REPORT:

RUFFORD SMALL GRANTS MEXICO CONFERENCE

"Sharing Research and Conservation Efforts for Nature in Mexico"

Venue:

Barceló Grand Faro Los Cabos Hotel, San José del Cabo, B. C. S. February 15th to 18th 2015

Organized by

GUSTAVO CÁRDENAS HINOJOSA

Funded by

The Rufford Foundation
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Summary Report

by Gustavo Cárdenas Hinojosa. March 13 2015.

Introduction

The Rufford Foundation & Gustavo Cárdenas Hinojosa held the 1st Rufford Small Grants (RSG) Conference in Mexico. Since 2012 these meetings have been held in different countries with the aim to provide a forum for RSG recipients to share the results of their projects, discuss ideas, problems, issues and create invaluable networking opportunities.

In Mexico, the Rufford Foundation has supported more of 78 nature conservation projects since 2005. With its small grants has allowed getting valuable results and important experiences to young professionals, researchers or conservationists, of research and conservation efforts for nature in Mexico. The diversity of nature conservation projects granted by RSG was highlighted during the project presentations of the 23 previous grantees that attended the Conference. The venue was in Barceló Grand Faro Los Cabos Hotel, San José del Cabo, B. C. S. during February 15th to 18th 2015. The Conference theme was: *Sharing Research and Conservation Efforts for Nature in Mexico*. Thus the main aims of the conference were to:

- Share the results of the projects granted in Mexico by The Rufford Foundation.
- Provide a forum for grant recipients to discuss ideas, issues and create new networking opportunities;
- Raise communication between previous Rufford grantees.

Summary of the role of the RSG in Mexico.

A summary was done of the conference proceedings with an emphasis on describing the role or impact that The Rufford Foundation plays in supporting conservation in Mexico at local and regional level. Therefore a list of examples is presented below:

Examples of where Rufford Funding has enabled disproportionately large and tangible conservation impacts to be delivered

The blue whale project of **Diane Gendron** was able to reach disproportionately large and tangible conservation impacts to the blue whales of Loreto since she was able to establish a working network between researchers, the local NGOs, the National Marine Park of Loreto and the WW service providers. This is a key element to enhance responsible long-term WW activities and to inform local people about the importance of the blue whale and the conservation of its habitat.

Through the four grants award to **Ericka Ceballos** about the monitoring of the e-commerce of protected wildlife in more of 26 African countries and Latin American Countries. The findings of Ericka have been reported to the CITES workshops and with the governments and media, creating awareness of the problem, to achieve the main goal: the monitoring and the enforcement of the e-commerce by the member countries.

Examples of how the results of the projects were translated to local communities.

The results of the project of **Alejandro Espinoza-Tenorio** and collaborators were shared and translated to local community, fisheries authorities, and public not specialized into accessible formats trough of posters and of a regional divulgation journal.

In the project of **Diane Gendron** they shared all the information to local communities in the creation of a blue whale conservation group from Loreto, posters, pamphlets, and webpage. Also the information was shared in meetings and workshops on blue whale observation.

Francisco Mora shared its results to local communities during a workshop and also by doing a formal report of the project to communities through their local authorities, so that it can be further used as a technical document to sustain applications for Payment for Ecosystem Services. Furthermore, some local persons were hired for collecting data.

Ivonne Cassaigne held a meeting with local ranchers where were presented results of her project. Besides, she gave another talk at the local university where many kids of ranchers and future biologists for some of those ranches attended. To both meetings we also invited the natural protected areas commission and local livestock department.

In the project of **Juan Luis Peña Mondragon** was conducted the first workshops in rural communities having conflicts with jaguar and other carnivores and through presenting the results of the project he could also get their impressions as groups and to explore into the solutions to the conflict. Furthermore, he did the First Mexican tiger festival in order to work with children of local communities.

The project of **Stephanie Rousso** had three parts: research, education, and conservation. All on this included it its field activities students, local people and tourists.

The activities of the turtle project of **Agnese Mancini and collaborators** also included the creation of the San Ignacio Lagoon Sea turtle festival and brought monthly educational activities in the schools. At the same time, they are working with the local university to support local fishermen and help them create an ecotourism project to create an alternative income.

Examples of locally developed approaches to biodiversity management

The goal of blue whale project of **Diane Gendron** was to study blue whale natural behaviour and the interaction with whale watching (WW), and share the results with the Federal Conservation authority and the users of this natural resource, to propose a new passive approach for WW. She reached this by doing workshops with local service providers of blue whale watching (WW) in Loreto in order to share the information gathered in the project and they were able to increase consciousness in relation to the blue whale responsible WW activities.

Francisco Mora and collaborators did an assessment of future management and alternative management strategies for the tropical dry forests of the Chamela-Cuixmala region, Mexican Pacific. This was shared to the landowners of this region.

The activities of the projects of **Agnese Mancini** had included a series of educational activities involving the local

primary schools on natural resources that can be found at the lagoon. Besides, she joined forces with a local NGO to create a turtle monitoring group composed by fishermen from the lagoon. Since the creation of the group, more than 100 turtles have been tagged and released in the southern part of the lagoon. All this information is key for the turtle management in San Ignacio Lagoon.

Examples of how has Rufford support helped early career conservationists achieve their goals

The results of the project of **Alejandro Espinoza-Tenorio** and collaborators helped to two persons to get a Master and PhD Degree. The project of **Antonio de la Torre** named Research for the conservation of the jaguar in the Selva Lacandona, Chiapas, Mexico was the fundamental for his Master dissertation.

Also, the project of **Ivonne Cassaigne** was fundamental to achieve the goals of collecting data for her PhD project. Some of the data collected in the two RSG projects of **Juan Luis Peña Mondragon** are fundamental to generate human resources since at least six students are analysing data of the project to end its bachelor or Master thesis. The project of **Fredy Alvarado** work will continue as part of his PhD research.

The first RSG granted to **Agnese Mancini** was a pilot study for a PhD thesis to standardize the data collection method, where the interview process and to find the best way to analyse results.

Examples of how Rufford funding has helped support work on species and ecosystems that are traditionally difficult to fundraise for or the funding helped for baseline information.

Fredy Alvarado Roberto was able to study the biodiversity conservation, ecosystem services and land use management in livestock dominated landscapes trough research on dung beetles of the Yucatan Peninsula. Also, **Victoria Capello** used the dung beetles to compare its diversity in intact forests landscapes of the Calakmul Biosphere Reserve to know the implications for conservation in adjacent human modified landscapes. **Aly Valderrama** and collaborators did the first study of the diversity and genetic structure of an endemic species tree *Tilia mexicana*. The findings of her project will be crucial for designing management and conservation practices for the endangered species.

