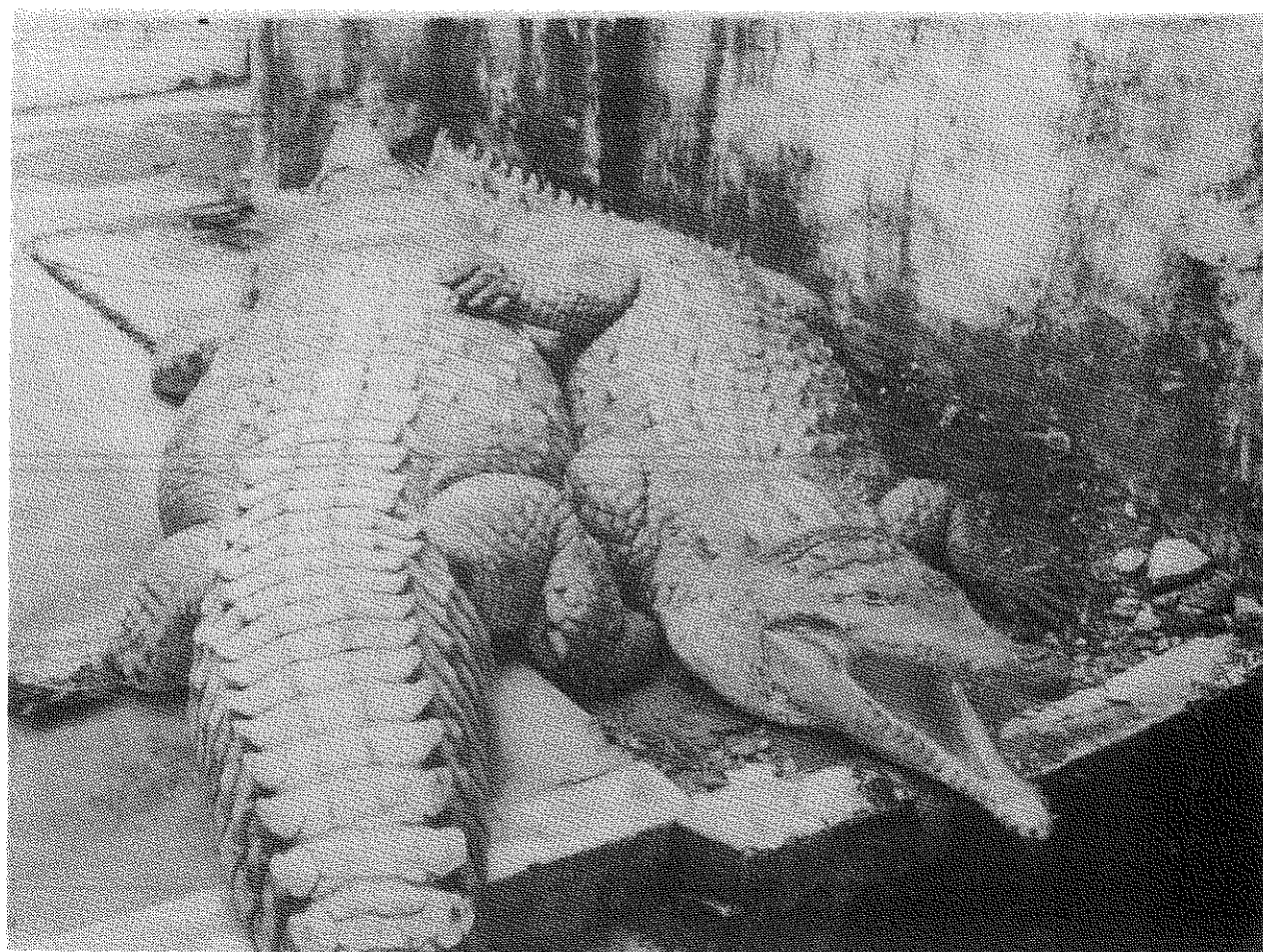


CROCODILE SPECIALIST GROUP

NEWSLETTER

VOLUME 12 No. 1 ■ JANUARY 1993 - MARCH 1993



IUCN World Conservation Union ■ Species Survival Commission

CROCODILE SPECIALIST GROUP

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VOLUME 12 Number 1
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IUCN--The World Conservation Union
Species Survival Commission

Prof. Harry Messel, Chairman
IUCN Crocodile Specialist Group
Executive Chancellor
Bond University
Australia

EDITORIAL OFFICE:

Prof. F. Wayne King, Deputy Chairman
Dr. James Perran Ross, Executive Officer
Florida Museum of Natural History
Gainesville, Florida 32611, U.S.A.

COVER PHOTO: *Crocodylus intermedius*,
breeding pair held at the Estación de Biología
Tropical Roberto Franco, Colombia. The
distinctive elongation of the mandibular
symphysis extending to the 6th or 7th tooth is
clearly evident. Article page 21. L. Lugo
photo.

PATRONS

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

Japan, JLIA- Japan Leather & Leather Goods Industries Association, CITES Promotion Committee & All Japan Reptile Skin and Leather Association, Tokyo, Japan.

Mainland Holdings Ltd., Lae, Papua New Guinea.

Philippe Roggwiler, Tanneries des Cuirs d'Indochine et de Madagascar, Paris, France.

Crocodile Farmers Association of Zimbabwe, Harare, Zimbabwe.

Utai Youngprapakorn, Samutprakan Crocodile Farm, Samutprakan, Thailand.

American Alligator Farmers Association, Plant City, Florida, U.S.A.

Ken Ogiso, Stock Kojima, Tokyo, Japan.

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World Wildlife Fund / USA, Washington, D.C., U.S.A.

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Center for Marine Conservation, Washington, D.C., U.S.A.

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Harry Freeman, Hartleys Creek Crocodile Farm, Queensland, Australia.

Zachary Casey, Pelts and Skins Export Co., Covington, Louisiana, U.S.A.

Sergio Trachter, Triton Imports Inc., El Paso, Texas, U.S.A.

Crocodile Farmers Association of Indonesia, Jayapura, Indonesia.

Paul H. Slade, Nell and Hermon Slade Trust, Mona Vale, Australia.

F. Wayne King, Gainesville, Florida, U.S.A.

IUCN-World Conservation Union, Gland,
Switzerland.
Kurt Preiss, Reptilia Inc., Miami, Florida,
U.S.A.
A. Handoko, Salim Group, Jakarta, Indonesia.
Crocodile Management Association of Thailand,
Bangkok, Thailand.
Prof. Harry Messel, Sydney, Australia.
Wayne Sagrera, Vermilion Gator Farms,
Abbeville, Louisiana, U.S.A.
Robert and Ellen Young, Thonotosassa, Florida,
U.S.A.
Terry Cullen, Cullen Vivarium, Milwaukee,
Wisconsin, U.S.A.
Gabriel & Miguel Rey, Hacienda el Molino
Ltda., Bogotá, Colombia.

EDITORIAL

CSG GOAL IS CONSERVATION. The regional meeting in Darwin brought up an issue of concern to many members. Has the CSG become excessively focussed on trade and commercial issues to the detriment of conservation concerns? There is no doubt that trade issues, farm and ranch issues and the politics of sustainable use occupied a significant portion of the official meeting schedule, the Steering Committee deliberations and the general discussion, at Darwin, and in Zimbabwe last August. The issue was brought to a head most clearly in trade workshops in Zimbabwe and Darwin when crocodile ranchers and traders repeatedly called on CSG to "do something" about improving the current world trade situation for crocodilian skins. A worldwide promotional program for sustainably produced crocodilian products has been proposed.

The response of the CSG has been clear and unambiguous on this matter - any initiative for trade promotion must come from the industry. The CSG can advise, and where appropriate, may support such an initiative, but cannot take the lead position on this issue. The CSG's primary concern is the conservation of wild populations of crocodilians. We need to work with ranchers and traders to create economic incentives to achieve our conservation aims, but all our members should be quite clear that our aim is conservation.

The issue is made complex by our policy of applying sustainable use programs to the

conservation of many species of crocodilian. The benefits of sustainable use for conservation rely upon a successful world trade and we have a common interest with traders and producers which enables us to work cooperatively. While we have demonstrated success with this strategy we tread a thin line between maintaining our conservation direction and being subverted to become an agent of the industry. We are intensely aware of this conflict and constantly seek a balance between the necessary, and valuable, cooperation with the trade, and an objective conservation position. We have also welcomed the sincere change of heart that many producers and traders have undergone in favour of sustainable legal trade. By working with the industry CSG has had a profound effect upon the behavior of the commercial sector, to the great benefit of crocodilians. However, cooperation with the commercial sector is only one of the strategies we pursue. CSG supports basic research and surveys, promotes the protection of wild populations in protected areas, works closely with other conservation NGO's, is active in the reporting and suppression of illegal trade, supports and advises students and managers of crocodilians and maintains a communications network between the numerous diverse constituencies interested in crocodilian conservation. This diverse approach ensures our primary aim of conservation is always maintained. -- *Professor H. Messel, Chairman CSG & Dr. J. Perran Ross, Executive Officer.*

MEETINGS

DARWIN REGIONAL MEETING, 12-19 MARCH. The regional meeting, hosted by the Conservation Commission of the Northern Territory, was a great success. Over 170 registered delegates from a dozen countries attended. Of particular importance was the presence of delegates from Cambodia, Vietnam, China, Palau and Myanmar, funded by Northern Territory and Australian Government sources. These represent new contacts in countries where the crocodile conservation situation is of great concern. Delegates received a series of dynamic keynote presentations and a series of valuable working papers on many aspects of crocodilian research, husbandry and conservation with a strong emphasis on the Asian region. Detailed

presentations on crocodilian management in Australia provided a valuable model for other areas to consider. PROCEEDINGS of the papers presented are in preparation. The meeting also conducted workshops on regional conservation priorities, survey techniques, revisions to CITES, and trade issues. Workshop reports will appear in the PROCEEDINGS. A generous social program kept delegates busy after hours at a series of cocktail parties, barbecues and a magnificent banquet. As always at these meetings the informal discussions outside the regular sessions were of great value in bringing people and ideas together. The CSG offers its profound thanks to our hosts, the Conservation Commission of the Northern Territory, for a very smoothly run, effective and valuable meeting.

Crocodile Specialist Group, Steering Committee
Minutes, 12 - 13 March 1993
Darwin, Australia

Participants: H. Messel (Chairman), W. King, P. Ross, J. Hutton, T. Yamanaka, D. Jelden, G. Webb, D. David, Y. Raharajo, A. Velasco, C. Koh, H. Jenkins, B. Vernon, B. Ortiz van Halle, J. Berney, P. Ratanakorn; Observers- Y. Takehara, V. Onions, M. Rodriguez, E. Espinosa, A. Matsuda, A. Woodward, G. Davis, B. Ottley, R. Elsey, K. Ogiso, M. Kataoka, M. Inoue, C. Koh, M.W. Kwan, K.W. Kwan, U.B.K. Aung Moe, C.H. Giam, Y. Nakano, M. Ohashi, Jinzhong Fu, Ho Thu Cuc, J. Miller, C. Manolis, K. Cook, M. Zalone.

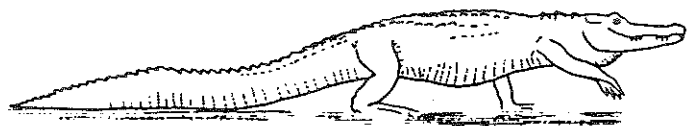
Meeting opened at 09:07 am and the chairman expressed his thanks and appreciation for the efforts of the Steering Committee members and observers for attending. The chairman explained that he was now Executive Chancellor, responsible for the full day to day executive operations of Bond University and this was taking a great deal of his time and effort. He asked that all routine CSG business be routed to the Executive Officer.

