BIOAMAZON NEWSLETTER

BIOAMAZON PROJECT
Conservation of species threatened by unsustainable trade

ACTO
Amazon Cooperation Treaty Organization

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Podocnemis expansa.

FOTO: ISTOCK

Countries begin the process of making data available to the Amazon Regional Observatory

Venezuela develops management plan for four turtle species from Podocnemididae family

This is the Bioamazon Project Newsletter, of the Amazon Cooperation Treaty Organization (ACTO). It is published every two months to disseminate the actions and results of the Project and its partners.

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Dear readers,

We are at a very important moment for the Amazon Cooperation Treaty Organization (ACTO). This semester, we will launch the Amazon Regional Observatory (ARO), which will receive official information from the eight ACTO Member Countries and will promote the flow and exchange of information. The ARO is developed in compliance with article 7 of the Amazon Cooperation Treaty, which determines that scientific research and exchange of information be promoted to increase knowledge about the flora and fauna resources of the Amazon territories, as well as it is recommends to establish a regular system for the proper exchange of information.

The development of the Observatory is a challenge for which the ACTO Permanent Secretariat spared no efforts. This has been possible thanks to the support of Member Countries and their political and scientific institutions and regional and international cooperation. The ARO, an information reference center, will be at the service of all of society, allowing consultation and analysis to increase knowledge of the Amazon and allowing ACTO Member Countries to become even more integrated.

In this edition of the Bioamazon Newsletter, we present in detail the Observatory's preparation efforts, as well as provide information on other ongoing initiatives. We have good news from Amazonian countries on initiatives such as the improvement of research infrastructure and the integration of CITES species into the ichthyological collection of the Sinchi Institute, in Colombia, and the development of mechanisms for the sustainable management and traceability of parrots in Guyana. Venezuela presents its management plan for the conservation and sustainable use of charapa species such as *Podocnemis erythrocephala* (Chipiro), *Podocnemis unifilis* (Terecay), *Podocnemis expansa* (Arrau) and *Peltocephalus dumerilianus* (Cabezón).

On the Agenda, we highlight ACTO's participation in the World Conservation Congress of the International Union for Conservation of Nature (IUCN), which takes place from September 3rd to 11th, in Marseille, France, and also online.

Therefore, we invite you to declare your enthusiasm and affection for the Amazon.

Good reading.

Alexandra Moreira
General secretary
Permanent Secretariat
Amazon Cooperation Treaty Organization (ACTO)

Countries begin the process of making data available to the Amazon Regional Observatory

Inauguration is scheduled for this semester

ILUSTRAÇÃO: VICTOR KITAMOTO/OTCA

The Amazon Cooperation Treaty Organization (ACTO) is in full swing in the implementation of the Amazon Regional Observatory (ARO) and in the preparation of the launch, scheduled for this second semester. To this end, it is counting on the support of Member Countries, whose institutions have started the process of providing data that will feed this Reference Center in Regional Information, which will enable research and analysis on biodiversity, natural resources, and socio-diversity in the Amazon Region.

Planned in three phases, the implementation of the ARO modules has its first phase finalized with the development of the technological platform by the company IngenioSig and the development of the CITES Module by the company IquitosPlay. In this phase a database of flora and fauna species included in Annex II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with geographical distribution in the Amazon basin was also generated; a tabular database of the red books of threatened species of the ACTO Member Countries – Bolivia,

Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela – and a module of information and dissemination on the prioritized species of Annex I of CITES susceptible to illegal trafficking and that are emblematic for the Amazon Region, promoting the generation of public awareness on the presence of illegal trafficking of species in the region.

The second phase started in August with the development of the Biodiversity, Water Resources and Forests Modules, as well as the beginning of interoperability with the national systems oriented towards identification, data collection from the data generating institutions of the Member Countries and integration in the ARO database, and should continue until the end of this year. The development of the Indigenous Peoples Module should begin in September.

So far, Brazil, Ecuador, Guyana and Peru have started the data transfer, and Bolivia, Colombia, Suriname and Venezuela are preparing their information.

For Brazil, the institutions that shared data are the Forest Products Laboratory of the Brazilian Forest Service (LPF/SFB), the Brazilian Institute of Environment and Renewable Resources (Ibama), the National Institute for Space Research (INPE) and the Ministry of Science, Technology and Innovations (MCTI) that made available all the databases of the Information System on Brazilian Biodiversity (SIBBr) which includes the National Institute for Amazon Research (INPA), Botanical Garden of Rio de Janeiro (JBRJ), Emílio Goeldi Museum of Para (MPEG), National Museum of Rio de Janeiro (MNRJ), Long-Term Ecological Research Program (PELD), Biodiversity Research Program (PPBIO), among others. In total, to date, Brazil has made available to the ARO data from 510 databases, including biological collections, species identification keys, import and export information and licenses, legislation, and cartographic information, among others. IBAMA has made available all information on CITES from 2014 to 2019.

Ecuador, through the Ministry of Environment, Water and Ecological Transition (MAAET), shared its biological collection of species.

Guyana, meanwhile, through the Wildlife Conservation and Management Commission (GWCMC) sent information on exports of CITES-listed species for the year 2019.

Peru, through the Ministry of Environment (MINAM), National Forestry and Wildlife Service (SERFOR) and the Peruvian Amazon Investigations Institute (IIAP), shared their databases of Amazon species lists, biological collections, licenses, cartographic information, legislation, Non Harmful Extraction Findings (DENP), CITES information, among others.

The ARO will allow searches and offers users the possibility of geographic analysis, data and indicators. The information will be presented by means of maps, tabular reports, and graphs that integrate data and indicators at the Amazon basin level. It will also be possible to search and access relevant documents and publications on the themes of the ACTO Strategic Agenda.

The third phase, planned to start on next year, involves the development of three more Modules: Information System and Knowledge Management of the PS/ACTO, Network of Research Centers of the Amazon (RedCIA) and Regional Window of micro, small and medium enterprises with sustainable production of species of wild fauna and flora under CITES and within the framework of Component 3 of the Bioamazon Project.

Design

In 2019, ACTO management board made the decision and began an intense work to effectively implement the Amazon Regional Observatory.

In July 2019, ACTO hired the company Corporate Excellence (EXCO), through the Bioamazon Project, to prepare the conceptual, operational and financial design of the ARO. In this opportunity, a team from ACTO accompanied EXCO in visits to all ACTO Member Countries, where workshops were held to learn about the national institutions that generate data and the existing information systems, and received inputs and suggestions for the conceptual design.

In August 2020 the conceptual, operational, and financial design of the ARO was approved by the Permanent Secretariat of ACTO and the documents were made available to the Member Countries. In October 2020, after an evaluation mission of the Bioamazon Project, the German Development Bank (KfW) approved the implementation of the ARO proposed by ACTO in 3 phases.

Amazon Cooperation Treaty

The implementation of the Amazon Regional Observatory is being driven based on the postulates of the Amazon Cooperation Treaty (ACT) signed by eight Amazonian countries in 1978, on the regular exchange of scientific information on the fauna and flora of the Amazon. The ACT establishes in its article 7 the need to promote scientific research and information exchange in order to increase knowledge about the flora and fauna resources in the Amazon territories, as well as to establish a regular system of adequate information exchange.

The task of developing and implementing the Amazon Regional Observatory was delegated to ACTO by a decision adopted during the XI Meeting of Ministers of Foreign Affairs in 2011. Since then, working groups with representation from ACTO Member Countries have discussed the concept, characteristics and format of the ARO, as well as the basic management structure and official information transfer components.

“Making the Amazon Regional Observatory a reality and thus complying with the Amazon Cooperation Treaty postulates is a challenge for which the Permanent Secretariat of ACTO has spared no effort. But this is only possible thanks to the support of the Member Countries and their political and scientific institutions and regional and international cooperation. The Observatory will soon be serving society as a whole, allowing consultations and analyses to increase understanding of the Amazon Region and enabling ACTO Member Countries to become even more integrated,” said Alexandra Moreira, Secretary General of the Amazon Cooperation Treaty Organization.

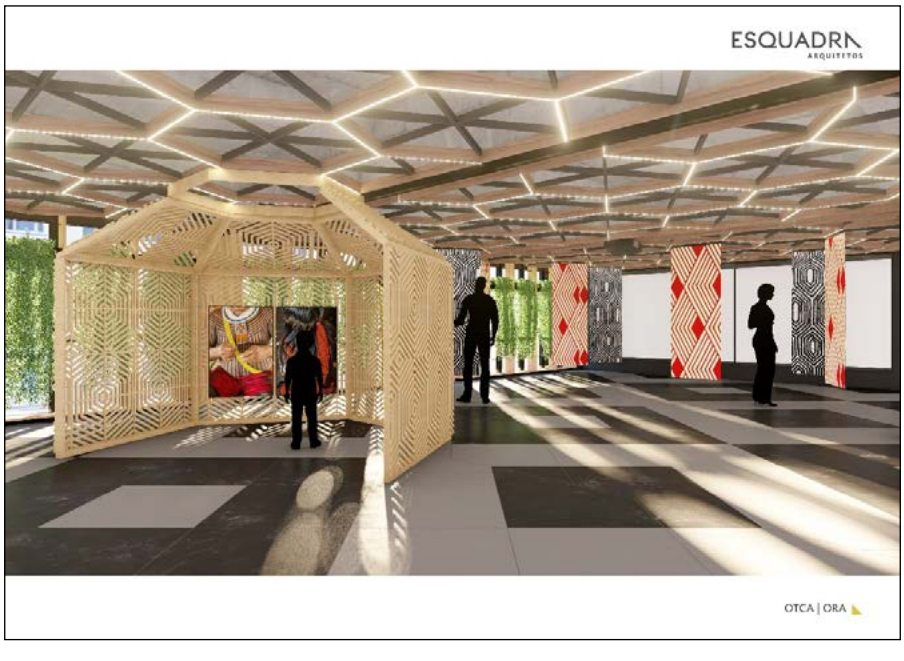
Facilities

In addition to being accessible via the Internet and open to all interested parties, the Amazon Regional Observatory will have its physical headquarters at the ACTO facilities in Brasilia.

