficial efforts to work directly with traditional resource owners, to restructure egg collection protocols and improve returns to local people. The government had not provided funds from the special account to support surveys since 2000 and there are concerns that the funds may have been improperly diverted to other uses. PNG now stands in danger of being unable to meet its CITES obligations for non-detriment findings, which could result in CITES censure. Mobilization of higher level political support and the establishment of a separate inviolate account for crocodile skin export levies (which pay for the monitoring) are considered urgent actions needed to restart the surveys. The CSG undertook to inform the Animals Committee of CITES of the dilemma. Paul Stobbs reported results of research indicating that hatchlings derived from the wild egg harvest were of lower quality (survival and growth) than those derived from captive bred eggs. This provides an additional concern about viability of the wild harvest program and its conservation incentives.



Grahame Webb emphatically makes his point as Professor Messel looks on. F.W. King photo.

After the meeting, the following letter was sent:

10 October 2002

Dr. Marinus Hoogmoed  
Chairman CITES Animals Committee  
CITES Secretariat  
Chemin des Anemones  
Geneva  
Switzerland

RE: Resolution Conference 8.9 Review of trade  
in Appendix II crocodiles from Papua New  
Guinea.

Dear Dr. Hoogmoed,

In our capacity as an expert advisor to the Animals Committee of CITES we write to request that you initiate a review of the trade in crocodilians from Papua New Guinea under the conditions of CITES Resolution Conf. 8.9 Review of Significant Trade. As we detail below and in the attached materials, trade in Appendix II crocodilian skins has increased to approximately 25,000 skins/year of two species (*Crocodylus porosus* and *Crocodylus novaeguineae*). Most, if not all, of these are of wild origin, either as wild hunted adult skins or as eggs collected from the wild and raised in ranches, although they are sometimes (erroneously) reported in CITES reports as bred in captivity. Papua New Guinea has failed to adequately survey crocodile habitat since 1998 and prior to that date, surveys indicated variable and possibly declining trends. We also have reports of extensive loss of nesting habitat by deliberate burning of floating vegetation mats where crocodiles nest. There is therefore no objective basis to determine that the current and continuing harvest of crocodiles from the wild is meeting the requirements of the convention Article IV paras 2 (a) (monitoring) and 3 (non-detriment). As expert advisors on crocodilians we request that the Animals Committee place crocodile populations (*Crocodylus porosus* and *Crocodylus novaeguineae*) of Papua New Guinea on the list of species considered to be significantly affected by trade (Resolution Conf. 9.1(Rev)) and immediately initiate a review of biological, trade and other relevant information. We undertake to assist the Animals Committee to conduct this review in a timely manner.

The management and conservation of crocodilians in Papua New Guinea (PNG) was long considered a model program combining sustainable resource use, integration with local community benefits, implementation of CITES permit and skin tagging requirements and a regular monitoring program. The monitoring program, designed originally as part of a multimillion dollar FAO project, was conducted for 15 years, 1982-1996 by annual aerial surveys of crocodile nests in a set of representative sample areas in the area where adult crocodiles or crocodile eggs were harvested. In 1996, at the request of the PNG CITES Management Authority (Department of Environment and Conservation) a CSG expert evaluated the program and made recommendations for streamlining the surveys and more easily interpreting the results. Monitoring was supported by a levy upon each skin exported to pay for the annual survey. PNG has built up a strong team of well trained and dedicated technical personnel who are fully capable of conducting and interpreting aerial nest surveys.

At the time of the experts review, the raw survey data indicated a fluctuating decline in the nesting index between 1993 and 1996 but this was thought to be due to environmental conditions (dry El Niño weather). A major recommendation of the expert review was that surveys be conducted on a reduced number of key areas at a minimum of every two years to ensure that any decline in the population due to environmental conditions, habitat loss or over-harvesting could be detected. We are therefore surprised and disappointed to report that surveys were only intermittently and incompletely conducted in 1997-1999 and have not been conducted at all in 2000, 2001 and 2002. In the same period the export levy has been paid but apparently the funds have been diverted or misappropriated and not applied to monitoring program. The deficiency is therefore not lack of capacity or personnel but a failure to apply the available funds.

We have engaged in extensive correspondence with both the administrative and technical levels of the management authority (attached copies) but despite numerous communications, no surveys result and the situation has reached a crisis point. A consideration of crocodilian population dynamics, the known rate of extraction of adult

crocodiles and eggs for commercial trade and reports of serious habitat degradation in the nesting areas all suggest that continued extraction of wild crocodiles in the absence of current monitoring data is in violation of Article IV para 2 a and 3 of the Convention.

We recommend that this situation be given immediate consideration by the Animals Committee for review and we can assist the committee by providing most of the necessary data to evaluate the situation. The most urgent priority is to survey the population at the next appropriate season (January-March 2003) to ensure that no detriment to the wild population is being experienced and this should be a condition of continued harvest and export. We propose as an interim measure to achieve this goal that funds be sought to conduct the surveys from the private sector engaged in production, export and trade of PNG crocodiles. We recommend that these and the skin levy funds must be secured in a separate account while the diversion of the funds from their proper purpose can be investigated and prevented. We have been advised by commercial interests that they would provide such funds if they could be properly secured and applied.

We hope that by a prompt application of the review process and application of some quite easily met secondary recommendations regarding surveys, that any detrimental harvest of crocodiles in PNG can be avoided and the program put back onto its previously stable basis.

Sincerely yours,

Professor Harry Messel  
Chairman, CSG; cc.: TRAFFIC International,  
IUCN Trade Program, CITES Secretariat

In response, the CITES Animals Committee Chairman intervened via the regional representative for the South Pacific to formally inquire of PNG about the situation. Additional discussions were held in Chile during the CITES COP and at the time of writing indications from



PNG are that the government is being responsive and will developing action along the recommended lines.

The group broke for lunch at 12.30 and reconvened at 2:00 pm.

A serious request to Mr. Terry Steve Irwin, "the crocodile hunter," to join in partnership with CSG for a long term global crocodile conservation initiative received an amusingly unresponsive reply--a misspelled letter and a signed photo of Mr. Irwin. A proposal to respond with a signed photo of the Chairman's arse was suggested but not approved. No one was prepared to take the photos!