Darwin Regional Meeting. Grahame Webb detailed the arrangements that had been made in preparation for the meeting. Participants were coming from many Asian and Pacific countries including representatives from China, Myanmar, Cambodia, Vietnam and Palau. The meeting reviewed the program for the regional meeting

and discussed the format and goals of the Workshop sessions. A revised program was approved for printing and distribution.

Revisions to the CITES resolutions pertaining to crocodilians. The report of the Workshop chaired by Ginette Hemley at Zimbabwe was presented. The report summarizes the background and present state of CITES regulations and sets out recommendations for changes that needed to be developed by further work of the subcommittee. This process is separate from, but associated with the revision of CITES listing criteria requested by the Parties at Kyoto. The CITES Secretariat had contracted IUCN to provide a draft of new criteria and IUCN had convened a workshop in London, developed a draft and presented it to the CITES Standing Committee in Washington in early March. Jon Hutton reported that the IUCN criteria were compatible with the CSG position and proposed that the development of CSG recommendations be continued as an adjunct to the IUCN draft criteria and to assist in the interpretation of IUCN criteria as they pertain to crocodiles. Given that the IUCN criteria were subject to extensive revision in the CITES process and that there was some opposition to the draft, it was also suggested that the CSG recommendation for revisions to CITES be prepared and held in reserve to ensure that some progress was possible on the issue at the next meeting of the Parties in USA next year.

CSG finances. The Executive Officer presented a draft financial report for the calendar year 1992, and a budget for 1993. After explanations of some items and a discussion of fundraising needs the report and budget were approved by the Steering Committee. The Executive Officer was instructed to advise donors and patrons that the budget was approved and request donations for 1993 be remitted as soon as possible with a plea for a 10% increase in donations. The precarious financial situation of CSG and the hand-to-mouth cash flow situation were discussed and the need for attracting additional new patrons stressed



Annual Financial Report- Jan - Dec 1992

Budget 1993

Summary

Balance 1 Jan 1992	\$19,858.60
Adjustment to balance *	[\$2,000.00]
Total Revenues 1992	\$64,684.01
Total Expenses 1992	-\$66,850.34

Balance at 31 Dec 1992 \$15,692.27

Revenues, 1992

Donations	\$55,646.20
Interest	188.55
Sales	\$1,176.00
(Publications, T- shirts)	
Fees for Services	\$4,054.36
Misc & News subs	\$3,618.90

Total Revenues \$64,684.01

Expenses

Salaries & benefits	\$39,600.00
Consultants & casual	\$1,006.60

Publications	
Photo developing, film	\$363.13
Printing and Copying	\$3,959.78

Office	
Repair	\$256.50
Supplies	\$907.23
Phone & Fax	\$3,000.00
Mail	\$5,334.86
(includes mail NEWSLETTER)	

Equipment (Capital \$500+)	\$2,305.89
Disposable	\$175.95

Travel	
Airfares	\$4,591.37
Lodging & Meals	\$3,249.71
Other travel expenses	\$462.41

Bank charges	\$506.73
Misc	\$1,130.18

Total Expenses 1992 \$66,850.34

Excess [Loss] Revenues - Expenses[\$2,354.88]

* 1991 revenues re-allocated to special projects fund

Projected expenses in \$ US, 1 Jan 1993 - 30 Dec 1993. Core expenses, Office, Executive Officer, NEWSLETTER production (4 issues), anticipated travel of Executive Officer to Darwin and one other meeting.

Revenues Estimated

Current donors	\$55,000
Interest	\$500
Sales	\$900
Fees for Services	\$5,000
NEWSLETTER subscriptions	\$3,600
Misc other	0

Total revenues \$65,000

Expenses,

Salaries & benefits	40,000
Consultants & casual	\$500

Publications	
NEWSLETTER (4 issues)	\$4,500

Office	
Repair	\$500
Supplies and Stationary	\$1,000
Phone and Fax	\$3,500
Mail	\$5,500

Equipment Capital	0
Disposable	\$500

Travel	
Airfares	\$4,000
Lodging & Meals	\$2,500
Other transportation	\$500

Bank charges	\$600
Miscellaneous	\$1,400

Total General Operations \$65,000

Additional activities, publications and special projects will be conducted on the basis of additional funds becoming available.

Model Management Plan. Dennis David summarized the history of this project and presented the current draft reflecting changes requested by reviewers last August. The draft was reviewed by H. Messel, W. King, J. Hutton, G. Webb and P. Ross. After discussion it was agreed that the content and format were acceptable but the style needed editing for brevity and readability. The probable future need to translate the document into other languages makes clarity in the English draft a high priority. The reviewers agreed to provide detailed editorial comments to Dennis who would prepare another draft and forward it to the Chairman for final approval as soon as it was completed and approved by the reviewers.

Zimbabwe Meeting PROCEEDINGS. Jon Hutton reported that the PROCEEDINGS had gone to press. Unfortunately delays at the printers had prevented him from bringing copies to Darwin for inspection, however, the PROCEEDINGS were expected to be printed and distributed in the very near future. Participants at the Zimbabwe meeting would receive copies by mail directly from the Zimbabwe organizers and additional copies would be available for purchase from the CSG office. A notice of availability of PROCEEDINGS would appear in the NEWSLETTER.

Crocodile Conservation Action, a Special Publication of the CSG. Copies of this publication were distributed to the Steering Committee and all CSG members will receive a copy by mail in the next month. The volume, which is a reprinting of the collected CSG reports for 1992, was produced with financial support from Mr. U. Youngprapakorn. The volume was prepared in final form last December but the absence of the Executive Officer in Nicaragua conducting crocodilian surveys had delayed mailing. The chairman commented that the absence of the Executive Officer in the field had impeded the smooth function of CSG and placed an unwelcome burden on the chairman at a particularly inconvenient time. He concluded that the allocation of the Executive Officer's time to field projects would have to be reconsidered and carefully regulated in the future.

Discussion followed on the need for a similar collection of field project reports in 1993 and beyond. It was agreed that the present format (a

bound special publication of unedited reports) was the most valuable and cost effective way of ensuring rapid dissemination and availability of CSG results and recommendations.

The chairman and Jon Hutton commented on the need for a CSG brochure for use in public relations, information and fund raising. The idea has been suggested several times but other priorities had prevented action. It was agreed that the Executive Officer, with assistance from Professor King, would prepare a sample brochure for review and approval by the Steering Committee at the next Steering Committee meeting.

Universal Tagging of Crocodilian skins. (Combined discussion from 12 & 13 March) A letter received from the Singapore Reptile Skin Trade Association was presented. The Association expressed general agreement with the principle of tagging raw skins in the country of origin but felt that the practical difficulties and administrative burden of inventory and tagging of skins for re-export were unnecessarily onerous and detrimental to trade. Mr. C. H. Koh detailed the Association's preoccupations citing the problems of tag loss during tanning; division of whole skins into parts; old tagging systems not meeting new CITES requirements and the heavy administrative burden of providing original tag information on re-exported skin shipments that were assembled from skins from diverse species, countries of origin and years of export. Hank Jenkins responded that while the solution to this issue was taking longer than originally anticipated, that some concerns could be allayed by careful reading and interpretation of CITES Res. Conf. 8.14 and the CITES Animals Committee resolution implementing it. Jaques Berney of the CITES Secretariat presented his views on interpretation of the text of 8.14. After discussion the following summarized interpretation was presented:

Interpretation of the Requirements of Resolution Conf. 8.14 and associated Resolution of the Animals Committee.

1. Paragraph (a) of Resolution Conf. 8.14 requires exporting countries to tag all skins and listed parts of skins. Initially, this has been restricted by the Animals Committee resolution to raw/processed whole skins, belly skins and flanks (para (c) refers). The

tag details are to appear on the export documents.

2. Paragraph (a) of Resolution Conf. 8.14 requires re-exporting countries to keep the original tags in any of the recognized skin units which they re-export. The tag details are to appear on the re-export documents. This requirement falls away only if "substantial processing and manufacturing has taken place". This clause is currently interpreted by the Animals Committee as referring at a minimum to tanned and dyed leather which has been cut into pieces.

3. Paragraph (l) of the Animals Committee resolution requests that re-exporting countries with stocks of untagged legal skins inventory such stocks and tag them prior to re-export. This process has subsequently been described as administratively complex.

4. It was recommended that concerned governments should bring the issue to the attention of the relevant regional representative of the Animals Committee for consideration by the full Committee.

5. The Animals Committee will review its recommendations in the light of the administrative problems encountered in an effort to formulate a practical system for the control of re-exported skins that pre-date the requirement for tagging.

6. This review shall not delay the implementation of Resolution Conf. 8.14 for original exports and re-exported skin units which are tagged in compliance with this resolution.

Extensive discussion on the problems of implementing universal tagging followed. It was recognized that the original aim of the tagging requirement was to control illegal trade by identifying legal skins in trade. The promotion of crocodile products from sustainable use programs with confidence and reassurance of consumers would be aided by a universal tagging system. Making the system so onerous that it negatively impacted trade would defeat the original intention, however, it should be recognized that forces opposed to wildlife use and trade had influenced the development of the

regulations in the CITES process. There is a strong need for the trade to demonstrate a willingness to comply with administrative requirements otherwise more restrictive controls were possible. It was recognized that a major aim of 8.14 was to bring the trade in caiman skins under the same level of control and documentation as currently required for other legal skins. The administrative burden of these controls was recognized, particularly with regard to re-tagging stockpiled skins. It was noted that these tags did not need to be sequential and that computer data bases should make the tracking of separate pieces of a divided skin fairly straightforward. The problem of tag loss during tanning was seen as a separate issue and the only available solution was for the processing country to use such skins internally or to apply new tags to such skins (or pieces) for re-export.

The inventory of stocks of untagged skins in processing countries was requested by the Animals Committee resolution. Should such skins be re-exported they require tagging by the processing country which became, effectively, as if it was the country of origin. While the practical and administrative burden of conducting such inventories was a problem there seemed to be no alternative at present if such skins are to be traded. After discussion it was recognized that inventories were needed in the countries thought to hold major stockpiles of untagged skins (Italy, France and Germany in Europe, Japan and Singapore). It was recognized that the practical difficulties would make completion of inventories difficult within the time frame of Conf. 8.14. It was suggested that these countries could communicate to the Secretariat their willingness to conduct inventories, but request additional time to complete them. After extensive discussion the Chairman of the CSG made the following statement to summarize the CSG position:

UNIVERSAL TAGGING

The CSG called upon all countries holding major stockpiles of untagged crocodilian skins to comply fully with the requirements of Conf. Res 8.14, and the associated Animals Committee Resolution and to conduct necessary inventories of these stockpiles and other recommended actions regarding their tagging for entry into trade.

Representatives from Japanese traders responded with the following statement:

- 1) We have no objection to the implementation of Conf. 8.14 at the earliest possible date.
- 2) At the same time we require the CSG and CITES Secretariat's best effort:
 - a) to provide the best practical way and clear interpretation of the resolution and
 - b) to ensure that major producing and consuming countries implement the system at the same time.
- 3) Regarding inventory of untagged stockpiles:
 - a) We do not know the position of the Japanese Government on this issue.
 - b) We, however, do not believe it is necessary for Japan to conduct an inventory in order to re-confirm the legality of the stock because Japan has followed every CITES regulation most precisely in recent years and the legality of these stocks is not in question.
 - c) We further foresee a very big and complicated procedure if MITI is required to conduct an inventory, particularly if re-tagging these stocks is required.