As explained by the Executive Director of ACTO, Ambassador Carlos Lazary, the ARO will be a meeting place, a living and dynamic locus, interactive, technological, with a structure to support visits, virtual and face-to-face work. "Having human beings as the center of the process, it will be a window to the world, interconnecting all the scientific-political production that is elaborated about the Amazon and disseminating information and knowledge," he said.

The Amazon Regional Observatory will have a Situation Room that will house the Amazon Hydrological Network (RHA) and the ACTO's Water Quality Monitoring Network (RCA), in addition to monitoring various aspects related to water resources and critical events at the regional level of systematic way. The information will be disseminated through the technological platform created for the Regional Amazon Observatory. This room will have a videowall system equipped with 18 49-inch monitors, audio systems with digital processing, videoconference and multiconference, which will allow the visualization and interactivity of images, equipment and scenarios.

The Architectural Project, Interior Architecture, Scenography and Complementary Projects for the Amazon Regional Observatory at the PS/ACTO headquarters began, in March 2021, in a space with a usable area of 341.21 m² and floor to ceiling height of 3.30m, by the Company Esquadra Arquitetos Associados LTDA, which was approved by the Permanent Secretariat.



SOURCE: ESQUADRIA ARQUITETOS

Architectural design of the ARO. Interactive exhibition spaces.

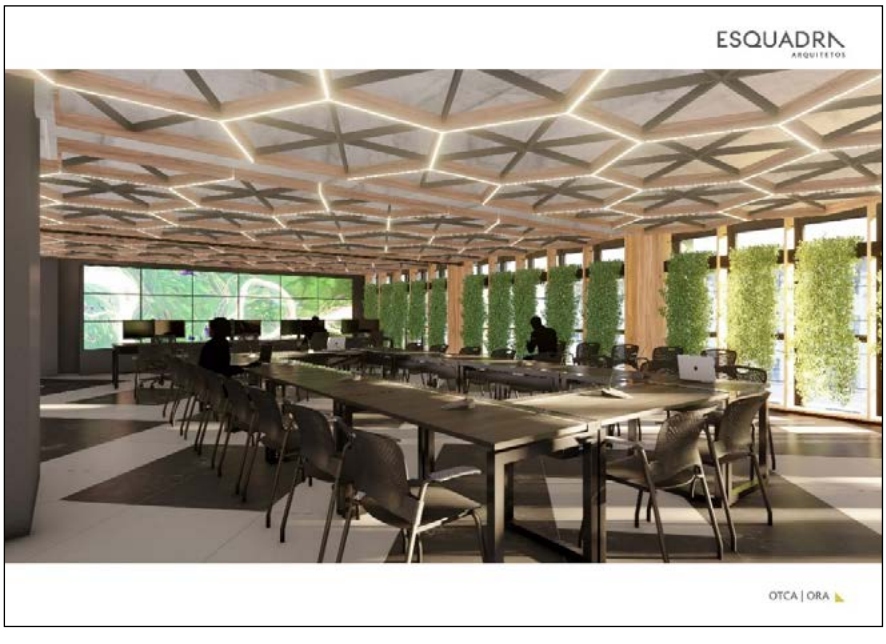
Combining concept, synesthetic resources (sight, hearing, touch, smell), technology and art, the scenography provides surprising experiences, atmosphere rich in symbols, space for playful, striking, immersive and enchanting contemplation, imprinting the message of the ARO in the memory of those present as relevant substances capable of transforming the perception of the visitor.

The proposed scenographic solutions avoid causing physical obstacles and provide new purposes to the environments, when necessary, and are aligned with all the

technological resources, infrastructure, interfaces, and equipment necessary for the functioning of the ARO.

The entire ARO space has acoustic ceiling, hexagonal light fixtures with LED lamps with luminosity reduction control, clean energy supply through the implementation of a photovoltaic plate system, and central air conditioning. The blinds have thermoacoustic properties and motorized activation that allow independence between the environments.

The integral concept of ORA also houses a space for exhibitions, workshops and international events, as it has an auditorium with capacity for 120 people equipped with interactive screens, monitors, fixed acoustic screens, transparent windows that allow the use of the space as a meeting place and other activities, meeting the requirements of high acoustic performance and the requirements of safety standards, without compromising privacy and acoustic comfort..



SOURCE: ESQUADRIA ARQUITETOS

Architectural design of the ARO. Conference room.

The ARO also has a space for a small library, work spaces equipped with computer infrastructure for its technicians and visitors.

Work to adapt the space for the Amazon Regional Observatory in July, 2021.

Example of individual workspaces and library.

Member Countries approve document of the ACTO Forest Program for the Amazon Basin and Region

With the participation of the eight Member Countries of ACTO, the technical delegates designated for the discussion of the "ACTO Forest Program for the Basin and the Amazon Region", approved on June 28, the latest version of the document.

The objective of this Forest Program is to promote conservation and Sustainable Forest Management – SFM / Integral and Sustainable Management of Amazonian Forests through actions of coordination, cooperation, and implementation among ACTO Member Countries; and it will develop the necessary capacities to follow the new requirements and deadlines of the global agendas of Forests and Biodiversity of the countries that make up the Amazon Cooperation Treaty.

The development of the Forest Program had the support of the Brazilian Cooperation Agency (ABC) of the Ministry of Foreign Affairs of Brazil.

During the closing of the virtual meeting, the Secretary General of ACTO, Alexandra Moreira, thanked the efforts made by all the participants and said that this is a wish of many years of ACTO and that they have been working and negotiating and today it is serving. "This commitment that everyone is showing through their countries is a commitment of the Amazon Region to the world," she argued.

For his part, the Executive Director of ACTO, Carlos Alfredo Lazary, expressed his gratitude to the ABC and pointed out: "We are fulfilling the approval of this Program, a milestone in Amazonian cooperation."

ACTO participates in webinar on international experiences in health of Amazonian indigenous peoples in the context of pandemic by COVID-19

With the collaboration of PAHO and the Ministries of Health of Brazil, Ecuador, Bolivia and Colombia, ACTO, ORAS, HIVOS and GIZ, the first webinar on international experiences and health information management in Amazonian indigenous peoples in border regions was held.

On July 20, the Peruvian Ministry of Health (MINSA), with the collaboration of the Pan American Health Organization (PAHO) and the Amazon Cooperation Treaty Organization (ACTO), and with the participation of the Andean Regional Health Organization (ORAS-CONUS), the Humanist Institute for Development Cooperation (HIVOS), and with the support of the German Development Cooperation (GIZ); a virtual event was held to socialize effective interventions in mitigation, containment and vaccination against COVID-19 implemented in Indigenous Peoples of Peru, Brazil, Colombia, Bolivia and Ecuador.

As a follow-up to the initiative, on August 24, a webinar was held on "International experiences in the health of Amazonian indigenous peoples in border areas, in the context of the COVID-19 pandemic".

In this virtual event, ACTO was represented by its Executive Director, Ambassador Carlos Alfredo Lazary, who highlighted the historical relevance of the activities in the protection of Indigenous Peoples in Isolation and Initial Contact (PIACI) in the Amazon Region, particularly carried out in the areas of the Strategic Framework for the Development of a Regional Agenda for the Protection of PIACI and the Indigenous Peoples in Border Regions Project, both activities carried out with the support of the Inter-American Development Bank (IDB).

The Executive Director of ACTO also expressed the importance of the products generated by these initiatives, such as the consensus instruments "Amazonian Guidelines for the Protection of IPACI" and "Concepts and Guidelines for the Protection of the Health of IPACI", in addition to the recommendations on the promotion of Traditional Knowledge in the Management of Natural Resources and Health Guidelines for the Exchange of Information among ACTO Member Countries.

On the other hand, Lazary explained the importance of the Amazon Regional Observatory (ARO), which will have thematic modules, one of them on Indigenous Peoples. This module will focus on health, to strengthen the articulated and culturally relevant response capacity of the different national and local health services in emergency and post-emergency situations of COVID-19, in Indigenous Territories in border areas.

To complement the information on ACTO's performance in its contributions to the fight against COVID-19, the technical team of the Contingency Plan for Health Protection in Highly Vulnerable and Initial Contact Indigenous Peoples project, implemented in cooperation with PAHO and with the support of the IDB, presented the components and current status of the activities being developed.

The event included a presentation by Dr. Alberto Lora Aguancha, Advisor to the Office of the General Secretariat of the Andean Community (CAN) -the most solid integration organization of the continent- considering as a priority the support in the vaccination against COVID-19 in indigenous peoples of Peru, Bolivia and Ecuador in order to improve the quality of life of the most vulnerable indigenous peoples of the region.

Likewise, Dr. Paolo Balladelli, Director of the Subregional Program for South America of PAHO/SAM spoke about the importance of strengthening support to the indigenous peoples of the Amazon Basin for the fulfillment of the 2030 agenda and the commitment of the countries to vaccinate all Amazonian indigenous people.

As part of the seminar, the supranational organizations shared their efforts, experiences and lessons learned from international cooperation in the health of indigenous peoples in the face of the Covid-19 health emergency, represented by: Dr. Maria del Carmen Calle, Executive Secretary of ORAS, Dr. Ana Isabel Moreno, Director of the GIZ Indigenous FFS Project; and Mgs. Catalina Campo, Coordinator of the HIVOS Amazon Indigenous Health Route Project.