Jeff Lang, Alejandro Larriera (Vice Chairman, Latin America) & Marcos Coutinho (Brazil). H. Suzuki photo.

REPORT FROM AFRICA. Vice Chairman Rich Fergusson provided a detailed report for the Africa region.

South Africa: There has been little activity on wild crocs but research/impact assessment on two dams has been conducted. Dr A. Leslie is also aiming to restimulate research in St Lucia – population studies, TSD and global warming, endocrine disruptors and population genetics.

Botswana: Dr. A. Leslie's research is also extending into an widespread program in the Okovango on crocodile ecology.

Mozambique: Swannie Swanepoel's proposed project on human conflict and populations/utilization is still pending approval by the Mozambique authorities. There are continuing reports of increasing human/crocodile conflict on the Zambezi River.

Zimbabwe: CFAZ has instituted a number of additional surveys of the wild population, mostly tied to the egg collection activities. The wild populations appear stable but there are concerns about declining average clutch sizes, which may

reflect trophy hunting or changes in the productivity of Lake Kariba. There has been considerable disruption of the ranching/farming system related to the land seizures, and there have been severe shortages of food for crocodiles, although this has mostly affected the smaller producers.

Zambia: Zambia Wildlife Authority have reported human/crocodile conflict problems in west and southern Zambia, and there have been calls for the wildlife authorities to reduce the wild crocodile population.

Malawi: Again there are continued reports of increasing conflict between humans and crocodiles in southern Malawi, but very little communication between the CSG and the local wildlife authority. Malawi continues to export the skins of 200 “nuisance” animals/year

Tanzania: After obtaining an Appendix II downlisting at COP 11 (2000), wild harvesting has now taken place for 3 years. One interim report for year 2000 was received and an update on the success of the harvest program to 2002 is expected shortly. There have been some allegations of inefficient harvesting and regulatory problems, but exports match the quotas, albeit somewhat delayed. No population surveys have apparently been done since downlisting and it is understood that an increased quota of wild skin exports has been requested for future years. There has been no known activity from farms/ranches.

Democratic Republic of Congo: There has been a proposal to farm crocodiles in central DRC, primarily for the meat market. This may have potential for offsetting the bushmeat trade in wild crocodilians. The feasibility of the proposal will be assessed in Nov/Dec. This is a potentially important development because all 3 species of African crocodiles occur in DRC, there has been very little information about them from this area in recent years, and the development of a farm can be expected to promote some research.

Uganda: One report recently received from the wildlife authority emphasizes human conflict and the threat it creates to the wild population.

Kenya: There are no recent data on the status of any Kenyan crocodile populations, but there are many reports of human/crocodile conflict. The wildlife authority commissioned a study on this, held a workshop to discuss results, and has examined policy changes that may be needed to better manage the situation.

Exports of skins from the farms are slowly increasing. It is understood that a number of new licenses for crocodile ranching have been issued by the management authority.

Ethiopia: Despite requests, no new information on wild crocodile populations has been obtained. The one ranch has recently held a large sale to destock and is attempting to modernize and improve.

Egypt: No information on wild populations. One request from Egypt for information on ranching, but no contact since.

Cote d'Ivoire & Liberia: Ekki Waitkuwait has recently started gathering information on all 3 species of African crocodile here, but this has been interrupted by the current political conflict in Ivory Coast. There are isolated populations of each species, although these have been reduced by hunting and fishing pressures.

Nigeria & Niger: Efforts have been started to establish contacts between the CSG and each of these countries, with the aim of assessing the status of wild crocodile populations in both countries.

Deputy Vice Chair Olivier Behra submitted a written prospectus for additional action in Francophone Africa, centered on cooperative actions with ECOFAC (Conservation and Sustainable use of Forestry Ecosystems of Central Africa program) in Gabon and with ECOPAS (a similar program for sub-saharan Africa) in Niger, Burkina Faso, and Benin. Two new French speaking CSG members from the region have been proposed. In Mauritania a travel agency is developing crocodile-based ecotourism in conjunction with M. Luc Fougereole of the Fermes aux Crocodiles. In Ghana a student is working on the distribution of crocodiles in the country, and will produce a distribution map.

HUMAN/CROCODILE CONFLICT PROBLEMS. Richard Fergusson referred to the spreading concerns on this issue all over the world and the need for an accelerated concrete response by CSG. Without this, politically motivated calls for the complete elimination of crocodiles in several African countries, and quite possibly elsewhere, could not be countered. Richard proposed to form a working group or task force on the topic, and to use the proposed session at the 16<sup>th</sup> Meeting to initiate the task force (see pp. 16-20). The possibility of cross-linking with other SSC groups where animal-people conflict

occurs (e.g., elephants, cats, canids) was noted, and the EO will coordinate with Richard on this issue.

The human conflict issue in Africa was seen to be related to wider concerns about the way in which management goals and programs in 2002 have increasingly diverged from the earlier models, and the possible need to undertake a new review of crocodile management throughout southern Africa. For example, the continued operation of captive breeding in South Africa, under a ranching approval, was peculiar. Programs in many other countries, including Tanzania and Zimbabwe were thought to have drifted from their original goals, such that the conservation value may be compromised. The CITES significant trade process in Appendix II species (Res, Conf 8.9) may provide a mechanism for examining this under the umbrella of CITES. Richard and Jon Hutton undertook to review the situation and draft a proposal for a review of African programs, which could be submitted to CITES and perhaps other agencies.

Crocs and the Church: Lehr Brisbin summarized his activities over the last two years in regard to stimulating interest by the Presbyterian Church's African missionary program in crocodile management and conservation. In Sudan, the church contact is with Christian rebels in the south and they had expressed interest in sustainable crocodile exploitation as a means for advancing community welfare. In Nigeria, church contacts were developing through Nigerian academics in USA and some senior politicians to investigate the potential of croc ranching to meet demands for wild "bushmeat." Dr. Doug Welch, senior administrator for Presbyterian Environmental funds was attending the CSG meeting on a fact-finding mission. Discussion took place on both the potentially powerful influence of the church in Africa (and elsewhere) on human behavior with regard to wildlife and its use, and to linking wildlife use with community and human welfare. Bris was encouraged to continue this initiative and Welch was welcomed and offered full cooperation by the CSG Chairman.