We would therefore request CITES and CSG to approve re-export of untagged stocks acquired legally prior to 8.14 without inventory or re-tagging subject, however, to re-export permits containing full documentation of the country of origin export permits and Japanese import documents.

In response, Jaques Berney of CITES Secretariat noted that the last point was difficult as the Secretariat or CSG had no authority to reverse the decision of the Parties as expressed in Conf. 8.14 and it would not be possible to allow Japan a special exemption if the resolution was implemented in full by other countries.

Dr. Giam, representative of the Singapore CITES Management Authority, said that such extensive administrative activity would divert efforts of developing countries to additional bureaucratic paper work.

Hank Jenkins suggested that Japan and Singapore should communicate with Mr. Ishii, Asian representative on the Animals Committee, expressing their concerns and that would make it

possible for the Animals Committee to re-examine the problem at their next meeting. However, any solution would be constrained by the requirements of 8.14. Any major amendment of Res 8.14 would have to await the next meeting of the Parties.

Philippines Report. Another review of progress at the CFI crocodile farm on Palawan was conducted by Professor Messel, Grahame Webb and Jon Hutton, 7-8 March 1993. A report on this review was presented and the major recommendations are summarized here. The high quality of the physical plant of CFI, described as the best facility of its kind in the world, was re-emphasized. Some progress had been made toward fulfilling the recommendations of the first review in February 1992, however, deficiencies remained that were inherent in the structure of administration and financing of the Institute. To address these the following recommendations were made:

- 1) An independent audit of all aspects of CFI operation be carried out.
- 2) A detailed and realistic plan for second stage development be prepared that ensures that CFI is self sustaining as it continues to contribute to crocodile conservation.
- 3) The current research and planned extension activities be subject to critical review by experts to ensure no waste of effort or resources.
- 4) Research results achieved should be submitted to international journals.
- 5) That renewed efforts be made to increase training opportunities and transfer of technology from overseas.
- 6) That every effort be made to continue the acquisition of sanctuaries, including specific aid proposals for this purpose.
- 7) That the administrative structure of CFI be changed to bring the complete operation under the direction of a Board of Directors. The Board of Directors should be advised on crocodilian matters by the CSG
- 8) That discretionary funds be made available to the Board for use as directed by them. Such funds should preferably be derived in Japan through a foundation or other direct sponsors.

Paraguay survey. A special survey was conducted during October 1992, in northern

Paraguay by Professors Messel and King to determine the status of caiman populations and the feasibility of sustainable use and ranching. The report is published in CROCODILE CONSERVATION ACTION, SPECIAL REPORT OF THE CSG 1992 and will be distributed to all members. The survey results indicated moderate numbers of caiman in rivers of the region and a disappointing low density in the one large lagoon surveyed. Additional surveys in representative localities are planned with the help of Prof. King, in coordination with local authorities.

Nicaragua survey. A CITES survey of Nicaragua was initiated by Professor King and Perran Ross in February 1993. During the first phase of six weeks field work, 408 km of waterways, representing 23 representative locations, were surveyed using standardized night spotlight techniques. Preliminary results indicate low populations densities (less than 1 caiman/km) in a large proportion (67%) of the habitat surveyed. Densities were moderate (1-5 caiman/km) in 10% of habitats and high (10 -20+) caiman/km in 18% of habitat surveyed. Large size animals greater than 4 ft. were rare. Crocodiles (*C. acutus*) were uncommon on the Atlantic coast but several small but viable populations were recorded on the Pacific coast. Analysis of these results and the presentation of recommendations for management and sustainable use will be postponed pending additional surveys in some key locations that will be completed later this year. The national CITES administrative structure is robust and local personnel have the training to adequately manage the resource. A problem of an unknown but suspected large volume domestic use, largely of undersize caimans and illegal crocodiles, was identified. There is interest in developing sustainable ranches for crocodiles in Nicaragua and the commercial interests have demonstrated a commitment to providing funds to assist conservation and management of the resource. An initiative to develop bi-national management of crocodilians between Nicaragua and Costa Rica was described and Costa Rican biologists participated in the Nicaraguan survey for training.

In response, Professor Messel commended the quality of this survey and the preliminary report but noted that *C. acutus* numbers actually surveyed were very low and any exploitation would need to be based on demonstrated

additional numbers of crocodiles. Commenting on local claims that significant crocodile populations occurred at localities not yet surveyed he noted that it was a corollary of Murphy's Law that the greatest density of crocodiles was always said to be in locations not surveyed. The bi-national initiative for crocodilian management was praised as an example for the region.

Discussion followed on the most appropriate way for Nicaragua to approach CITES with a proposal to allow the controlled development of crocodile ranching. Both the commercial proponents and the Management Authority would prefer a gradual entry into trade and controlled development of regulatory structures to avoid the problems experienced elsewhere. Potential for development of an exemplary crocodilian management program in Nicaragua was good.

Honduras. P. Ross presented a summary report of his fact finding mission to Honduras in September 1992. The report is published in CROCODILE CONSERVATION ACTION, SPECIAL REPORT OF THE CSG 1992 and will be distributed to all members. The report stressed that the Management Authority in Honduras appears to lack the personnel or experience to adequately manage the crocodilian resources of the country. A proposal for a workshop in Honduras to bring together interested parties is under development.

Thailand. The report of the CSG review committee (Prof. H. Messel, D. Jelden) which visited Thailand, 2-4 November 1992, was presented. The report is published in CROCODILE CONSERVATION ACTION, SPECIAL REPORT OF THE CSG 1992 and will be distributed to all members. A substantial improvement in crocodilian management was reported. The committee resolved:

- 1) That the review committee was pleased with the excellent progress made with crocodile conservation and management in Thailand.

- 2) The next review committee visit would be 3-8 October 1993.

- 3) The CSG would give every encouragement to continued survey programs and urges some attention be paid to *Tomistoma*.

- 4) The CSG reaffirmed that every effort should be made to curtail illegal trade in crocodiles across the border with Cambodia.

5) The CSG reaffirmed that every effort should be made to trace, inventory and monitor the stocks of caiman skins within Thailand.

6) The CSG encourages Thailand to form a marketing group in order that Thailand sales and exports of skins are tightly controlled.

7) The CSG encourages Thailand to pursue a reintroduction program for the Siamese crocodile.

8) The CSG was gratified to learn that concerns expressed by the US Fish and Wildlife Service would be addressed with new regulations.

9) The CSG pointed out that lifting a ban in the US would not mean that *C. siamensis* (including hybrids) would be accepted as legal imports into the US as a separate petition from Thailand to the US would be needed to change the status of *C. siamensis* under the US Endangered Species Act, and this would take several years.

In the discussion following, concern was expressed that new legislation had been passed in November, but the necessary regulations were still not issued and therefore the US ban on imports remained. A preliminary questionnaire about crocodile status had revealed hearsay reports of wild Siamese crocodiles at two locations and surveys were planned to verify and quantify these reports. An inventory of caiman skins was being planned and was expected to be conducted within the next few months. Import of crocodiles from Cambodia was said to exclusively into small village level operations and not into the commercial export farms. Recent drops in prices had resulted in a large reduction in the volume of this trade. In general, progress was significant and continuing and general compliance with CITES was greatly improved. The importance of continuing this progress, and in particular, the rapid development of regulations, was stressed. Progress will be evaluated at the next review committee visit in October 1993.

Indonesia Review Committee report. A CSG review committee (Prof. H. Messel, G. Hemley, D. Jelden) visited Indonesia, 5-12 November 1992, and their report was presented. The report is published in CROCODILE CONSERVATION ACTION, SPECIAL REPORT OF THE CSG 1992 and will be distributed to all members. The report detailed progress, remaining problems and recommendations for species status and distribution, administrative structure, Task

Force, management program, monitoring, reporting, wild harvest, farm stocks, skins, exports, training, CITES listing of species and use of tags. Additional review of the special needs of *Tomistoma* and *C. siamensis*, enforcement problems, crocodile reserves, restocking programs and the FAO Indonesian crocodile project were detailed. The next review was scheduled for 8-16 October 1993. In general, while substantial progress has been made in administrative structure, significant deficiencies remain in the functioning of the management process. These were specified in the report and will be specifically examined by the next review committee. Some confusion and miscommunication between the PHPA and CSG about review of an FAO proposal was discussed and resolved.

Hank Jenkins reported on an review of wildlife trade (prompted by the EC ban on certain species from Indonesia) conducted by him and Steve Edwards, IUCN Sustainable Use Program. They had recommended substantial improvements in infrastructure, and enforcement capacity of wildlife regulatory agencies, particularly in provincial centers. It was noted that the activities of the CSG with PHPA and the Indonesian Crocodile Task Force had been fairly effective and was ahead of developments in other Indonesian wildlife trade problems such as the wild bird and plant trade. The failure of these other problems to be resolved with the same effectiveness as the crocodile issue represented a danger to the crocodile program as pressure from NGO's and others on these other issues might spill over to affect crocodiles. Discussion of the details and confusion of trade, capture and export quotas for birds and primates followed. Grahame Webb noted that a basic problem was wildlife trade exports were not of sufficient value to justify increased government expenditures, therefore improvements required outside funding. The chairman concluded debate by stating that CSG requirements had been clearly defined and CSG would judge Indonesian progress in crocodile management by demonstrated results visible to the review committee next October.

CSG 12th Working Meeting, Pattaya, Thailand 1994. Dr. Parntep Ratanakorn presented a status report on progress in organizing the meeting. Meeting space has been reserved, suitable hotels identified, local transport needs

developed and a pricing structure for registration and services established. A preliminary registration form is available and will be distributed at the Darwin Meeting and by the NEWSLETTER.

Alan Woodward presented a proposal for structuring the scientific content of the meeting using a symposium structure with session chairmen responsible for identifying and inviting speakers, coordinating sessions and preparing reports for publication. The merits of the system proposed were evident although some difficulty was expected in ensuring that activities delegated to chairmen would be effectively completed. After discussion it was agreed that Woody would join Perran Ross in structuring and coordinating the scientific program.

Steering Committee Meetings. Professor Messel commented on the expense and time used in frequent meetings and cautioned that too many meetings weakened CSG effectiveness. The proposed schedule of meetings for 1992-1994 was reviewed. Earlier proposals to hold a Steering Committee meeting in conjunction with the Paris Leather Show in September 1993 were compromised by changes in the Leather Show format to a much smaller show this year. After discussion it was agreed to cancel that Steering Committee meeting. Discussion was held on the possibility of CSG meetings in conjunction with the IUCN General Assembly in Buenos Aires (January 1994), the Hong Kong Leather show (April 1994), the CSG Working Meeting in Pattaya (May 1994) and the CITES meeting in the USA in late 1994. It was agreed that one full Steering Committee Meeting a year was sufficient but that additional ad hoc meetings could be convened whenever a sufficient number of members were assembled for other business. Firm decision on the next meeting was deferred until the exact dates of the Hong Kong leather show were determined.