The event included a technical round table where the need to promote health systems that guarantee the rights and respond to the needs of the population was highlighted, as well as the generation of scientific evidence for decision making and the strengthening of traditional medicine to combat the symptoms caused by COVID-19.

On the other hand, the representatives of the Ministries of Health of Brazil, Ecuador, Bolivia and Peru presented the progress made in the development of information management platforms for Indigenous Peoples, which include the publication of ordinances, technical reports, recommendations, clinical management protocols, epidemiological bulletins, protocols for action by Indigenous Health Teams, National and District Contingency Plan for Human Infection by the new Coronavirus in Indigenous Peoples; among others.

The speakers considered it key to promote the economic, social, cultural and political reactivation of the indigenous peoples of the countries of the region, the exchange of good practices and the design of innovative and inclusive strategies in favor of the Amazonian indigenous peoples, considering the current crisis caused by the pandemic in border areas.

Mr. Julio Mendigure Fernandez, Director of Indigenous and Native Peoples of the Ministry of Health, said that MINSA – as promoter of the platform – will continue to expand the spaces for participation in supranational integration mechanisms,

through the development of international seminars on September 28 and October 26.

In this way, the Peruvian health sector, in collaboration with the German Development Cooperation and the PAHO/WHO Subregional Program for South America, have initiated the exchange of experiences, knowledge and common efforts in the health of Amazonian indigenous peoples, with emphasis on human rights, interculturalism and border work, in order to contribute to the implementation of strategies that address the social determinants of health and improve the quality of life of the populations that live and travel along the borders of the countries of Brazil, Colombia, Ecuador, Bolivia and Peru.

The webinar is available at: https://youtu.be/e3bVS81xpag.

FONTE: BANCO DE IMAGENS OTCA

Indigenous village in Brazil.

Integrated Fire Management among ACTO Member Countries

On August 12, the Amazon Cooperation Treaty Organization (ACTO) held a webinar to present the "Memorandum of Understanding on Cooperation and Assistance in Integrated Fire Management among ACTO Member Countries (MoU-MIF)", approved on June 1 by the Working Group of ACTO Member Countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela, within the framework of the competencies and mandates of the PS/ACTO.

The implementation of integrated fire management is a permanent task and in some cases, in order to be effective, it requires coordination between more than one country, since fires do not recognize geopolitical borders and can affect more than one country in the same event. The increasing impacts that fires in the Amazon have been causing over the last few decades have attracted the attention of different initiatives and organizations specializing in the subject.

In this sense, the objective of the webinar was to present the MoU-MIF at national, regional and international level and provide a space for ACTO Member Countries to detail their needs and expectations regarding its implementation within the framework of ACTO. Also, to discuss the progress in the formation of the Amazon Network, foreseen within the MoU; and to provide a space for the various participating organizations to present their actions in the Amazon so that the possibilities for cooperation at the regional level are known.

Webinar available here: https://youtu.be/waclkCK2OVs

(FOTO: ISTOCK)

On the Agenda

IUCN World Conservation Congress

The Secretary General, Alexandra Moreira, the Executive Director, Ambassador Carlos Lazary, and the Administrative Director of SP/OTCA, Ing. Carlos Salinas, participate as panelists at the World Congress for Nature Conservation, held by the International Union for the Conservation of Nature (IUCN).

The Congress will take place in Marseille, France, and also virtually, between the 3rd and 11th of September

The initiatives recently launched by ACTO such as the Biological Diversity Program, the Forests Program, actions in support of Indigenous Peoples and the Memorandum of Understanding signed by ACTO Member Countries for the Comprehensive Management of Fire in the Amazon, in addition to the Amazon Regional Observatory will be presented by the board.

The sections in which ACTO participates are:

- Indigenous Territories in the Amazon Basin: Community-Based and Nature-Based Solutions, on the 5th, from 3:00 pm to 4:30 pm, with the participation of the Executive Director.
- Reflections and strategies of indigenous peoples facing the turning point of the Amazon, on the 6th, from 9:00 am to 10:30 am, with the participation of the Secretary General.
- Connected by our forests: Community monitoring and governance role for nature-based solutions, on the 6th, 11:30am to 12:30pm, with the participation of the Administrative Director.
- Connected by our forests: experiences from the Amazon 2.0, on the 6th, from 1:30 pm to 3:30 pm, with the participation of the Administrative Director.
- Board of Directors of the BIO-PLATEAUX Project, on the 7th, with the participation of the General Secretary.

At the meeting of the Management Committee of the BIO-PLATEAUX Project, the ACTO General Secretary will present the Amazon Regional Observatory and the possibilities for collaboration, in addition to sharing experiences related to the integrated management of water resources in the region (GIRH).

The BIO-PLATEAUX Project, co-financed by the European Union through the Interreg Amazon Cooperation Program, aims to develop the exchange of data, information and experiences on water and the biodiversity of aquatic environments between French Guiana, Brazil and Suriname, in particularly in the two transboundary basins of the Oiapoque and Maroni rivers.

To participate in the IUCN World Conservation Congress, visit this link: https://www.iucncongress2020.org

Study on the population status of the yacaré (*Caiman yacare*) and the black caiman (*Melanosuchus niger*) in their natural distribution areas in Bolivia

Authors: Fundación para el Desarrollo de la Ecología FUND-ECO

Contact: jehaninon.rios@gmail.com

PHOTO: MARIANA ESCOBAR W-W

The National Program for the Conservation and Sustainable Use of the Yacaré (*Caiman yacare*) - PNCASL (for its acronym in Spanish) was originated in Bolivia, from the Supreme Decree No. 24774 promulgation, in 1997. This Decree approved the first Regulation for the Conservation and Exploitation of the yacaré, in the face of a series of failed protecting measures of Bolivian biodiversity, which was exposed to the intense exploitation (S.D. 21312), and from an Indefinite General Ban imposed at the national level in 1990 (D.S. 22641) for the chase, capture, storage, and conditioning of wild animals, as well as the collection of wild plants, and their derived products.

The main objective of the yacaré harvesting process is to guarantee the biological, economic, and social sustainability of the Caiman yacare in Bolivia, ensuring a fair and equitable distribution of benefits. For this purpose, the main biological criteria provided, which were taken from the Venezuelan model for commercial exploitation of (*Caiman crocodilus*), are:

1. The yacaré harvest model is based on hunting adult male individuals with a total length (snout - tail) greater than 180 cm (Class IV), coming from wild populations in the natural range.
2. The harvest is based on the population abundance and structure, authorizing a maximum of 25% of Class IV individuals, provided that they exceed 15% of the total population, without considering the animals from the first year (Class I).
3. Annually, the populations of the Caiman yacare must be evaluated by night counts within the whole range.

The consultancy aimed at preparing the study of the population status of the yacaré (*Caiman yacare*) and the black caiman (*Melanosuchus niger*) in their natural range, in Bolivia, within the framework of the Bioamazon Project - Conservation of species threatened by unsustainable trade, started in March 2020. Due to the pandemic caused by SARS-COV-2, the study was paused, and therefore, it had to be extended until October 2021.

The main objective of the consultancy is to conduct populational studies about the yacaré (*Caiman yacare*) and the black caiman (*Melanosuchus niger*) in their natural range in Bolivia, and to plan models and criteria to estimate their populations susceptible to harvesting This study is a very important yacaré resource management tool, with which the Competent Environmental Authority can guarantee its sustainable use, considering that the latest estimated quota calculation model for the potential harvesting of this species, in the provisions PNCASL authorized, is from 2010.

To date, the activities that have been developed within the framework of the execution of the consultancy are the following:

- Review of the state of the art on the knowledge regarding the biology and natural history of the black caiman in the country, in order to serve as a basis for identifying populations prone for exploitation and to determine basic biological criteria for the management of their populations. Most of the published and unpublished information on these species corresponds to the survey of population parameters (abundance and structure), however, there is a lack of studies on reproductive biology, habitat use, genetic structure of populations and ecology, which is a very important data for the management of their populations.

- A single Database has been consolidated with information from different sources generated in the last ten years related to population parameters of yacaré under management and populations of black caiman. This information was scattered, and the need to establish information standardization criteria within the Competent Environmental Authority was observed, both for data collection and for its analysis and the adoption of methods for defining harvest quotas.

FOTO: JEHAN NINON RIOS-RIOS

– Population evaluations have been carried out in two indigenous territories in the department of Beni: the Indigenous Territory and Isiboro Sécure National Park (TIPNIS) and the Chimán Indigenous Territory (TICH), characterizing the populations of yacare and black caiman and conducting interviews on the perception of the hunters and beneficiary families about their degree of empathy for these species and the benefits of harvesting these species at the family and community level.

FOTOS: MARIANA ESCOBAR W-W

– Finally, a yacaré distribution model has been developed to estimate the exploitation potential and determine quotas at the basin and micro-basin level in the yacaré distribution departments. This model is currently under review.

From the completion of this study, it will be possible to define and regulate the catch quotas by the Ministry of the Environment and Water of Bolivia (MMAyA for its acronym in Spanish).

Brazil

Forest Products Laboratory and RJ Botanical Garden make wood collection data available on the internet

Integration of information between the two institutions was supported by ACTO, through the Bioamazon Project.

FOTO: GUSTAVO BARROS ROCHA/LPF

Handroanthus impetiginosus

The xilotheque[1] of the Forest Products Laboratory (LPF) of the Brazilian Forest Service (SFB), has just been integrated to the JABOT system, developed by the Botanical Garden of Rio de Janeiro. The system is a data platform for managing scientific collections and integrates a network of herbaria and other botanical collections throughout Brazil.

Named after Dr. Harry van der Slooten xilotheque in honor of the founder of the Forest Products Laboratory, this official wood collection currently contains more than 5 thousand wood samples from around 3 thousand species of wood trees.

