

Threats to the conservation of the West African manatee (*Trichechus senegalensis*) in Eniong Creek, Southern, Nigeria

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ABSTRACT

The West African manatee (*Trichechus senegalensis*) has great potentials for ecotourism. It is however threatened with extinction in Enion Creek due to excessive exploitation resulting from the high commercial value of its meat, oil, skin and bone. Anthropogenic perturbations, socio-economic indices and awareness level of the local people about conservation and their impact on the survival of the species in Eniong Creek were studied. Questionnaires and interviews were used to collect data. Fifty questionnaires were distributed through stratified random sampling in the three sections of the creek in the ratio of 20, 15 and 15 respectively in line with the population of the settlements. The respondents were mainly fishermen and manatee hunters. Student's t-test, chi-squared test and percentages were used to analyse data. Results revealed that 88% of the respondents listed hunting, deforestation, livestock grazing, bush burning and the use of chemicals as factors responsible for the declining population of manatee in the area. A significant number of respondents (43, $P < 0.05$, t-test) agreed that there are no local conservation laws against the killing of manatee. It was recommended that alternative livelihood options like snailery, apiculture and cane rat rearing, as well as modern farming methods be introduced to the local inhabitants to enhance the conservation of manatee. Federal and State laws against the poaching of the manatee (*Trichechus senegalensis*) should be enforced in the area.

INTRODUCTION

Management of natural resources, poverty alleviation, food security, protection of biodiversity and environment pose a great challenge to Nigeria and other developing nations. Also the world population is increasing at a geometric progression, it is now five billion and the estimate for 2020 is 8 billion at the current growth rate of 90 million a year. This brings about tremendous pressure on land, forest and other natural resources (Ene, 2000). This pressure leads to loss of biodiversity, erosion of genes, depletion and extinction of global species and loss of habitat due to excessive exploitation of some wildlife and plant species, bush burning, over-grazing, introduction of exotic species, ecosystem pollution, poaching and other unsustainable uses of land and water (Olajide and Eniang, 2000). The west African manatee (*Trichechus senegalensis*) possesses great potentials and attractions for tourists and environmentalists due to its physical features, behavior, feeding and breeding characteristics. Manatees have a slow rate of reproduction. Females mature at about five years of age (Marmontel et al., 1992). Pregnancy occurs after mating and an average of one calf is born every two to five years. Twins are rare. The gestation period is between 12 to 13 months (Reynolds and Powell, 2002). These characteristics make the manatee highly vulnerable to extinction. Despite the Federal and state laws put in place to protect the manatee from excessive exploitation, the high commercial value associated with manatee meat, oil, skin and bone, as well as wide ranging use of its body parts for traditional medicine, seems to supersede the fear of arrest or punishment.

Thus poaching of the manatee continue unabated, especially in Eniong Creek. No conservation initiative has been undertaken in the area. This work was undertaken to assess the level of human disturbance, the socio-economic indices that enhance poaching of the manatee and the level of awareness of the local people about the conservation laws on manatee and their impact on the survival of the species in Eniong Creek.

METHODOLOGY

The Creek was divided into three sections A, B, and C, corresponding to settlements in the lower, middle and upper courses of the creek. Questionnaires and interviews were used to collect data. Fifty questionnaires were randomly distributed to respondents in the three sections of the creek namely, A, B and C in the ratio of 20, 15 and 15 respectively, in line with the population density of the sections. The respondents were mainly fishermen, manatee hunters and farmers. Data collected included the number of manatee hunters in the study area, instruments used in killing it, local conservation laws on endangered species, the level of awareness of the laws prohibiting the killing of manatee if any and the utilization of the manatee locally. Student's t-test, chi-square test and percentages were used to analyse data. Tables were prepared from the data analyzed.

RESULTS AND DISCUSSION

The major occupation of the inhabitants of the study area is fishing. This view was supported by 43 respondents or 88% of the total. Fishing and manatee hunting as well as farming were engaged in by

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only 4 respondents each (12%). None of the respondents took manatee hunting alone as his/her occupation (Table 1). This is perhaps as a result of the low population of manatee in the area, which makes manatee hunting alone unprofitable. All the respondents in the three sections of the Creek (100%) were of the view that hunting,

deforestation, livestock grazing, bush burning and the use of chemicals and explosives were the major activities responsible for the declining population of the manatee in Eniong Creek (Table 2).

Table 1. Distribution of respondents by occupation

Occupation	No of Respondents							
	A	%	B	%	C	%	Total	%
Fishing only	16	80%	13	93.3	14	93.3	44	88
Fishing and manatee								
Hunting	24	10	1	6.7	1	6.7	4	12
Farming only	2	10	1	6.7	1	6.7	1	6.7
Manatee hunting only	0	0	0	0	0	0	0	0

Note: A, B and C are the different sections of Eniong Creek X^2 - calculated = 2.04, X^2 -tabulated = 3.816 ($P > 0.05$). Accept H_0 .

