

CROCODILE SPECIALIST GROUP – IUCN/SSC

FINAL REPORT ECUADOR, PERU, BOLIVIA AND PARAGUAY



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**FINAL REPORT
VISIT TO ECUADOR, PERU, BOLIVIA AND
PARAGUAY**

**DR. ALEJANDRO LARRIERA
VICECHAIRMAN OF CSG**

**BERNARDO ORTIZ
REGIONAL TRADE OF LATIN AMERICA AND THE CARIBBEAN
TRAFFIC SUR AMERICA**

**ALVARO VELASCO B.
REGIONAL CHAIRMAN OF LATIN AMERICA AND THE CARIBBEAN**

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BACKGROUND ISSUES

The mission to four countries (Ecuador, Peru, Bolivia and Paraguay) was carried out between 1 - 15 March 2005, with the following goals:

- a. UPDATE - national situation of the species, conservation programs, management and sustainable use of crocodilians: strengths and weaknesses.
- b. MEETINGS - with key players involved with crocodilian conservation and management: CITES Administrative and Scientific Authorities, traders, researchers, NGO's, research institutions and universities;
- c. CSG COLLABORATION - contact with existing and potential CSG members, inform about CSG Latin Office, to determine what the CSG may be able to do to better assist within the limits of budget.
- d. RECOMMENDATIONS - preliminary recommendations from the mission.

Results are reported under each sub-heading, for each country. In situations where crocodilians are reasonably abundant, the CSG supports sustainable use as a management option in compliance with the IUCN Policy Statement on Sustainable Use of Wild Living Resources (Resolution 2.29), adopted at the IUCN World Conservation Congress, Amman, October 2000 (Appendix 1)

CSG AND CITES CONVENTION

The CSG works for the conservation of all crocodilian species, regardless of where in the world they exist or whether they are used commercially or not. Where use occurs, the CSG fosters improved management to ensure sustainable use. CITES focuses on crocodilian species that are used commercially, and entrusts national CITES Management Authorities to certify that wild populations are not being detrimentally affected by harvest for international trade.

The Crocodile Specialist Group (CSG) of IUCN-SSC is a group of 360 volunteers concerned with enhancing the conservation of wild crocodilian populations, in all countries, regardless of whether they are being used commercially or not. The CSG supports the IUCN Policy Statement on Sustainable Use of Wild Living Resources (Resolution 2.29), which recognizes that through effective management some benefits derived from the commercial use can assist the conservation of wild populations. The CSG supports and helps CITES when asked to do so, but its core business is to work at the national level with governments, managers, and the trade sector and research institutions, to improve conservation.

CITES is primarily concerned with controlling international trade so that international demand for wildlife products does not lead to the extinction of crocodilians within range states. Regardless of whether crocodilian species are on Appendix I of CITES (no trade from wild populations; trade only from captive breeding), or Appendix II of CITES (allows trade from wild harvested or farmed specimens if not detrimental to the survival of wild populations), responsibility for trade control is largely in the hands of the CITES Management and Scientific Authorities of the exporting country. CITES has no jurisdiction at the national level, and its actions are restricted to the species in international trade.

THE CSG AND THE COUNTRIES VISITED

The CSG and its members have had a long involvement in crocodilian conservation and management in Latin America, and are committed to assisting enhanced conservation and management, in the nations visited, through whichever mechanism is appropriate.

The CSG and the membership have a long history of activity within Latin America, including within Peru, Ecuador, Bolivia and Paraguay. CSG members have been involved in general crocodilian research and in the design and implementation of survey programs, management programs and sustainable use programs. The CSG itself has been involved in program evaluations and in representation in forums such as CITES.

At the time of the visit, each country had different priorities in regard to crocodilian conservation and management, and different strengths and weaknesses. For the CSG, getting a better understanding of the problems, at a national level, is the first step towards helping derive solutions. Some particular issues in each country which the CSG had identified as being in need of update were:

The CSG is keen to update itself on are:

1. Ecuador: Status of *Melanosuchus niger* farming program; the status of wild populations of *Caiman crocodilus* and *Crocodylus acutus*.
2. Peru: Status of *Crocodylus acutus* farming program; status of wild populations of *Caiman crocodilus* and *Melanosuchus niger*.
3. Bolivia: Status of *Caiman yacare* management program; status of the conservation programs for *Caiman latirostris* and *Melanosuchus niger*.
4. Paraguay: Status of *Caiman yacare* management program.

In Bolivia and Paraguay, the CSG has had involvement in review missions undertaken by the CITES Secretariat in the last two years.

CONSERVATION, VALUE AND SUSTAINABLE USE

For the purposes of this mission we define conservation as: *actions taken to protect and maintain wild population that are valued positively*. Increasing the value of wildlife to the community is a prerequisite to increased conservation action. In some species and contexts, economic benefits from sustainable use can increase value to the community and thus help achieve conservation. But in others this may not be the case for a variety of reasons.

It is difficult for the CSG to discuss what actions could help or be prejudicial to crocodilian conservation, if authorities do not share the same basic view of what *conservation* is, and how it can be linked to *sustainable use*. From the CSG's perspective:

1. History demonstrates that people only invest resources in the conservation of items because they value them for some reason (commercial or otherwise).
2. Conservation can therefore be defined, in a broad sense, as: *actions taken to protect and maintain items that have a positive value*.
3. This definition suggested that a prerequisite to people taking conservation action to conserve crocodilians is that those same people must value crocodilians.
4. Values can be very diverse, but for many people economic values are the ones that are effective in the short-term.

If uses of wild crocodilians are the proposed mechanism for generating values for conservation, then those uses need to be biological, social and economically sustainable, with real profits extended to local the local communities and authorities responsible for conservation on the ground.

Sustainable use of wildlife has been defined in many different ways, but a simple working definition is: *uses of wildlife that can be maintained indefinitely with the impacts of use (ecological, social, and economic) maintained within defined levels*.