1 Xiloteca (do grego: *xýlon*, madeira + *theke*, caixa, coleção) é um arquivo de madeiras ou um local onde se guarda diversos tipos de madeira e informações relativas sobre sua estrutura anatômica (https://pt.wikipedia.org/wiki/Xiloteca)

The catalog is important reference material for wood identification and for scientific research.

With the integration of information in the JABOT system of the Botanical Garden of Rio de Janeiro, the data from the LPF collection will be available in an online environment for the whole society, contributing to the biodiversity research carried out in the country.

The next step will be to make available photographs of all wood samples, microscope slides, and other types of images produced by the LPF equipment acquired by ACTO through the Bioamazon Project, which totals more than USD 263,000.

The online library will be used both to support research in wood technology and to assist control and enforcement actions by providing an excellent reference base for taxonomic determination of wood samples.

To visit the LPF's xylotheque at JABOT, visit http://lpf.jbrj.gov.br/ To see the entire platform and scientific collections deposited in herbaria and other institutions, visit http://jabot.jbrj.gov.br/v3/consulta.php#

The ACTO Bioamazon Project, implemented with funding from German cooperation through KfW, collaborated in this action of migrating the Access database to the JABOT system and integration with REFLORA, making the collection available online with an investment of about USD 18,000.

"With the conclusion of this activity, the Project contributed so that at least one institution at a national level has the facilities, equipment, technological tools and training to operate information systems related to biodiversity and CITES. Our goal is to equip other institutions in the other Amazon countries and thus contribute to the integration and sharing of information on Amazon biodiversity," said Mauro Ruffino, coordinator of the Bioamazon Project.

FOTO: GUSTAVO BARROS ROCHA / LPF

Combretum glaucocarpum.

Colômbia

CITES species included in the Ichthyological Collection CIACOL

Considering the threat situation of freshwater stingrays, CIACOL elaborated a descriptive booklet for the species present in Colombia in 2020.

The diversity of fish in the Amazon region of Colombia is the highest in the country, where at least 751 species cohabit, of which 42% are of interest in the ornamental market and 12% in national consumption. This figure is underestimated because it does not include species that are part of the diet of local inhabitants.

The Ichthyological Collection of the Colombian Amazon - CIACOL is a resource that accounts for this biodiversity. Thus, the work of CIACOL contributes to research, dissemination and disclosure of this natural resource, from the description of species, expansion of geographical distribution ranges and valuation of use within the local context, among others. As of today, the collection has 34,378 specimens taxonomically organized in 12 orders, 49 families, 290 genera and 660 species; it is located in Leticia in the department of Amazonas and can be consulted online through the link: sinchi.org.co/ciacol.

In order to strengthen the production of information to support decision making on biodiversity, the Regional Project for the management, monitoring and control of species of wild fauna and flora threatened by trade, implemented by the Permanent Secretariat of the Amazon Cooperation Treaty Organization (PS/ACTO) supports the strengthening of biological collections deposited at the Sinchi Institute by financing

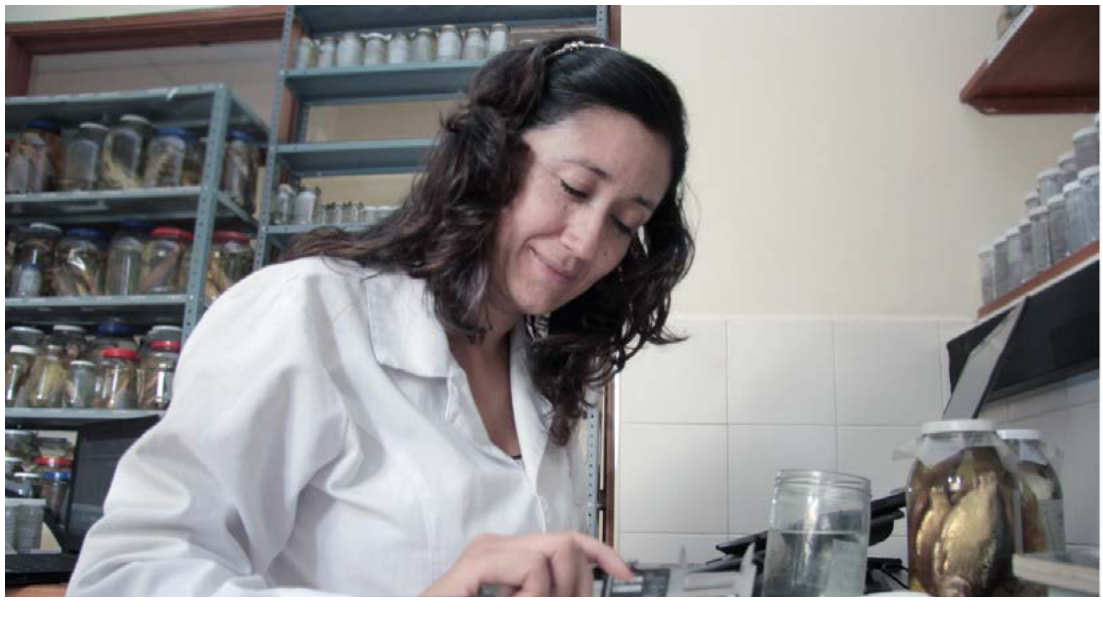


FOTO: INSTITUTO SINCHI

Researcher at the Sinchi Institute, Colombia.

the adaptation of infrastructure of new storage spaces for plant collections (Herbal COAH) in Bogota and herpetological and ichthyological collections in Leticia.

A total of 189 pieces of equipment were acquired by the PS/ACTO for the SINCHI Institute, including electric generators, air conditioners and dehumidifiers, a solar panel system, refrigeration equipment, computer equipment, camera traps, photo studio booth, field equipment for fauna (GPS, binoculars, mist nets, dissection accessories, among others) and laboratory equipment, for an approximate amount of USD 250,000.00.

What are CITES species?

CITES or the Convention on International Trade in Endangered Species of Wild Fauna and Flora is a measure that seeks to regulate the excessive exploitation of species due to international trade and for this purpose groups them into three appendices according to the degree of threat to each one of them.

In 2016, the CITES secretariat approved and notified the request made by Colombia to include several species of rays in Appendix III: *Paratrygon aiereba, Potamotrygon constellata, P. magdalenae, P. motoro, P. orbignyi, P. schroederi, P. scobina* and *P. yepezi*, species that joined the pirarucú (*Arapaima gigas*), which is included in appendix II since 1975, since it is a native species of the Amazon basin highly appreciated in the regional and national consumption.

CITES Appendix II includes threatened species whose populations have been greatly reduced, although they are not in danger of extinction. Appendix III includes species that are threatened in at least one country (and even in danger of extinction at the local level), which is why the parties to the treaty have been asked to help control their commercialization.

River rays: endangered species

Considering the threat situation of freshwater stingrays, CIACOL prepared a descriptive booklet for the species present in Colombia in 2020, entitled "Rayas de río" (Acosta-Santos and Agudelo 2020), so that it can become an illustrated tool that allows the rapid identification of the species, based on the observation of distinctive conditions of each one of them, such as coloration patterns, shape and size of the tail and eyes.

Do you want to know more about the Colombian Amazon Ichthyological Collection - CIACOL? Visit: sinchi.org.co/ciacol

About the Amazonian Institute for Scientific Research SINCHI

The SINCHI Institute is a high-level scientific and technological research entity, committed to the generation of knowledge, innovation and technology transfer and the dissemination of information on the biological, social and ecological reality of the Colombian Amazon region, satisfying the needs and expectations of the communities of the region in a timely manner, for which we have committed human talent.

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Ecuador

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Arapaima gigas

Orchids and arapaima: an opportunity to improve value chains for products of Ecuador's biodiversity

Representatives of Ecuador's Ministry of Environment, Water and Ecological Transition and the Bioamazon Project discuss the potential for using Ecuador's biodiversity.

In Ecuador there are more than 4,187 species of orchids, 1,707 of which are endemic to the country. Such diversity and beauty of the species attract the attention of orchid enthusiasts and collectors. The export of orchids from Ecuador reached USD 1,939,403,570 (FOB) in 2019.

To contribute to the conservation of orchid species and support sustainable businesses, Bioamazon Project is supporting Ecuador's Ministry of Environment, Water and Ecological Transition with two studies: one for the development of the Action Plan for Orchid Conservation in Ecuador and another for the strengthening of the orchid value chain in the provinces of Napo, Morona Santiago and Zamora Chinchipe.

The latter includes a proposal to strengthen the management and ensure the conservation of these species, as well as to ensure sustainable use. Among the actions proposed are the creation of five orchid routes to encourage ecotourism, the development of 20 management plans and the adoption of participatory monitoring to prevent wildlife trafficking.

The objective of the arapaima (*Arapaima gigas*) study is to establish an arapaima management strategy, including a diagnosis of the current status of the crop, the development of a fishery management plan, and a proposal to define monitoring, reporting and verification (MRV) procedures. This fishery resource, also known as Amazonian cod, is in high demand in domestic and international markets for meat and skin. At the same time, an international workshop on successful experiences with arapaima (*Arapaima gigas*) management by ACTO member countries is underway to facilitate dialogue and exchange among experts, small producers' organizations and institutional representatives in order to identify arapaima management experiences, learn about successful arapaima management models in a socially, environmentally and economically sustainable context among ACTO countries, share lessons learned and contribute to strengthening the use and exploitation of biodiversity in Ecuador.

Cooperation

Bioamazon Project and the Ministry of Environment, Water and Ecological Transition of Ecuador, through its Biodiversity Directorate (DBI), have been cooperating in a very coordinated manner for the implementation of different actions. On August 16, the workshop "Presentation of Bioamazon Project and national initiatives underway" was held to identify points of common interest that will strengthen local initiatives and actions of the inhabitants of the Amazonian provinces within the framework of the value chains of wildlife products identified as being of high interest and potential.

