CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

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MORELET´S CROCODILE (*CROCODYLUS MORELETII*)

The attached document has been submitted by Mexico[*].

[*] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

1. The information presented complements Mexico's amendment proposal, contained on CoP15 Prop. 8, to transfer *Crocodylus moreletii* from Appendix I to Appendix II with a cero quota for wild specimens.

2. This document has been prepared in order to provide the following to the Conference of the Parties (CoP15):

   A. The results of the Trinational Mexico-Guatemala-Belize Workshop on the Monitoring Program for Morelet´s Crocodile (*Crocodylus moreletii*); and

   B. Information on measures applied in Mexico to regulate Morelet´s crocodile captive breeding, control and trade.

A. TRINATIONAL MEXICO-GUATEMALA-BELICE WORKSHOP ON THE MONITORING PROGRAM FOR MORELET´S CROCODILE (C*rocodylus moreletii*)

Mexico City, January 27th to 29th 2010

I. INTRODUCTION

The Monitoring Program for Morelet´s Crocodile (*Crocodylus moreletii*) is being developed within the framework of the Trinational Belize-Guatemala-Mexico Strategy for Conservation and Sustainable Management of the species, adopted on April 2006 (Mexico City). It consists of 2 phases, Phase I will include the design of the program and the development of supportive documentation, while Phase II will imply its publication and field implementation. The Trinational Mexico-Guatemala-Belize Workshop on the Monitoring Program for Morelet´s Crocodile was organized as part of Phase I according to the agenda presented on ANNEX 1.

II. MEETING DEVELOPMENT

32 participants (ANNEX 2) from Belize, Guatemala, United States and Mexico, including researchers of academic institutions and conservationist organizations, experts in counting and field management of crocodiles, authorities from range countries governments, as well as farm crocodiles breeders of and a representative of the IUCN Crocodile Specialist Group attended.

The overall objective of the workshop was to agree on the minimum necessary elements for the systematic monitoring of representative wild populations of *C. moreletii* throughout all of its natural range.

III. RESULTS

Minimum necessary information to establish the monitoring system was identified, as well as the periodicity to take it. Methods to obtain such information were agreed and relevant wild populations and monitoring units were also identified; field teams, coordination needs and elements for analysis and systematization of data were defined in addition to those needed to develop a procedures manual.

There was an agreement that the goal of the monitoring would not be to produce exact calculations of *C. moreletii*'s populations, but to detect changes in indexes and variables over time and its implications for the species conservation instead.

Continued research on unknown areas, and priority setting was also considered as important. However, this should be done through parallel projects to the monitoring program, and only when possible for field teams without compromising the quality of the monitoring results.

During Phase II, it will be necessary to carry out pilot travels in order to test team's efficacy and route's viability of transit. Training workshops for field teams are expected to be held on 2010, in agreement with national institutions (Belize´s Forest Department, Guatemala´s CONAP and CONABIO in Mexico) and based on the procedures manual. Field work (pilot travels) is expected to start in 2011.

III.1 Geographic spaces for monitoring

In order to improve the organization of the monitoring and to facilitate work coordination, a multi-scale hierarchical geographic structure was determined. From more to less amplitude, such structure components are:

- Coordination Sectors (SC): in México, the range of distribution of the species was divided into 4 sectors (Tamaulipas-San Luis Potosí-Northern Veracruz; Center of Veracruz; Southern Veracruz-Tabasco-Chiapas; Campeche-Yucatán-Quintana Roo).
- Monitoring Units (UM): each one of the areas determined at the workshop; 34 for México (inside 4 sectors), 13 for Guatemala and 2 for Belize (ANNEX 3).
- Routes (R): lines, at least one inside each UM, which describe the approximate trajectory to be covered.
- Sites (ST): segments that conform a route; for example, certain portion of a river or creek, a lagoon or *cenote* shore, among others.

The Monitoring Unites for Belize (6), Guatemala (13) and Mexico (34) were determined based on agreed criteria related with data availability of the area, encounter rates, previous experience on the area, actual or potential levels of pressure for the species on the area and survey feasibility.