ADAPTIVE MANAGEMENT AND INTERNATIONAL “BEST PRACTICE”

Variables affecting wildlife management are diverse, rarely constant over time and are rarely well understood. Management goals may be prescriptive (e.g. to achieve sustainable use), but the management protocols need to achieve them over time need to be *flexible* and *adaptive*. *Experimental* and *adaptive management* go hand in hand as strategies for fast-tracking responsible management in a cost-effective way.

The CSG is reviewing the 'international best practice' in crocodilian management throughout the world. One immediate result is that there is no single approach to crocodilian management that can be applied for all the situations. Management is extremely context specific - it needs to be tailored and adjusted to the social, biological and economical local conditions whenever the program is expected to work.

Even when designed for a particular local situation, we should never assume that a management program is perfect. Rather we should assume that it is very imperfect, and that weakness will be identified continually as time goes on and new problems emerge. All management should be *experimental*, in terms of having a predicted result and a protocol for determining objectively the extent to which the result has been achieved. *Adaptive Management* is the process through which the management program is changed on the basis of new information (results), to better achieve the predicted or desired result.

The main problems in wildlife management are invariable risk and uncertainty - new influences and threats. An ideal program should be designed to respond when these new influences and threats appear. It is pointless to be overly prescriptive and pretend that each imaginable problem has been confronted before it appears. Even with the best intentions, it is impossible to account fully for risk and uncertainty.

Wildlife management is a multivariate science that operates at biological, social and economic levels of resolution, all of them interconnected.

GENERAL RESULTS

CONSIDERATION OF CONSERVATION AND SUSTAINABLE USE

The CSG support actions that each visited country are taking in favor of conservation and sustainable use of crocodilian populations. These actions to be effective should consider participation of local communities and other actors involved in the commercial use of the species.

Each country is taking actions that allow improvement of the conservation strategies and sustainable uses that they have been implementing. In a general way, the visited countries are updating their laws to improve their programs.

On the other hand, some country's programs do not involved local communities and different commercial sectors on the program review, others counties are including local communities in the reviewing process, and some others include local people in the conservation and sustainable use programs review.

Work priorities defined as problems are identified. This would allow detected faults to be solved, but those species that have no programs defined by the Administrative Authority in each country, will not be resolved in the short or medium time scale.

LEGAL FRAMEWORK FOR MANAGEMENT

Some countries are under a review process of their legal framework that regulated the conservation and sustainable use, including design, approbation and implementation of a *management plan*. It should be considered that the management model could be adjusted periodically, in an easy way, avoiding that the design protocols to be restrictive and included inside the legislation.

Some countries are in a process of updating laws that regulate crocodilians conservation and sustainable use (Bolivia and Paraguay). This review goes from the promulgation of legal norms for wildlife management through specific situations as commercial use of wild crocodilian populations.

All the updates include design, approval and implementation of *Management Plans*, by interested people, permitted within the new laws. Although it is important to point out here, that included in the law there were conditions about how the management plans should be designed and this was not a good experience in many countries. Management plans should be flexible over time, allowing them to be adapted to changes and experience achieved by species management and its results.

ENVIRONMENTAL EDUCATION

Environmental education about crocodiles is very important, there is a need to preserve these species and there is a connection between conservation and sustainable use in order to reach and maintain public support needed for recovering wild crocodilians populations. In general there are no such initiatives in the visited countries.

Effectiveness of conservation, in any country, will depend on the public comprehension and support. Because sustainable use has been clearly establish, we should educate people on schools about how and why conservation and sustainable use era linked and how together they could benefit both, people and wildlife. Working with crocodiles, environmental education is especially important because they are predator species and get dangerous as they population increases. Effective publicity campaigns should be a priority; they also should be educational about the crocodilian diversity, why we need to preserve then and off course about the importance of sustainable use.

All these initiatives were observed in just a single visited country, where commercial programs in indigenous lands of Bolivia include this component on the design of the management program.

SITUATION ON EACH COUNTRY

ECUADOR

SPECIES, STATUS OF WILD POPULATIONS AND MANAGEMENT OR SUSTAINABLE PROGRAMS

In Ecuador there are 5 crocodiles species: *Caiman crocodilus*, *Melanosuchus niger*, *Crocodylus acutus*, *Paleosuchus palpebrosus* and *Paleosuchus trigonatus*.

In regard to *Caiman crocodilus* and the *Paleosuchus* spp., it is known they are abundant in the wild and there is a subsistence market for their meat, but there is no management program for the species. For *Crocodylus acutus* the principal problem is the population reduction resulting from habitat destruction. The best population is found in Guayas river and recently studies to determinate the status have begun. The *Melanosuchus niger* population is recovering, but needs more studies to determinate the real situation.

Ecuador doesn't have a National Conservation program for crocodiles. The *Melanosuchus niger* ranching program with commercial proposes **IN NOT** a National program or part of one.

MEETINGS

Meetings were held with Biodiversity Direction of Ecuador Ministry of Environment, institution, the CITES Administrative Authority. In this country the CITES Scientific Authority consists of 10 institutions, and we did not meet with any one of these.

We meet with the owners of *Melanosuchus niger* farm, and we visited the farm in Coca city, in Equatorial Amazonian, in order to have a reasonable vision of the situation of the country.

Meeting with the Administrative Authorities

At this meeting we were informed that Ecuador legislation does not allow the use of wildlife populations, with the exception of *Melanosuchus niger*, as included in the approved management programs for the country and presented to CITES Secretariat.

The legal framework is set up as follow:

- CITES Convention text is part of the Country Law.

- The Regulatory framework, that has rank of Law, specifies how wildlife management should be.
- The secondary Unified Text of Environmental Legislation (TULAS for the Spanish words) is a set of rules that supports National Regulatory framework.

Right now, they are developing a new set of rules that would help the Ministry of Environment on the management and conservation of wildlife in Ecuador.

On the specific situation of the *M. niger* farming, the Ministry of Environment expressed its desire of knowing what recommendation the CSG would make about this activity. We informed them that our visit had no intention of recommendations or suggestions about crocodilians conservation or sustainable use in the visited countries, however, we could make some general comments, once we had an idea about the real situation,.