Juan Luis Peña Mondragon did the first assessment of damage caused by jaguars and other large carnivores on domestic cattle in the southern state of Nuevo Leon, Mexico. Furthermore, also identified the main locations where the conflict between the jaguar and rural people is stronger. The research of **Luis Malpica Cruz** will be the first one to quantify the ecological and socioeconomic impacts of an invasive predator (lionfish) to artisanal fishing and recreational diving in Veracruz, Mexico.

The study of **Luz Adriana Perez Solano** will be the first to be conducted in the Mapimi Biosphere Reserve using the direct method of radiotelemetry to evaluate the spatial and behavioural ecology of the mule deer in the Chihuahua Desert, Mexico.

The research of **Miriam San José y Alcalde** will be the first to assess the independent impacts that different landscapes attributes (forest cover, forest fragmentation, edge density, etc.) may have on ecological processes as seed dispersal, seed predation and seedling recruitment for the rainforest regeneration, which are disturbed by the increasingly threatened by deforestation, forest fragmentation and defaunation. She we will work in two regions that represent biodiversity hot-spots and are considered of main conservation concern by the Mexican government: Los Tuxtlas and Lacandona rainforest

Examples of how Rufford funding has helped train a future generation of conservationists

Ivonne Cassaigne established a link with the owner of a ranch and the director of the local University (University of Moctezuma) to enrol students in more Jaguars conservation projects at his ranch.
In the activities of the project of **Rafael Reyna Hurtado** was included the training of three local people of Calakmul Biosphere Reserve in techniques to study wildlife populations.

Examples of where Rufford grantees have published important biodiversity information or published of its project findings

Alejandro Espinoza-Tenorio and collaborators did a proposal for the spatial planning of two traditional fisheries in competition; Huaves y Zapotecas. The project findings of Alejandro have been published in four papers in international peer-reviewed journals, two papers in national peer-reviewed journals, two book chapters, and three research notes.

Claudia Monzón Alvarado published a paper entitled "Fire management and climate variability: challenges in designing environmental regulations" in the Journal of Land Use Policy. **Ericka Ceballos**

Juan Luis Peña also published the results of his project in a peer-reviewed journal and the results have been presented at various national and international conferences specialized in environmental issues.

The project findings of **Rafael Reyna Hurtado** were published in at least two papers in international peer-reviewed journals. **Stephanie Rousso and collaborators** presented its results in two international conferences and published in a chapter book the findings of projects granted to **Agnese Mancini** were published in four international peer-reviewed journals.

Examples of how the information is translated to the management and conservation government authorities.

The information obtained in the project of **Antonio de la Torre** was given to the authorities of the Mexican Federal Government, the National Commission of Natural Protected Areas (CONANP).

The results of the blue project of **Diane Gendron** was included in the Action Program for the Conservation of the blue whale of the National Commission of Natural Protected Areas (CONANP).

Claudia Monzón Alvarado shared its project results with local authorities and government agents to initiate a dialogue for the design of more adequate and flexible policies in order to adapt the law for burning in Calakmul, Mexico. **Ericka Ceballos**

The results of the project of **Francisco Mora** also were reported to environmental authorities of the Chamela-Cuixmala Biosphere Reserve Administration (CONANP). **Juan Luis Peña Mondragon** did the first workshops in rural communities and brought together State and Federal authorities and non-governmental organisations of the state of Nuevo Leon with the aim of updating them on the conflict between jaguar and other carnivores and people's domestic livestock. **María Camila Latorre Cárdenas** shared her results about the effect of persistent organochlorine Compounds on the Neotropical otter in Veracruz, Mexico with the National Water Commission (CONAGUA). The results of **Veronica Solis** about bison were included in the Conservation Action Plan (PACE) of CONANP. The information derived from the research of **Rodrigo Sierra**

Corona was included in the management plan for the Janos Biosphere Reserve.

Summary of conclusions of discussion groups.

After the end of oral presentations, it was asked to the grantees to join in four discussion groups. The discussions and consensus were focus, based on **experience gathered in RSG projects**, in the actions applied to be successful in the conservation of species or ecosystems, the issues or difficulties presented in the process of, and the potential creation of a network of RSG grantees of Mexico.

Actions for conservation

- Workshops with local people and government in order to include them in the conservation actions of the project
- Publication of scientific papers
- Divulgation of results to local communities through posters, books, communitarian radio, brochures, etc. focused mainly in children (future generations)
- Involvement of local people in the research or divulgation activities to change its perspective about wildlife. E.g. from hunter to field assistant for conservation projects.
- Organization of events in communities for the divulgation of information of the project and participation of local people on this events.
- E.g. festivals, courses, etc.
- Creation of national or international committees with government institutes, local people, academy, NGO´s in order to discuss issues and propose integral solutions.

Difficulties for conservation

- Time for covering all the goals of the projects and areas as social, scientific and management.
- Lack of training for skills as socials, artistic, etc., to translate the results to local communities for best understanding and impact.
- Apathy of environmental authorities of all levels.
- Issues for collecting fauna.
- Lack of concordance between government institutions and knowledge in the tasks de each one.
- Lack of a transversal agenda of between government institutions for conservation
- Lack of environmental education in the people with permanent activity.
- Lack of an effective surveillance for the wildlife protection by the government authorities.
- Funding for long-term research projects.
- Insecurity in zone of conflict
- Overlap of interests

Networking

It was agreed to create a private group in Facebook in order to keep updating about results of the projects, consultancy about paperwork of scientific permits and other issues, and potential collaboration between RSG grantees. The Facebook group was created during the Conference. The name is “RSG México”.

Recommendations for projects to get major impact on conservation

- Having a multidisciplinary group
- Encourage to children the promotion of conservation.

- Use of social networking for divulgation of results of the projects.
- Learning of experience of local people
- Divulgation with products of high quality.
- Use of the media for communicate the conservation problematic

List of participants, conference schedule and abstracts

Conference schedule

February 15th	Activities
15:00	Hotel check-in*
19:00 – 21:00	Dinner
February 16th	**Activities**
07:00 – 08:30	Breakfast
08:30 – 08:40	Registration of Participants
08:40 – 08:50	Introduction of Participants
08:50 – 09:00	Welcome and Opening Remarks
09:00 – 10:00	Keynote Talk: Vaquita conservation actions and research *Lorenzo Rojas Bracho*
10:00 – 10:20	Coffee Break
10:20 – 13:00	RSG Project Presentations
10:20 – 10:40	A proposal for the spatial planning of two traditional fisheries in competition – Huaves and Zapotecas. *Alejandro Espinoza Tenorio*
10:40 – 11:00	Research for the conservation of the jaguar in the Selva Lacandona, Chiapas, Mexico. *Jesus Antonio de la Torre de Lara*
11:00 – 11:20	Effects of restoration and concentration of natural prey as a mitigation action to reduce predation on livestock by jaguars and mountain lions in Sonora, Mexico. *Ivonne Cassaigne Guasco*
11:20 – 11:40	Conservation of endangered mammals in a semi-dry tropical forest in Southern Mexico: predicting responses to climate change. *Rafael Angel Reyna Hurtado*
11:40 – 12:00	Coffee Break
12:00 – 12:20	Characterization of livestock management for conservation of the jaguar in Northeast Mexico. *Juan Luis Peña Mondragon*
12:20 – 12:40	Quantifying ecological and socioeconomic impacts of an invasive predator on marine ecosystems *Luis Malpica Cruz*
12:40 – 13:00	The environmental history of the Janos Biosphere Reserve in Mexico: critical knowledge for the development of ecosystem conservation strategies.