Indian Crocodilian Conservation. Following reports received from India at Zimbabwe, Jon Hutton visited India, 1-3 March, and conducted a workshop with Indian members of the CSG. He commented on the extreme enthusiasm and dedication of Indian members who in many cases travelled for days in crowded 2nd class trains to attend the workshop in Madras. He presented a report with recommendations

Over 3,500 gharial, 1,300 saltwater crocodiles

and nearly 1,200 mugger have been released into suitable waters since 1975. Restocking was initially very successful and by the end of the 1980's the conservation status of all three species was markedly improved. However, after FAO collaboration in the project ended in 1982 the restocking program and its monitoring were greatly reduced and a limit to restocking is the severe shortage of suitable habitat. At present there are 1,500 gharial in the wild and over 450 in captivity. There are 1,000 saltwater crocodiles in the wild and 650 in captivity and mugger number some 3,000 - 5,000 in the wild and over 12,000 in captivity. The workshop recommended restructuring of the Indian crocodile program and made the following recommendations:

a) The Technical Committee for crocodiles should be revived.

b) A country wide survey should be conducted to determine present status of restocked crocodiles and to locate additional release habitats.

c) Commercial captive breeding should be established with a portion of the revenues benefiting crocodile conservation.

d) The law should be reviewed to allow *C. porosus* and *C. palustris* to be available for commercial trade.

e) Commercial ranching should be established under "ecodevelopment" programs for people in the neighborhood of crocodile sanctuaries whose support is essential for crocodile conservation.

f) Development of an industry and marketing system for products derived from crocodiles.

g) Initiation of international cooperation with Nepal and Bangladesh crocodile management.

h) Maintenance of select groups of captive stock of all three species as conservation insurance.

i) Encouragement of additional expertise.

The CSG recognized the importance of establishing sustainable use of crocodilians in India to provide funds for crocodilian

conservation. Considering that letters from CSG and approaches by Indian CSG members had proven ineffective it was resolved to organize a delegation to visit India and discuss this issue with Indian authorities. Professor King and Dr. Hutton were delegated to coordinate this meeting. To initiate this process the following letter was sent to the new Minister of Environment:

Shri Kamal Nath
Honourable Minister of Environment
Paryavaran Bhavan C.G.O. Complex
New Delhi 11003, India

Dear Shri Nath:

I am writing to you as Chairman of the IUCN/SSC Crocodile Specialist Group about the Government of India's crocodile conservation program.

India has an internationally acclaimed record for the management and conservation of its crocodiles, largely as a result of its imaginative program of captive breeding and restocking that was undertaken during the 1970's in conjunction with FAO. However, it has for some time been a concern of the international community that the impetus has been lost in the program. This was confirmed at a recent workshop held by the Crocodile Specialist Group in Madras to review the status of Indian crocodiles.

I would very much like to dispatch to India a small delegation of senior members of our Group to meet with you to discuss the findings of the workshop and to explore ways in which the IUCN/SSC Crocodile Specialist Group may be able to assist your country's ongoing conservation effort and management of India's crocodiles as a resource.

I look forward to hearing from you about this possibility and to arranging a delegation at a time which is convenient to you. In the meantime, it is clear that India has outstanding expertise in the field of crocodilian management and I wonder if I can urge you to mobilize this expertise by reconstituting the principle advisory body for the management of Indian crocodiles- The Technical Committee on Crocodile Conservation? This was once an active

and well respected body, but it has been non-functional these past five years. We believe that such an advisory group could serve a very important function in India and help determine the future of the three crocodile species.

I enclose a list of the most active Indian members of the Crocodile Specialist Group in the certainty that these people can provide the best possible advice in helping you formulate and implement policies that will benefit both crocodilians and people in your country. I look forward to your response.

Yours sincerely,

Professor H. Messel, Chairman CSG.

Ecuador, Sustainable Use of Black Caiman. Mr. Tommy Hines submitted a letter and a proposal detailing his plans to conduct surveys in Ecuador to examine the feasibility of caiman ranching there in conjunction with local interests. Professor Messel reviewed the proposal and generally endorsed it. Hank Jenkins had also received and reviewed the proposal and passed it to CITES Secretariat. Jaques Berney indicated that having received CSG review and approval the proposal should be passed to the Ecuadorean Management Authority who in turn should submit it officially for CITES consideration.

Venezuela, Orinoco Caiman Survey. Jaques Berney indicated that a proposal from the Venezuelan Management Authority to survey the Orinoco delta had been approved by the CITES Standing Committee. Alvaro Velasco explained the proposal was a continuation of ongoing work in the area and answered questions on methodology. Several committee members stressed the great importance of using standard methods to ensure repeatable surveys. Discussion ensued on the appropriate use of correction factors for sighting proportion. It was agreed that critical elements of repeatable surveys were that start and end points and distances between them be accurately recorded, that original raw sighting counts be accurately recorded and presented in final reports, and that the value and basis for correction factors used should be clearly and fully described. Interpretation of the results might be variable depending on the assumptions and correction factors used but the availability of the raw data

and the survey locations ensured that results could be compared with other locations and between surveys. After this discussion the meeting endorsed the proposal recommending that the factors discussed be addressed. The chairman then congratulated Venezuela on its advances to what was now a model program for crocodilian sustainable use in South America. While there had been difficulties and setbacks, the program remains fundamentally sound.

Alvaro Velasco presented a report on other aspects of the Venezuela management program. A final report on national caiman surveys had recommended an annual take of 50,000 - 70,000 caiman from the wild, however, the government had restricted the present harvest to 34,000 for the second consecutive year in order to test the effects of the harvest regime more thoroughly. The Venezuela ranching program started in 1990, now comprises 20 ranches. Data from the surveys and a report by John Thorbjarnarson were used to estimate the allowable harvest of eggs for farms. A recommended nest harvest reduced previous harvests by 50% as present ranches were seriously overstocked and having difficulty selling products. The management and action plan for the Orinoco crocodile is undergoing final review and would be finalized by 31 march 1993.

A question was raised on the present status and economic viability of caiman farms in Venezuela. Responding to a broad statement that caiman farming was not economically viable, Colombian representatives from the CITES Management Authority and farmers association dissented, citing their economic analyses. Debate followed. It was concluded that while caiman farming was economically viable under some circumstances, that a real danger was the raising of unreal expectations in prospective ranchers of any species. When farms and ranches encounter economic difficulty there is strong temptation to turn to wild stock to subsidize poor husbandry practice, either by replacing lost animals or by illegal laundering of wild skins. Effective enforcement is necessary to prevent this. The economic failure of farms and ranches impacted directly upon conservation when economic incentives and dividends for management funding were lost. As an example, in the case of Venezuela, the loss of income from reduced sales of both ranches and wild skins has reduced funds available to the Management Authority.

Proposal for a Crocodile Survey in the Sudan. This proposal had also been approved by the CITES Standing Committee. Dietrich Jelden suggested that the proposal was generally acceptable but some practical considerations might require changes in implementation. Social unrest and warfare in some parts of the country made some of the proposed survey locations (e.g. the Sud of Nubia) impractically dangerous at present. Mr. Richard Ferguson of Zimbabwe was going to conduct a preliminary survey in April and it was recommended that Sudan await the preliminary results in order to identify real needs and practical activities for the survey.

Italy. Jaques Berney reported that on 19th February the CITES Standing Committee had recommended the temporary suspension of the wildlife trade ban on Italy recognizing the substantial improvements in CITES implementation there. The ban had not been completely lifted pending the successful completion of some outstanding requirements, but these were confidently expected and a full rescinding of the ban was anticipated. These developments had been achieved with significant assistance from Marco Pani who had submitted a written report detailing the compliance of Italy with CITES requirements.

An inventory of crocodilian skin stocks had been accepted and was being planned. The interception and seizure of two shipments of caiman skins was cited as evidence of the new effectiveness and vigor of the Italian CITES system. The remaining requirements were to receive the approval of the new legislation by the Italian parliament and senate. The current unrelated difficulties concerning scandal and re-organization in the Italian government might delay this. It was also felt that the volume of trade had been so small that the new regulatory system was inadequately tested. A period of full volume trade while the ban was suspended would give a more accurate test of the effectiveness of the new system. Jaques suggested, "Italy may become a model for implementation of CITES in Europe".

Professor Messel responded that this was welcome news and noted how quickly the perception and actuality of wildlife trade could be reversed. Recent examples included the rapid conversion of Japan, Thailand, Singapore, and now Italy, toward legal wildlife trade and effective CITES implementation.

Colombia. Mr. Bernardo Ortiz presented a report submitted in response to the CSG letter sent from Zimbabwe in August 1992. He noted that this letter had galvanized the situation in Colombia, raising concern and consideration of the crocodilian issue to the highest level of Government. A preliminary response had been received from the Minister of Agriculture in December and an extensive report detailed the Colombian response and actions. Colombia was proposing action on a wide front to address issues raised by the CSG letter in August 1992. Field surveys to establish a quantitative base for monitoring and management are in an advanced stage of planning. Studies to improve farm technology and assess caiman farm profitability were underway. An extensive program to improve enforcement of CITES in Colombia was being developed. These included a working manual and training course for customs agents, improved police and intelligence operations, reinforcement of IRENA control of captive breeding, and restriction of ports of exit for wildlife exports. The CITES Secretariat has been invited to review progress in this program.

Mr. Ortiz expanded upon the report explaining that the first phase of the survey, accumulating maps and assessing habitat areas was underway. A proposal had been submitted to CITES and a preliminary expedition was planned to investigate the status of *Caiman c. apaporiensis*. The enforcement section of the report above had been submitted separately to the CITES Standing Committee for approval. Jaques Berney commented that this report represented a strong positive response by Colombia and the Standing Committee recognized their efforts to improve the situation. He noted that the continuing activity of a few illegal traders and producers compromised these valuable efforts and it was of great importance that Colombian Government and traders combine to clean their own house.

Mr. Ortiz expressed frustration, echoed by other Colombian representatives, that their efforts were impeded by an unfair perception that Colombian skin exports were all suspect. He felt that this situation was being manipulated by skin buyers who used it as an excuse to pay lower prices for legal Colombian skins. He felt the prejudice of some classic skin producers who resented the caiman trade was also a factor. Discussion followed and Colombian representatives were advised not to succumb to

despair but to demonstrate that their trade could be legal and sustainable and that their present efforts were a laudable beginning.

It was noted that of the 13 points raised in the August CSG letter, 5 or 6 had been addressed but several had not, particularly the call to restrict additional farm development and begin converting from closed cycle farms to ranches. It was explained that some of these issues were controversial and sometimes legally difficult in Colombia. It was noted, however, that some positive changes were proposed. For example, a request has been made that the investment bank divert funds formerly used to finance new farms, to the upgrading of technical capacity of existing farms and that the minimum technical requirements for farms to upgrade from "experimental" to "commercial" production had been raised. The commitment to complement farming with a strategy that adds to the conservation value of the program is waiting for the results of the survey so that the management authorities can decide which alternative (ranching, cropping etc.) is best for the species and the special conditions of the country.

It was recommended that CSG write to the Colombian authorities congratulating their energetic response and encouraging them to continue their efforts.

Seizure of Caiman Skins in Montevideo. The recent seizure of a large shipment of caiman skins in Uruguay was discussed. The facts of this matter as they were presently known were presented. As the matter is under ongoing investigation and possible legal action in three countries, detailed discussion or any action was not advisable. The CITES Secretariat noted that CITES and authorities in Colombia, Aruba and Singapore were actively cooperating in the investigation to establish the actual facts and people involved in this shipment. The Colombian representative stated that Colombia was offering complete cooperation to other authorities to assist the successful prosecution of the issue and was actively pursuing investigations in Colombia. The representative from Singapore stated he could not comment as the matter was under investigation and subjudice, but Singapore was pursuing the case vigorously and will bring the full force of the law on anyone involved. The chairman commended the rapidity of action and cooperation of the authorities involved and noted that such illegal trade endangers the conservation

of these species and brings into disrepute legal sustainable use and trade. He hoped that CSG would be kept fully informed of the progress and outcome of investigations.