At the same time the CSG visit was undertaken, the Ministry had received a petition for renewing the license for the farming operation for another year, as required by internal law. However, they have not decided yet, if they will authorized it or not, because the farm has not collected any hatchling for the last two years.

The Ministry considers that the original ranching project should be reviewed and adapted to the actual situation, based on the experience gained over the years, maintain monitoring wild populations and evaluate potential areas for reproduction of the species in their natural habitats, and only then, take a position about the future farming program of *M. niger* in the country.

We should point out that the original project included the reintroduction of 5% of the captured hatchlings for farming, but because just a few individuals were collected they never reintroduced any animals.

In reference to other crocodiles species, we were informed that there are 3 farming operation of *Crocodylus acutus* all near Guayaquil city, pacific coast of Ecuador. These centers function as rescue centers for the species and they have been successful in the reproduction in captivity. The situation of the species in the wild is near extinction, and its habitat is mostly destroyed. The Ministry of Environmental considers that this species has no way to be evolved in any program outside of farming, no adult harvest, nor eggs or hatchlings collection from the natural habitats.

We talk on the phone with the Director of Environment of Guayaquil City, Mauricio Velásquez. He informed us of the recent informal junction between City Authorities and 2 breeding centers of *Crocodylus acutus*, for the realization of an Environmental Education workshop, with the aim of developing a project for the reintroduction of the species in natural areas. The CSG offered its help, once the project is ready for reviewing.

Visit the *Melanosuchus niger* Farm

We visited the facilities of the *Melanosuchus niger* farm, in Coca City, in the Equatorial Amazonian with its owner, Cody Evans.

The farm has facilities for 300 individuals, but at the moment they have only 48 *Melanosuchus niger*. The main problem they have had over the last two years was different illness' that killed around 100 individuals (see table), due to bad preservation of the food.

Year	# animals	# of dead animals	# alive animals	
1994	20	1	19	
1995	29	4	44	
1996	43	1	86	
1997	13	4	95	
1998	28	2	121	
1999	101	18	204	*
2000	48	10	242	*
2001		25	217	*
2002		26	191	**
2003		35	156	**
2004		53	103	***
2005		55	48	***

- * Hatching Mortality
- ** Mortality due by lack of Calcium
- *** Mortality due by estetitis

The facilities are of good quality to maintain the animals, and take care of there management as per the original plan. The problem is that is the difficulty in obtaining hatchlings from the wild, for several reasons:

- Distance from the harvesting place: two days by boat required to reach the place.
- Local communities did not join the hatchling collection program.
- There are no studies that show the best areas for hatchling harvesting.

As a consequent of Pablo Evans death, the Evan family is trying to figure out what to do with the farm. They have two options in mind:

1. Close the farm.
2. Make association with NGO, Universities and Government for the farm to become a research center for the species.

Whatever the decision the company takes about the future of the farm, it should be evaluated with the Ecuador Administrative Authority, and then update the original

management project and farm production of the species, considering the existence of more than 10 years experience on this issue.

The CSG representatives expressed the view that if they wish to maintain production, the objectives and main goals of the species management plan, should be reoriented, based on the experience gained, and that CSG could help the Administrative Authorities and farm owners in the proposal reviewing process.

GENERAL RECOMMENDATIONS

After taking all information into consideration, we suggest the following general recommendations:

- Design a Conservation National programs for crocodiles.
- Upgrade the *Melanosuchus niger* ranching program on base of its experience.
- Make strategic alliances with Universities and NGO's to manage the *Melanosuchus niger* ranching program.
- The *Melanosuchus niger* ranching program, generated important information about captive management, and this information needs to be gathered in order to prepare basis information and expertise for a manual.
- Continue with the ranching program with *Melanosuchus niger*, and revise the goals.
- Design a Conservation Program with *Crocodylus acutus* in the Pacific coast, based on the experience in Guayaquil city with private initiative.

PERU

SPECIES, STATUS OF WILD POPULATIONS AND MANAGEMENT OR SUSTAINABLE PROGRAMS

In Peru there are 5 crocodiles species: *Caiman crocodilus*, *Crocodylus acutus*, *Melanosuchus niger*, *Paleosuchus palpebrosus* and *Paleosuchus trigonatus*.

There are no recent studies carried out on any species. The situation for *Caiman crocodilus* is good, the *Paleosuchus ssp.* are indefinite. With *Melanosuchus niger* there have been some studies in two National Parks (Samaria and Manu), where is possible to find the best populations. *Crocodylus acutus* in the wild is much depleted and they are implementing a captive breeding program in Tumbes, Puerto Pizarro region.

MEETINGS

We had meetings with the CITES Administrative Authorities of Peru, the Biodiversity Conservation Direction of Institute of National Natural Resources (INRENA) of the Ministry of Agriculture, and the National Fund for Fishing Development (Fondepes), institution which manages the *Crocodylus acutus* program.

Meeting with the Administrative Authorities (INRENA)

This meeting was with Rosario Acero, Biologist, Director of the Biodiversity Conservation Direction, and two other members of the Direction, Ing. Pedro Vásquez, from Universidad Nacional Agraria, La Molina (UNALM), and Ana María Trelancia member of the CSG. They expressed that they do not have a national program for crocodiles conservation and management in Peru.

Regarding the *Crocodylus acutus* farm in Tumbes, they are still working with Fondepes, in order to change the farm under INRENA jurisdiction, but up to our visit there was no substantial result.

In the last months, Pedro Vásquez and his group from UNALM, inspected the farm to evaluate the animals. The work consisted on data collection, through marking in the scutes for individual identification, sexing, body measurements, and animal condition. As a result, a report was done with observations and recommendations for future actions about the farm. The report was sent to Dr. Alejandro Larriera and Alvaro Velasco.

There has been no other work done with other crocodilian species at the moment in INRENA. There is also no recent data about the wild population status. During the meeting, they expressed that INRENA has at this moment other priorities to resolve, even they knew crocodilians might be an important fauna resource, unfortunately they are more involved with other projects with a higher social importance.

We mention about the working on with *C. acutus* in Guayaquil city in Ecuador, and the Cispatá Bay Project (Colombia). we also offered to send names and contacts to share ideas and know more about those projects.