III.2 Data and field methods

Based on Nocturnal Visual Encounter (DVN) there was an agreement that the most relevant piece of information for the species monitoring is the encounter rate (as individuals/km), as a relative abundance index that could be applied both to linear aquatic routes and to other water bodies' perimeters.

In addition, through DVN, in some cases it i is possible to obtain data on the composition of the visible fraction of the local population by sizes (five categories), which will be differentiated in 0.5m intervals (total length).

Travel speed will be determined depending on site characteristics and it shall be maintained constant in those sites in each visit. To use the same type of boat and illumination during visits to a same site was recommended.

With the purpose of standardizing habitat information, field teams will estimate vegetation types.

DVN would be done annually for the first five years and then periodicity must be reevaluated (possibly every 2 or 3 years). Ideally, surveys should be carried out twice a year, starting before laying (dry season and as close to new moon as possible) and dates should be adjusted according to known local oviposition calendars, trying to minimize the differences between route´s starting dates of a same monitoring unit and between them. DVN should be done on the first night, with its replica on the second night.

It was estimated necessary to complement DVN data through capture, review, marking and recapture of individuals (MRE sampling) to obtain morphometric measures, sex, weight, basal tail perimeter and photographs. Likewise, individuals will be marked with Monel metal staples with a specific monitoring program code. Attendants agreed to other desirable and optional data, which will be obtained according to resources and time availability. MRE survey should be independent of DVN, on the second night after DVN replica.

The search and follow up of nests will be not a mandatory component of the monitoring program in its initial design, since harvesting of wild specimens is not allowed at this moment.

Both for DVN and MRE surveys each field team will have to be composed of 2 to 4 people capable to achieve each necessary activity (boat operation, basic mechanics, navigation, observation, specimen manipulation, data gathering, etc.).

Field information will be captured on standardized formats to be included, every 2 months, to national and homogeneous databases among the three countries. Forest Department (Wildlife) will be the institution evaluating and concentrating such information in Belize, while regional CONAP offices and central CONAP will be for Guatemala and CONABIO for México. On a global scale, the development of a Trinational database for great-scale analysis was suggested; and CONABIO was proposed to host it.

It was agreed that early data would be used to determine reference thresholds of relevant changes in appropriate indicators. Accumulated data from 5 to 7 or 8 years is expected to have representativeness and an adequate degree of confidence in information.

III. 3 Procedures manual

The need for a procedures manual to allow a uniform monitoring was recognized, in order to establish a working protocol and equipment lists for double-checking before travelling, as well as a common conceptual platform to carry on the fieldwork. The basic content of the procedure manual was agreed and it will be developed in coordination with workshop attendants and authorities from the range countries.

Mexican CITES Authorities would like to thank attendants from Belize, Guatemala, United States and Mexico, as well as Dr. James Perran Ross from the IUCN Crocodiles Specialist Group, for all their valuable help and constructive spirit.

B. REPRODUCTION, CONTROL AND TRADE OF *C. moreletii* IN MEXICO

During the development of the amendment proposal (CoP15 Prop. 8), Mexico consulted the Animals Committee, the IUCN Crocodile Specialist Group, and Belize and Guatemala, among others, who expressed some doubts and concerns about management and control of the species in the country, as well as when it enters the international trade from Mexico. The following information is intended to address those concerns.

I. UNITS OF MANAGEMENT FOR CONSERVATION OF WILDLIFE (UMA)

National legislation in Mexico (see point 7.1 on the amendment proposal CoP15 Prop. 8) establishes that conservation and harvest activities for Morelet´s crocodile (*Crocodylus moreletii*) require registration of establishments as Units of Management for Conservation of Wildlife (UMA) before the Wildlife General Direction of SEMARNAT (DGVS, CITES Management Authority of Mexico). These units could have specific objectives of restoration, recuperation, reproduction, repopulation, reintroduction, research, shelter, rehabilitation, exhibition, environmental education and sustainable use, among others.
http://www.semarnat.gob.mx/tramitesyservicios/informaciondetramites/Pages/vidasilvestre.aspx

In order to register an intensive UMA (captive breeding) it is necessary to prove legal possession or property of the land where it is going to be established, as well as a management plan, which constitutes the technical operative document to be approved by the authorities. Such plan has to be prepared by the technical responsible of the UMA and must include a detailed description of the area and infrastructure, management measures and care details for the species for its whole life cycle, together with the marking system in each life stage and an inventory register program.