Costa Rican Crocodilian Survey Proposal. Following discussions initiated during the Nicaraguan survey, and after Costa Rican representative Earl Junier had participated in the Nicaraguan survey for training, a draft proposal for a croc survey in Costa Rica was prepared by the Costa Rican Ministry of Natural Resources, Energy and Mines. This draft proposal was submitted to CSG for comment and approval in principle, understanding that one goal of the survey was to evaluate the feasibility of sustainable use by wild harvest and ranching of crocodilians. A Venezuelan company has already established a pilot caiman ranch in northeast Costa Rica. The proposal was reviewed by D. David, W. King, H. Jenkins, and a copy for information presented to Jaques Berney. The Steering Committee expressed its approval to Costa Rica for them to proceed with the development and submission of the proposal and undertook to provide detailed review and advice as requested.

Delisting of *C. porosus* in US. A letter from Grahame Webb to the US Fish and Wildlife Service asking that the delisting process for *C. porosus* in the USA proceed without delay was presented.

Mr. John Turner, Director
US Fish and Wildlife Service
Dept. of the Interior
Washington, DC 21240.

Dear Mr. Turner:

Re: Reclassification of the Australian population of the Saltwater Crocodile (*Crocodylus porosus*) on the US Endangered Species Act (1973).

As Vice-Chairman of the IUCN-CSG responsible for Eastern Asia, Oceania and Australasia, I would like to lodge a formal complaint over the failure of the US to deal efficiently and effectively with the above reclassification. This failure is causing a number of serious problems, not the least of which is loss of confidence in organizations like the CSG.

According to my records, CITES

reclassified the Australian population of *C. porosus* from Appendix I to Appendix II (ranching) in 1985. The US was specifically petitioned to change the classification of the Australian population from "endangered" to "threatened" in May 1990. Now, in February 1993 there is still apparently no resolution to the problem. This is despite:

1. The full support of the IUCN Crocodile Specialist Group.
2. Full support of the Parties to CITES.
3. An exemplary conservation and management program in which vast sums continue to be spent in monitoring every aspect of the wild and captive populations with regular reporting to CITES and,
4. Considerably more control on management than occurs in Papua New Guinea, which has had its population of the same species on Appendix II of CITES but which has always been on the "threatened" rather than the "endangered" list.

This would seem to be a fundamentally simple and straightforward conservation decision to make, in the eyes of everyone familiar with crocodilian conservation around the world. If there are valid conservation grounds for delaying the reclassification then I and other CSG members would be most happy to comment upon them.

As it stands now, the failure of the US to act promptly on this issue is placing myself and other members of the CSG in an untenable position. The delay is widely interpreted by trade, conservation and government organizations alike as one of blatant protectionism- an attempt to delay imports of legally produced products (regardless of the conservation merits in the country of origin) because they may compete with *Alligator mississippiensis* production within the US.

Our efforts to build up respect for CITES and national conservation legislation is being seriously undermined. If the CSG cannot think of valid reasons why the relatively small production from such a widely acclaimed program should be restricted from the US (on conservation grounds) who could? What

disasters have occurred as a consequence of PNG's classification as "threatened"? I look forward to your response.

Dr. Grahame Webb

The content and sentiment of the letter was endorsed by the Steering Committee, noting that the delisting of two other crocodilian species, *C. niloticus* and *Caiman yacare* had also been unduly delayed. Additional letters supporting this position were solicited from all CSG members. These should be sent directly to:

The Hon. Bruce Babbitt
Secretary of the Interior
US Dept. of the Interior
Washington, DC 20240 USA

Tomistoma Survey Proposal. Correspondence, a position paper and a proposal for surveys of *Tomistoma* had been received from the Asian Wetland Bureau who proposed conducting surveys and sought the CSG's cooperation and advice. After reviewing and approving the proposal the following response was sent:

Mr. Anthony Sebastian
Asian Wetland Bureau
Institute for Advanced Studies
University of Malaya
Lembah Pantai
59100 Kuala Lumpur, Malaysia

Dear Mr. Sebastian:

Dr. Grahame Webb, CSG Vice Chairman, and Dr. Perran Ross, Executive Officer of the CSG, have kept me informed of your correspondence concerning your plans for crocodilian studies in South East Asia, particularly on *Tomistoma*. At our recent CSG steering committee meeting in Darwin, Australia, we reviewed the position paper and draft proposal you kindly provided.

We must immediately congratulate you on the initiative that Asian Wetland Bureau is taking for crocodilian conservation and thank you for keeping us informed and giving us the opportunity to coordinate activities. As you are aware

Tomistoma was identified in our recent Action Plan as a species of highest priority for conservation. We therefore welcome your interest in this endangered species.

We have looked carefully at your position paper and proposal and essentially concur on the information presented, the priorities identified and on the proposal goals and objectives. We note that you have already provided some new information on *Tomistoma*, and with your permission, we will include this information in our next update of the Action Plan, with whatever additional facts come to light in your studies. At the CSG Regional Meeting in Darwin next week we will be conducting a workshop on conservation needs of S.E. Asian species of crocodile and will forward the recommendations of the workshop to you for your further information.

The Steering Committee suggested a couple of general guidelines for you that I understand agree with suggestions already made by Dr. Webb and Dr. Ross. We agree that a coordinated activity with PHPA in Indonesia is an important component of the *Tomistoma* work. CSG has been working closely with Indonesian Authorities to assist them develop a functional management program for crocodiles. If your *Tomistoma* surveys could be coordinated with them it would enhance the program they are developing. It would be particularly valuable if Indonesian counterparts could participate and receive training in your survey and the survey results be made quickly available to PHPA. Also we cannot overstress the importance of using standardized, quantitative and repeatable techniques to assess crocodile populations. It is the unfortunate case that a great deal of research money and time has been squandered by well meaning studies that have not followed standard protocols and the results of which are therefore impossible to evaluate. We urge you to seek the advice, assistance and participation of qualified experts, at least in the preliminary period of your study, to introduce standard techniques to you. Dr. Webb can provide detailed information on qualified individuals to you. Scott Frazier

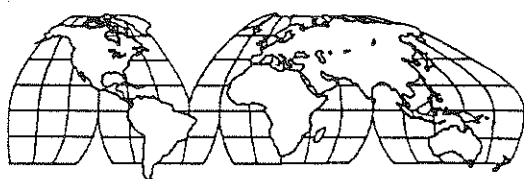
is certainly one such person. We also draw your attention to the training course being sponsored by the Conservation Commission of the Northern Territory and run by Dr. Webb. This course provides a unique and valuable opportunity to provide training in crocodilian management techniques, including survey techniques. We recommend the course to you and particularly to local counterparts and S.E. Asian nationals who may participate in your project.

The Steering Committee was impressed with the materials and approach you are developing and we look forward to continued coordinated work with and to seeing your results as they become available. Please continue to coordinate your efforts directly through Dr. Webb and Dr. Ross. With best wishes.

Yours sincerely,
Professor Harry Messel, Chairman CSG.

Improved Communications within Latin America. Noting that the Vice Chairman for Latin America was absent and the Deputy Vice Chairman had recently resigned, Mr. Bernardo Ortiz and Mr. Alvaro Velasco, Steering Committee representatives from Latin America, requested approval of the Steering Committee to initiate a communications network among CSG members and others within Latin America. This was approved.

AREA REPORTS



AFRICA

Cameroon:

FAO CROCODILE MANAGEMENT PROJECT. Olivier Behra is currently working with the

Ministry of Agriculture and Environment, funded by FAO, to develop crocodile management recommendations and examine the feasibility for crocodile farming or ranching. Initial indications are that farming is not going to be economically viable for *Osteolaemus tetraspis*, however, the advice of other crocodilian experts, particularly those experienced with caiman, is being sought on this point. However, some management activity for *Osteolaemus* is justified as despite an Appendix I listing and local protective laws, approximately 10,000 *Osteolaemus* appear at local markets for use as food each year in Cameroon. This quantity could be an important nutritional component for forest area inhabitants and has been maintained for years. Olivier also observed Nile crocodile items for sale at local markets that appear to be derived from skins from Chad, Central African Republic and Sudan, rather than local Nile croc populations.

In developing management recommendations the local Forestry Department and FAO have been very open to comments and suggestions and of constructive help in the field. Olivier closes by noting with gratitude the contributions of recently retired FAO Coordinator, Mr. Child, and wishes him a happy and deserved retirement. -- Olivier Behra, *Deputy Vice Chairman Africa, BIDEV, Lot VX 18 Andrefandrova, Antananarivo, Madagascar.*

Kenya:

TANA RIVER DELTA UNDER THREAT. Conservationists have long been confident that at least a portion of the biologically rich and varied ecosystem of the Tana River delta would become the first wetlands preserve in the region. The area supports significant crocodile populations. Last May the government of Kenya unexpectedly allocated nearly 50,000 acres in the delta, comprising 95% of the proposed park, to a locally owned ranching company who later sold the land to Coastal Aquaculture, a foreign owned prawn farming concern. Conservationists, led by the East African Wildlife Society (EAWLS), have protested the proposed prawn farm as an "ecological disaster". Local politicians and the national government have not been responsive, claiming that "nobody in Tana River wants a national reserve at the delta". Richard Leaky, Director of the Kenya Wildlife Service has warned that wildlife outside the delta will be affected as the land allocation sends a clear

message to the international donor community that state lands may be released to private companies rather than conserved. A compromise solution locating prawn farms outside the proposed protected area is being developed by EAWLS incorporating a revenue sharing program with local people for tourist revenues generated by a wetland reserve. But meanwhile farm development has proceeded with the building of houses and ponds. - from *African Wildlife Update*, Mar -- Apr 1993. Vol 2, No. 2.

Togo:

During a tour of Togo for the CITES West and Central Africa Crocodile Project, Olivier Behra reports that at one village, crocodiles have been kept as a tourist attraction. With the decline in tourist interest in the area due to political unrest the villagers were having difficulty maintaining the stock. They have now gone into partnership to form a crocodile farm. They have approximately 100 crocodiles in one big enclosure. The majority are *C. niloticus* with some *C. cataphractus* and *Osteolaemus* also present. Some of the *Osteolaemus* have been observed to lay eggs in the enclosure where there is almost no vegetation and they cover their nests with a minimal amount of earth and some dead leaves. Cross species mating was also observed between a *C. niloticus* male and a *C. cataphractus* female. Conservation has been very difficult to develop in Togo so this crocodile farm has the potential to be a source of stock for the future, as long as uncontrolled hybridization does not compromise the stock. -- Olivier Behra, *Deputy Vice Chairman Africa, BIODIV, Lot VX 18 Andrefandrova, Antananarivo, Madagascar*.

Zambia:

CROCODILE CENSUS ON LAKE TANGANYIKA. On the night of 14 July 1992, we conducted a night survey of crocodiles on the Zambian shore of Lake Tanganyika assisted by Mr. Vic Page, a Kasaba Bay lodge manager and crocodile farm caretaker. Survey duration was 1 hour and 5 minutes and conditions were clear and dry but with turbulent water. Lake Tanganyika is devoid of surface vegetation on the Zambian shore. The survey yielded a density of 5 crocodiles per km surveyed and all specimens seen were 2-3 meters in length.

Fishermen of Lake Tanganyika do not destroy nests and nesting sites. A detailed survey of Zambian wetlands is necessary to establish the real status of crocodile populations. Local crocodile farmers utilize the wild populations but in the absence of serious surveys the quotas approved by CITES and the CSG lack objective justification.

The situation of *Crocodylus cataphractus* is less clear. The record of Wittes 1953 has not been verified, although sight records by fishermen have been reported. Zambia appears to have been the southern range limit for this species and changing habitat conditions in the Luapula river, Lake Mweru and Lake Tanganyika may mean that *C. cataphractus* may be extinct now in Zambia. -- Dr. Malumo Philip Simbotwe, *Managing Director ESCC, Box 60127, Livingstone, Zambia*.