	Rodrigo Sierra Corona
13:00 – 13:20	Conservation biology of *Tilia mexicana*, an endangered medicinal tree. *Aly Veronica Valderrama Villarroel*
13:20 – 14:40	Lunch
14:40 – 17:20	RSG Project Presentations
14:40 – 15:00	Assessing the conservation value of tropical dry forests under local management in the Chamela-Cuixmala Region, Mexican Pacific Coast. *Francisco Mora Ardila*
15:00 – 15:20	Building capacity for a community-based marine turtle tourism conservation model. *Stephanie Rousso*
15:20 – 15:40	Biodiversity conservation, ecosystem services and land use management in livestock dominated landscapes in South-Eastern Mexico. *Fredy Alexander Alvarado Roberto*
15:40 – 16:00	Seed trees for cloud forest restoration. *Magdaleno Mendoza Hernandez*
16:00 – 16:20	Coffee Break
16:20 – 16:40	*ludovici* (Chiroptera: Phyllostomidae) in Veracruz, Mexico. *Natalia Cortes Delgado*
16:40 – 17:00	Fire landscapes in Calakmul, Mexico: examining the link between institutions and escaped fires. *Claudia María Monzon Alvarado*
17:00 – 17:20	Effect of persistent organochlorine compounds on the physiological health and habitat suitability of the neotropical otter in Veracruz, Mexico *María Camila Latorre Cárdenas*
19:00 – 21:00	Dinner
February 17th	**Activities**
07:00 – 08:30	Breakfast
08:30 – 09:30	Keynote talk: Recovery Program of Endangered Species of the National Commission of Natural Protected Areas of México. *Dulce María Ávila Martínez*
9:30 – 9:50	Coffee Break
9:50 – 13:10	RSG Project Presentations
9:50 – 10:10	Dung beetle diversity in intact forest landscapes of the Calakmul Biosphere Reserve: implications for conservation in adjacent human-modified landscapes. *María Victoria Capello*
10:10 – 10:30	The impact of landscape and regional features on natural regeneration of human-modified tropical rainforests. *Miriam San José y Alcalde*
10:30 – 10:50	Spatial and behavioural ecology of the mule deer in the Chihuahua Desert, Mexico. *Luz Adriana Pérez Solano*
10:50 – 11:10	Monitoring of the e-commerce in ivory and species protected by CITES *Ericka Ceballos*
11:10 – 11:30	Towards the recovery of bison and its ecological role in Mexico. *Veronica Solis Gracia*

11:30 – 11:50	Coffee Break
11:50 – 12:10	Monitoring blue whale behaviour in the Gulf of California: a key component to encourage responsible whale watching. *Diane Gendron*
12:10 – 12:30	Promoting grass-root conservation of natural resources in San Ignacio Lagoon, BCS, México. *Agnese Mancini*
12:30 – 13:30	Discussion groups
13:30 – 14:10	Conclusions of discussion groups
14:10 – 14:40	Closing remarks for the RSG Conference
14:40 – 16:40	Lunch
February 18th	**Activities**
11:00	Check-out*

List of participants and type of grants awarded.

Name:	Institute:	RSG1	RSG2	Booster	Cont.
Alejandro Espinoza Tenorio	El Colegio de la Frontera Sur	X			
Jesus A. de la Torre de Lara	Instituto de Ecología-UNAM	X			
Ivonne Cassaigne Guasco	Universidad Nacional Autónoma de México (UNAM)	X			
Rafael Angel Reyna Hurtado	El Colegio de la Frontera Sur	X			
Juan Luis Peña Mondragon	Centro de Investigaciones en Ecosistemas (CIEco)-UNAM	X	X		
Luis Malpica Cruz	Simon Fraser University-ECOCIMATI, A.C.	X			
Rodrigo Sierra Corona	Instituto de Ecología-UNAM	X			
Aly V. Valderrama Villarroel	Centro de Investigaciones en Ecosistemas (CIEco)-UNAM	X			
Francisco Mora Ardila	Centro de Investigaciones en Ecosistemas (CIEco)-UNAM	X			
Stephanie Rousso	ProFauna Baja organization	X	X		
Fredy A. Alvarado Roberto	Instituto de Ecología, A.C. (INECOL)	X			
Magdaleno Mendoza Hernandez (Tarín Toledo)	Instituto de Ecología, A.C. (INECOL)	X			
Natalia Cortes Delgado	INECOL/University of Illinois	X			
Claudia M. Monzon Alvarado	Instituto de Ecología, A.C. (INECOL)				
María C. Latorre Cárdenas	Instituto de Ecología, A.C. (INECOL)	X			
Maria Victoria Capello	Instituto de Ecología, A.C. (INECOL)	X			
Miriam San José y Alcalde	Universidad Nacional Autónoma de México (UNAM)	X			
Luz Adriana Pérez Solano	Instituto de Ecología, A.C. (INECOL)	X			
Ericka Ceballos	CATCA Environmental and Wildlife Society	X	X	X	X
Veronica Solis Gracia	Instituto de Ecología-UNAM	X			
Aurorora Paniagua (Diane Gendron)	Centro Interdisciplinario de Ciencias Marinas (CICIMAR)	X			

Agnese Mancini	Boomerang For Earth Conservation	**X**	**X**	**X**	**X**
Gustavo Cárdenas Hinojosa	Instituto Nacional de Ecología y Cambio Climático (INECC)	**X**			
Non-Rufford Grantees					
Lorenzo Rojas Bracho	Instituto Nacional de Ecología y Cambio Climático	Keynote talk			
Dulce María Avila Mártinez	Comisión Nacional de Áreas Naturales Protegidas (CONANP)	Keynote talk			
Ursula González Peral	Universidad Autonoma de Baja California Sur (UABCS)	Participant			
Sergio Goméz	Comisión Nacional de Áreas Naturales Protegidas (CONANP)	Participant			
Anibal López	CONACULTA/INAH/ProFauna Organization	Participant			
Carla Sanchez	ProFauna Baja organization	Participant			
Josh Cole	**The Rufford Foundation**	Grants Director			

Abstracts of presentations

"A proposal for the spatial planning of two traditional fisheries in competition; Huaves y Zapotecas"

Alejandro Espinoza T0enorio[1] y José Alberto Zepeda Dominguez[2]

[1] Grupo de Manejo Sustentable de Cuencas y Zona Costera (CYZCO), El Colegio de la Frontera Sur, Villahermosa, Tabasco.