REPORT FROM LATIN AMERICA. The Regional Vice Chair Alejandro Larrierra introduced Luciano Verdade, who reported on a survey he had conducted on crocodylian research and management programs in Latin America. He identified programs in 14 countries, involving

over 60 individuals, with 60% of activity in three countries: Argentina, Venezuela and Brazil. Most Latin American countries had some activity, and a wide variety of research foci were apparent: population ecology, physiology, practical husbandry issues, etc.

Alejandro summarized the results of a recent Caiman yacare workshop held in Gainesville, 3 - 5 Oct., immediately prior to the 16<sup>th</sup> Working Meeting of the CSG (see report below, pp. 22-23). The concrete output was a request by C. *yacare* range states that an ad-hoc working group be formed, under the joint sponsorship of the CSG and Traffic - Sur America, where the range state representatives could meet and harmonize their regulations and research. After brief discussion the proposal was approved by the Chairman and cleared for activation.

The C. *latirostris* ranching program in Santa Fe, Argentina, continues to develop with its first production of commercial skins expected in 2002 (1,500 skins), followed by 3,500 skins in 2003 and continued increases over the next 3 years to a production target of 10,000 skins per year. The emphasis of the program continues to be landholder incentives for wetland habitat preservation.

A workshop on *Crocodylus intermedius* conservation was held in Venezuela in December 2001, with funding support from JLIA and Italtide. The final bilingual (English- Spanish) report of that workshop was presented by Alvaro Velasco and should serve as a guide to Orinoco crocodile conservation for the next several years.

Management of black caiman in Brazil: In 2000 a workshop was convened in Brazil to consider harvest potential and current uses of *Melanosuchus* within Brazil. It is estimated that illegal, although apparently sustainable use, may be in the order of 5,000 - 10,000 specimens per year for the largely domestic salted meat trade. Brazil has a national ban on wildlife use, but one strategy considered was for Brazil to seek a downlisting of its population to Appendix II of CITES, as a precursor to changing Brazilian regulations. Ronis da Silveira had subsequently requested an experimental harvest of 30 individuals, but Brazilian authorities refused permission because the previous requirement to seek an Appendix II listing had not been advanced. There is a potential difficulty in requiring a CITES downlisting as a prerequisite for domestic use and trade, when the proposed harvest for national rather than international

trade), although other nations have used CITES as a tool for strengthening domestic issues in the past. After discussion of the political complexities, Alejandro and Luciano drafted a note to Ronis, clarifying CSG's position that management of Brazil's internal harvest and domestic trade is fundamentally a domestic legislative issue and should not be dependent on CITES.



CSG members planning strategy at the 12<sup>th</sup> Conference of the Parties to CITES, Santiago, Chile, November 2002. L to r: Hank Jenkins, Christine Lippai, Roldan de Sola, Dietrich Jelden, Pam Ashley & John Caldwell. D. Ashley photo.

**CROCODILE TRADE STUDY.** Jon Hutton reviewed the history and activities of the CSG Trade Task Force, that led to the Global Trade study funded by industry groups in the USA. The main objective of the study was to identify activities that would improve the conservation benefits derived from commercial trade, including structure and distribution of economic benefits through the trade chain.

The first draft report of the Global Trade study was released in October 2001 and received mixed reviews. Some reviewers were very complimentary about the scope and content of the report but others were very critical of some factual aspects and of the general presentation. After spirited discussion and the submission of detailed critiques, the report was revised and the draft final version distributed for review. Detailed review comments submitted by Mr. C.H. Koh on behalf of the CSG Trade section were presented at the meeting and referred to Jon Hutton for consideration. The report will be presented for discussion at the 16<sup>th</sup> Working Meeting.

The extent to which the Global Trade study can be continued is dependent on funding. Some potential sources of support were identified. A major result of the study was that the growth of production from captive breeding, with its weak links to in-situ conservation, was far in excess of growth in production from ranching or wild harvest, that are directly linked to in-situ conservation. Concern was also expressed that funding from limited sources may bias the direction and results of the research, but this was easily refuted by the key researcher, Dr. James MacGregor. Further discussion was postponed to the trade workshop at the 16<sup>th</sup> Working Meeting of the CSG.

**CITES ACTIONS.** No proposals to amend the appendices of CITES with regard to crocodylian species were being considered at the 12<sup>th</sup> COP, to be held in Santiago, Chile (3-15 November 2002). However, several proposals were of direct interest to the CSG and CSG representatives attending the COP were urged to assist parties with their consideration of these issues.

A Venezuelan proposal to exempt crocodile personal effects from CITES controls was strongly supported by the CSG.

Some concerns over fine details of the proposal had been raised by some Parties, which would need to be resolved by the Parties in Chile. The CSG's role was one of supporting the resolution. [The proposal was subsequently presented, modified and expanded from crocodylians alone, and unanimously adopted at COP12].

A proposal to facilitate entry and re-export of trade samples, using the Customs carnet system, was reviewed by the CSG before being presented to CITES by Italy, on behalf of the EC. The CSG strongly supported the proposal. [The proposal was subsequently modified and adopted by at COP12].

A proposal to facilitate rapid permitting of time-sensitive scientific samples, such as blood and tissue for DNA analysis, had been developed over several CITES meeting and was supported by the CSG. The proposal was opposed by some countries concerned about control of trade in genetic material of commercial value [the proposal was modified and adopted at COP12 despite objections by 16 Parties.]

A request from CITES Secretariat for CSG to conduct a review and evaluation of CITES ranching programs for crocodilians had been received, but was later withdrawn. A further request was received for the CSG to report on the approaches taken to establishing “non-detriment” with crocodilians, a requirement for trade in Appendix II species. It was decided to pursue the issue directly with the Secretariat in Chile.