In addition to the authorities of the Biodiversity Board, the workshop was attended by representatives of the Decentralized Autonomous Government of the Province of Sucumbíos, Ricardo Orellana (Tourism Department), Ricardo Tapuy (Nationalities Department), Edwin Herrera and Jessica Moncayo (International Cooperation

FOTO: ISTOCK

Department); the representatives of Cedeal, Andrés Cerna and Karla Rodríguez; the coordinator of the Bioamazon Project, Mauro Ruffino, and consultants who are developing the studies within the framework of the project.

In his presentation, Mauro Ruffino, mentioned the objective of the Bioamazon Project to contribute to the conservation of Amazonian Biodiversity and especially of the species included in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), promoting the efficiency and effectiveness of the management, monitoring and control of wildlife species threatened by trade in the ACTO Member Countries.

"We are developing the Amazon Regional Observatory (ARO), a virtual forum for the integration of the eight Amazonian countries that are members of the Amazon Cooperation Treaty Organization (ACTO) that will promote the exchange of information and knowledge about the Amazon among Amazonian countries and other stakeholders. We are grateful for the participation of the Ministry of Environment, Water and Ecological Transition of Ecuador in the actions of the Project and the ARO," said Mauro Ruffino, coordinator of the Bioamazon Project and the implementation of the ARO.

Néstor Acosta-Buenaño, wildlife specialist of the Ministry's Biodiversity Board, in turn, presented the evolution of Ecuador's Biodiversity Information System, which had the support of ACTO for the development of interconnection and interoperability modules and connection with the ARO, to make biodiversity data available also in the Observatory.

"The Biodiversity Information System of Ecuador (SiB-Ec) was conceived in 2010 and it was until the period from 2017 to 2019 that with funds from the PCBRedd project financed by KfW that it was strengthened with the implementation of several modules completing a total of 37 modules to address the processes of research permits, framework contracts, patents of conservation means, rescues, retentions, trampling, among others; Then in a second period from 2020 to date, with funds from the Bioamazon Project, financed by KfW, we will continue with the implementation of 11 modules and 21 more under development for the management of CITES information, environmental risks and interoperability and interconnection mechanisms with other systems such as the ARO", mentioned Néstor Acosta-Buenaño.

María Alejandra Gallardo, Mariana Mites, Cristina Flores and Ricardo Burgos, consultants for Ecuador's Bioamazon Project, presented the progress made in defining and identifying strategies, tools and experiences to strengthen the orchid and arapaima production chains. For orchids, a tourism and conservation strategy called "The Orchid Route" was proposed, which in turn will serve to strengthen the proposal of the Action Plan for threatened orchids to guarantee their conservation. In addition, the planning of workshops on successful experiences with orchids, arapaima and charapa in the Amazon region of ACTO member countries will strengthen the work of identifying the arapaima value chain.

The workshop made it possible to reach a close rapprochement with an important local stakeholder in the province of Sucumbíos, whose representatives committed to collaborate and closely support the initiatives being implemented within the framework of Bioamazon Project.

Guyana

Strengthening a sustainable management initiative and traceability mechanisms for Psittacines in Guyana

Authors: Alona Sankar[1] and Patrick Chesney[2]

[1]Commisisoner, Guyana Wildlife Conservation and Management Commission, Ganges Street, Sophia, Georgetown, Guyana; [2]Independent Consultant, PO Box 101521, Georgetown, Guyana.

Abstract: *During January to July 2021, field populations of Psittacines distributed across known trapping sites in Guyana were assessed for abundance and distribution, public consultations with key stakeholders on psittacine management planning and pet management were held and a psittacine pet registration module (PPRM) was developed, all to strengthen the sustainable management and traceability mechanism for psittacines in Guyana. Amazonica amazonica had the highest relative abundance across all ecological zones (0.311) followed by Pionus menstruus (0.238) and P. melanocephalus (0.096). No other species had a relative abundance greater than 0.07. Psittacine species richness of the ecological zones ranged from 6 to 11 however, the zones had similar species diversity of psittacines as measured using the Shannon Diversity Index. Approximately 30% of the species observed were found at all ecological zones. For prudent management the trade of these species may continue at the current rate provided that offtake and natural populations are carefully monitored. The Psittacine Management Plan should provide for the establishment of annual monitoring of all psittacine species in the trade utilizing distance sampling methods and the involvement of local communities. Trappers, traders and owners of psittacine pets have access to information on the care and management of the birds in captivity and the registration of pets using an online PPRM, that is a part of the Domestic Licence Management System for wildlife in Guyana.*

Keywords: *assessment, administrative regions, macaws, management planning, parrots, pets, registration.*

Background

Guyana is considered the country with the largest number of exports for psittacines, collectively referred to as parrots, in the Amazon; approximately 139,485 parrots left the country over the period 2000-2013 (ORTIZ-VON HALLE, 2018). The exportation of parrots from Guyana began in the 1970s (KRATTER, 1998), and national quotas for 2020 for the various species can be found here. Psittacines have been harvested for a variety of uses in Guyana over the years.

These species are quite charismatic and are very popular in the pet trade. The pet trade is the primary catalyst for the observed harvesting in the country, as there is high demand, by foreigners and locals, for these animals.

As the national focal point for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Guyana Wildlife Conservation and Management Commission (GWCMC), has an obligation to conduct assessments to inform the non-detriment findings outlined in the convention. The first recorded assessment of psittacines was conducted during the late 1990s (KRATTER, 1998), and the second, during the period 2018-2019, in known trapping areas across Guyana (GWCMC, 2020). With the financial support from the Amazon Cooperation Treaty Organization (ACTO), through the KfW-funded Bioamazon Project (Component 3)[1], the GWCMC is strengthening a sustainable management initiative and traceability mechanisms for Amazonian species in Guyana. This present assessment was carried out from January to July 2021 and contributes to management planning for the sustainable utilization, conservation and (where possible) protection of psittacines in Guyana.

General objective

To improve management initiatives for all psittacines utilized in the domestic and international trade to ensure that viable populations remain throughout their historic range.

Specific objectives

- To collect information on the abundance and distribution of psittacines from selected areas in Guyana.
- To develop specific management strategies, through consultations with stakeholders, and to contribute to the overall management plan for psittacines in Guyana.
- To develop, market and execute a system to encourage citizens who are owners of psittacines to register their pet with the Bioamazon National Technical Focal Point.
- To develop and produce an informational user's guide on best practices for trapping, transporting and caring for psittacines in the international and domestic trade.

Population assessment based on field surveys

From February to June 2021, a series of surveys of populations of psittacines were conducted in Administrative Regions #2, #4, #7, #8, #9 and #10. These sites were located in a range of habitats with specific sampling sites identified by local experts. Study areas were determined as important for psittacines based on knowledge gained from preliminary studies.

Methodology: Two distance sampling methods, line transect and point transect (BUCKLAND et al, 1993), were used to study the populations of psittacine species. Data from field surveys, collected during a total of 25 survey events - eight line transects and 17 point transects - at 22 sites, were recorded. Ten of the 13 sites included in the analysis were only sampled once for one hour. The remaining three were sampled at least twice for one to two hours on the same day. The data therefore is largely representative of events (an

1 Bioamazon Project Component 3: "Strengthening sustainable management initiatives and traceability mechanisms for Amazonian species" seeks to prioritize and strengthen existing initiatives for the sustainable management of species through investments requested by ACTO member countries, among the most relevant, those that allow better evaluation of traceability systems.

occurrence of short duration at a specific moment in time) rather than a reliable sample of the population. Results and inferences therefore need to be viewed and tempered with this caveat in mind. After an assessment of the data quality, considering completeness and execution of the methods, data from 16 surveys - two line transects and 14 point transects - from 13 sites were selected for analysis. Survey sites were plotted on satellite imagery to illustrate spatial distribution using Google Earth Pro. Based on the geographical distribution, the sites were grouped into ecological zones identified, and summarized in Table 1 below.

Table 1: Determined ecological zones with associated sample sites for Psittacines in Guyana, 2021.

Ecological Zones	Sample Sites
Iwokrama-Rupununi	Site 17
Mabura	Site 5, Site 6, Site 7, Site 9, Site 11, Site 12 and Site 13
Pomeroon-Supenaam	Site 14, Site 15 and Site 16
Rockstone-Macuria	Site 1, Site 2, Site 3, Site 4 and Site 10
Soesdyke-Linden	Site 8, Site 18, Site 19, Site 20, Site 21 and Site 22

Psittacine population data were analyzed similarly at the level of the ecological zones and individual survey sites. The area of a point transect was computed as the area of a circle with radius equals the maximum observable distance of 150m. The area of a line transect was calculated as the area of a rectangle with length equal to the length of the transect and width equal to twice the maximum observable distance of 150m. Species diversity was estimated using the Shannon Diversity Index (H). The relative abundances of each species observed were computed by dividing the observed abundance for the species by the total abundance for the transect/site/zone. The population density of each species was computed simply by dividing the observed abundance of each species by the sample area (site/zone). This is a simplification of the density formula presented by Buckland and colleagues (1993) to estimate the actual probability of detection. The computation of species densities within the ecological zones was done for line transects and point transects together and separately (LEGAULT et al, 2012). All data were aggregated to compute the total number of observations, overall species richness and relative abundances. Computed densities and species diversity were also compared across zones. Analyses were conducted in MicroSoft Excel and R.

Results: Across all zones, 261 individual observations were made and the observed abundance of psittacines was 1,574, a number that was reduced to 998 after treatment of the data for the Soesdyke-Linden zone (Table 2). Species richness across all zones was 14. Relative abundance is illustrated in Figure 1. *A. amazonica* had the highest relative abundance across all zones (0.311) followed by *P. menstruus* (0.238) and *P. melanocephalus* (0.096). No other species had a relative abundance greater than 0.07.