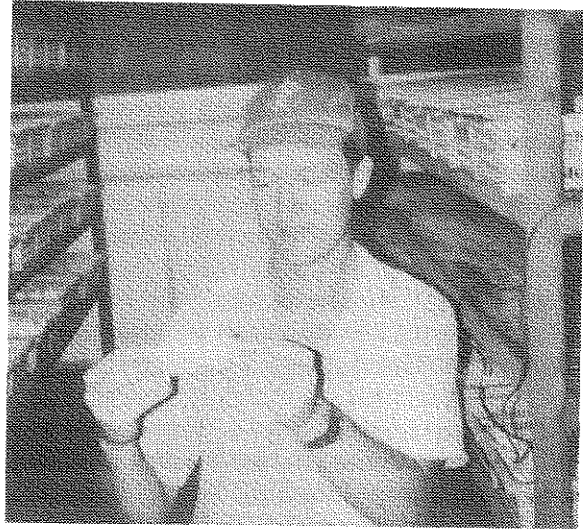
EASTERN ASIA & OCEANIA

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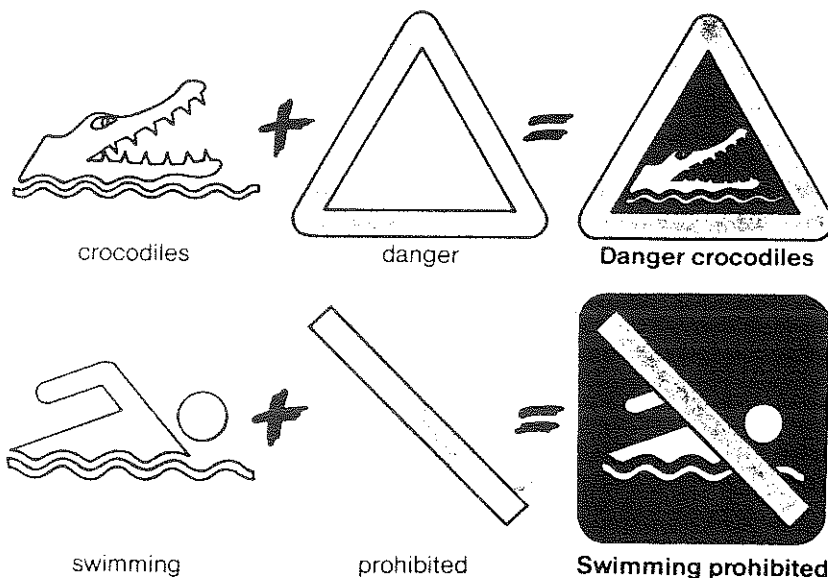
CERTIFICATE IN CROCODILE CONSERVATION, MANAGEMENT AND HUSBANDRY. The Conservation Commission of the Northern Territory is offering a course on this topic as part of its series on Wildlife Conservation, Management and Sustainable Use. The Certificate has been designed by G. Webb Pty. Ltd in collaboration with the International Project Management Unit (IPMU) of the Northern Territory Government, The Department of Education, The Department of Primary Industry and Fisheries and the Northern Territory University. The course offers practical hands on opportunities over a six week period of instruction that will extend experiences and skills of direct and immediate benefit to the operation of programs for crocodile conservation, management and husbandry. The maximum number of participants is 15 and funding assistance is available through the Australian International Development Assistance Bureau. Participants from developing nations and from Australia's Asian and Pacific neighbors are particularly targeted. Further information may be obtained from -- Mr. Patrick Markwick-Smith, *Director IPMU, GPO Box 4160, Darwin NT 0801, Australia*.

CROCODILE MANAGEMENT PROGRESS IN QUEENSLAND. Crocodile management and research in Queensland has received a boost recently with the passage of the Nature Conservation Act of 1992. The Act provides the legislative framework that will allow the development of management plans, protected areas and controlled use and trade in Queensland. As a result the Queensland Department of Environment and Heritage has now called for submissions from land owners, interest groups and the public to develop Conservation Plans for several species, including crocodiles. In a related move Dr. Jeff Miller has been appointed to the Queensland National Parks and Wildlife Service to coordinate crocodile research to provide supporting information for crocodile management and conservation. The Queensland National Parks and Wildlife Service has issued revised guidelines for Farming and Trading crocodile products in Queensland and a valuable booklet for the public on avoiding crocodile/camper conflicts. --

unusual problems for their record keeping; Eggs laid - 36, Hatchlings produced - 37 ?? The NEWSLETTER will be kept informed on progress. -- Gregor Reise, *Crocodile Farms NT*, GPO Box 86, Palmerston, NT 0831, Australia.



Gregor Reise with double egg laid by *C. porosus*. G. Reise photo.



materials submitted by David E. Baker, *Wildlife Management, Queensland National Parks and Wildlife Service, P.O. Box 155, North Quay, Qld. 4002, Australia.*

DOUBLE TROUBLE. At Crocodile Farms (NT) Pty. Ltd. a captive bred *C. porosus* female recently laid an unusually long egg which appears to be two eggs fused together. Both are banded and appear to be developing well. This poses

DOG DAYS IN DARWIN. The Northern Territory Chief Minister, Mr. Marshall Perron, recounted his personal experience with nuisance crocodile control while welcoming delegates at the recent Darwin Regional Meeting. Feeling threatened by a large crocodile cruising near his Darwin waterside home the Chief

Minister requested assistance of the Crocodile Control Program and a humane, baited, live trap was duly placed in the harbour in front of the Ministers home. He was surprised next morning to hear hysterical loud barking from his German Shepherd dog, who was finally located, nose above water, in the croc trap, fortunately without a croc. The dog had evidently entered the trap at low tide after the odorous bait. The dog was safely released and the trap reset in slightly

deeper water. However, Minster Perron's troubles had just begun as the complaints from his electorate and the local humane society flooded in about the croc trapping program, and his office had to explain that it was neither government policy or personal idiosyncrasy to bait croc traps with live dogs! After this personal experience, Mr. Perron feels well qualified to tread the difficult line between conservation needs, animal welfare and human safety issues involved with crocodile control. -- *Used with permission, Marshall Perron, Chief Minister, Government of the Northern Territory, NT, Australia.*

Indonesia:

MEDAN CROCODILE FARM. Tan Yanxiang, Huang Zhujian and Zhang Huying of the Institute of Zoology, Academia Sinica, China, all visited Indonesia during 1992 and visited Medan Crocodile Farm and its director Mr. Luo Tanmu. They think Mr. Luo has made good achievements in keeping crocodiles and would like to introduce him to colleagues.

In 1959 by chance someone sold 12 young crocodiles to Luo Tanmu who built a small pool to keep them purely for his own interest. In 1966, when the crocodiles were 7 years old he obtained 500 m² of land and built a larger pool. In 1974, when the crocodiles were 14 years old, a friend loaned him 5,000 m² of wasteland where he constructed an artificial lake for the crocodiles. By that time they had begun to mate and lay eggs. Seven young crocodiles were hatched in 1975 and now after 16 years he has bred about 2,000 crocodiles.

The crocodiles reached maturity at 12 years of age. The mating season is from October to March, eggs are laid from February to June. The females lay 30-90 eggs. They mate in the lake and lay eggs in a nest no more than 200m from the shore. The female makes a nest with her hind feet using mud and plants which takes several days and guards the nest throughout incubation. After about 90 days, when the young crocodiles call out from the nest, the female digs them out and takes them to the water to fend for themselves. The young crocodiles are fed shrimps daily and adults are fed with chicken or meat also once a day. -- Huang Zhujian, *Institute of Zoology, Academia Sinica, Fu Jue, Beijing Zoological Gardens, Beijing, China.*

WESTERN ASIA

Pakistan:

STATUS REPORT ON CROCODILES IN PAKISTAN:

The Marsh Crocodile or mugger (*Crocodylus palustris*) is thought to be extinct in Punjab Province where extensive alteration of the Indus River system has eliminated or altered much of its habitat. In Sind, the mugger is thought to be vulnerable and diminishing with small populations reported along the Nara Canal, Khairpur Sanghar and Nawab Shah districts and Haleji Lake. Illegal killing for hides is thought to be a threat. In Baluchistan, the mugger is widely distributed with seven coastal rivers cited as confirmed locations: Nari River, Hab River, Titiani, Hingol River, Nahang Kaur, Kach Kaur and the Dasht River. In all cases the number of individuals reported is very small and the populations are thought to be rare and endangered. An increasing rate of river dam construction is further reducing habitat.

The species is protected in all provinces but problems of enforcing wildlife protection are encountered. The government is aware of the need for conservation programs but these remain largely in the planning stage. Captive stocks are being held in Punjab, at Faisalabad (2.3.13) and Joeyanwala (1.2.0), Jallo Wildlife Breeding Center (1.2.2), the Lahore Zoo (0.0.1) and the Bahawalpur Zoo (0.0.3). Three pairs are expected to breed in 1993. Twenty mugger are in captivity at Haleji and Khar in Sind. There is also a program underway to procure captive bred Mugger from India for release into protected habitat at Chasma Barrage and Taunsa Barrage Wildlife Sanctuaries and Patisar Lake in the Lal Suhanra National Park.

The gharial (*Gavialis gangeticus*) is not reported from Baluchistan and is thought to be extinct in Sind and the Punjab with the last confirmed animal being killed in 1953. Recent reports of gharial in the Indus system remain unconfirmed. A proposal to obtain captive bred gharial from India for restocking is being considered and three sub adult male gharial are held at the Faisalabad Wildlife Research center and four at the Lahore Zoo.

Crocodiles in Pakistan are seriously threatened by habitat loss and modification and by illegal killing. In some areas in Sind and Punjab large areas of inundated wetlands could provide suitable habitat for crocodiles, however,

fear of crocodiles and potential fisheries conflicts make re-introduction to these areas difficult. -- *Extracted and summarized from STATUS REPORTS OF CROCODILES IN PAKISTAN*, Dr. Abdul Aleem Chaudhry, *Deputy Game Warden, Wildlife Sciences, P.O. Box 1513 Nishatabad, Faisalabad, Pakistan.*

CENTRAL & SOUTH AMERICA

Argentina:

RESERVA EL BAGUAL. During Spring 1992, we had the pleasure of giving back to nature 29 one year old *Caiman latirostris* raised in captive conditions. The release locations were selected within the El Bagual Ecological Reserve and the animals were tagged with orange cattle tags for future identification. These babies were quickly seen to migrate from the ponds where they were liberated.

In collaboration with Dr. Dixon from Texas A & M University, USA, we used implanted microchip tags to mark all the captive caimans from the 1992 breeding season. The reader (125 kHz) from AVID, Norco, CA, USA, proved to be effective and fast at identifying individual marks for each caiman. The PIT tags were implanted in the base of the tail on the left side with no associated problems. It appears a very safe technique and a most important aspect is that the PIT tags can be recovered if animals die. We will inform the NEWSLETTER of developments with this technique in the future. Two nests of caiman, one for *C. latirostris* and one for *C. yacare*, have been deposited so far (early December) in our breeding pens and will be artificially incubated.