Meeting with Fondepes

The Chairman of the institution, Ing. Carlos Lazarte, informed us about the actions they have taken over about the administration of the *Crocodylus acutus* farm in Puerto Pizarro, Tumbes department.

He explained that he is the person responsible for solving the problems of the farm and showed himself as a proactive person, willing to achieve the presented goals.

One of the detected problems is that the farm does not have a budget for a complete functioning, even considering the large amount of people visiting their facilities. This is due mostly to the fact that Fondepes can not charge for visitors to the farm. As a result, all the tourist activity linked to the farm, is managed by the fishermen and boat owners, the ones that receiveing the direct economic benefit, with out any of the profits being returned to the farm.

Based on that experience, they are developing agreements between involved communities, so part of the profits, produced from the visits, reaches the farm, and helps its functioning.

The farm facilities have been renewed, in order to improved tourist needs. They have buildt new restrooms, walkways, kiosks for selling drinks, and are producing practical information about the conservation activities taken by the farm.

They have also thought about making arrangements with Universities in the region, so that Biology students could use the facilities and animals for their research, and if possible, assist in the farm management. They have also made arrangements with PROMPERU (Tourist Ministry) to include the farm in the local tourist circuits, promoting eco-tourism in the region.

We advised Ing. Lazarte about the experience that Giovanni Ulloa is implementing in Colombia, Cispata Bay, where communities are involved in the program for the conservation of *Crocodylus acutus*. He got interested in the idea, and will shortly contact the project to provide more details. We also commented about the successful activities underway in Guayaquil City, Ecuador, with the same species. It was interesting to us to share these experiences between both countries, due their geographical proximity and because they are confronting the same kind of problems.

GENERAL RECOMMENDATIONS

- Design a Conservation National Plan for crocodiles in the country.
- Determinate the status of all crocodiles in the country based in a Conservation National Program.
- Begin wildlife studies with *Crocodylus acutus* near the captive breeding activity in Puerto Pizarro.
- Continued with the strategic relationship with Universities and NGO's to manage the captive breeding with *Crocodylus acutus* in Puerto Pizarro.
- Begin contacts with the regional government of Guayaquil city in Ecuador and private sector to understand the *C. acutus* initiative program and interchanges experiences.

BOLIVIA

SPECIES, STATUS OF WILD POPULATIONS AND MANAGEMENT OR SUSTAINABLE PROGRAMS

In Bolivia there are 3 crocodiles species: *Caiman crocodilus yacare*, *Caiman latirostris* and *Melanosuchus niger*.

The wild populations of *Caiman crocodilus yacare* are good and have supported a wild harvest for the last 6 years. The CITES Scientific Authority was to undertake surveys to evaluate the population capacity for wild harvest in the last 2 years.

There have not been any recent surveys of the other two species their status is unknowns.

MEETINGS

In Bolivia we meet the Biodiversity General Direction - DGB (CITES Administrative Authority), PUMA Foundation (ONG), National Office of Protected Areas (SERNAP), Vice Minister of Natural Resources and Environmental Marielena Hidalgo Claros, in La Paz; we shared meeting with Beni and Santa Cruz Prefectures, Museum of Natural History Noel Kempff Mercado MHNKM (CITES Scientific Authority), with traders, indigenous communities and NGO in Santa Cruz City.

Meetings in La Paz

During the morning we assisted presentations about the commercial program of *Caiman yacare*, following are abstracts of each lecture:

1. *Politic components for the yacare sustainable use.* This presentation showed a document exposing the ideas about biological sustainability of the species, the administrative system for control, certification, profits distribution, production web, wild population monitoring, the creation of a fund for the studies that should be done for the implementation of the management plan and sustainable use and the strategic connections underway with many institutions, in order to have a successful management of the species. Up to the meeting, the document was still under construction, so we saw a draft. It should be finished before December 2005, and then will be discussed with all the participants of the program.
2. *Yacare harvesting quota allowance for 2005.* The presentation explained the methodology to follow with the information produced during wild populations monitoring and how the annual quota is established. The monitoring is done during the harvesting, in the dry season, and generated information that will be used for the following year. The field work will be done by Museum of Natural History, Noel Kempff Mercado staff (CITES Scientific Authority), who presented another lecture with more detail in Santa Cruz City, and we visited the GIS department of the museum.
3. *Management plans in Indigenous communities.* The NGO, Faunagua, presented a short report in La Paz, then in Santa Cruz they did a full report of the management plan that is being implemented in the Isiboro-Secure communitarian territory (Tipnis community), with the yacare. In this program the indigenous community is actively involved in monitoring, harvesting and meat and leather commercialization.

This model could be an example to consider in other indigenous communities within Bolivia.

During the evening the rest of the meetings took place, PUMA Foundation (ONG), National Office of Protected Areas and with the Vice Ministry. The most important thing of this meeting was:

- ◆ Within the framework of strategic association, PUMA Foundation (NGO) manages funding support for productive projects in Bolivia. They call for projects application about communitarian development and sustainable use of natural resources, which are peer reviewed, and if approved, they get funding from the foundation and are developed by the authors. At the time of the visit, they were assisting on the management plan of the yacare in the Itomana Communitarian Territory in Beni department.
- ◆ The National Office of Protected Areas is working with DGB in order to include within Bolivian legislation the use of natural resources in protected areas, because many of them share the status of Indigenous Communitarian Territories and Protected Areas, and those communities have asked for hunting permits and are using the caimans.
- ◆ The Vice Ministry of Natural Resources and Environmental Marielena Hidalgo Claros, informed us about the work that is been doing to update and make the commercial program of *Caiman yacare* more dynamic. They are improving the legal framework, working with the departments, strategic associations, many government and non government institutions, and the participation of all the parts involved in the commercial program. She thanks CSG support and our aim to collaborate with Bolivia.