Four species were found in all zones surveyed - *A. amazonica*, *A. farinosa*, *P. melanocephalus* and *P. menstruus*. Another five species were observed only in one zone - *A. dufresniana*, *A. ararauna*, *Aratiga pertinax* (Brown-Throated Parakeet), *F. passerinus* and *P. caica*. Of these five species, three were only found in the Mabura ecological zone and two were only found in the Soesdyke-Linden ecological zone.

Tabela 2: Riqueza geral de espécies, abundância de espécies observada e abundância relativa para todas as zonas combinadas.

Scientific Names (Common Names)	Observed Abundance	Relative abundance
Amazona amazonica (Orange-winged amazon)	310	0.311
Amazona dufresniana (Blue-cheeked amazon)	10	0.01
Amazona farinosa (Mealy Parrot)	53	0.053
Ara ararauna (Blue and Gold Macaw)	1	0.001
Ara chloropterus (Red and Green Macaw)	34	0.034
Aratiga pertinax (Brown-Throated Parakeet)	21	0.021
Deroptyus accipitrinus (Red-fan Parrot)	16	0.016
Diopsittaca nobilis (Red-Shouldered Macaw)	40	0.04
Forpus passerinus (Green-Rumped Parrotlet)	68	0.068
Orthopsittaca manilata (Red-bellied Macaw)	52	0.052
Pionites melanocephalus (Black-Headed Parrot)	96	0.096
Pionus fuscus (Dusky Parrot)	36	0.036
Pionus menstruus (Blue-Headed Parrot)	238	0.238
Pyrilia caica (Caica Parrot)	23	0.023
Total	998	
Species Richness	14	

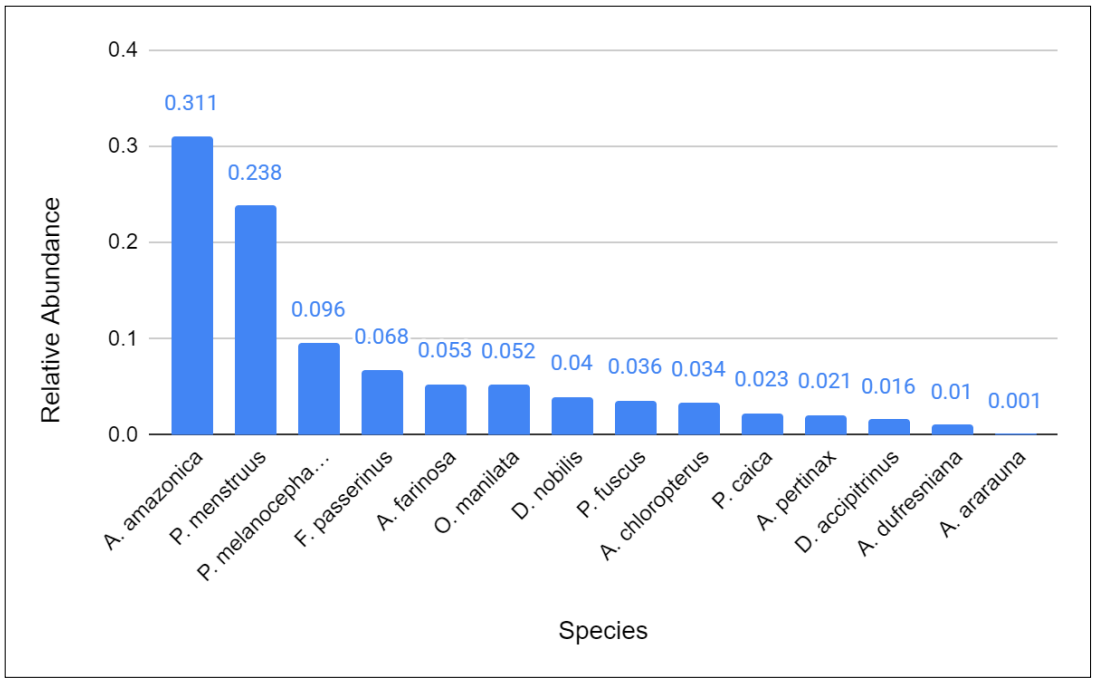

Figure 1: Relative abundance based on combined abundance at all zones for species observed in study.

Figure 2 and Table 3 summarizes the estimated density for each species in the ecological zones. Only point transect data are used here so as to avoid the impact of data from line transects previously mentioned. The Coefficient of Variation indicates that the variation of densities among the zones for only three species (*A. amazonica*, *A. farinosa* and *D. accipitrinus*) was high (>1).

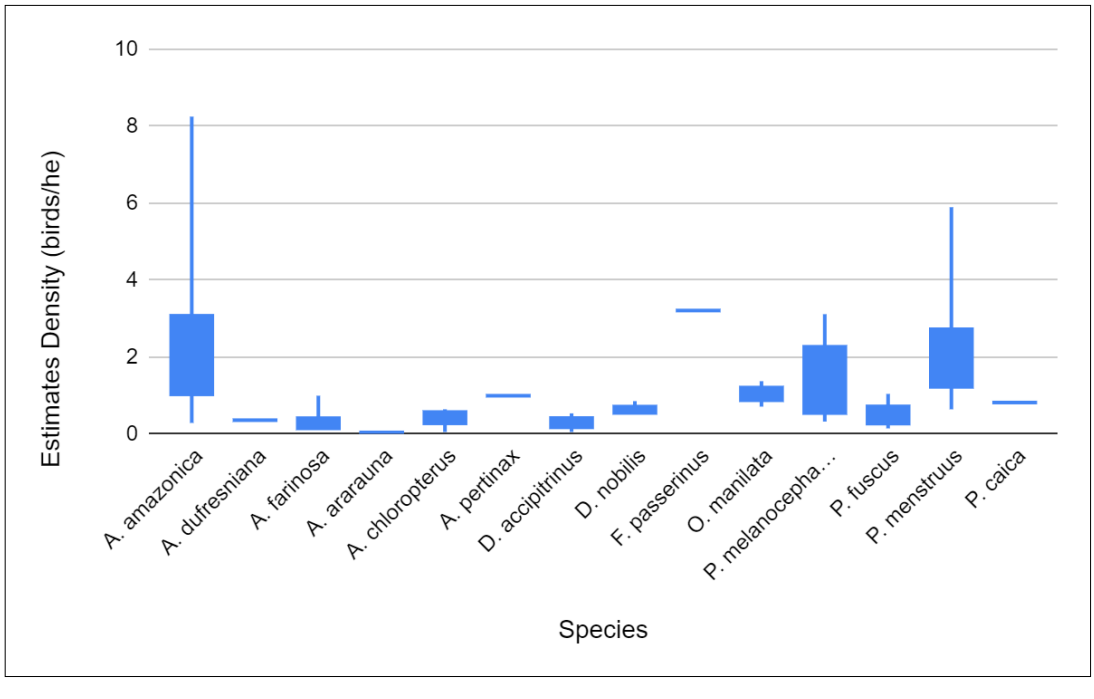

Figure 2: Boxplot of estimated population density for species observed at all zones.

Table 3: Summary of estimated population densities for each species at all zones with coefficient of variation among the zones for each specie.

	Population density at zones (point transects only)				
Scientific Names (Common Names)	Pomeroon-Supenaam	Soesdyke-Linden	Rockstone-Macuria	Mabura	Coefficient of variation (CV)
Amazona dufresniana				0.354	0.0
Amazona farinosa	0.141	0.141	0.99	0.212	1.1
Ara ararauna				0.035	0.0
Ara chloropterus		0.047	0.637	0.495	0.8
Aratiga pertinax		0.99			0.0
Deroptyus accipitrinus		0.047		0.531	1.2
Diopsittaca nobilis	0.849	0.519		0.566	0.3
Forpus passerinus		3.207			0.0
Orthopsittaca manilata	0.707	1.368			0.5
Pionites melanocephalus	3.112	0.613	1.981	0.318	0.9
Pionus fuscus		1.037	0.141	0.389	0.9
Pionus menstruus	1.415	5.895	0.637	1.662	1.0
Pyrilia caica				0.813	0.0

Ecological Zones	Shannon Diversity Index (H)
Pomeroon-Supenaam	1.53
Soesdyke-Linden	1.7
Rockstone-Macuria	1.59
Mabura	2.13
	CV =0.2

All ecological zones had Shannon Diversity Indices for psittacines ranging from 1.53 to 2.13 with low variation among them (CV=0.2)

Main inferences:

1. The study covered a good set of ecologically distinguishable areas, critical for the capture of parrots and macaws for the trade.
2. This study can be used as a baseline for monitoring populations of psittacines in Guyana at regular intervals.
3. There are 28 species of psittacines known from Guyana (MELINSKY et al, 2005) and 19 of these species are listed for trade from Guyana. These surveys encountered 14 species of which 13 are listed for trade.
4. The study provides a significantly empirical basis to guide the future extraction of Psittacine species

from the wild and continued monitoring of the populations. Cross referencing the findings of this study with published records of densities of a number of genera and species - *Amazona, Ara, Aratinga* and *Pionus* (MARSDEN & ROYLE, 2015), *A. amazonica* (MARSDEN et al, 2000), *A. farinosa* (LEE & MARSDEN, 2012; Guix et al, 1999), *A. chloropterus* (LEE & MARSDEN, 2012), *O. manilata* (LEE & MARSDEN, 2012) and *P. menstruus* (LEE & MARSDEN, 2012; MARSDEN et al, 2000) - suggests that the densities observed are similar to or above what is those observed in similar ecosystems.