[2] Departamento de Pesquerías y Biología Marina. Instituto Politécnico Nacional – Centro Interdisciplinario de Ciencias Marinas.

Fisheries' in Mexico are threatened. To revert this situation, the Mexican government has been promoting public participation recently. We proposed and developed a consensus–building process to support the spatial assignation of use rights in local fisheries in the Huave Lagoon System (HLS). This lagoon was selected because it provides an especially important attribute to research: it has been historically used by ethnic groups where fishermen have competed for resources but, until recently, it has demonstrated that fisheries and marine environment have been preserved. We thus proposed the use of social science techniques to gather traditional knowledge about fisheries and ecosystem dynamics to design an inclusive consensual spatial assignation representing the actual different social interests in the HLS. The work exceeded our expectations. Acting respectfully to the traditional organizational systems, and the joining of our research with the effort of local colleagues allowed us to operate successfully in a site where prevailing complex social processes, that on previous occasions had limited external research efforts. Thus, as was the objective of the project, we collected important part of the traditional knowledge of fishing communities. With the idea that the knowledge compiled is not only a source of academic information but a community heritance, we designed a series of products (e.g., articles, fisheries chart, video) to share our main findings.

"The impact of landscape and regional features on natural regeneration of human-modified tropical rainforests"

Miriam San José y Alcalde

Universidad Nacional Autónoma de México

The rapid human population growth has increased the demand for agriculture lands converting tropical

forests into agricultural landscapes. Under this scenario, conservation efforts may be misguided unless we understand how land-use changes affect biodiversity and forest regeneration. Rainforest regeneration depends on ecological processes, such as seed dispersal, seed predation and seedling recruitment, which are increasingly threatened by deforestation, forest fragmentation and defaunation worldwide. This project will be the first to assess the independent impacts that different landscapes attributes (forest cover, forest fragmentation, edge density, connectivity, and matrix type) may have on these ecological processes. We will work in two regions that represent biodiversity hot-spots and are considered of main conservation concern by the Mexican government: Los Tuxtlas and Lacandona rainforest. Los Tuxtlas has been severely deforested, and nowadays <10% of forest cover remains. Forest fragments are principally surrounded by a matrix of cattle pastures, and most populations of mid- and large-sized animals have disappeared. In contrast, the Lacadona rainforest maintains approx. 40% of forest cover, has a highly heterogeneous matrix, and it has not suffered a noticeable defaunation process. Thus, by comparing the response of these ecological processes to landscape changes between both regions, this project will shed some light on the possible causes and ecological consequences that land-use change may have on forest regeneration and biodiversity persistence. The results will be shared with the local communities through workshops, so they will become aware of how forest regeneration works and will begin to appreciate and protect the remaining rainforests.

"Monitoring of the e-commerce in ivory and species protected by CITES (2009 – 2015)"

Ericka Ceballos
President of CATCA Environmental and Wildlife Society Our monitoring started as a necessity to expose the growing e-trade.

RSG1 first formal monitoring was in Ecuador. We found from African grey parrots to lions in ads. We found elephant ivory which led to our independent monitoring in 4 Latin American countries. Both reports created lots of awareness at the CITES CoP, helped prevent the approval of threatening proposals to down list African elephant populations, and created understanding among the government authorities about the e-commerce problems.

RSG2 we monitored the e-commerce of primates in 5 countries of Latin America. The results brought interesting and disturbing facts about the illegal primate trade. Our report was used by government authorities to discuss the trade of *Macaca fascicularis* at CITES AC 2011. Our chimpanzee results were mentioned by OBE Ian Redmond during his UNEP event at CITES CoP16.
RSG3 we researched the e-commerce of ivory in 8 countries of Africa and Asia. The specimens differed in each country, from jewellery items in India to religious figures in Philippines; tusks in Arab countries, to almost 12 million USD worth of hankos in one Japanese website. We found 5 advertisements with alarming number of tusks and rhino horns, which we reported to the enforcement authorities of those countries and Interpol.

With this report we successfully negotiated between 26 African countries and Latin American Countries at the CITES CoP16 to support Proposals for the elephants, sharks, manta rays and African manatees (all were approved!), and we discussed with government authorities to create monitoring squads to reduce their illegal e-commerce.
All these reports are at the Interpol database.

RSG4 we are monitoring the e-commerce ivory in Latin America.

"Conserving San Ignacio Lagoon - The journey from monitoring stranded turtles to the beginning of a grass-root conservation initiative"

Agnese Mancini
Boomerang For Earth Conservation

The coastal waters of Baja California Sur (BCS), Mexico serve as feeding and developmental ground for five species of sea turtles in the world. Although sea turtles are protected in Mexican waters since 1990, accidental or directed fishing are still a serious threat. In order to better understand the extent of this problem in BCS, we started, in 2006, a project aimed at:

- Assess minimum mortality rate per species per year and identify major mortality causes in the area of BCS over a period of two years.
- Identify high-risk areas for marine turtles.
- Increase awareness and assess the extent of turtle black market.

Data collected revealed intense consumption especially during specific events like Semana Santa. It also proved the existence of a black market of sea turtle meat that reached cities in the United States. High stranding rates of dead turtles were also found (mostly as a consequence of by- catch), especially in San Ignacio lagoon, a nursery ground for grey whales that also hosts a variety of marine species, including some of commercial importance. It was found that the high mortality of marine turtles was due to a seasonal artisanal fishery targeting guitarfish. We tracked marine turtles using GPS/VHF tags to prove that areas used by fishermen and turtles overlapped. We also understood that turtles were moving following the main current streams and that most animals got entangled in the nets because those were left tended for 24hrs. After communicating results to the fishermen and the local authorities, a compromise was found and the turtle mortality dropped drastically. At the same time we initiated a series of educational activities involving the local primary schools on natural resources that can be found at the lagoon. Recently, we joined forces with a local NGO to create a turtle monitoring group composed by fishermen from the lagoon. Since the creation of the group, more than 100 turtles have been tagged and released in the southern part of the lagoon. We have also recently organised the 5th San Ignacio Lagoon Sea turtle festival and brought monthly educational activities in the schools. We are now working to include our environmental education program into the current school curriculum. At the same time, we are working with the local university to support local fishermen and help them create an ecotourism project to create an alternative income.

"Effect of persistent organochlorine compounds on the physiological health and habitat suitability of the Neotropical otter in Veracruz, Mexico."

María Camila Latorre-Cárdenas
Instituto de Ecología, A.C.

Human disturbances, such pollution and fishing are one of the causes of the species loss and the principal cause of the riparian ecosystems deterioration. We evaluated the human activities around the rivers and the degree of exposure of the Neotropical otter to persistent organic compounds (POCs, i.e. pesticides and PCBs) in order to know if those affect the physiological health of this species. We used the faecal cortisol metabolites (FCM) levels as indicator of otter health and chronic stress situations. This study was conducted in La Antigua and Jamapa rivers, located in Veracruz.