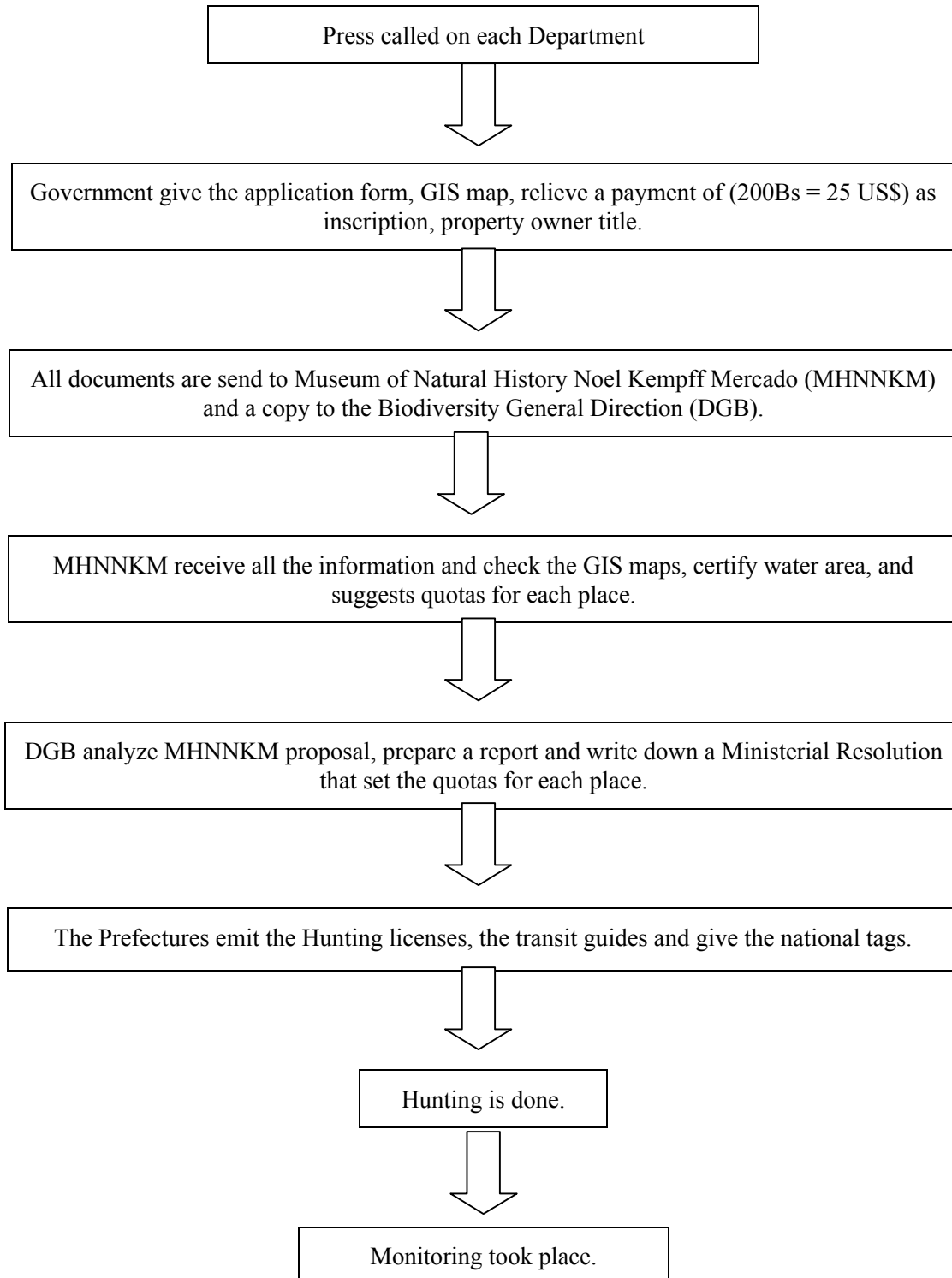
Meetings with the Authorities of Santa Cruz and Beni

The Authorities of Beni and Santa Cruz presented how they are implementing the commercial program of *Caiman yacare*. They detailed the steps to be followed in order to obtain hunting permits, how they make the call for hunting licenses, how they give the licenses and how the products are moved. We provided a description of the strengths and weakness of the work done by the Prefectures, pointing out the following:

Strengths	Weakness
Coordination between Prefectures and DGB	There is no stock centers for the leathers
Generates work	Centralized definition of hunting quotas
Complete utilization of a hunted animal	Not enough people for control and monitoring
Monitoring by CITES Scientific Authority	Not enough local professionals on that issue
Local design of management plans	

The yacare program has two levels; one is a national level that controls the program through Ministerial Resolution from DGB, and the other level is at the departments and they control the program execution.

These are the steps that the program follows:



At the time we visited Bolivia, some illegal yacare skins had been confiscated because they were not covered by a hunting license, and the authorities were thinking about what to do with those skins. They expressed to us that they had two main options: firstly - burning the skins, and secondly to include those skins in the national quota. CSG believes that it is better to give the confiscated skins to the Trinidad Jail and have the prisoners produce domestic products to be sold in the domestic trade, because to incorporate them into the quota would allow more illegal hunting since the skins would become legalized.

Meeting with the Museum of Natural History Noel Kempff Mercado

In the meeting with the Museum of Natural History Noel Kempff Mercado (MHNNKM), they explained that they are hired to do the monitoring, and the money they are paid came from the budget of the Departments itself, not from the payment of the fees for hunting.

During monitoring they visit the properties and evaluated *Caiman yacare* populations on the different types of water body, calculated an index of abundance of caiman per km, and determination the size classes.

To set up the harvest quotas, the MHNNKM prepares a GIS with the information the Prefectures receive from the people applying for hunting licenses, maps are prepared at a 1:250.000 scale. We should mention that there are relatively small properties (1,000 Ha) to huge indigenous territories (1,000,000 ha). In the GIS they present all the information about water area from rivers, lagoons, flooding areas, and administrative divisions (protected areas, forestry lands, etc.). If one property does not have aquatic area, or have any administrative conflict, they will not get a hunting license. On the other hand, if the property has water bodies, they estimated the amount of km of rivers, lagoons and flooding area to calculate with abundance index and size class the hunting quota for that property. Finally, if the hunting quotas are higher than the national quota, the national exporting quota is adjusted. In addition, the data base of properties is kept updated with the harvesting information, monitoring, and evaluation of their development and potential.