REPORT FROM NORTH AMERICA. Deputy Vice Chair Allan Woodward introduced representatives from Mexico, who reported on activities with *C. moreletii*. Luis Sigler and Manuel Muniz reported that the Mexican proposal to downlist *C. moreletii* to CITES App. II at COP11 in Nairobi was withdrawn on CSG advice, following the CSG meeting in Cuba in 2000. Since then extensive additional survey information had been gathered by Mexican researchers, with the goal to downlist *moreletii* in both CITES and US Endangered Species Act. Binational discussions between Mexico and the US Fish and Wildlife Service had been held about this issue. The new results, which are being prepared for publication, confirm that in 2000-2002, *C. moreletii* were present at all 43 locations that they had previously been reported from in Mexico. Average densities from standard survey techniques ranged from 4-7 individuals/km, indicating widespread recovery and numerous robust populations throughout the species’ range. Mexico’s researchers and government agencies were well coordinated through a national crocodile management council. An annual public relations program to promote appreciation of crocodiles was proposed for Mexico - National Crocodile Day. It is to be held on 23 August, which commemorates the birth date of Mexican crocodilian expert Miguel Alvarez del Toro. Professor Messel congratulated the Mexican delegation on their efforts. In recognition of the increasing prominence and activity of Mexico in crocodilian conservation, management and research, a proposal was made and accepted to include a Mexican representative on the Steering Committee.



Allen (Woody) Woodward addresses the meeting from the podium. H. Suzuki photo.

NEXT MEETING OF THE CSG (2004). Tentative inquiries for holding the next CSG meeting were received from Nepal (Tirtha Maskey and Jack Cox) and Australia (Grahame Webb). After discussion about internal security, costs, facilities and current crocodilian conservation priorities, the Chairman instructed the Executive Officer to invite both groups to submit full invitations, detailing funding, facilities and other details, for consideration by the Steering Committee early in 2003. Subsequently a formal invitation and pledge of funding was received from the Northern Territory government and has been accepted by the CSG Chairman.

There being no further business, the meeting closed at 5:30 pm. — Perran Ross, *Executive Officer and rapporteur*



## Tomistoma Task Force

At the conclusion of the 16<sup>th</sup> Working Meeting of the Crocodile Specialist Group a discussion was held with Dr. Grahame Webb on the establishment of a *Tomistoma* Task Force, within the CSG, so that the CSG could advance *Tomistoma* conservation in an ordered and indeed coordinated fashion.

This working group would be established to:

- Summarize the current status of our knowledge about *Tomistoma* in the wild.
- Develop a plan and priority list for such status surveys that may be needed to fill important gaps.
- Identify immediate threats to the survival of the species and its natural habitat
- Coordinate and continue international efforts to improve the current status of *Tomistoma schlegelii* in the wild.
- Further the objectives set forth in the CSG Conservation Action Plan for this species.

Discussion: Dr. Webb (WMI) presented the group with a recent report on the status of *Tomistoma* in the Merang River, Sumatra, where WMI have been studying *Tomistoma* biology and status since 1995, with Mark Bezuijen as the key project officer.

The two priorities in Indonesia, which is clearly the remaining stronghold of the species, are:

1) To examine options for large scale support of a conservation-management regime for the Merang River area, with *Tomistoma* as a flagship species, thus building on the series of workshops with relevant authorities already undertaken by WMI.

2) To develop a plan for assessing the status of *Tomistoma* in Kalimantan which would ideally need to be done in two stages:

a. An overview of the situation (course level of resolution) as can be determined from the literature and from visiting the key population centers and interviewing wildlife officials, crocodile farmers etc., and

b. Finer level of resolution surveys in identified areas that may be strongholds for the species.

The overview part of this project could involve Sabah, Sarawak and Brunei.

Both 2(a) and 2(b) could involve multiple groups of individuals, from different institutions, but their efforts should ideally be coordinated.

Mark Bezuijen is clearly experienced with the issue and depending on his availability should be a key person involved.

Jong Joon Soon and Robert Stuebing have reported that despite peat swamp habitat (the main habitat used by *Tomistoma*) on the Batang Lupar River at Maludam has been gazetted for protection, the Drainage and Irrigation Department are systematically draining peat swamps near Kuching and Serian for agricultural development. These peat swamps held known populations of *Tomistoma* in Sarawak, and this may be a priority area for CSG action.

### Recommendations:

- It is recommended by Dr. Webb that, Mark Bezuijen be approached with regard to his preparedness to help co-ordinate the *Tomistoma* Task Force as an unpaid Executive Officer.
- That the task force be prepared by Mark Bezuijen and Dr. Webb, and that progress be reported through the CSG Newsletter.
- That a website to disseminate information about the Task Force be established, perhaps by Akira Matsuda, and that a *Tomistoma* Conservation Trust Fund be established, as advised by Perran, to raise public funds for the conservation of this species.

The participants of the discussion group were Jong Joon Soon, Robert Stuebing, Akira Matsuda, Ralf Sommerlad, Colin Stevenson and Bruce Shwedick. They agreed to actively participate in the task force, and to expand membership to include all people and institutions interested in this species. They will provide materials for the website, assist with fund raising activities and provide such other support as is possible.

The Task Force should aim to have good progress made by the next meeting of the CSG, in Darwin, in late May 2004. Participants were Akira Matsuda <matsuda@aibas.com>, Bruce Shwedick <shwedick@aol.com>, Ralf Sommerlad <crocodilians@web.de>, Jong Joon Soon <Jong670@tm.net.my>, Colin Stevenson <coleosuchus@hotmail.com>, Robert B. Stuebing <rs888@aol.com>. Contact point for the Task Force is Grahame Webb, Wildlife Management International, PO Box 530, Sanderson, NT 0813, Australia <gwebb@wmi.com.au>.

# Human - Crocodile Conflict Task Force

## LIVING WITH A WILD PREDATOR: MANAGING HUMAN/CROCODILE CONFLICT IN AFRICA

A proposal for an IUCN/SSC  
Crocodile Specialist Group initiative  
to provide technical support  
for the investigation and alleviation  
of human/crocodile conflict  
in several African countries

Compiled by  
Dr. R.A. Fergusson  
CSG Vice-chairman (Africa)

August 2002

**EXECUTIVE SUMMARY.** Conflict between humans and Nile crocodiles has been reported from 17 African range states. This is perceived as a serious problem in five east and southern African countries. Human populations are expanding and using rivers and lakes that are also inhabited by crocodiles. There are very few data on the status of most crocodile populations and incidences of attacks by crocodiles are currently poorly recorded. The respective wildlife authorities generally lack the resources and expertise to initiate an effective assessment and alleviation program. Consequently ill-informed decisions to exterminate crocodiles are handed down from the political arena for wildlife authorities to implement.