In response to the editorial in NEWSLETTER 11(4) by J.P. Ross, we wish to report that in Eastern Formosa Province, Argentina, both species of caimans (*C. latirostris* and *C. yacare*) are hunted legally and illegally in order to extract the fat which is conserved by being hung under a roof for future use. The only reported use is for applying to wounds and cuts, especially skin ulcers. This practice is common not only with aboriginal Indian people but with "gringos" as well. In 1989, I had opportunity to see how a deep, 5 cm diameter skin ulcer cured in a week with treatment with caiman fat, first drying then regrowing normal skin tissue. This effect

deserves pharmaceutical research. -- A. Yanosky and C. Mercolli, *El Bagual Ecological Reserve, Salta 994 (3600) Formosa, Argentina.*

CAIMAN LATIROSTRIS PROJECT IN ARGENTINA, 1992. The experimental breeding farm is run by the Ministry of Agriculture and Livestock and does not have a commercial aim. In 1992, seven clutches were harvested from three constructed nests in breeding ponds in the farm, suggesting multiple clutching in one nest. The 263 eggs were artificially incubated to produce 164 hatchlings. By December 1992, only 2 hatchlings had died and the remainder are growing well. The Monitoring and Restocking Program carried out by the Ministry of Agriculture and Livestock and the Instituto Nacional de Tecnologia was begun in 1990. The aim of this project is to evaluate the ranching of eggs collected from the wild for commercial exploitation in association with conservation activities in Santa Fe Province.



Juvenile *Caiman latirostris* at Alejandro Larriera's facility in Argentina. A. Larriera photo.

In 1992, 25 nests were collected from the wild and artificially incubated. Those nests, with 903 eggs, produced 701 hatchlings and 661 were successfully raised for eight months and released last November. The monitoring program is showing a measurable increase in the wild population and so commercial production might

start in 1 or 2 years. For the coming year (1993) a harvest of 1,500 - 2,000 eggs is planned and the program will extend to Entre Rios Province in conjunction with a private farm. These activities continue to be coordinated by Alejandro Larriera with assistance from Alba Imhof and Cristina Von Fink in Santa Fe and Jorge Venturino in Entre Rios. -- Alejandro Larriera, *Bv. Pellegrini 3100, 3000-Santa Fe, Argentina.*

Colombia:

BREEDING SUCCESS WITH *C. INTERMEDIUS* AT ESTACION BIOLOGICA ROBERTO FRANCO. En abril de 1991 se reportó el nacimiento en cautividad de 7 *C. intermedius* en la Estación de Biología Tropical Roberto Franco, Colombia. Pero ese mismo año de otra pareja que llegara a esté en 1970 [cover photo], nacieron 28 criás: al siguiente año las dos hembras ovipositaron pero solo se obtuvieron 32 neonatos de una de las hembras. Este año se tienen 68 huevos en incubación procedentes de las dos hembras y se cuenta con 62 criás. La talla de las criás que cumplen dos años está entre 80 y 120 cm y de los cumplen dos años está entre 40-70 cm. La estabilización de las posturas anuales por hembra, el porcentaje de nacimientos y el bajo índice de mortalidad de criás auguran una buena alternativa para la conservación de este especie en Colombia. La Estación proyecta un plan de conservación de *C. intermedius* en donde además de incrementar la cría en sus instalaciones, pretende realizar un estudio de los reductos poblacionales de esta especie en la Orinoquia Colombiana. Se espera obtener ayuda económica de organismos nacionales e internacionales. -- Luz Myrian Lugo Rugeles, *Estación de Biología Tropical Roberto Franco, Apartado No 2261, Villavicencio, Colombia.*

In April 1991, the birth of 7 *C. intermedius* at the Estacion Roberto Franco was reported. However, in the same year another pair which had been in the Station since 1970 produced 28 hatchlings. The following year both females laid but we only obtained live hatchlings (32) from one of them. This year (1992) we are incubating 68 eggs produced from the two females, and rearing a total of 62 juveniles from previous years. The juveniles that are now two years old are between 80 - 120 cm length and those one year old are 40-70 cm. The stabilization of the annual breeding production of the females, the

good hatch percentage and the low hatchling mortality auger well for improved conservation of this species in Colombia. The Station is producing a conservation plan for the species which includes increasing the number of captive raised hatchlings, and initiating a study of the populations in the Orinoco region of Colombia. We hope to obtain economic aid from both national and international organizations. -- *Free translation of the article above.*

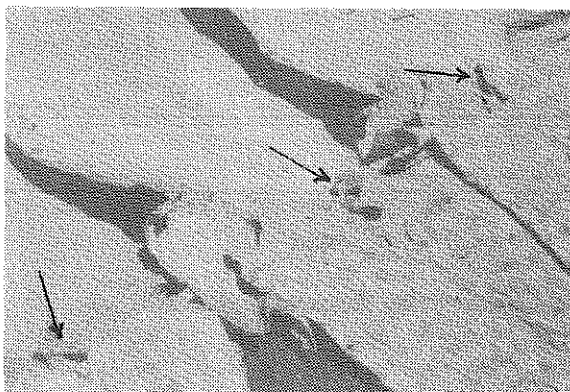
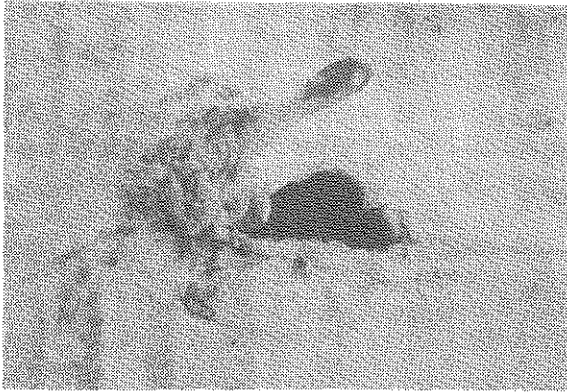
Guyana:

GUYANA SURVEYS. Stefan Gorzula visited Guyana in September -October 1992 to conduct a survey of boa constrictors for CITES. While there he also surveyed spectacled caiman for the Ministry of Agriculture assisted by Eduardo Uruena and staff from Nested Ltd. Accompanied by representatives of the Ministry of Agriculture, the team saw more caiman in four days than were seen in the whole February to September survey in 1989. It is hoped these new results will assist the development of sustainable use of caimans in Guyana.

Caiman are still sufficiently common that recently a four foot long specimen was found in central Georgetown and killed by local residents. In another incident, a fisherman at Potarinau village, Central Rupununi, was attacked by a caiman [possibly *Melanosuchus*, eds.] that was presumed to be guarding its young. The fisherman sustained bites to his legs before driving the beast, described as 'monstrous', away with his screams and struggles. -- Eduardo Uruena, *Nested Ltd. P.O. Box 12258, Georgetown, Guyana, and material from THE SUNDAY CHRONICLE 9 Aug. 1992 and the STABROEK NEWS 17 Oct. 1992.*

IDENTIFYING MALE CAIMAN SKINS. As part of his recent activities surveying caiman in Guyana, Stefan Gorzula has been experimenting with variations of skinning technique that might allow unambiguous identification of skins from male caiman. The method is simple and totally unambiguous. In the course of removing the whole skin from the caiman, the penis is left attached at the anterior end of the cloacal opening on the interior (flesh) side of the skin. The penis remains visible and identifiable through salting and tanning to crust (see photos). The method is a simple variation of skinning that

allows identification of whole skins from male caiman. -- Stefan Gorzula, *Biosphere Consultancies*, 14 Ferry Road, Millport, Isle of Cumbrae, KA28 0DZ, Scotland, UK.



Salted hide (above) & Crusted skin (below) of *Caiman crocodilus* male showing the penis remaining visible on the skin.

Venezuela:

ORINOCO CROCODILE BREEDING. In December 1991 Agropecuaria Puerto Miranda in the State of Guarico, in the Venezuelan llanos region, fenced in a small lake in which nine adult Orinoco crocodiles were transferred from other locations where they were held in captivity. In January 1993, courtship activity was observed and it is hoped that fertile eggs will be produced and the animals raised for subsequent liberation into the wild. In January 1993, Agropecuaria Puerto Miranda received one hundred and thirty five small Orinoco crocodiles from Hato Masaguaral. These will also be raised until they reach an adequate size for liberation to the wild. -- Manuel Denis, *Venezuelan Crocodile Specialist Group*, Torre Phelps, Piso 14, Plaza Venezuela, Caracas, Venezuela.

NORTH AMERICA

Mexico:

GROWTH OF YOUNG *CROCODYLUS MORELETII*. *Crocodylus moreletii* is one of the most valuable crocodile species in the New World because of its leather quality, however, there is little research applied to its management, particularly in restocking natural areas and establishing ranching and farming systems in Mexico. To approach a model for intensive raising of young *C. moreletii*, I studied growth rate of 18 animals (40-100 cm total length) in an outdoor enclosure without shade. The animals were fed *ad libitum* 4 or 5 times a week with red meat from dead cattle. The study was conducted at CEICADES-Colegio de Postgraduados in Tabasco State, Mexico.

The maximum, mean and minimum ambient average temperature during the year was 32° C, 26.5° C and 21° C, respectively. The annual growth rate for *C. moreletii* in this study was 47.7 ± 3.4 cm, which is the greatest growth rate recorded for this species in Mexico. Isotherm statistics indicate temperatures similar to those in this study occur widely in other States in Mexico. However, there is a large region where *C. moreletii* occurs that have lower temperatures and where other researchers have recorded lower growth rates. -- *Abstract of a bachelors thesis in Biology, Faculty of Science, UNAM, directed by Dr. Casas Andreu and Dr. Flores Villeda*. Adolpho Bucio Galindo, *Colegio de Postgraduados - CEICADES, Aptdo. Postal 24, H. Cardenas, Tabasco C.P. 86500, Mexico.*

United States:

CROCODILE SCAM UNCOVERED. In an investigation that began in 1991, a US Fish and Wildlife inspector found 47 baby dwarf (*Osteolaemus tetraspis*) and Nile crocodiles (*Crocodylus niloticus*) concealed in two boxes labeled "land crabs" at JFK airport in New York. The shipment was en route to Worthington, Ohio. Agents arrested the importer and an accomplice who were sentenced to 12 and 14 month prison sentences and fined \$5,000 each. The crocodiles were taken to Columbus Zoo, Ohio, and those that survived were eventually returned to Nigeria. -- from *TRAFFIC USA*, Volume 11, No. 4, Dec 1992.

SIX MEN ARRESTED FOR ILLEGAL ALLIGATORS. Authorities in Florida have charged six men in Polk County with illegal possession of alligators after they were observed during an illegal alligator hunt by Florida Game and Freshwater Fish Commission aerial surveillance. A trailer with 13 alligators ranging from 6 to 11 feet in length and a video tape of the hunt were seized. The men were using a permit issued to the father of one of them to legally hunt alligators on private lands as part of Florida's sustainable alligator management program. However, the men had taken more alligators than they had permits for and the catch was not tagged as required by law. A subsequent search of the premises of one of those charged revealed additional untagged alligator hides and other irregularities in an alligator farm there. Criminal charges involving fines of up to \$5,000 have been filed. -- *News release Florida Game and Freshwater Fish Commission, Lakeland, FL 33811, USA.*

ALLIGATOR PROMOTIONS EMPHASIZE VALUE AND FLAVOR. The Florida Department of Agriculture and Consumer Services worked cooperatively with the Florida Alligator industry to host a luncheon and tour for journalists. The goal of this event was to communicate alligator industry information. Primary talking points were: 1) the American alligator is a conservation success story and can be farmed or wild harvested on a sustainable basis, 2) alligator products, both meat and hides, are legal and consumer purchasing does not endanger the species, 3) alligator meat has an excellent flavor, nutritional value and culinary versatility, 4) the alligator industry is suffering from the worldwide recession which has resulted in very low leather prices and 5) the U.S. market is small and needs to be expanded. As a result, favorable stories appeared in weekend editions of two regional newspapers. In further action, the Bureau provided on camera materials for the Florida Television News Network resulting in a two part series that aired on 11 television stations. Don Ashley succinctly summed up the message saying "If you want save the alligator, buy a pair of alligator boots". -- *Paul Zajicek, Bureau of Seafood and Aquaculture, Florida Dept. of Agriculture and Consumer Services, 2051 East Dirac Drive, Tallahassee, FL 32310-4033, USA.*

ZOOS



GIANT DWARF CROCODILE. Ray Pawley at Brookfield Zoo, Chicago, forwarded a necropsy report on a particularly large *Osteolaemus tetraspis*. The total body length was 8 feet 1 inch (2.46 m) and the weight 180 lb (81.6 kg). The specimen was originally obtained 20 August 1976 and is thought to have been imported in 1969 from the Congo. It died 27 March 1986. The large size is probably an artifact of captivity but may still be a record. Do any CSG members have information of specimens of this species of similar size? -- *Rick Hudson, Fort Worth Zoological Park, 1989 Colonial Parkway, Fort Worth, TX 76110, USA.*

BUSCH GARDENS REPORT. The Conservation Education Department at Busch Gardens, Tampa, Florida, uses reptiles to convey many of our conservation messages. Since we successfully breed American alligators, we use young alligators as a key species in our presentations. Busch Gardens is also privileged to maintain a breeding pair of American crocodiles, and we are fortunate to have one of their offspring to use in educational programs. It is interesting to compare the two species: morphology, physiology, behavior, conservation status and the numbers in their wild populations.