The otter health monitoring (POCs accumulation and cortisol levels) allowed us to detect problems in the

riparian ecosystem. We found that 1) otters bioacummulated higher concentrations of POCs than its prey, indicating that otter as a top predator in riparian ecosystems reflect the contamination status of the ecosystem, 2) human activities act as stress factors and affect the otter health, 3) the drines and metoxychlor possibly act as endocrine disruptors which could have negative effects on the reproductive function.

Working with people through interviews and workshops, allowed us to identify that having an effect on the agriculture and livestock practices, as well as on the use of resources by the communities require a long lasting effort. However working with people gave us a robust diagnose and showed us that people are interested in preserve their natural resources. It is important to work with farmers, but especially with the industry, which are what really drive and promote the use of pesticides.

"Spatial and behavioural ecology of the mule deer in the Chihuahua Desert, Mexico"

Luz Adriana Pérez-Solano
Instituto de Ecología, A.C.

Despite the fact that the mule deer (*Odocoileus hemionus*) is of great cultural and economic significance for the communities of northern Mexico, it remains one of the least well known of the cervids. Its populations are naturally low and have been further reduced by loss of their natural habitat, mainly due to the expansion of livestock production and uncontrolled hunting. The objective of this study is to identify the ecological strategies related to the movement and behaviour adopted by the species in order to survive in a desert region, and to determine how these strategies are influenced by intrinsic and extrinsic factors. This will serve to identify areas and resources that can influence the wellbeing of individuals, as well as the viability of their populations. The study is being conducted in the Mapimi Biosphere Reserve, which is located in the Chihuahuan Desert. This is a project that we are currently developing, so it is not yet complete. Up to this moment we have captured and monitored nine deer and we have estimated home range and core area at the moment, using this data, we have not found significant differences between home range or core area size in the different seasons or between physiological states. However, we found that they don't use the same places during the dry and wet seasons. Another progress that we have made is the vegetation map, so our next step is to analysis the habitat use. Our research project continues and we will monitor more animals this year.

"Effects of restoration and concentration of natural prey as a mitigation action to reduce predation on livestock by jaguars and mountain lions in Sonora, Mexico."

Cassaigne Ivonne and R. Medellin
Universidad Nacional Autónoma de México

With the objective of the creation of an alternative for ranchers to decrease their livestock depredation by pumas and jaguars we increased natural prey and quantify its impact on the diet of both predators.
Our objectives were 1) to estimate relative abundance of deer, peccary and cattle in the study area using camera traps. 2) Increase relative abundance of peccary and deer and 3) Determine jaguar and puma kill rates on select species, before and after augmentation of prey.

Methods (2 periods, 8 months each, divided by the event of prey augmentation).

- Camera traps to estimate relative abundances of deer, peccary and cattle before and after prey augmentation. (21 camera traps distributed in 37 Km2.)
- Capture of 5 pumas or jaguars to determine diet through kill sites and estimate selectivity (Jacob's

Index) in each period.

- Collect scat samples to establish frequency of predation of deer, peccary and cattle by DNA in each period.
- Provide 4 deer feeders and release 36 peccaries at the study area after 8 months from the beginning of the study. Preliminary results
- Relative abundance of prey:
- Pre-treatment: Deer 18 %, Calf 6.7 %, Peccary 0.1 % Post-treatment: Deer 26%, Calf 6.3%, Peccary 1.3%
- Frequency of occurrence in the diet of pumas and jaguars and selectivity of prey >15 kg by Jacobs' Index. (We captured 4 pumas and 2 jaguars). Pre-treatment: Deer 26% (0.08) They eat deer according to what is available
    - Calf 21% (0.49) They select calves
    - Peccary 5% (0.96) they select peccaries over calves.
    - Post-treatment: Deer 32% (-0.06) They eat deer according to what is available Calf 7% (0.05) They eat calves according to what is available Peccary (42%) They select peccaries
- Scat (Analysis in process). Preliminary highlights:
- Depredation on livestock decreased by 50% in the study area, while peccary and deer predations increased (1,100% and 80% respectively).
- We observed a switch in the prey preferences, both jaguars and pumas preferred less calves after the augmentation of natural prey.

"Creation of a Model for Conservation Tourism through Community-based Research and Outreach"

Stephanie Rousso
ProFauna Baja organization

This project will develop a model for tourism that incorporates conservation of coastal and marine habitats for marine turtle populations in Mexico. Scientific-based recommendations and standard protocols for assessing impacts during the Mexican federal Environmental Impact review process result from beach profiles and nesting density research in Baja California Sur. This project has three parts: research, education, and conservation. The first phase in 2013 focused on quantifying nesting habitat impacts for *Lepidochyles olivacea*, an endangered marine turtle species, using a current multi-use development as our pilot case study. The second phase in 2015 focuses on ATV use in nesting beaches.

"The Socioeconomic Impacts of a Marine Invader"

Malpica-Cruz, L.[1,2], and I.M. Côté[1]
[1] - Simon Fraser University, [2] – ECOCIMATI, A.C.

Coral reefs provide valuable ecosystem services to the environment and to coastal communities. These services depend on the continuity of ecosystem processes, many of which are currently affected by a myriad of stressors. The Pacific lionfish is an invasive predatory species to the western Atlantic that has detrimental effects on the ecology of invaded reefs, and potentially on associated socioeconomic activities. This project took place in areas of the Caribbean and Gulf of Mexico, where artisanal fishing and recreational diving activities occur. I combined ecological surveys with socioeconomic interviews to determine the vulnerability of reef-dependent socioeconomic activities to lionfish invasion. Recreational diving data is

currently under analysis following a choice modelling approach while fisheries data will be used to estimate a prey vulnerability index. With this project we expect to generate valuable management and conservation information that promotes sustainability, balancing ecological and socioeconomic development in an ecosystem affected by the lionfish invasion. Results will be used to produce estimates of economic losses if no actions are taken to mitigate the impacts of the lionfish invasion in the region. Ultimately this could allow policy makers and community leaders anticipate and adapt to changes in fish availability as well as to long-term changes to reef ecosystems.