Among the DGVS duties, technical supervision visits are carried out randomly or when irregularities are detected in order to verify infrastructure, inventories, reports, etc. Additionally, PROFEPA (CITES Enforcement Authority of Mexico) performs inspection and vigilance actions by programming visits to UMA's, attending citizen complaints and executing operatives within the species range of distribution where UMA are located.

UMA registration consists of a consecutive number, which indicates authorization for wildlife captive breeding, location and year of registration. Simultaneously, the management plan is authorized. The owner has to fulfill a number of conditions during the operation of the UMA, including annual reports of activities with a detailed description of specimens movements (updated inventory), as well as other events that may have occurred (contingencies, diseases, remodeling, etc.).

II. PROVE OF SPECIMENS ORIGIN

Parental stock origin is proven through the UMA's inventory when requesting registration and it has to indicate each specimen´s origin and backup documentation (i.e. invoices, donations, etc.) which will be evaluated by the authorities.

It is worth mentioning that all operating UMA's with authorization for commercial harvesting of captive breeding specimens of *C. moreletii* (6 in total) have obtained their reproductive individuals through donation, purchase or exchange with other registered UMA, none of which acquired their specimens from the wild.

Modifications to the UMA inventory have to be informed to the authorities through annual reports of activities (first semester of the year) specifying scientific name, marking and consecutive number assigned to each specimen, proving legal origin when such specimens are incorporated to the inventory or, when discharged, the necropsy certificates. Legal origin of specimens produced within the reproductive program of UMA is proven by the inventory and marking delivered as part of the annual reports.

III. HIBRIDS

During the 70´s, repatriation of more than 200 individuals reproduced in Atlanta, USA, coming from a reproductive couple of the center of Yucatán occurred. The descendents of this couple constitute the reproductive stock of current UMA, including those registered before CITES (COCOMEX, Industrias Moreletii and CAICROCHIS). In order to attend concerns about possible presence of hybrids in Mexican farms, CITES Administrative and Scientific Authorities (DGVS and CONABIO) met with the Subcommittee for the Conservation, Management and Sustainable Use of Crocodilians in Mexico (COMACROM, see section 7.1 of amendment proposal CoP15 Prop. 8) on September 25th 2009. Experience of authorities, specialists and breeders points out that no hybrids are present on any reproductive stock of UMA registered to internationally trade on *Crocodylus moreletii*. Mexican authorities are aware of detailed information needs on this matter, and, in order to corroborate the later, blood and tissue samples have been taken to analyze DNA with the intention of secure and confirm purity of reproductive specimens, and so far, preliminary results suggest that there are no hybrid individuals among analyzed UMA (com. pers. Manuel Muñiz, CAICROCHIS-COMACROM).

IV. HARVESTING AND TRASLOCATION

In Mexico, commercial harvest of *Crocodylus moreletii* is only allowed for captive breed (closed cycle) specimens coming from intensive registered UMA, which have reproductive stocks that allow them to reach second generation (F2). In order to harvest, an authorization must be issued by DGVS, which verifies the legal origin of each specimen through its marking (established on the management plan) as well as the documentation that proves they are produced within authorized reproduction in that UMA. Currently, it is not allowed to harvest wild specimens for commercial purposes.

On the other hand, movement of specimens within national territory requires a specific authorization that indicates: scientific name, sex, marking, purpose, origin, destiny and time to be spent on destination.

V. CONTROL OF TANNERIES, TALABARTERIES AND TAXIDERMY

Any establishment with the intention to become a tannery, talabartery or to perform taxidermy should notify so to DGVS. The authority evaluates both crocodile skins produced in Mexico and imported when they are used in manufacturing articles (boots, shoes, waistcoats, belts, wallets, shawls, jackets, etc.), through an inventory or balance control according to outputs from every piece of skin when elaborating such articles. Both DGVS and PROFEPA perform inspections to verify those transforming industries.