This project seeks to assist national wildlife authorities in five countries to obtain reliable data on this conflict and on the status of their wild crocodile populations. It also aims to integrate these findings within the framework of national crocodile management plans to alleviate the conflict while allowing for the conservation and sustainable utilization of the crocodile populations.

The methodology comprises a review of existing data in each country, establishment of a standardized reporting procedure, analysis of the determinants of attacks, aerial and boat-based surveys of crocodile populations, training staff in all aspects of data collection and interpretation, collection and dissemination of information on practical countermeasures and assisting in the

development of management policies that will alleviate the conflict.

**INTRODUCTION TO HUMAN/CROCODILE CONFLICT IN AFRICA.** Africa is a continent crowded with people, the majority living by subsistence agriculture in arid surroundings. In the face of such poverty there is little room for idealism, the imperatives of survival direct many of their activities – provision of water and food are a lot more immediate than conservation. On another level, there are national and global responsibilities to conserve the planets' habitats and biodiversity. Accepting that the conservation of biodiversity needs to encompass more than the protected areas, conservation and resource management practitioners have turned to approaches that are community-based. The success of these approaches is fundamentally affected by the severity of negative attitudes towards wildlife. It is often conflict that threatens life and property that engenders these attitudes.

There have been conflicts between wildlife and humans as long as we have considered ourselves distinct from wildlife. To the victim, conflict with wildlife often constitutes a very personal drama. Elephants, buffalo and hippos are all big, scary and deadly. Together with the big cats, they account for much of the human/wildlife conflict. The reptiles have the worst stigma – “the only good snake is a dead snake” is a belief held throughout most of Africa. There remains one other major predator that for the most part escapes our notice – the crocodile.

It is perhaps not surprising that crocodiles have persisted in some areas now frequented by humans. They spend the vast majority of their lives out of sight, submerged with only eyes, ears and nose breaking the water surface, and they are usually most active at night. They become accustomed to human noises and disturbance. Most of their predation, even that of adult crocodiles, is out of sight and directed at fish and other species that register little on our consciousness.

In many African countries crocodiles were subjected to intense hunting in the 1950s. By the mid-1960s this hunting, largely illegal, had tailed off. Crocodile populations were largely left alone until the 1970s and 1980s when ranching of crocodiles for the purpose of harvesting the skins was developed. The period between 1945 and 1980 was also a time of major investment in

dams and reservoirs on many rivers. Each of these increased the habitat available for the young crocodiles of the time. The ecological maturation of these dams and the development of fishing industries contributed to the welfare of the crocodile populations. As the crocodile is a long-lived animal, the young populations of the 1960s are now adult and reproducing themselves. Moreover, as these animals grow into adults they become physically large enough to pose a threat to humans. Regrettably, but in keeping with the crocodiles' low profile, little work on monitoring the populations of crocodiles was attempted by any African wildlife authorities until the 1980s and 1990s. Some of those results indicate that despite intensive annual egg collection there are large populations of crocodiles and that these are predominantly made up of young and sub-adult animals.

Almost all types of rural land use in the developing world involve the collection of water from natural and man-made water bodies. Women and children using buckets and containers normally do this, and it is done by standing in or very close to water, often knee deep. Knee deep is deep enough for an adult crocodile to be completely submerged and invisible.

Similarly, livestock are most frequently watered in streams, dams and rivers. Other activities on or near water carry risks – boating, fishing, fording, swimming, playing.

Human and crocodile populations in many African situations have been growing simultaneously. The predator occupies a habitat that is essential to the prey. The scene is set for conflict.

**PROJECT JUSTIFICATION.** A broad definition of human/crocodile conflict (HCC) would include any interaction “which results in negative effects on human social, economic or cultural life, on conservation of the species or on the

environment” (AfESG). The focal point of this conflict is shown by the more frequent use of this phrase to refer to interactions between crocodiles and humans in which the latter (or their livestock or domestic animals) are threatened, attacked, injured or killed. From the definition HCC is normally only a feature of areas regularly occupied by humans. The thrust of most conservation activities outside protected areas is towards providing incentives for communities to conserve habitats and wildlife AND to mitigating negative interactions in some way.

Ecologically and economically the Nile crocodile is an important species. It is recognized as a keystone species and is the largest species of African predator. In some



In addition to attacks on humans, loss of pets and livestock are also serious conflicts wherever crocodiles occur. D. Lee photo.

areas, e.g. Madagascar, it is the only large predator. The other two crocodilian species found in Africa *C. cataphractus* and *Osteolaemus tetraspis* are smaller, less widely distributed and less aggressive.

Conservationists have little information on the size or status of any wild crocodilian population in any African country. There is more information on their

distribution, albeit frequently incidental, from which we know that crocodiles exist widely outside as well as inside wildlife protected areas. The Nile crocodile exists in 42 range states in Africa and conflict in some form has been reported from most of these. This is one of the few human-wildlife interface problems that has been comprehensively ignored by the wider conservation community although among crocodile biologists the problem has been recognized. The principal threat to the conservation of Nile crocodiles is listed as conflict with people (Ross 1998).

There is somewhat better information on the demography and distribution of the human population, which indicates that people are settling and utilizing land around natural and man

made water bodies. Crucially, this progression is inexorable and irreversible. The outlook is therefore one of increased conflict and in the long term, increased threat to the existence of crocodiles through loss of habitat and a greater demand for the elimination of crocodile populations.

A crucial point to emphasize is that the reported cases of conflict establish only the minimum level. Experience with cases investigated to date indicates that many more verifiable incidences can be found that were not initially reported. The reasons for this underreporting need to be established and accounted for in the design of any improved data capture system. Concentrating attention only on the number of human fatalities caused by crocodiles can focus attention on the problem but fails to capture the diversity of HCC impacts.

Negative interactions between wildlife and rural communities are frequently made most visible in the political and administrative arena rather than being treated as an ecological or wildlife management problem. Without data and specialist skills the wildlife management authorities have little room to argue and are seen as ineffective. Consequently well-intentioned but ill informed decisions are sometimes made within governments and handed to wildlife authorities to implement. For example, public orders to exterminate crocodiles from certain areas have been made in two southern African countries in the last two years.