"Roost use in shade coffee plantations by Sturnira hondurensis (Chiroptera: Phyllostomidae) in Veracruz, Mexico"

Natalia Cortés-Delgado
Instituto de Ecología, A.C., University of Illinois

Shadow coffee plantations are considered important habitats for biodiversity conservation. In this systems frugivorous bat richness is equal or even can increase compared to that recorded in forest. However, it is unknown whether these crops are offering shelter and food resources to frugivorous bats. This work seeks to answer this question using Sturnira hondurensis as example. A total of 24 individuals of S. hondurensis were captured, half in cloud forest (CF) and half in shade coffee plantations (SCP); each one was fitted with a radio transmitter to locate their roosts and feeding areas. Twenty day roosts were located in cavities belonging to 11 different species of trees. Roosts located in CF differed significantly ($P < 0.05$) from SCP on having a smaller crown area, a higher percentage of cover understory and greater richness and density of plants around the roost. SCP in both the home range as the core use area were lower on average than in the CF, but the differences were not statistically significant. Distances travelled by bats were generally higher and more variable in the SCP; the distance between capture site and foraging site was significantly higher in CF compared to SCP ($X=802.5$m, $F=8.57$, $P = 0.008$). Although it was found that S. hondurensis does use roosts and foraging sites on SCP, it is important to note that the maintenance of this species really depends on the preservation of the forest remnants of modified landscapes, where roosts and fruits are constantly and in abundance.

"Study and Conservation of Carnivores in north-eastern Mexico"

Juan L. Peña-Mondragón and Alicia Castillo
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Currently large carnivorous mammals confront diverse problems worldwide. Among the most relevant, habitat loss and fragmentation, prey species hunting and the increase of the human habitat and agricultural frontier contribute highly to declination of these large carnivores' populations. Historically the study of these species has been concentrated within a-species ecosystem-gene approach, neglecting the socio- cultural factor. Based on the above, during the last eight years we have established a long-term project at the National University of Mexico (UNAM) campus Morelia where our focus has been to study the problems these carnivores face from a holistic and integrated perspective based on examining the problems human rural communities have with those carnivores with whom they share the habitat in north-eastern Mexico. Particularly we have worked in southern Nuevo Leon focusing our efforts towards a charismatic and umbrella species, the jaguar. The project has received financial support from Rufford Small Grants Foundation (RSGF) twice. Initially, the funding was used to study social perceptions of jaguars and other carnivores and the economic damages caused on livestock. Afterwards, the grant was used to purchase

camera traps with which we have begun to monitor the species in relation to conflict with local populations. As part of the socio-ecological approach we use, we have also organized workshops in which we have tried to construct solutions with the local rural inhabitants in order to mitigate the conflict they have with carnivores. Among the commitments made with RSGF we continue to characterize livestock management associated with predation by jaguars and other carnivores. This with the goal of identifying variables that may potentiate or detonate this predation and to identify actions which may help decreasing or preventing livestock depredation in the future. The project has enabled us to establish close ties with the rural communities, sharing views and knowledge which we hope will traduce in implementing conservation strategies that help the long term maintenance of carnivore wild populations at the same time that the livelihoods of rural communities is improved.

"Monitoring blue whale behaviour in the Gulf of California: A key component to encourage responsible whale watching."

Diane Gendron
Centro Interdisciplinario de Ciencias Marinas (CICIMAR) - IPN

The Northeast Pacific population of blue whales is known as the healthiest worldwide. However, it faces different treats in their migration, like collisions and shipping noise in coastal waters off California. In the Gulf of California a significant coastal development is being proposed, which will generate more marine traffic, including more whale-watching (WW) that is specifically focused on blue whales, which feed, nurse their calves, and breed in this region every winter. Our goal was to study blue whale natural behaviour and its interaction with WW in the National Park Loreto Bay, sharing the results with the authority and the WW companies, in order to propose a new passive approach of observation. Through the focal-animal survey, we obtained behavioural data, movement patterns of different individuals, and their interaction with WW. Females dived less long than males and in general they changed their diving pattern in presence of WW boats. Meanwhile a project PROCER was initiated and aimed to share the blue whale knowledge with the WW providers to promote social participation through different actions, like the creation of a blue whale conservation group from Loreto, design of posters, pamphlets, meetings, workshops, and a webpage. As a result, the WW captains adopted the focal-animal survey as their own during the 2014 season. The diving behaviour of this new approach showed unaltered surface-diving patterns of whales. These results are now promoting a new study involving behaviour and acoustic, as well as monitoring noise and how increasing marine traffic could affect these whales.

"Conservation biology of *Tilia mexicana*: an endangered medicinal tree"

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Around the world different species of Tilia had been used by its medicinal properties associated to anxiolytic compounds in the flowers. However, the diversity and genetic structure of the species has not been studied. *Tilia mexicana* is endemic to Mexico and is protected by NOM-059, which avoided its cutting down. We propose that the continuously harvest of flowers generated an effect in the recruitment of the species. On this research we evaluated the threatened of species in two levels: Age composition on the communities and, diversity and genetic structure of the specie. The diameter at breast height (DBH) of the trunk and, the diversity and genetic structure were determined by nuclear microsatellites markers specific for

Tilia (SSR) and, chloroplast universal microsatellites (SSRcp). The communities showed a low recruitment of new individuals and mainly, were found tree on adult stage. The AMOVA analysis of SSR and SSRcp, demonstrated a high genetic flux occurred inside the communities (91 and 85 %, respectively). The genetic structure index (Gst and Rst) obtained showed a scarce genetic structure for SSRcp and, was found a high genetic structure between the communities for SSR. The scarce genetic flux between the communities was related with the pollination syndrome of the species and, associated with the limited seeds dispersion, generates a high genetic structure of the communities with a low genetic exchange between the communities. In the long term this situation will limit the stay of the species in the future in a climatic change scenario.

"Assessing the conservation value of tropical dry forests under local management in the Chamela-Cuixmala Region, Mexican Pacific Coast"

Francisco Mora[1], Felipe Arreola, Patricia Balvanera, Andrés Camou, Daniel Cohen, Eduardo García-Frapolli, Ana Y. Martínez, Tamara Ortiz & Oscar Ugartechea

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Tropical dry forest in the Chamela-Cuixmala region (Mexican Pacific Coast) is one of the most biodiverse in the world, but the increased extension of pasture and secondary forests resulting from land transformation during the last four decades seems to threat the conservation of biological diversity. In this project we evaluated the conservation value of different forest types subjected to management by: 1) characterizing land management through field surveys with local landowners, 2) evaluating tree species presence and abundance under different forest types, and 3) assessing the projected land management by landowners. We identified three main types of managed forest: "Barbecho Joven" (forest up to 15yr of regrowth), "Barbecho Viejo" (forest 15-40yr of regrowth) and "Monte Alto" (non-cleared forests), all of them making part of an integrated, multipurpose plot-level management that includes cattle ranching and forest products extraction. Secondary forest are diverse, with "Barbecho Viejo" being similar in composition and species richness to "Monte Alto", and with a higher density of useful species, which suggest that people is managing those forests towards an increased service provisioning state. The prospect for most of these forests is encouraging, since landowners expect to increase their extension even under favourable scenarios for forest conversion; the only exceptions are forests on flatlands, which are already rare because of land use for agriculture. These results allowed us to hypothesize that multiple use of the forest could be favouring their conservation. Also relevant, the project also allowed us to establish a trust relationship with local people.

"Towards the Recovery of Bison and its Ecological Role in Mexico."