The problem with this methodology is that they are distributing among the people interested in hunting a national export quota, and when the number of interested people increase, the amount of animals per property should be lower. There is no estimation, based on field results (monitoring) about the real production capacity of the country considering the whole area where the program will be implemented. The quota for Bolivia is for the whole area where the program will be implemented, and should not be divided based on the number of solicitants, because in such a way they will be overexploiting some local populations, or places where they distribute the hunting licenses.

When the monitoring is done, they also get information about water bodies habitat characteristics, that will allow the design of a model by each ecological region associated with the *Caiman yacare* populations. In order to make this goal easier the CSG

representatives suggest reviewing the Venezuelan program, and we provided many reprints, information, and data bases.

Meeting with the Isidoro-Secure Tipnis Community

They presented the management plan for *Caiman yacare* that they have been implementing with the help of Faunagua NGO. The plan consists of the monitoring of the populations for 4 consecutive years, to establish its abundance and size class structure, and then they propose to set up the lowest harvesting possible in order to get profits to the indigenous community. Then in the 5th year they will evaluate the harvesting impact on the populations.

The community work will be based on the experience they will gain over time. At the beginning they will have simple harvesting to reach at the end a complete use of the resource, where there is an evidence of a major profit in legal harvesting then on illegal one.

The weakness of the yacare project in this community has been the access to the areas for monitoring the yacare populations, the attitude of indigenous authorities vs community interest, the participation of the community as decision makers, and the property of the resource. To solve that problems a working group was created and guided by a NGO with people of different professions and personalities.

Meeting with Amigos de la Naturaleza Foundation

The NGO Foundation Amigos de la Naturaleza (FAN) is a focal point of the biotrade in Bolivia, since last month. In the biotrade strategy design process of Bolivia, the commercial use of *Caiman yacare* was included as an activity that can produce profits to indigenous and local communities, and the land owners.

A diagnosis was done by UNTACD, linking the advances in production with norms, and the different actors involved in the commercial program.

The DGB is doing an association with this NGO in order to support and help the implementation of the commercial program with the species.

Meeting with the tanneries representatives

Two of the four tanneries working with *C. yacare* skins were present. They expressed to agree with the changes that are improving the program within the country, but they said it is taking too long. They hope the monitoring results will show the real capacity of harvesting from the wild populations, and the quota be updated to reality, so that they can utilise all facilities already installed in the tanneries.

They consider the biggest problem in Bolivia is the established times in the legal norms of the program, and that is the reason why there were some confiscated skins without hunting licenses.

GENERAL RECOMMENDATIONS

- Determine the wildlife status of crocodilian species populations, except *Caiman crocodilus yacare*.
- Continue the monitoring program in the wild of *Caiman crocodilus yacare* in more areas to determine the real potential of harvest.
- Review the methodology to distribute the annual harvest quota. At the time of the visit, the methodology used would probably permit over exploitations in some areas because they distribute the annual quota between the total applications for a harvest licenses, but this quota will be distributed in the total area of implementation of the harvest program.
- Continue with the great relationships between the CITES Administrative Authority and the local governments.
- Continued with the strategic association with NGOs and Biotrade Initiative.
- Implement and monitor the management plans in the Indigenous Communitarian territories.
- In relation to the illegal skins that were confiscated, we suggest that the confiscated skins be given to the Trinidad Jail so that the prisoners can produce products to be sold in domestic trade and create the precedent that they not be include into the annual harvest quota.

PARAGUAY

SPECIES, STATUS OF WILD POPULATIONS AND MANAGEMENT OR SUSTAINABLE PROGRAMS

In Paraguay there are 4 crocodiles species: *Caiman crocodilus yacare*, *Caiman latirostris*, *Melanosuchus niger* and *Paleosuchus palpebrosus*.

There were no recent studies to determine the status of wild populations for *Caiman latirostris*, *Melanosuchus niger* and *Paleosuchus palpebrosus*. For *Caiman crocodilus yacare*, only local surveys studies were done to determine the capacity of hunting wild populations two years ago, before the moratorium implemented by the Government.

At the time of our visit, the government had reviewed the National Program for Wild Harvest with Caiman yacare and they took the decision to implement a moratorium that does not permit any harvest for the last two years, until the legal evaluation is finished. They do not have any conservation programs for the other species.

MEETINGS

We had three meetings. The first one with the Secretary of Environmental (SEAM) Institution, now the CITES Administrative Authority, and with the Paraguay Data Center for Conservation of the Secretary of Environmental, now the CITES Scientific Authority.

The others meetings were with the Attorney General, the Public Ministry, Universities, researchers and NGO, and finally with the tanneries and business people.

Meeting with the Secretary of Environmental

We had a meeting with the Biodiversity Director of Secretary of Environment (SEAM), Lic. Mirta Medina and with the CITES Scientific Authority, Lic. Nélide Rivadola. They inform us that a Normative Decree is being elaborated that will allow improvement of the application of Paraguay's legal normative about wildlife, because the Laws have not been listed yet

The proposal is beeing done by SEAM, and once finished it will be presented to the Environmental National Council. At that stage, there will be many institutions and NGO involved for its review and later approval.

SEAM was under intervention by the pertinent legal institutions and the analysis determined that the stock pile of *Caiman yacare* tagged tanned skins; could not be exported. There are about 30,000 skins (flanks and tails) on the stock pile. On the other hand there are legal processes against persons and the legality of the stock pile is under review.

The priority at the moment is to resolve the Normative and legal framework and analyze the legality of the products the commerce people and tanneries have, and so later start to work on the design of management plans for the fauna species able to be used commercially.

Meeting with the Attorney General, Public Ministry, Universities, researchers and NGO's

The meeting was organized by the Attorney General, who explained with the Public Ministry the country situation.