There are also significant economic and social impacts associated with crocodile conflict that are important from a poverty alleviation and rural development perspective. These include the direct costs of livestock killed or equipment damaged as well as opportunity costs. These costs can be considerable relative to the economic status of rural areas with little wage employment or monetary income.

HCC appears to carry a certain appeal for print and broadcast media particularly where lives are lost. This can be wildly sensationalized depending on the circumstances, for example the recent death of a teenage British girl in Kenya, due to a crocodile attack led to dozens of pages of high profile newspaper coverage in UK. In contrast a Kenyan newspaper reported the deaths of 11 children in 2001 around Kiambere Dam, with 2 column inches.

The legal ownership of wildlife and the responsibility for compensation in the case of conflict also varies widely between countries in Africa. Where such compensation schemes exist they are often not functioning which further adds to the negative view of wildlife and of the authority responsible.

There is an opportunity to evaluate one management option for alleviating HCC. In Tanzania crocodiles were perceived as a serious problem for many years. A limited quota for a wild harvest was issued by CITES for several years and in the most recent period (2000–2002), this is reported to have led to a significant drop in HCC incidents. These data need to be examined and the impact of the harvest on the wild population assessed so that the wildlife authorities of neighboring countries may be correctly advised on this apparently attractive solution.

AIM. This project aims to collect and compile data on crocodile populations and on the conflict between crocodiles and humans, to establish the determinants of such conflict and to suggest acceptable countermeasures. Ultimately the project aims to integrate these findings within the framework of national crocodile management plans to alleviate the conflict while allowing for the conservation and sustainable utilization of the crocodile populations

#### OBJECTIVES & VERIFIABLE OUTPUTS.

##### *1. Objectives related to attacks, countermeasures and defining "conflict."*

1.1 To compile data on the incidence of crocodile attacks on humans and livestock that resulted in death or serious injury in the last five years in Kenya, Uganda, Zambia, Malawi & Mozambique, as well as on the countermeasures employed.

1.2 To assess the completeness of these data and estimate appropriate correction factors if it is apparent that the data are incomplete.

1.3 To select and implement improved systems of data capture on a pilot study basis, in high and low incidence areas, to establish a correction factor(s) for existing data (see Obj 1.2).

1.4 To analyze the historical and newly collected data on attacks for trends and patterns (biotic, abiotic, geographic, temporal & behavioral) that may reveal determinants of attacks and effective countermeasures.

1.5 To compile information on all the types of negative interaction between crocodiles and humans perceived by communities and wildlife managers.

*2. Objectives related to crocodile populations and conservation.*

2.1 To compile data from past surveys of wild crocodile populations carried out in the same countries in the last twenty years.

2.2 To plan and undertake appropriate surveys to obtain data on current crocodile populations, focusing on areas identified by Objective 1.

2.3 To assess the effectiveness of current conservation and management activities at a national scale.

*3. Objectives related to capacity building and dissemination.*

3.1 To train and provide exposure to wildlife authority staff in the techniques of crocodile population surveys.

3.2 To train enumerators for data collection on attacks and incidents referred to in Objective 1.3.

3.3 To set up the options for assessment and action in response to reports arising from the new data collection system (see Objective 1.4 )

3.4 To hold a workshop for relevant stakeholders in each country at the beginning and end of the process.

3.5 To provide specialist advice on crocodile biology, conservation, management and utilization as required.

*4. Objectives related to countermeasures.*

4.1 To gather information from all affected communities on countermeasures used and their efficacy and to assess the determinants of effective countermeasures.

4.2 To disseminate information on countermeasures to other affected communities.

*5. Objectives related to policy development, legislation and utilization.*

5.1 To suggest the actions required to alleviate all types of HCC and to highlight actions required for the conservation of the species.

5.2 To assist with the development of up to date management plans for crocodiles inside and outside protected areas, which incorporate the alleviation of conflict and the conservation of the species.

5.3 To promote the inclusion of utilization options in crocodile management, particularly where this relates to rural communities.

5.4 To assist national Management Authorities to prepare and present proposals and notifications on crocodile management to

CITES, based on the data and information collected by this project.

5.5 To assist with development of policy on related issues such as compensation and the right to wildlife use by communities.

SCOPE, PHASING & DURATION.

*Geographical coverage:* There now appears to be most conflict between crocodiles and human populations in Kenya, Uganda, Zambia, Malawi and Mozambique. Within the remit of this project, only these countries will be targeted. Similar attention may yet be required in Botswana, Rwanda, Ethiopia, Sudan, DRC and possibly others. Specific survey work in Tanzania may also be required as indicated above.

*Phasing:* It is intended that activities start in Kenya and Uganda as some preliminary arrangements and information have already been obtained. These will be followed by Malawi and Zambia and finally by Mozambique. The rate at which the objectives are fulfilled in each country is expected to vary. It would not be productive to impose a timetable on activities in each country at this proposal stage.

The timeline (Figure 1) shows the intended sequence of operations and their approximate duration within each country. It should be noted that achieving the objectives in any one country should take approximately two years. It is intended that operations should be running in several countries at the same time but that the start-up be staggered by one to two months between countries.

*Duration:* The project is intended to run for three years with the option for extension dependent on progress and funding.

INSTITUTIONAL FRAMEWORK & COLLABORATION. The project will be carried out under the auspices of the Crocodile Specialist Group of the IUCN/SSC who will provide the technical and administrative input required.

The collaborating institutions will vary between countries but the essential partner in each country is the Wildlife Authority. Communication has been initiated with:

- Kenya Wildlife Services (KWS)
- Uganda Wildlife Authority (UWA)
- Zambia Wildlife Authority (ZAWA)
- Malawi National Parks and Wildlife (MDNPWL)

- Departement Nacional de Fauna Bravia, Mozambique (DNFB)

Other collaborating institutions are expected to include:

- Other IUCN Specialist Groups, particularly African Elephant Specialist Group (Human Elephant Conflict Working Group)
- CITES Secretariat & subsidiary organizations including TRAFFIC and MIKE
- National Museums of Kenya
- National institutions including Ministries responsible for local government, police, health, rural development, wildlife etc.
- Community Associations working in natural resources, environment and wildlife sectors
- NGOs working in the natural resources, environment, rural development, wildlife sectors, among others
- Uganda Wildlife Education Centre
- Universities with interests in wildlife management and conflict
- Various private companies and individuals involved in crocodile utilization

Communications have been started with some of these institutions.