Veronica Solis-Gracia[1], Rurik List[2], Enrique Martínez Meyer[3], and Gerardo Ceballos[1]

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North American grasslands have suffered large transformations and species losses, including that of keystone species like bison (*Bison bison*). Bison population was reduced from somewhere between 10 and 60 million to about 1000 individuals between 1830 and 1880. Today there are ca. 600,000 bison in segregated groups. However, 95% of them are managed as cattle for meat production and do not exert an ecological role similar to that believed to have occurred prior to recent European impacts on North America's grasslands. Efforts are underway in Canada, the United States, and more recently in Mexico, to recover the ecological role of bison. Using data from aerial surveys of the only free ranging bison herd in Mexico (which moves between Janos, Chihuahua and Hidalgo County, New Mexico), and ecological niche modelling

predictive tools (MAXENT), we determined habitat use of the Janos-Hidalgo herd and identified 10 different patches most suitable for bison reintroduction in north-western Mexico. Bison from Wind Cave National Park in South Dakota were translocated to one of those patches, to a conservation ranch within the Janos Biosphere Reserve, in order to form a breeding herd for the production of bison for reintroduction in other suitable sites and for research of bison ecology and behaviour in the region. We also made 24 interviews to ranchers, communal land owners, and intensive farmers, to learn about ecological history and perspective on bison reintroduction. The information from this study was incorporated to the Bison Conservation Action Plan (PACE).

"Fire landscapes in Calakmul, Mexico: Examining the link between institutions, and agricultural fires"

Claudia María Monzón Alvarado
Department of Geography, University of Florida

This research addressed the human dimension of fire dynamics by studying the design, implementation and enforcement of State fire management regulations contrasted with farmers´ practice in Calakmul, Mexico. Participant observation of six agricultural burns and eighteen interviews with farmers allowed reconstructing the fire-use activities and understanding the rationale of the burning process. Interviews and workshops with authorities at different levels, from communal to federal, provided data to assess the institutions for fire management. The analysis of complementary data from wildfire records, agricultural fire use permits and climate data illustrated the context and outcomes in the governance of fire management. The study documented the impact of climate variability in farmer´s decisions on how to use fire and its effects on the burn outcomes. Wildfires have received much attention due to their environmental impacts, yet this study evidenced that "malquemados" or bad burns resulting from incomplete combustion, is another undesirable burn outcome to farmers. These local difficulties are, however overlooked by the State who attempts to regulate the timing of the burn and the character of fire-use with regulations that do not fit with the ecological and cultural contexts. Finally, through the study of farmers' motivations for engaging in wildfire prevention behaviours, this research identified those institutions that are actually shaping fire-use decisions. A better understanding of the local decisions of agricultural fire- use, and the local cultural and biophysical conditions that lead to the different burn outcomes, is the first step to analyse the adequacy of existing fire management institutions.

"Research for the Conservation of the Jaguar in the Selva Lacandona, Chiapas, Mexico"

Jesus Antonio de la Torre de Lara
Instituto de Ecología – Universidad Nacional Autónoma de México

The jaguar (*Panthera onca*) is the largest cat in America, the top predator in the lowland ecosystems, and an important figure in many indigenous cultures. This species is one of the least studied of large felids, and face conservation problems in much of its former range, to the degree that today the jaguar occupies only about 46% of his historical distribution. Principal threats are due to the continuous habitat destruction and hunting of jaguars and their prey. In Mexico, the jaguar is a priority species and is listed by Mexican Federal Government as endangered, although the actual status of remain populations is unknown. One the most important population of jaguars occurs at the Selva Lacandona, state of Chiapas. This forest is one of the few areas in Middle America large enough to maintain viable populations of animals, such as jaguar, white- lipped peccary (*Tayassu pecari*) and Baird's tapir (*Tapirus bairdii*). The aim of this project is to estimate jaguar density in the Montes Azules Biosphere Reserve through camera-trapping in combination with capture-recapture sampling methods, for

evaluate the status of conservation of this species in the region. The results of this project will raise awareness in general and specially within the context of the entire Mayan Forest about the importance of Montes Azules reserve in terms of population of jaguar, and also will promote the conservation of the Selva Lacandona region, using the jaguar as a focal and umbrella species. This species is sensitive to a variety of threats, and their presence in a determined area provided a robust view of the general status of an area's biodiversity. Surveys in the future in other sites at Selva Lacandona using the same methodology will provide the status of conservation relative to these sites, and it could be a solid tool for design strategies of management and conservation of the natural protected areas of the Lacandona region.

"Biodiversity Conservation, Ecosystem Services and Land Use Management in Livestock Dominated Landscapes in South-Eastern Mexico"

Fredy Alexander Alvarado Roberto
Instituto de Ecología, A.C.

The transformation of natural ecosystems as a consequence of increased demand for food is one of the main factors responsible for biodiversity loss. More than half of the world´s land is used for crops (12%), livestock grazing (33%) and exotic tree plantations (15%). Clearly, understanding the value of livestock grazing to biodiversity, and the interaction between yields (production per unit area), biodiversity and ecosystem services is key to minimising the impact of food production on wild nature. In many tropical regions, agroforestry and silvopastoral systems emerge as land use systems that may be compatible with biodiversity conservation and ecosystem service provision. However, few studies have examined the relationship between biodiversity, yield production and ecosystem services under different land-use strategies that producing varying quantities of food (meat). Coprophagous beetles (dung beetles, Scarabaeidae) are well known for their role in the functioning of ecosystems, including the incorporation of organic matter into the soil and the control of the hematophagous (blood-sucking) flies and gastrointestinal parasites that develop on dung and affect both domestic animals and people. Through this research, and using the dung beetles as a study model, it may be possible to generate information regarding how species densities change in response to the different livestock production systems and how these, in turn, affect or favour the re-establishment of ecosystem services that are important to the activity of livestock production. This study will provide solid evidence regarding which livestock production systems are most efficient in terms of biodiversity conservation and maintenance of ecosystem services. With this information, it will be possible to predict whether the projected demand for meat and other products will be better satisfied with small areas of high yielding production, or by larger areas with lower-yielding production regimes (e.g. silvopastoral systems). Similarly, through the analysis of the ecosystem services regulated by the dung beetles an understanding can be gained of the functional consequences of habitat modification and of the management practices in highly diverse ecosystems.

"Seed Trees for Cloud Forest Restoration"

Tarín Toledo Aceves
Instituto de Ecología, A.C.