5. Psittacine species richness of the ecological zones ranged from 6 to 11 however, the zones had similar species diversity of psittacines as measured using the Shannon Diversity Index. Approximately 30% of the species observed were found at all ecological zones and approximately 35% were found at only one zone. All species could be found between Soesdyke-Linden and Mabura and these two zones were also the most species rich, diverse and unique in relation to psittacines.
6. The ecological zones need to be better defined and geographical boundaries established to allow for the estimation of population sizes in the future.
7. In order to ensure all species in the trade are included in any future population assessments, additional ecological zones must be surveyed. Three areas are recommended - the Barima and Waini river basins in the north-west region, the middle and upper Mazaruni districts and the Rupununi savannahs and associated mountains (Kanuku and Acarai).

Public consultation on key considerations for Psittacine management planning

To gather information from stakeholders who utilize psittacines, in-person workshops were held over a period of four months, and facilitated by GWCMC, supported by an independent consultant. Workshops were held in eight administrative regions, as follows: Region 1 (Mabaruma), Region 2 (Lake Mainstay), Region 4 (East Bank Demerara / Soesdyke, Georgetown), Region 6 (Corentyne), Region 7 (Bartica, Kamarang), Region 8 (Mahdia), Region 9 (Lethem), and Region 10 (Linden). Through the planning process and stakeholder analysis, the following groups were selected for engagement: - Toshaos (village captains), trappers, middlemen, transporters of wildlife, residents of indigenous communities, institutional stakeholders and persons living in or proximal to areas identified as critical habitats for psittacines.

Recommendations for Psittacines management planning

1. There is no evidence to suggest that any species encountered in the surveys should be removed from the trade. However, there is also no evidence to justify an increase in trade in any of these species. For prudent management the trade of these species may continue at the current rate provided that offtake and natural populations are carefully monitored.
2. The Psittacine Management

Plan should provide for the establishment of annual monitoring of all psittacine species in the trade utilizing distance sampling methods.

3. Other critical areas for psittacines in Guyana need to be included in the monitoring of populations of these species in order to: (a) monitor the full range of psittacine species (with priority on those in the trade); (b) monitor areas with no or extremely low harvesting pressures to understand trends in psittacine populations independent of harvesting pressures. Four areas for consideration in this regard are: (i) North Rupununi savannahs and Iwokrama forest; (ii) South Rupununi savannahs and Kanuku and Acarai mountains; (iii) Middle and upper Mazaruni districts; and, (iv) Barima-Waini region.
4. The Management Plan should establish or cater for the establishment of boundaries for all psittacine ecological zones to allow for estimating population sizes from population density data. These Zones may wholly or partially be designated as harvesting or non-harvesting areas. Based on high species richness and diversity, and indications of high population densities, The Soesdyke-Linden and Mabura zones determined in the referenced study may be designated as harvesting zones.
5. The Plan should require the establishment of non-harvesting areas to cover all species in the trade. These areas will serve as sanctuaries where populations of harvested species can thrive without harvesting pressure. They will provide genetic material to other populations and will also serve as reference populations to study the impact of harvesting. The Upper-Mazaruni is one possible non-harvesting area.
6. The management plan for psittacines should allow for the provision of incentives to communities for protection and preservation of habitats and species. These may include financial support for protection/preservation and providing evidence of the same, support for alternative livelihoods, direct benefits from law enforcement and capacity building opportunities. Specific incentives should be discussed with individual communities and formalized in agreements.
7. Related to 6 above, villages will need to be assisted with the development of community regulations for the management of psittacines and their habitats.
8. Monitoring is critical to management and the psittacine management plan should cater for monitoring of populations and habitats in areas designated for harvesting as well as non-harvesting areas. Monitoring extraction, housing and transport of the species for compliance should be routine. This may be accomplished through local community engagement and/or inter-agency collaboration.
9. Before the management plan is finalized for implementation stakeholder groups should be engaged in an effective way on its content and provisions and particularly how it relates to them, there should be capacity building opportunities at the community level that would aid

the conservation of the species, and approaches to encourage the presence of species should be explored by the GWCMC and the relevant agencies.

Registration of psittacines as pets

The GWCMC is currently undertaking the development of a digital system for licensing the domestic wildlife trade, called the Domestic Licence Management System (DLMS). The GWCMC developed an online Psittacine Pet Registration Module (PPRM) as part of the DLMS. Owners of pets can simply log in and input data and information in the online registration form. In addition, a strategy was developed to increase awareness among the owners of Psittacines' pet about the requirement for registration with the GWCMC.

The DLMS consist of three applications;

a) Licence Admin Portal (LAP),

b) Wildlife Application Portal (WAP) and

c) Licence Management System API (LMSAPI);

The PPRM uses a subset of each. The PPRM focuses on the registration of psittacine as pets and the analysis and export of the registration data. The capabilities of the PPRM are as follows:

- Psittacine Species Management - Using the LAP, staff of the GWCMC can create, view, update, and delete the list of known psittacine species. This list is presented to the pet owner during the pet registration process.
- Data Analysis - Using the LAP, staff of the GWCMC can view a dashboard summarizing pet registration by administrative region, species and a combination of both. The feature also supports region and species filters for applicable charts.
- Data Export - All pet registrations can be exported to a formatted Microsoft Excel file for further data analysis and record keeping.
- Pet Registration - Using the WAP, pet owners can register their pets using a website.

In collaboration with the Bioamazon National Technical Focal Point, a temporary link is in use for the online registration https://application.gwcmc.geoideasgy.com/#/, but that once the licensing system has been finalized, the online registration application will be migrated to the GWCMC website by GWCMC staff.

The Psittacine pet registration awareness strategy will utilize a combination of digital and printed materials, audio-visual content, stakeholder engagements and an active online presence via website and social media to reach the specified target audience; thereby ensuring that the message is delivered and received by the intended target group, the required action is taken and ultimately the expected outcome is achieved. Monitoring Indicators have been developed to track how citizens, who are owners of psittacines, register their pet with the National Technical Focal Point.

Parrot care

The GWCMC has developed a booklet to: (i) offer advice on trapping and handling birds; (ii) to provide first aid to birds in the care of pet owners; and (iii) to improve ways birds are handled to decrease death during transport (Figure 3). The overall goal is to safeguard parrots and

macaws in the local and international trade by improving how these birds are handled during harvesting and transport to holding stations.

Trapping is the first physical stage in the wildlife trade and is done throughout Guyana. Trapping parrots and macaws provides an income with minimal investment but can result in unnecessary death of birds if not practised correctly. Animal welfare concerns remain a priority for the GWCMC and therefore this guide on best practices was developed after an assessment was done to determine the factors which may lead to death of birds during trapping.

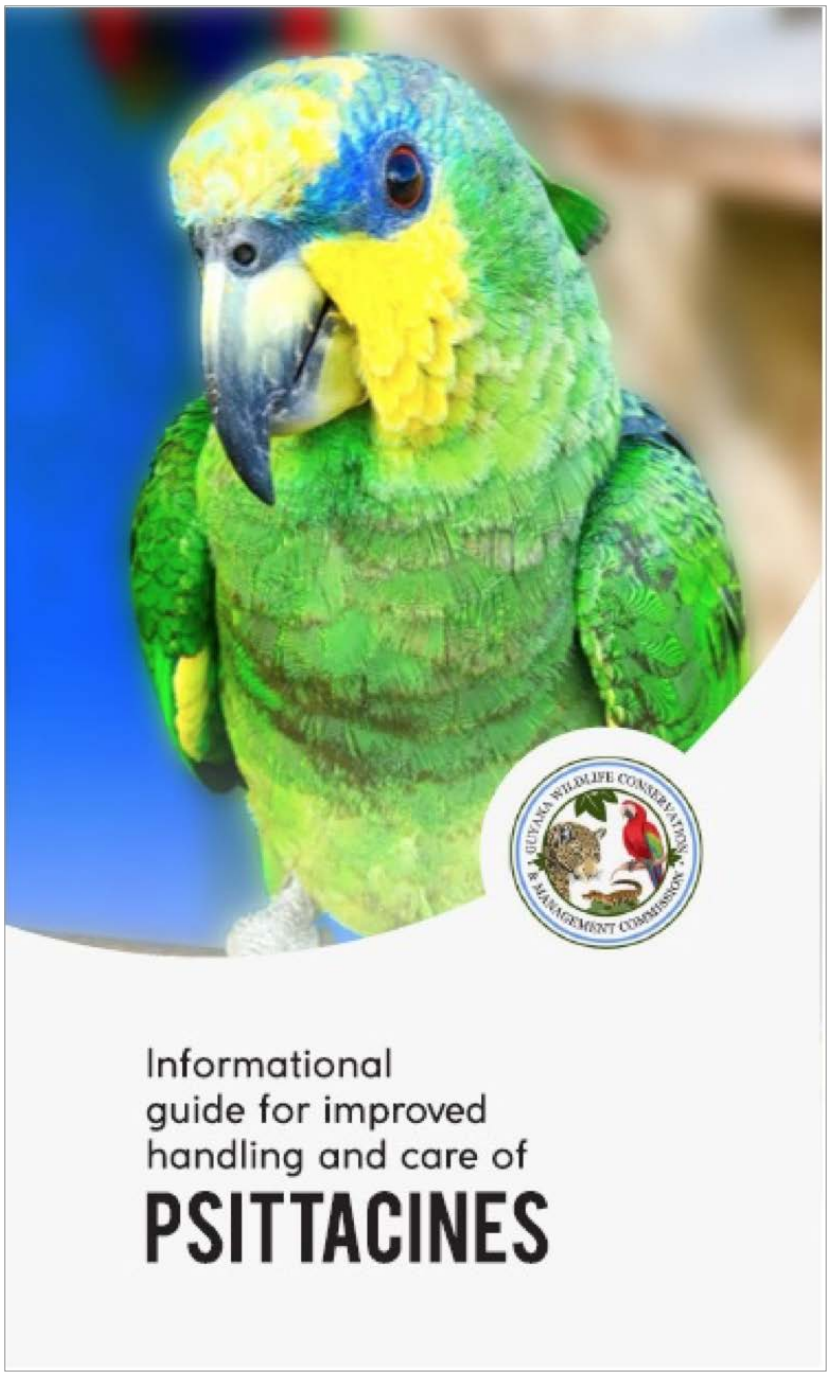

Figure 3: Informational guide for improved handling and care of psittacines in Guyana (GWCMC 2021).