**BENEFICIARIES.** As this project is geographically widespread and interacts with diverse interest groups, individuals and communities, it is expected that there will be many beneficiaries. They can be summarized as:

- Rural communities – through reduced conflict, improved awareness of crocodiles, utilization of crocodile populations, improved knowledge of countermeasures, eventually through the provision of alternate sources of water
- Wildlife authorities – by participating in efforts to alleviate conflict, through improved knowledge of the conservation status of crocodile populations, from training on survey methodology, from improved knowledge and experience in managing human/wildlife conflict
- Other local authorities – through having had responsibilities and procedures relating to HCC clarified
- Companies and individuals involved in crocodile utilization – through specialist advice and increased opportunities and options for crocodile utilization in many forms.

**PRINCIPAL INVESTIGATOR.** Dr. R.A. Fergusson, CSG Vice Chairman for Africa who will act as the principal investigator, has proposed this project.

**FUNDING REQUIREMENTS.** It is intended that this project serve five countries during the course of three years, starting mid-2003. To be effective the project must be adequately funded. It is proposed that all funding is channeled through the CSG Conflict working group and that all accounts be open for inspection by donors.



Harry Messel & CSG patrons, Phil & Lydia Steele of Crystal River Alligator Farm. H. Suzuki photo.

## Philippines Report

A special meeting to discuss the current crisis in conservation of the Philippine crocodile was convened on 8 October 2002. Present were CSG representatives Prof. Harry Messel chairman CSG, Perran Ross, executive officer, Grahame Webb, John Hutton. Representatives of the American Zoo and Aquarium Association (AZA) Crocodile Advisory Group (CAG) Andy Odum (Toledo Zoo), Winston Card (Cincinnati Zoo), Kent Vliet and John Brueggen (St. Augustine Alligator farm), Colette Adams (Gladys Porter Zoo), John Behler (Bronx Zoo) and representatives active in the Philippines; Jenny Daltry (FFI), Frederick Pontillas (Louisiana State Univ), Merjlin van Weerd (Plan International-Netherlands).

Basis of the discussion was the report from Chris Banks detailing current issues, problems and internal difficulties in the Philippines and e-mails from William Oliver, a representative of FFI with deep experience of Philippines conservation issues. Issues focused on the breakdown of support for in-situ captive breeding in the Philippines, the economic difficulties currently experienced by the Palawan Wildlife Rescue Center (PWRC formerly CFI) and recent problems experienced by the US zoo community in negotiations with the Philippines

regarding disposition of captive *C. mindorensis* in the USA.

After extensive discussion and airing of views the following themes emerged:

- There is a general plan for conservation of Philippines crocodile developed by the Philippines Crocodile Task Force. While the task force had not yet demonstrated leadership or effectiveness (or even responsiveness) to current problems, nevertheless this plan remains the only comprehensive overview generated with significant Filipino input and government approval. Components of the plan remained a useful general guide to needs and actions.
- The role of PWRC was unclear. On one hand it remained the single largest repository of both individuals and genetic diversity of Philippine crocodiles. On the other the facility seems constantly crippled by lack of resources and funds. The important role of PWRC in public relations to improve public perceptions of crocodiles was noted. One opinion was that PWRC was no longer relevant and that alternative private sources of crocodile specimens existed in the Philippines, but this view was not generally supported. It was noted that PWRC specimens are derived almost exclusively from Mindanao do not adequately represent the diversity of the species.
- The objective of developing commercial use of *C. porosus* with a partnership of PWRC and private interests to subsidize PWRC activity on *mindorensis* was not succeeding. A report received from Japanese commercial sources indicated quality and quantity of skin production was unlikely to be commercially viable in the near future.
- Concerns have been raised by Philippine government sources that the genetic diversity between different islands required separate management of island stocks, despite the facts that no such stock exist for most island populations. These concerns were thought to be based on misunderstanding and incomplete results of the ongoing genetic analysis by Frederick Pontillas. Until adequate genetic information became available, this issue should be de-emphasized. The continuing uncertainty about freshwater crocodile taxonomy throughout the region continues to be a problem.
- The role of US and other overseas zoos to create an ex-situ genetic reserve for the species received extensive discussion. Current holdings in the US comprise a single mated pair and two adult males and is inadequate to serve this

function without significant augmentation of new stock. The AZA-CAG needed to more clearly articulate its goals and structure to address this goal. In the meantime, it would be advisable to disperse the current concentration of specimens at Gladys Porter Zoo, but this can only done with approval of Philippine government through their existing MOU with Gladys Porter Zoo. The advisability and need for a revised MOU to include a broader group of US institutions was discussed.

- The need to link ex-situ zoo activity with in-situ conservation was continually referred to but no concrete proposal to achieve this was forthcoming. This remains a critical and missing component.
- The activities of Plan International in Luzon provided a model of how community development and welfare activities and crocodile conservation could be linked to mutual advantage.
- Conservation International (international conservation NGO) has a Conservation and Environment Partnership Fund CEPF available and preliminary discussion with the fund administrators indicated great interest in using Philippine crocodile as a flagship species to promote general conservation in the biological hotspot area of eastern Luzon.
- The difficulties encountered in many interactions with Philippine government agencies was recognized and attributed to historic, colonial and cultural factors. The expertise and experience of William Oliver in a wide variety of conservation activities in Philippines, including cooperative arrangements with US Zoos, provided another valuable component for guidance and inclusion.

From this basis four general points of action were agreed:

- 1) The Task Force Plan should remain the general guide to conservation of the Philippines crocodile & the Task Force should be supported and strengthened to be more active in this role.
- 2) The CAG breeding program should proceed using whatever agreements, genetic stock and institutional cooperation was available, run by AZA-CAG. The importance of direct linkage to in-situ activities should be stressed. One readily available avenue for this component would be for US zoos to provide direct support to allow Frederick Pontillas to complete his genetic analyses, which would support both in-situ and captive breeding needs.

3) A draft proposal for the CI-CEPF should be prepared. A critical need for this program is the identification of a suitable in-country NGO partner.