Cloud forests (CF) are a global conservation priority because they host exceptional concentrations of biodiversity but are severely threatened by deforestation and global climate change. Many CF tree species are currently listed as threatened and have become locally rare. In Mexico, 60% of CF tree species have been reported as threatened. Since both the seedling and sapling stages have a very strong influence on forest dynamics, the reintroduction of key tree seedling and juvenile species could be a viable strategy by which to accelerate CF recovery. Given the predicted consequences of climate change scenarios for CF, forest restoration must consider the past, current as well as future distributions of key tree species. Changes in

altitude are associated to reduce temperatures, reduction of relative humidity and changes in patterns of fog deposition. There is a vast literature demonstrating that tree seedling survival and growth are strongly affected by changes in light, temperature and humidity. Evaluation of seedling establishment in response to different climatic conditions associated with an altitudinal gradient will allow us to identify species-specific responses to predicted scenarios of climate change and to determine the potential of threatened species for use in CF restoration efforts. The study will provide CF restoration recommendations for use in federal environmental policy and local communities based on analysis of the performance of 10 key tree species across an altitudinal gradient in Central Veracruz, Mexico. The main outcomes of this project include: propagation of threatened tree species, thus contributing to their conservation, and education and training for the local communities will increase awareness of the value of CF biodiversity and act to strengthen their responsibility in the maintenance of these extremely valuable forests.

"Conservation of Endangered Mammals in a Semi-Dry Tropical Forest in Southern Mexico: Predicting Responses to Climate Change"

Rafael Reyna Hurtado
El Colegio de la Frontera Sur

The latest climatic models predict that tropical forest of Southern Mexico will become drier as climate change intensifies. What will be the effect of these changes on the population of species that depend on waterholes or on critical watery food species to their survival? This project aim is to monitor the behaviour and population status of four highly endangered species and the critical resources they depend during the dry season. The four species are: the Baird's Tapir (*Tapirus bairdii*), the white-lipped peccary (*Tayassu pecari*), the black howler monkey (*Alouatta pigra*) and the spider monkey (*Ateles geoffroyi*). By describing ecological adaptations of these species during the dry seasons through a long-term monitoring plan that includes comparison through years, we will be better positioned to elaborate conservation plans for these endangered species. These conservation plans will include the ecological requirements they need to survive. Such requirements could be the differential use of habitats, food species, or changes in behaviour, or movement patterns. We may find that in addition to hunting pressure, and habitat loss and fragmentation (factors that have already been established as having a negative impact on the populations), climate change will affect negatively the long-term survival probability of the species in the region by intensifying the dry seasons. We want to provide information on this latter aspect to have integral conservation plans for the species in the area.

"The environmental history of the Janos Biosphere Reserve in Mexico: critical knowledge for the development of ecosystem conservation strategies."

Rodrigo Sierra Corona
Instituto de Ecología – Universidad Autónoma Nacional de México

The native arid grasslands of Janos Chihuahua, in North-western Mexico, are considered a conservation priority for North America due to its outstanding biodiversity. This region maintains large extensions of native arid grasslands, as well as one of the largest complexes of black-tailed prairie dog colonies (*Cynomys ludovicianus*) on the continent, the only free ranging herd of American bison (*Bison bison*) in Mexico and is part of the areas selected to be part of the black footed ferret (*Mustela nigripens*) recovery efforts. Janos's native arid grasslands have been subject of degradation processes in the last three decades; frequent and intense droughts, cattle overgrazing and land conversion to agriculture are the leading causes of it, with the loss of biodiversity and the degradation of ecosystem services, which negatively affects the wellbeing of the local human population. As direct result of our conservation efforts on the region, the Mexican Federal Government designated Janos grasslands as a Biosphere Reserve in 2009, setting the legal and administrative bases for its recovery. This project objective is to describe the environmental history of the Janos Biosphere Reserve trough archival

research and interviews to the local population to understand the ultimate causes of the environmental changes and its effects. The information derived from this small pilot project will have an immediate use to feed the management process of the Janos Biosphere Reserve. Interviews and archival work are fundamental for the creation of a historical baseline, which will help us define and support restoration objectives and to disclose its ultimate causes in a fine detail. This will allow us to maximize the effect of the already scarce monetary resources, using them in forms that are coherent with the social and ecological history, leading us to solve causes –not only effects- and achieving restoration and conservation in the long run.

"Vaquita conservation actions and research"

Keynote Talk

Lorenzo Rojas-Bracho, Armando Jaramillo-Legorreta, Edwyna Nieto García and Gustavo Cárdenas Hinojosa

Instituto Nacional de Ecología y Cambio Climático, Coordinación de Investigación y Conservación de Mamíferos, Ensenada, BC 22860, México

In 1999 the International Committee for the Recovery of Vaquita (CIRVA) recommended that vaquita by-catch be reduced to zero as soon as possible by banning all gillnets throughout its range. CIRVA also recommended that research be started immediately to develop and test alternate gear types and techniques to replace gillnets as well as measures be developed to offset the economic hardship imposed by these regulations on residents of the Upper Gulf. Since 2008 the government of Mexico implemented the Programme of Recovery of the Vaquita (PACE) to implement the recommendations of the CIRVA. To execute PACE it was necessary to draw appropriately from multiple disciplines to solve the facing problems of a complex situation. Marine mammal scientists, specialists in different disciplines (e.g. population biology, genetics, acoustics) as well as sociologists, economists, oceanographers and fisheries scientist from different Countries collaborated to put into practice the PACE. This innovative Program offered a ground-breaking schedule of compensations (e.g. payment-for-conservation programme), technological developments (e.g. alternative fishing gear) and monitoring of vaquita (e.g. acoustic). This effort has been able to reduce fishing effort in 30% and hence slowdown vaquita population decline but has not stopped it. In 2013 the new federal administration created the Presidential Commission for the Recovery of Vaquita (CAP) and in 2014 CIRVA had its 5th meeting. The report of this Committee to CAP concluded that vaquita population had declined in 37% in the past two years. This as a consequence of the explosion of the illegal fishery of totoaba. Gillnets to catch this fish have a very high vaquita bycatch. Therefore CIRVA strongly recommended that the Government of Mexico to enact an emergency regulations establishing a gillnet exclusion zone covering the full range of the vaquita starting in September 2014. This regulation will be in place in April 2015 for only two years.

"Recovery Program of Endangered Species of the National Commission of Natural Protected Areas of México."

Dulce María Avila Martínez

Keynote Talk

The goal of the Program of Conservation of Endangered Species is to contribute to the recovery of species at risk addressed by through the Program of Action for the Conservation of Species (PACE) to bring them down category in the Official Mexican Standard 059, and if possible remove them from the list, having achieved its recovery and viability of populations. This process should be understood in terms of biological species times, considering their reproductive and biological cycles, to define the conservation and management efforts in the medium and long term in PACE. During the keynote talk were mentioned the implementation of PACE´s of different species.

Images of the Conference

RSG presentations and discussion groups


Introduction


Assessing the conservation value of tropical dry forests under local management in the Chamela-Cuixmala Region, Mexican Pacific Coast.
Rufford


Rufford
toration and concentration
s a mitigation action to
on livestock by jaguars
n lions in Sonora, Mexico


Calakmul, Mexico:

Closing dinner