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Venezuela

Management Plan for the Conservation and Sustainable Use of *Podocnemis erythrocephala* (Chipiro), *Podocnemis unifilis* (Terecay), *Podocnemis expansa* (Arrau) and *Peltocephalus dumerilianus* (Cabezón)


FOTO: ISTOCK

Authors: Carliz Díaz[1] *e Edis Solórzano*

Abstract: *Development of a management plan for the conservation and sustainable use of the species Podocnemis erythrocephala (Chipiro), Podocnemis unifilis (Terecay), Podocnemis expansa (Arrau) and Peltocephalus dumerilianus (Cabezón), through institutional strengthening and updating of information on the status and population dynamics and the design of strategies for their conservation and sustainable use, as a way to conserve and maintain wild populations, reduce negative anthropogenic pressure on them and provide productive alternatives to improve the living conditions of local and indigenous communities in Venezuela.*

Key-words: *Podocnemis expansa, Podocnemis unifilis, Podocnemis unifilis, Peltocephalus dumerilianus, management plan, Venezuela..*

1 Directora General de Diversidad Biológica. Ministerio del Poder Popular para el Ecosocialismo (MINEC).

Freshwater turtles are among the most endangered vertebrate groups in the world because they suffer intense pressure from humans (Moll & Moll, 2004). Their populations are being diminished by unsustainable exploitation and habitat destruction. On the other hand, the growing demand for their eggs and meat, together with widespread traditional medicine practices, are critical factors that have brought many turtle populations to the brink of extinction (Turtle Taxonomy Working Group, 2017).

In Venezuela, as in other areas of distribution of the arrau (*Podocnemis expansa*), terecay (*Podocnemis unifilis*), Chipiro (*Podocnemis unifilis*) and cabezon (*Peltocephalus dumerilianus*) turtles, their eggs and meat are exploited, mainly for human consumption in rural areas.

Some of these species have been used in zoo-breeding activities for the reinforcement of wild populations or for commercial purposes, within the framework of conservation and sustainable use programs developed in the country. These activities are part of the conservation plans that have been carried out for more than 30 years in several areas of the country, within the framework of the National Program for the Conservation of Continental Chelonians developed by the Ministry of Popular Power for Ecosocialism (MINEC), with financing from the government of the Bolivarian Republic of Venezuela, which has allowed us to have a wide experience in the management of this group of animals (Marín, 2006; Marín, Babarro and Dávila 2007; Marín and Solórzano, 2012).

The techniques used in the aforementioned Program are perfectly applicable to achieve the successful realization of the sustainable use of these species, varying only in their final objective, that is, replacing the objective of preservation (in many cases wrongly called conservation), with that of sustainable use. These techniques include the protection of nesting areas, the transplantation of clutches, the collection and rearing of hatchlings, the recording of biological statistics, the evaluation of reproductive patterns, the release in areas of their natural distribution of specimens reared for a year and the incorporation of local communities in the execution of all the actions developed.

On the other hand, in order to support national policies and with the objective of achieving the conservation of freshwater turtles, MINEC is currently promoting the implementation of the project: Development of a management plan for the conservation and sustainable use of the species *Podocnemis erythrocephala* (Chipiro), *Podocnemis unifilis* (Terecay), *Podocnemis expansa* (Arrau) and *Peltocephalus dumerilianus* (Cabezón), through institutional strengthening and the updating of information on the status and population dynamics and the design of strategies for their conservation and sustainable use, as a way to conserve and maintain wild populations, reduce negative anthropogenic pressure on them and provide productive alternatives to improve the living conditions of local and indigenous communities; This project is financed by the German Development Bank (KfW), implemented under the institutional tutelage of ACTO, through a financial cooperation agreement between Germany and the Permanent Secretariat of ACTO (PS/ACTO) through KfW.

This management plan will make it possible to have the technical-legal norms that will regulate the commercial harvesting of the aforementioned species in the country, since the commercial harvesting of wild fauna in Venezuela is carried out under the modality of

management plans, whose content and terms of reference are established by the National Environmental Authority, according to the provisions of the Regulations of the Law for the Protection of Wild Fauna (Republic of Venezuela, 1970; Bolivarian Republic of Venezuela, 1999). These plans are promulgated through ministerial "Resolutions" that establish the administrative and technical measures for managing the resource, as well as the norms to be applied for controlling activities during their implementation.

The implementation of this plan, in addition to promoting legal domestic trade, will make it possible to promote international trade in these species, which are included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), so that CITES will ensure that international trade does not threaten the survival of the populations involved.

The plan is based on criteria of legality, that is to say, it is guaranteed that the specimens have been obtained in accordance with national laws and regulations for the protection of wild fauna; and under criteria of sustainability and traceability, in order to have basic information, as well as strategies to verify that the trade of the species is carried out in a sustainable manner and is not detrimental to the maintenance of their wild populations, and also that it can be traced through the issuance and control of the respective CITES permits.

With the implementation of this management plan, it is expected that there will be greater empowerment and appreciation of the local and indigenous communities for the target species, which will have a positive impact on the conservation of their wild populations and the promotion of productive activities that will improve their livelihoods.

PHOTO: EDIS SOLÓRZANO

Arrau tortoise specimens

PHOTO: EDIS SOLÓRZANO

Release of Arrau and Terecay tortoises, at the Arrau Tortoise Wildlife Refuge.

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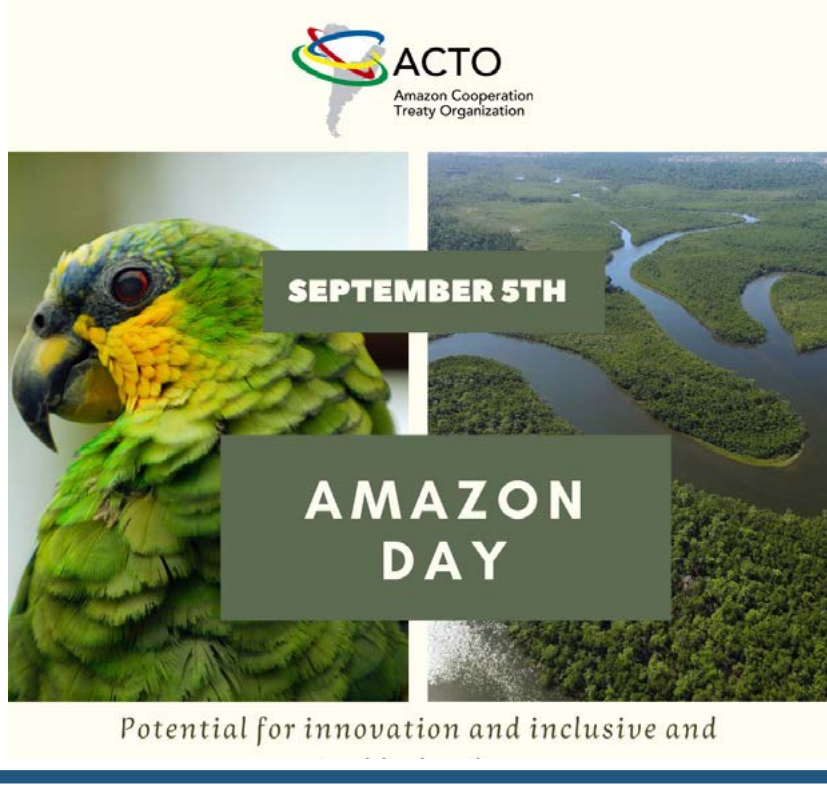
Amazon Day



Publications

Discover the Venezuelan publication Megabiodiversa Available in Spanish in this Link

http://otca.org/wp-content/uploads/2021/08/Boletin_MegaBiodiversa-menor.pdf

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About the Bioamazon Project

Bioamazon is a **regional project in the ACTO´s framework** that contributes to the conservation of **Amazon Biodiversity**, especially the species included in the CITES Convention.

To this end, it seeks **to increase the efficiency and effectiveness of the management, monitoring and control of species of wild fauna and flora threatened by trade** in ACTO member countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela.

It is part of a Cooperation Agreement between the Federal Government of Germany and ACTO with implementation through the KfW.

Newsletter Datasheet

Amazon Cooperation Treaty Organization – Permanent Secretaríat (PS / ACTO): Secretária Geral, Alexandra Moreira López. Diretor Executivo, Carlos Alfredo Lazary. Diretor Administrativo, Carlos Salinas Montes. Assessora de Comunicação, Frida Montalván. Estagiários: Ana Luísa Neiva da Natividade, Patrick de Oliveira Nascimento y Stephanie de Paulo Barbosa.

Bioamazon Project – Coordinator, Mauro Luis Ruffino; Administrative, Technical Expert, Vicente Guadalupe; Amazon Regional Observatory (ARO)Data Science Expert, Isaac Ocampo Yahuarcani; Financial and Procurement Manager, Sergio Paz Soldán Martinic; Administrative Assistant, Janet Herrera Maldonado; Communication Advisor, Denise Oliveira.

Production and content edition – Denise Oliveira (bioamazonia@otca.org)

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ACTO Address – SEPN 510 Norte Bloco A 3° andar CEP: 70750-521, Brasília-DF, Brasil.
Tel.: (55 61) 3248-4119

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BIOAMAZON PROJECT
Conservation of species threatened by unsustainable trade

ACTO
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