4) CSG activity should be attached to the organizational strengths and interest of other larger organizations active in the region. To achieve this Perran Ross (CSG) should coordinate with Jenny Daltry and John Hutton (FFI) and Merjlin van Weerd to continue planning and action.

If all the players could act pragmatically and get one reestablishment program going, no matter how small, it would give a very serious and much needed boost to the whole issue, as has occurred with Vietnam and China. It would also make it much easier for outside organizations to help generate support for the Philippines and *mindorensis*. The meeting was noted to be disappointingly vague in its action items, which was attributed to the very fluid and complex nature of the setting, lack of information and scarce resources. Lack of communication and incomplete congruity of aim between the various players was recognized and a difficulty to be overcome. However, a majority of the participants felt that a beginning had been made toward better integration of efforts. — Perran Ross, *CSG Executive Officer*.

## **Caiman yacare Workshop Report**

A workshop was held 3-5 October 2002 in Gainesville, Florida, USA to discuss management, conservation and trade in *Caiman yacare*. Twenty-five official participants represented the four yacare range states (Argentina, Bolivia, Brazil, Paraguay), Venezuela, USA, the meeting sponsors (US Fish and Wildlife Service, CITES Secretariat, Louisiana Fur and Alligator Council, TRAFFIC Sur America and Crocodile Specialist Group).

A series of country reports detailing yacare management in the four range states were distributed in Spanish and English prior to the meeting and presentations on these and on general principles of crocodilian harvest, conservation and management provided the basis for the discussions. Discussions were held primarily in Spanish but were greatly assisted by simultaneous translation facilities. All documents and products of the workshop have been translated and are available in both Spanish and English.

On the first day, delegates conducted a detailed program of information exchange and review of current status of research and management of yacare in the range states and general discussions of principles of crocodilian management and harvest. Participants expressed surprise and pleasure at the quantity and quality of information presented.

On the second day three breakout working groups were directed to address three topics:

- Requirements and field techniques for field data collection.
- Requirements and techniques for regulation of harvest.
- Requirements and processes for regulation of trade and export.

Each group returned progress reports and a written final report to the plenary session. Delegates recognized that the special conditions in each range state, including geography, research and management infrastructure and capacity, legal and political system and economy, precluded development of a single guideline for managing yacare.



*Caiman yacare* workshop in action. L to r: Nora Neris (Paraguay), Iolita Bampi (Brazil), A. Larriera (workshop chairman), Obdulio Menghi (Argentina), Bill Knapp (USA), Malan Lindique (CITES) & Victoria Lichtschein (Argentina). F.W. King photo.

Therefore a general outline of key factors was prepared that each range state could adapt to their conditions and capacity. While this approach may appear overly general, the participants were unanimous that simple and general guidelines would be more likely to be implemented and each representative of a range state national agency undertook to do so.



*Caiman yacare* workshop. F.W. King photo.

On the final day of the meeting delegates struggled with an unresolved technical issue, the determination of appropriate and harmonized size limits for wild caiman harvest. In a revelatory moment for the group, it was recognized that the conflicting proposals for different size limits were all constrained by inadequate information on the size of sexual maturity of female *Caiman yacare* in the four range states, and that these might well be different. A significant compromise was achieved in agreement on a practical, harmonized and precautionary harvest size limit of 180 cm total length that would restrict harvest to mostly adult males. Research to establish the biologically appropriate size limit was identified as an immediate need. This process of conflict resolution by informal discussion between national agencies was recognized to be a new and significant breakthrough in the management of crocodylians and might be extended to other shared natural resources.

The culmination of the workshop was therefore a very dynamic drafting session, aided by the computer technology to instantly project and revise the draft document, at which a proposal to develop a forum to continue these discussions was developed.

The outputs of the meeting (presented papers, working group reports and the final plenary manifesto) were finalized and copied to discs and distributed to participants prior to their departure.

This report is also available in English and Spanish and will be assembled and bound for distribution in both languages to participants and sponsors. This report will also be made available for electronic distribution. — Alejandro Larriera, *Workshop Chairman*, Perran Ross & Bob Godschalk, *workshop coordinators*.

## Publications



CSG PROCEEDINGS REPRINTS. Under an agreement with Taxon Media — Zoo Book Sales, all the Proceedings of previous CSG Meetings have been reprinted and are now available. Original text of Proceedings were scanned, new color covers designed and a revised title page indicating reprint status was inserted, but the main text appears unchanged. The reprints are produced with the permission of IUCN, the copyright holder, for distribution by Zoo Book Sales and CSG will receive a small royalty (\$4.00/volume) on all sales.

Sample reprints were released at the 16<sup>th</sup> Working Meeting and sold rapidly. Proceedings are available from all CSG Meetings from the first (1971) to the 15<sup>th</sup> (2000) with the exception of the 3<sup>rd</sup> (1976) and 4<sup>th</sup> (1978) that were never produced. Reprints can be ordered from: Zoo Book Sales, PO Box 405, Lanesboro MN 55949-045 USA <zoobooks@acegroup.cc>.



***Preliminary Announcement:***

**17<sup>th</sup> Working Meeting of the  
Crocodile Specialist Group**

23-28 May 2004

Darwin, Australia

The CSG has received and accepted an invitation from Wildlife Management International, RIRDC and the Northern Territory Government to hold the meeting in May 2004 in Darwin, Northern Territory, Australia. Darwin is well served by air connections through Singapore, Sydney and Brisbane to most major international locations. To receive information about the meeting as it is generated, please send your e-mail contact directly to Tom Dacey <tom.dacey@epa.qld.gov.au>. Full details of the meeting—registration, paper submission, accomodations, field trips, etc.—will be announced in a future newsletter announcement and website and sent by e-mail.



Participants of the 16<sup>th</sup> Working Meeting were welcomed with cocktails & appetizers. L to r: Don Boyer (San Diego Zoo), Tom Dacey (Queensland, Australia) & Leonardo Orjuela (Colombia) sample the buffet fare. H. Suzuki photo.



Crocodile brothers/Hermanos cocodrilos?  
 Toby Ramos, left, and Kent Vliet, right. Or is it  
 Kent Vliet, left, and Toby Ramos, right??  
 F.W. King photo.



Darn! Lost my keys AGAIN!!



*T. schlegelii* at Utairach Crocodile Farm, Thailand.  
 R. Sommerlad photo.

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

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