An investigation that showed faults in the SEAM execution of the commercial programs was done. List of faults follow (in importance order):

- ◆ Indigenous communities have hunted for subsistence two stocks that produced skins for trading without commercial licenses; one of the stocks is 400 and other 2000 skins.
- ◆ There is no commercial utilization program with indigenous communities, which is not allowed under the Law.
- ◆ There was no wild population monitoring in the country to support the harvesting quotas for 2003.
- ◆ In 2002 the ranch owner contracted directly the wild population survey. The studies have been questioned; some professor and researchers from the universities are involved in those studies.
- ◆ There was no census of caiman in the indigenous lands.
- ◆ There is no data base of the caiman skins traders.
- ◆ SEAM emitted a Resolution that allowed commercial hunt within indigenous communities, after the subsistence harvesting were done.
- ◆ They believed that in the present stock piles not all the skins have been legally allowed with commercial hunting permits.

Universities representatives expressed that they presented a technical proposal for the realization wild populations surveys, but we do not have certainty that this is an official position of the Universities.

NGO present made no comment about the issues discussed during this meeting.

Meeting with skin traders

There were representatives from all the yacare skin traders, and the meeting was realized due to an invitation provided by the Public Ministry to meet with the CSG representatives.

They expressed different positions about the country situation:

- ◆ They agreed to a pause of the yacare commercial use, in order to improve the program.
- ◆ At the moment there is no dialogue between SEAM and traders.
- ◆ They have not been consulted in the design of the Decree that is being elaborated by SEAM.
- ◆ Nobody wants to recognize the stock pile of 30,000 yacare skins, although there is a document dated December 2004 from CITES Scientific Authority delivered to the SEAM specifying the amount of skins each trader has. They explain what those skins are tanned, tagged and ready for exportation,.
- ◆ They expressed that all the companies have commitments with international clients, and that is why they are soliciting the export of skins.
- ◆ They mention that within the yacare commercial program regulation in Paraguay it is stipulated the payment of many taxes, of those 50% should be utilized by SEAM for function and control of the programs and the remaining 50% for monitoring wild

populations. Although traders had to pay the costs of monitoring, pay for products control and buy the tags.

- ◆ Incomes from the caiman program to SEAM is about US\$200,000 per year.

GENERAL RECOMMENDATIONS

- Conclude the revision the legal framework of *Caiman crocodilus yacare* harvest program.
- Design a National Conservation Program for crocodiles.
- Design a National Conservation and Sustainable Use program for *Caiman crocodilus yacare*.
- Design and implement a real monitoring program for *Caiman crocodilus yacare*.
- Determinate the status of all wild population of crocodiles in the country.
- Establish a discussion scenario that include Universities, NGO's, Tanner industry, traders and local governments that could produce recommendations or suggestions to the CITES Administrative Authority to design the Conservation National Programs for crocodiles.

ANNEX 1

The IUCN Policy Statement on Sustainable Use of Wild Living Resources (Resolution 2.29) adopted at the IUCN World Conservation Congress, Amman, October 2000:

RECALLING Resolution 1.39 'Sustainable Use Initiative' adopted by the 1st Session of the World Conservation Congress, requested the Species Survival Commission's (SSC) Sustainable Use Specialist Group (SUSG) to develop urgently a short policy paper on sustainable use for written comment from IUCN members, and for SSC to take these comments into account in preparing a final draft for presentation at the next World Conservation Congress;

ACKNOWLEDGING that, in accordance with Resolution 1.39, the Steering Committee of the SUSG prepared the draft 'Policy Statement on Sustainable Use of Wild Living Resources' that is attached herewith;

ALSO ACKNOWLEDGING that successive drafts of this statement were reviewed by members of 14 regional SUSGs, Chairs and members of the SSC Specialist Groups, the SSC Steering Committee, Chairs of other Commissions, heads of IUCN's Thematic and Regional Component Programmes, and IUCN's members;

RECOGNIZING that sustainable use is one of the three components of the objective of the Convention on Biological Diversity and that the Convention provides a definition of 'sustainable use';

NOTING that Article 3 of the 'Ramsar' Convention on Wetlands obliges its Contracting Parties to implement wise use approaches and that, in particular, the Convention has recently produced a series of Wise Use Handbooks;

ALSO NOTING that the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) have endorsed the principle of sustainable use in Resolution Conf. 8.3;

RECOGNIZING that sustainability and sustainable use are concepts that are now being applied to sectors beyond the scope of this policy statement per se, e.g., water, agriculture, soils;

and NOTING that most Component Programmes of IUCN work on sustainable use and that there is a need for the principles of sustainable use to be mainstreamed in all pertinent IUCN technical, regional, national, project, and Commission activities;

The World Conservation Congress at its 2nd Session in Amman, Jordan, 4-11 October 2000:

1. ADOPTS the Policy Statement attached herewith and commends the policy to IUCN's members, Commissions, and Secretariat for implementation in the context of its Overall Programme, and in accordance with the objectives of IUCN; and,

2. CALLS ON the Secretariat to report on the progress achieved in implementing the terms of the Policy Statement at the 3 rd World Conservation Congress.

This Resolution was adopted by a show of hands. The delegation of the State member United States indicated that it had abstained.

Policy Statement on Sustainable Use of Wild Living Resources

1. Conservation of biological diversity is central to the mission of IUCN, and accordingly IUCN recommends that decisions of whether to use, or not to use, wild living resources should be consistent with this aim.
2. Both consumptive and non-consumptive use of biological diversity is fundamental to the economies, cultures, and well-being of all nations and peoples.
3. Use, if sustainable, can serve human needs on an ongoing basis while contributing to the conservation of biological diversity.
4. At the 18th Session of the General Assembly (Perth, 1990) in Recommendation 18.24, IUCN - The World Conservation Union recognized that "the ethical, wise and sustainable use of some wildlife can provide an alternative or supplementary means of productive land-use, and can be consistent with and encourage conservation, where such use is in accordance with appropriate safeguards".
5. This position was re-affirmed in Recommendation 19.54 at the following session of the Union's General Assembly in 1994 and subsequently in Resolution 1.39 at the 1 st Session of the World Conservation Congress in 1996.
6. Analyses of uses of wild living resources in a number of different contexts demonstrate that there are many biological, social, cultural, and economic factors, which combine in a variety of configurations to affect the likelihood that a particular use may be sustainable.
7. On the basis of these analyses, IUCN concludes that:
 - a) Use of wild living resources, if sustainable, is an important conservation tool because the social and economic benefits derived from such use provide incentives for people to conserve them;
 - b) When using wild living resources, people should seek to minimize losses of biological diversity;
 - c) Enhancing the sustainability of uses of wild living resources involves an ongoing process of improved management of those resources; and,
 - d) Such management should be adaptive, incorporating monitoring and the ability to modify management to take account of risk and uncertainty.
8. To increase the likelihood that any use of a wild living resource will be sustainable requires consideration of the following:

- a) The supply of biological products and ecological services available for use is limited by intrinsic biological characteristics of both species and ecosystems, including productivity, resilience, and stability, which themselves are subject to extrinsic environmental change;
 - b) Institutional structures of management and control require positive incentives and negative sanctions, good governance, and implementation at an appropriate scale. Such structures should include participation of relevant stake-holders and take account of land tenure, access rights, regulatory systems, traditional knowledge, and customary law;
 - c) Wild living resources have many cultural, ethical, ecological, and economic values, which can provide incentives for conservation. Where an economic value can be attached to a wild living resource, perverse incentives removed, and costs and benefits internalized, favorable conditions can be created for investment in the conservation and the sustainable use of the resource, thus reducing the risk of resource degradation, depletion, and habitat conversion;
 - d) Levels and fluctuations of demand for wild living resources are affected by a complex array of social, demographic, and economic factors, and are likely to increase in coming years. Thus attention to both demand and supply is necessary to promote sustainability of uses.
9. IUCN is committed to ensuring any uses of wild living resources are equitable and ecologically sustainable, and to this end it has established the Sustainable Use Initiative which incorporates regionally-structured Specialist Groups of the Species Survival Commission to:
- a) Identify, evaluate, and promote the principles of management that contribute to sustainability and enhanced efficiency in the use of wild living resources; and,
 - b) Regularly communicate their findings to members and the broader community.

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ANNEX 2 [AGENDA]

Tuesday, August 2.

Meet with Ministry of Environmental, Quito, Ecuador.

Meet with Biodiversity Director Montserrat Ríos, CITES Coordinator Patricia Galeano, Sergio Lasso, Alexandra Endara y Francisco Villamizar.

Wednesday, August 3.

Visit *Melanosuchus niger* farm, Coca city, Ecuador Amazonian with Cody Evans.

Thursday, August 4.

Back to Quito; closing meeting with the Ministry of Environmental, Patricia Galeano.
Fly to Lima, Peru.

Friday, August 5.

Meet with National Found of Fishing Develop (Fondepes), with Ing. Carlos Lazarte (Chairman) and Ana María Trelancia CSG member.

Meet with the Institute of Natural Resources (INRENA), with Director of Biodiversity Conservation Rosario Acero, and Marina Rosales y Jorge Lozada staff of this Direction, Pedro Vázquez y Ana María Trelancia CSG members.

Sunday, August 7. Fly to La Paz, Bolivia.

Monday, August 8.

Meet with Ministry of Sustainable Development, PUMA Foundation, Vice Ministry of Natural Resources and Environment Marianela Hidalgo Claros, National Services of Protected Areas (SERNAP) Executive Director Jhon Gomez and Juan Carlos Gomez Director of Environmental Monitoring and Luís Beltrán, Patricia Reyes CITES office – Bolivia.

Tuesday, August 9.

Fly to Santa Cruz de la Sierra.

Meet with Prefectures.

Meet with Foundation Amigos de la Naturaleza NGO.

Meet with NGO Faunagua.

Meet with tanneries.

Wednesday, August 10.

Visit to Museum of Natural History Noel Kepmff Mercado, Geographical Information System Department.

Close meeting with Prefectures.

Fly to Asuncion, Paraguay.

Thursday, August 11.

Meet with Secretary of Environmental (SEAM), Biodiversity Director Mirta Medina and CITES Coordinator Nélica Rivadola.

Meet with Universities, NGO's, Attorney General; Public Ministry (annex 3).

Back to Argentina.

Friday, August 12 to 14.

Visit Formosa farm and stay in Santa Fe with Alejandro Larriera.

Monday, August 15.

Back to Venezuela.

ANNEX 3

Meet Assistants in Asunción, Paraguay.

Name	Institution
Luz Sanchez	Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Asunción
Frederick Bauer	Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Asunción
Ignacio Avila	
Dr. Carlos Britos	Zoológico, Municipalidad de Asunción
Dr. Julián Ortiz	Zoológico, Itaipú Binacional
Virginia Fernadez	Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Asunción
Martin Quinteros	Carrera de Ingeniería Forestal- Universidad Nacional de Asunción
Blas Knoop	Contraloría General de la República
Juan David Martinucci	Contraloría General de la República
Juan Carlos Yegros	Contraloría General de la República
Arq. Norma Ramirez	Contraloría General de la República
BQ. Laura Mereles	Dirección de Medio Ambiente, Ministerio Público
Rocio Barreto	Dirección Vida Silvestre, Secretaría del Ambiente
Estela Gomez	Dirección Vida Silvestre, Secretaría del Ambiente
Cristina Morales	Guyra Paraguay
Carmen Vitale	WWF
Daniel Aguade	Dirección de Medio Ambiente, Ministerio Público
Rosalía Fariña	Dirección de Medio Ambiente, Ministerio Público
Dra. Ma. Bernarda Alvarez	Unidad Penal Especializada, Ministerio Público
Martha Motte	Museo Nacional de Historia Natural del Paraguay, Secretaría del Ambiente

MEET WITH TRADERS	
José Beconi	DELBECO TRADING
Ciro García	Corporación CIRESA
Vicqueio Beconi	Delbeco Trading SRL
Hetty Abadie	CACECAS
Angel Hernandez	BELGEL SRL
Carlos Valiente	Asociación Cinegética
Mario Vasconcellos	Asociación Cinegética
Oscar Rodriguez	Asociación Cinegética