REPORT CROCODILE SPECIALIST GROUP UICN-SSC

Project tittle: CARRYING CAPACITY OF THE AMERICAN CROCODILE POPULATION IN THE TEMPISQUE RIVER BASIN.

Organization: Instituto de Conservación y Manejo de Vida Silvestre (ICOMVIS)
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The study "CARRYING CAPACITY OF THE AMERICAN CROCODILE POPULATION IN THE TEMPISQUE RIVER BASIN". For which I applied to the scholarship, was the initial title of my master degree thesis and is framed into the project "Assessment of the population structure and exposure to pollutants in the *Crocodylus acutus* population from the Tempisque river basin" from the Instituto de Conservación y Manejo de Vida Silvestre (ICOMVIS) directed by Dr. Laura Patricia Porras. Which arises with the aim to provide scientific information that allows substantiate decisions to the people who is developing the management plan for the American crocodile (*Crocodylus acutus*) from the Tempisque river basin in Costa Rica. Within the aspects that were identified as priority for the management plan were found aspects related to the crocodile population as the carrying capacity and aspects from the social field, the last one due to the recurrent incidents between crocodiles and persons in the zone, although not in high number.

Delays in the acquisition of economic resources for the research and problems associated with data obtained from the crocodile population in previous years, did not allowed to accomplish the research during the time of my Master´s degree. However, since it is framed in a bigger project, its realization in a future is not dismissed; simply because of my time constraints on the masters I was unable to do it. In that way it was refocused to the social area, taking into account the requirements from the social field for the management plan and the discussion with one of the evaluators of the project of the scholarship who suggested, to include this part in the research objectives. In that way it was raised as follows:

Title:

INTERACTION BETWEEN MAN AND THE AMERICAN CROCODILE (*Crocodylus acutus*) IN THE TEMPISQUE GREAT WETLAND.

Background:

Historically, Wildlife professionals have put great effort in the manipulation of wildlife populations, as a source to face conflict caused by human-wildlife interaction (Decker, Lauber and Siemer 2002). However, acceptance capacity concept has been proposed as an alternative method to give account from the negative and positive effects in the human-wildlife interaction, through the tolerance level of the society; based on the perception from the stakeholders about the effects of a wildlife population in their life, finally the values from the stakeholders are taken into account when making management decisions at the local and regional scale in the wildlife management (Linchka 2006). We found some examples in the use of this methodology to approach the management of the conflict between humans

and wildlife population as: white tailed deer in Pensilvania (McGuinness 1997), in the south of Michigan (Lischka 2006, Ridley and Lischka 2009) and Maryland (Griffin, J. R., E. Schwaab and P. A. Peditto 2009), with big carnivores in Lativia (Andersone and Ozolins 2004), gray wolf in Michigan (Peyton 2007) and with moose in the Rocky Mountain National Park in Colorado (Fix, Teel, Manfredo and Boston 2012).

Justification:

Due to the conflict present nowadays between people from communities and factories adjacent to the river, the Sistema Nacional de áreas de Consevación (SINAC) is carrying out a management plan of the crocodile population searching how to solve the conflict. This work was born as a support to this initiative providing information that allows them to base some of their decisions. From this information it would be possible to guide either management actions for the crocodile population, find equilibrium between the number of crocodiles and the acceptance capacity from the human communities, and/or the education and sensitization of community and factories.

General objective:

Evaluate the interaction between human communities adjacent to the Tempisque great wetland and the crocodile (*Crocodylus acutus*).

Specific objectives:

- Determine the activities that favor the interaction human-crocodile.
- Recognize the perception from the stakeholders about the crocodiles and its presence near the settlements.
- Establish the tolerance level regarding crocodiles from the communities settled near the Tempisque great wetland.

Stakeholders:

- Social stakeholders from adjacent populations to the river that has conflict with the crocodile population.
- SINAC officers.
- Employees from fish and shrimp companies.
- Researchers.

Methodology:

Cualitative method: Naturalistic inquiry, this is a descriptive method that aims to understand the situation or phenomena as it is presented.

Technique: Focused interview, the conversation is guided towards the predetermined topic and from it, the person interviewed is selected.

Analysis: through a qualitative analysis that comprises four stages 1) reduction and systematization of the transcriptions, in relevant analysis units, 2) Categorization, processing and allocation of categories to segments of the transcriptions, 3) Conclusions, 4)

interpretative data lecture (verification of the conclusions). Ultimately, data triangulation to support and validate data interpretation.

Result: Master thesis “INTERACTION BETWEEN MAN AND THE AMERICAN CROCODILE (*Crocodylus acutus*) IN THE TEMPISQUE GREAT WETLAND, attached in pdf.

Abstract: Due to expansion and urban development the interaction between man and wildlife has increased, and even though these interactions could bring benefits for both, also there are some that can conduct to conflict. In the Tempisque great wetland, the habitat of the crocodile (*Crocodylus acutus*) has been subject to a high pressure, which has reduced considerably the available space for the species, this and the fact that the crocodile population has quadrupled in the last 15 years, has increased the probability of an encounter between humasn and crocodiles. Interaction between human and crocodile was evaluated from a qualitative social approach and the focused semiestructured interview was used to know the perception of different social stakeholders and to stablish the tolerance level of the adjacent communities to the Tempisque river. Conflict existence was identified in some sectors of the population due to the presence of crocodiles in 22 settlements adjacent to the Tempisque great wetland, negative perception of the people from the adjacent communities regarding crocodiles is bigger than the possitive and is influenced by gender, andsettlement. Negative perception is bigger in women and in the settlements Guardia, Comunidad, Palmira, Hacienda El Pelón de Bajura, Filadelfia, La Guinea, Corralillo, Rosario, Puerto Humo, Pozo de Agua, San Lázaro, Caballito, Puerto Moreno and Bebedero. Furthermore, it was determined that the recognition or not of benefits or damages given by the presence of crocodiles has an effect on people perception. Otherwise, it was found that the researchers and officers from the SINAC have interest to collaborate and improve the conditions to diminish conflict, also companies have the interest to work together with the authorities to solve the problems associated with the presence of crocodiles in their properties.

Scolarship CSG: The scholarship funds were intended to transport and accommodation during the field phase, in which 22 settlements were visited in the Tempisque great wetland area.

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