Instruments used to kill the manatee included spears and large nets. These activities were also listed by Olajide and Eniang (2000) as the unsustainable uses of land and water that are responsible for the loss of biodiversity, erosion of genes, depletion and extinction of global species and loss of habitat. Economic gains and the use of manatee body parts for traditional medicine were the reasons given by all the respondents (100%) to be responsible for the killing of the manatee.

Poverty is thus implicated in the poaching of the manatee in Eniong Creek leading gradually to the extinction of the species in the study area.

Table 2. Activities responsible for the declining population of manatee

Activity	No of Respondents							
	A	%	B	%	C	%	Total	%
Hunting (poaching)	20	100	15	100	15	100	50	100
Deforestation	20	100	15	100	15	100	50	100
Livestock grazing	20	100	15	100	15	100	50	100
Use of Agro chemical	8	40	5	3.3		6	19	38
Bush burning	20	100	15	100	15	100	50	100
Oil spillage	17	85	13	8.7		12	42	84
Farming	19	95	14	9.3		14	49	98
Fishing with chemicals and								
Explosives	20	100	15	100	15	100	50	100

Note: A, B and C are the different sections of Eniong Creek. X^2 - calculated = 0.24, X^2 -tabulated = 11.69 ($P > 0.05$).

This calls for urgent steps to provide alternative livelihood options to the natives and the introduction of sustainable wildlife utilization that is practiced in many other areas where communities are actively involved in the sustainable utilization of wildlife species especially tourism (Redford *et al.*, 1995). Fame was the other important reason

given by 11 respondents (22% of the total) to be responsible for the killing of the manatee in the study area. The killing of the manatee to gain fame is unfortunate as the animal is harmless. This is supported by the fact that no respondent listed attack on fishermen as one of the reasons for killing the manatee (Table 3).

Table 3. Reasons for killing the manatee

Activity	No of Respondents						Total	%
	A	%	B	%	C	%		
Revenue	20	100	15	100	15	100	50	100
Causes boat to capsid	0	100	0	0.00	0	0.00	0	0.00
Livestock grazing	20	100	15	100	15	100	50	100
Attack people	0	100	0	0.00	0	0.00	0	0.00
Skin, meat, bone and oil	20	100	15	100	15	100	50	100
Frame and status	8	40	2	13	1	6.7	11	22
Tradition and religion	3	15	1	6.7	1	6.7	7	14
Causes damage to crops	2	10	1	6.7	4	16.7	7	15

Note: A, B and C are the different sections of Eniong Creek. X^2 -calculated = 0.24, X^2 -tabulated = 11.69 (P > 0.05).

A significantly (P < 0.05, t-test) high number of respondents claimed to be unaware of the Federal and state laws that prohibit the killing of the manatee (Table 4).

Table 4. Awareness of the local people about federal and state laws that prohibit the killing of the manatee.

	Yes	No
	2	18
	3	12
	1	14
Total	6	44
Mean	2.0	14.7

t-calculated = 6.28. t-Tabulated = 4.303 (P < 0.05). Reject Ho

Manatee is listed among animals that the endangered species Decree 11 of 1985 prohibits the killing or trade in them. Thus the non enforcement of this law as well as other wildlife laws is responsible for the continued decline of the manatee and other wildlife species in Nigeria. For instance, monkeys are still being used by some people as

pets. Ropes are tied around their waists and tied to Lorries that play the highways at the full glare of law enforcement agents in Nigeria. There are also no local conservation laws in place against the killing of manatee. This was the view of a highly significant (P < 0.05, t-test) number (43) of the respondents (Table 5).

Table 5. Responses on awareness of existence of local conservation laws against the killing of manatee.

	Yes	No
	4	16
	2	13
	1	14
Total	7	43
Mean	2.33	14.33

t-calculated = 21.05. t-tabulated = 4.303 (P < 0.05). Reject Ho.

Local conservation laws have been found to be very effective in the conservation of forest and wildlife resources in Eko Esai. (CERCOPAN, 2006 Personal communications). There is therefore an urgent need for the inhabitants of Eniong Creek and environs to be enlightened about the importance of conserving the manatee (*Trichechus senegalensis*) which has very high ecotourism potentials. Wild animals may assume more value to local communities through tourism (Redford et al., 1995).

CONCLUSION

The inhabitants around Eniong Creek engage in a number of unsustainable land use practices like deforestation, bush burning, poaching and the use of chemicals and explosives in fishing which rapidly deplete the population of manatee and other fish and wildlife species in the area. Poverty is a major reason for carrying out these obnoxious acts. Federal and state conservation laws are not only obsolete, but they are also not enforced.

RECOMMENDATIONS

It was recommended that alternative livelihood options like snail rearing, cane rat farming be extended to the local inhabitants of Eniong Creek along with modern methods of farming. The inhabitants of the area should be encouraged to put local conservation laws in place and enforce them along with the Federal and state laws to check the poaching of manatee (*Trichechus senegalensis*) in Eniong Creek.

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