VI. INTERNATIONAL TRADE

Specimens of *C. moreletii* from México destined to international trade come from CITES registered farms (intensive UMA) and, additionally to the use of a national marking system (specified on the management plan), they apply the universal tagging system of CITES.

To issue CITES permits and certificates, the Management Authority (DGVS) requests UMA to present harvest documentation and legal origin of specimens (see sections above), as well as information on the seal for marking CITES skins.

In case of imported crocodile skins, DGVS does not issue an import permit if CITES seal number is not indicated on export permits or re-export certificates (stricter measure). Additionally, DGVS does not issue a re-export certificate of skins if they do not present a seal from the country of origin or export country. If seals have been damaged while tanning, staining or skin finishing, a certificate is only issued when these have been placed again with previous authorization of the Management Authority for its production.

Control of international trade is also achieved by the customs and CITES Enforcement Authority (PROFEPA) who respectively verify and validate the fulfillment of custom and non-custom restrictions, and of transboundary movements of specimens, parts and derivatives in ports, airports and frontiers. This includes ocular inspection and document verification of shipments, as well as issuing of fulfillment constancy (verification register). Similarly, in accordance to Notification to the Parties 988/1997, DGVS and PROFEPA do not accept permits or certificates that lack validation of competent authorities from the country of origin or the export. The same Notification also suggests Parties to adopt similar measures with specimens coming from Mexico, in which case documentation must be validated by PROFEPA (section 14 of Mexican CITES Permits and Certificates).

VII. CONSERVATION ACTIONS OF UMA

Intensive UMA that reproduce Morelet´s crocodile implement conservation actions including environmental education (courses, workshop) and community support, as well as species population studies in surrounding ecosystems (e.g.. postgraduate students). Moreover, they offer advice to competent authorities and customs officers about management and identification of species.

As examples, CAICROCHIS UMA (CITES register A-MX-503), supports communities on coastal region of Chiapas, Oaxaca, San Luis Potosí, Campeche and other Mexican States by giving courses, workshops and consultancies. This UMA also has agreements with educative institutions of all levels to perform studies and postgraduate thesis, and it participates on direct actions within Natural Protected Areas, like La Encrucijada Biosphere Reserve in Chiapas. COCOMEX (CITES register A-MX-501) has an agreement with the local university to perform studies within "*Conociendo a los cocodrilos, Conuco*" program framework, and works with *C. acutus*. Some other UMA also have direct and indirect actions for conservation of crocodiles and their habitat.

ANNEX 1

Agenda of the Trinacional Mexico-Guatemala-Belize Workshop on the Monitoring Program for Morelet´s Crocodile (*Crocodylus moreletii*)

DAY 1.- Wednesday, January 27th 2010

Schedule	Theme
8:00	Attendants register
9:00 – 9:20	Opening and welcome
9:20 – 9:30	Introduction of attendants
9:30 – 11:00	Work with *C. moreletii* background. Introduction, context and background of the workshop (Hesiquio Benítez)
11:00 – 11:30	*Coffee break*
11:30 – 13:30	Objectives, mechanics and expected products (Oscar Sánchez) **Theme 1.-** Identify mínimum information to establish a monitoring system of relevant wild populations of C. moreletii and define the periodicity to obtain such information
13:30 – 14:30	Meal
14:30 – 16:00	**Theme 2.-** Agree on methods to obtain information for monitoring wild populations of *C. moreletii*.
16:00 – 16:30	*Coffee break*
16:30 – 18:00	**Theme 2** (continuation)

DAY 2.- Thursday, January 28th 2010

Schedule	Theme
9:00 – 11:00	**Theme 2** (continuation)
11:00 – 11:30	*Coffee break*
11:30 – 13:30	**Theme 3.-** Identify most relevant wild populations; define criteria and monitoring routes for (Working Groups MX,GT, BZ)
13:30 – 14:30	Meal
14:30 – 16:00	**Theme 4.-** Define coordination team needs for monitoring.
16:00 – 16:30	*Coffee break*
16:30 – 18:00	**Theme 4** (continuation)