Until August, 1992, our juvenile American crocodile had a large area all to herself. When we received a smaller Nile crocodile, about one half her size, we placed it in with her. Naturally we observed them to be certain they exhibited no agonistic behavior toward one another.

They have been together almost seven months now and are virtually inseparable. The smaller Nile rests its head on the American while basking, rides on her back in the water and shares a 'house' with her during the day. It seems strange to see such thigmotactic behavior between two different species, even though they are social animals. They never cease to intrigue me. -- *Jo-Ann Jennier, 20818 Moreland Drive, Spring Hill, FL 34610, USA.*

ZOO SURPLUS. *Crocodylus niloticus*, 0,0,2, Schonbrunner Tiergarten, Ges.m.b.H, Maxingstrasse 13b, A-1130 Wien Austria. phone 43 1 877 9294/fax 43 1 877 96 41; *Paleosuchus palpebrosus*, 18 (size and sex not reported) Harald Jes, Curator of the Aquarium, Cologne Zoo, D 5000 Cologne, Germany, phone 49 221 7785-0/fax 49 221 778 5111. -- Rene Honegger, Zoo Zurich, Zurichbergstrasse 221, CH-8044 Zurich, Switzerland.

PUBLICATIONS

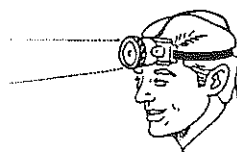


STUDIES ON SEXING CROCODILES USING A VAGINAL SPECULUM. Jes H. 1993. Geschlechtsbestimmung bei Panzerescheln mittels Vaginal-Spekulum. *Elaphe* (N.F.) 1.(heft 1):6-7. [in German], describes the use of a vaginal speculum to directly inspect the genitalia and determine gender of crocodilians. The technique is described as easier and less ambiguous than the traditional palpation and particularly effective on small individuals. -- Harald Jes, Koln Aquarium and Zoo, Riehler Str. 173, 5000 Koln 60, Germany. Submitted by Rene Honegger, Zoo Zurich, Zurichbergstrasse 221, CH-8044 Zurich, Switzerland.

THE STATUS OF CROCODILES IN THE EASTERN COROZAL DISTRICT. Meerman J.C. 1992. Occasional Papers of the Belize Natural History Society. 1 (Nos. 1-4):1-5. Results of a survey conducted in 1991 with P. Ouboter are reported. Identification of populations of both *C. acutus* and *C. moreletii* are described. -- J. C. Meerman, Shipstern Nature Reserve, P.O. Box 1694, Belize City, Belize.

ANNUAL PUBLICATIONS ISSUE. As in previous years, in the next issue of the NEWSLETTER we will publish a list of publications in 1992 concerning crocodilians. This material is kindly collected and provided by Mr. Terry Sexson of Wildlife Review. Readers are asked to provide citations and copies of publications from obscure sources that might be overlooked by standard literature search technology, for inclusion. Materials can be sent directly to the NEWSLETTER.

PERSONALS



Floris Deodatus, Ecole de Faune, BP 271 Garoua, Cameroon (new address), reports that he has moved

from Malawi to Cameroon where he is posted as an ecology/economy teacher at the Wildlife College, Garoua.

Dr. Malumo Philip Simbotwe, ESCC consulting Ecologists on the Environment, Box 60127, Livingstone, Zambia, informs colleagues that ESCC, a firm of consulting ecologists on the environment, is now working in unison with a Zambian NGO, The National Center for Environmental Education (NCEE), operating from offices on the 2nd floor of Zambia National Commercial Bank, Musi-oa-Tunya Rd, Livingstone, with phone 320160 and fax 320068. They have recently completed consultancies assisting Chimba and Kasaba Bay crocodile ranches and hope to provide similar assistance where needed for management appraisals and technical assessments of crocodile farms.

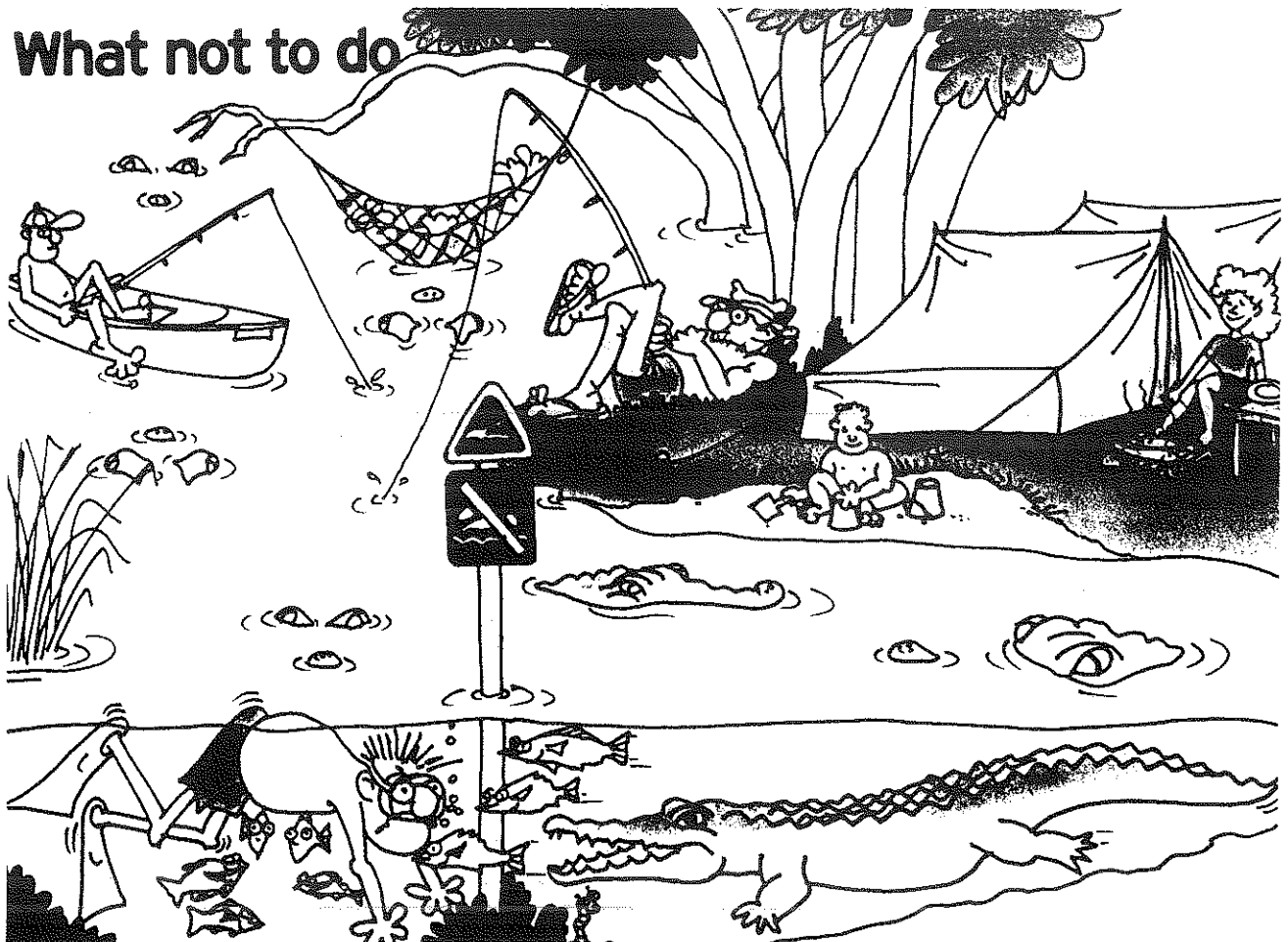
Howard Hunt, Zoo Atlanta, 800 Cherokee Avenue S.E., Atlanta, GA 30315, USA, sustained a bite from a black mamba in November. After three decades of handling venomous reptiles, Atlanta Zoo's curator of reptiles was bitten in the left bicep while cleaning the mamba's cage. Within minutes he began to have difficulty breathing and other neurotoxic symptoms. Howard received prompt treatment, including an antivenin injection within 15-30 minutes of being bitten. Hunt received intensive treatment at a local hospital and returned to work 10 days later. We trust Howard will stick to less dangerous animals like crocodiles in future.

Mr. Luis "Lucho" Pacheco, Florida Museum of Natural History, Gainesville, FL 32601, USA, conducted field work on Black caiman in the Beni region of Bolivia from May to December last year as part of his masters thesis. He will return to Beni in May to undertake recaptures of marked animals to complete this work.

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

EDITORIAL POLICY - The newsletter must contain interesting and timely information. 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. The information in the newsletter should be accurate, but time constraints prevent independent verification of every item. 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, unless specifically indicated as such, are not the opinions of the CSG, the SSC, or the IUCN-World Conservation Union.

What not to do



from Wildlife Information brochure: CROCODILES IN QUEENSLAND -- Queensland National Parks and Wildlife Service.

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For further information on the CSG and its programs, on crocodile conservation, biology, management, farming, ranching, or trade, contact the Executive Officer or Regional Vice Chairmen:

Deputy Chairman: Prof. F. Wayne King, and Executive Officer, Dr. J. Perran Ross, Florida Museum of Natural History, Gainesville, FL 32611, USA. Tel: (1) 904 392 1721 Fax: (1) 904 392 9367.

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Western Asia: Vice Chairman: Romulus Whitaker, Madras Crocodile Bank, Post Bag No. 4, Mamallapuram 603 104 Tamil Nadu, India. Fax: (91) 44 491 0910. Deputy Vice Chairman: Dr. Lala A.K. Singh, Project Tiger, Similipal Tiger Reserve, Khairi-Jashipur, Orissa, India 757091. Harry Andrews, Madras Crocodile Bank Trust, Post Bag No. 4, Mamallapuram 603 104 Tamil Nadu, India. Fax: (91) 44 491 0910.

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6866 Fax: (65) 627 1042. Lic. M. Quero P. & A. Velasco B., PROFAUNA, Ed. Camejo, Entrada Oeste, Mezzanina, Centro Simon Bolivar, Caracas 1010, Venezuela. Fax: (582) 545 3912

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IUCN: Species Survival Commission Chairman: Dr. George Rabb, Chicago Zoological Society, Brookfield, IL 60513, USA Tel: (1) 708 485 0263 Fax: (1) 708 485 3532. Program Director, Sustainable Use of Wildlife: Dr. Stephen Edwards, IUCN-US, 1400 16th St. NW, Washington DC 20036, USA Tel: (1) 202 797 5454 Fax: (1) 202 797 5461

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