DAY 3.- Friday, January 29th 2010

Schedule	Theme
9:00 – 11:00	**Theme 5.-** Define elements to systematize and analyze information
11:00 – 11:30	*Coffee break*
11:30 – 13:30	**Theme 6.-** Define the basic elements of the procedures manual
13:30 – 14:30	Meal
14:30 – 16:00	Agreements
16:00 – 16:30	*Coffee break*
16:30 – 18:00	Attendants directory update Workshop closing

ANNEX 2

List of Attendants

Country	Degree	Names	Last names	Position	Institution
MEX	Biol.	Gabriel	Barrios Quiroz	Academic technician	Instituto de Biología UNAM (DF)
MEX	Biol.	Hesiquio	Benítez Díaz	Director of Liaison and International Affairs	CONABIO (CITES Scientific Authority) (DF)
GUAT	Biol.	Francisco	Castañeda Moya	Postgraduate student	Universidad Autónoma de Madrid
MEX	Dr.	José Rogelio	Cedeño Vázquez	Profesor-Researcher	Instituto Tecnológico de Chetumal (Quintana Roo)
MEX	Ing.	Miguel Ángel	Cobián Gaviño	Subdirector of National Trade, International and Other Uses	Dirección General de Vida Silvestre SEMARNAT (DF)
MEX	Biol.	Jerónimo	Domínguez Laso	Museo Cocodrilo Curator	Regional Zoo "Miguel Álvarez del Toro", IHNE (Chiapas)
MEX	Biol.	Lilia	Estrada	Chief Deparment of Intensive Harvest Analysis	Dirección General de Vida Silvestre SEMARNAT (DF)
MEX	Mtro.	Jesús	García Grajales	Profesor-Researcher	Universidad del Mar (Oaxaca)
MEX	Biol.	Alejandra	García Naranjo	CITES Coordinator	CONABIO (CITES Scientific Authority) (DF)
MEX	Biol.	Fernando	Gavito	Deparment Chief	CONANP (DF)
MEX	Mtro.	Yadira	Gómez Hernández	Research and monitoring coorinatonr, Biosphere Reserve Sian Ka´an	CONANP (Quintana Roo)
GUAT	Lic.	Franklin Rafael	Herrera Almengor	Chief Fauna Departament of Wildlife	CONAP
MEX	Mtro.	Marco Antonio	Lazcano Barrero	General Director	Ecologic Reserve El Edén (Quintana Roo)
BEL	Mr.	Andre	Lopez	Wildlife Conservation Officer Wildlife Program	Ministry of Natural Resources and the Environment
MEX	P. Biol.	Gabriela	López Segurajáuregui	CITES Fauna Analyst	CONABIO (CITES Scientific Authority) (DF)
MEX	MVZ	María de la Paz	López Vázquez	President (to be confirmed)	Asociación de Productores de los Crocodylia en México (Chiapas)
GUAT	Tech.	Julio Alfredo	Madrid Montenegro	Director Departament of Wildlife, Region VIII Peten	CONAP
MEX	Mtro.	Gonzalo	Merediz Alonso	Executive Director	Amigos de Sian Ka´an A.C. (Quintana Roo)
MEX	Mtro.	Paola	Mosig Reidl	Program Officer	TRAFFIC Northamerica
MEX	Arq.	Manuel	Muñiz	Director	CAICROCHIS (Chiapas)
MEX	Lic.	Verónica	Peña Crisanto	Cocodrilario "David Montes" Coordinator	Dirección General de Vida Silvestre SEMARNAT (DF)
MEX	Mtro.	José Juan	Pérez Ramirez	Director Area of Flora and Fauna Protection Bala´an K´aax	CONANP (Quintana Roo)
EUA	Dr.	James	Perran Ross	Associated Scientist (University of Florida) Vicepresident Thematic Grupo IUCN	CSG/IUCN
MEX	Mtro.	Paulino	Ponce	General Director	Bosque Tropical, Investigación para la Conservación de la Naturaleza A.C. (Jalisco)
MEX	Lic.	Martín	Rodríguez Blanco	Departament Chief	Dirección General de Vida Silvestre SEMARNAT (DF)
MEX	Biol.	Fernando	Rodríquez-Quevedo	Chief Crocodile Program Tabasco	UJAT (Tabasco)
BEL	Ms.	Rasheda	Sampson	Forest Officer – Wildlife Program	Ministry of Natural Resources and the Environment
MEX	Biol.	Oscar	Sánchez Herrera	Wildlife biologist	CONABIO Consultant
EUA	MVZ	Luis	Sigler Moreno	Conservation Biology for Latinamerica	The Dallas World Aquarium (DWA)
BEL	Mr.	Bonefacio	Tut	Forest Guard Forest Department	Ministry of Natural Resources and the Environment
MEX	Mtro.	Alejandro	Villegas Castillo	PhD student	Instituto de Biología, UNAM / UAM-X (DF)
BEL	Mr.	Marcelo	Windsor	Deputy Chief Forest Officer	Ministry of Natural Resources and the Environment

ANNEX 3

Monitoring Units for Belize, Guatemala and Mexico

BELIZE

1. Río Hondo (to be worked with Mexico)
2. Belize River Watershed (the unit starts on the shared frontier with Guatemala and extends until the Caribbean sea, sections will be chosen with more than 100km. It will include the city of Belize, a place with special interest because of potential interaction between humans and crocodiles)
3. New River Watershed (it will include the lagoon and part of New River, only some sections to cover a representative extension)
4. Monkey River
5. Rio Grande
6. Rio Sarstoon (to be worked with Guatemala)

GUATEMALA

PETEN

1. Rio San Pedro-Sacluc
2. IASA-Sacnab Lagoon
3. Central Area of Peten lagoons: Salpetén, Macanché, El Burral and Tintal
4. Rio Pasión
5. Rio Usumacinta; UM shared with México
6. Petexbatún River and Lagoon
7. Río Mopán

IZABAL

8. Lago de Izabal and Río Polochic
9. Río Motagua
10. Río Sarstún; UM shared with Belice
11. Canal Inglés, San Francisco del Mar and Punta de Manabique

ALTA VERAPAZ

12. Laguna Lachuá
13. Río Candelaria

MÉXICO

Tamaulipas

1. Arroyo Villa de Casas
2. Río Corona
3. Laguna El Carpintero-Altamira-Río Carrizal
4. Dique el Tecolote (of Emilio Portes Gil dam)

San Luis Potosí

5. La Ciénega de Cabezas (Tamasopo)-Río Santa María
6. Río Valles

Veracruz

7. Río Pánuco-El Tomatal
8. Río Tuxpan-Bahía de Cochinos
9. Río Tecolutla (Estero La Victoria, Estero Lagartos, Estero Larios, Estero de la Cruz)
10. Laguna Verde
11. Los Tuxtlas (lagoons, including Catemaco)
12. La Mancha Lagoon
13. Río Coatzacoalcos-Minatitlán (specific route to be defined)

Oaxaca

14. Lago Santa Virginia
15. Chimalapas (specific route to be defined)

Tabasco

16. Pantanos de Centla (specific routes to be defined)
17. Laguna El Rosario

Chiapas

18. Lago el Caracol
19. Arroyo San Vicente
20. Laguna de Catazajá
21. Sistema Río Lacantún (including Río Tzendales)
22. Lago el Aguacate (pending)

Campeche

23. Laguna de Términos (including complex Pom Atasta-Palizada)
24. Rio Champotón
25. Río Candelaria
26. Petenes-Ría Celestún

Yucatán

27. Dzilam de Bravo
28. Ría Lagartos

Quintana Roo

29. Wetlands of Yum Balam – Yalahau
30. Lagoon system Muyil-Chunyaxché-Bocapaila (partof Sian Ka´an Biosphere Reserve)
31. Lagoon system el Chikchankanab-Esmeralda
32. Lagoon system Cobá
33. Río Hondo (shared with Belice)
34. Balam Ka´ax