



# Academic Journal of Life Sciences

ISSN(e): 2415-2137, ISSN(p): 2415-5217

Vol. 2, No. 3, pp: 18-22, 2016

URL: <http://arpgweb.com/?ic=journal&journal=18&info=aims>

## A Preliminary Record of Indigenous Ecological Knowledge on Common Palm Civet at Cauvery Deltaic Region, Tamil Nadu

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**Abstract:** Indigenous knowledge is a body of knowledge built by a group of people through generations of living in close contact with nature. The present study is aimed to carry out Indigenous Ecological Knowledge on common Palm Civet in Cauvery Deltaic Region, Tamil Nadu. The study findings show that local people can recognize and distinguish the animal species, as well as notice and explain qualitative population trends and their habitats. The respondents were affirmed about the habitat, the Common Palm Civet occupied mostly in coconut tree followed by coconut and long trees, coconut and bamboo and coconut and mango tree. Nearly 82% respondents assured that the animal was single and 18% respondents observed in groups. Nearly 109 respondents assured that the animal is rare in their locality and 46 respondents marked as a common species. Majority of respondents (80%) belongs to Nagapattinam District assured that the species increasing trend was observed. While discussed about causes of decreasing, majority of the respondents coded the hunting followed by combined accident and hunting, habitat loss, accident, hunting and poisons, poaching, road kill, combined accident, hunting & poisons, hunting & habitation loss and hunting & road kill. When discussed about method of hunting, the respondents assured that cages are used majority (63%) respondents followed by poisons (21%). Nearly 21 combinations of food habits were recorded from the respondents during the study period. Among this food habits, 44 (28.4%) respondents assured that the coconut (both tender and ripened) is a major food source for the Common Palm civet followed by palm fruits, insects, rats, vegetables, mangoes, heron, etc., While discussed the breeding season of the species, 116 (75%) respondents expressed to us don't know, because the animal nocturnal habit. Some 31 (20%) respondents assured that the rain season is a breeding season of particular species. Like wise, the breeding area showed unknown is highest 72% respondents followed by shrubs 20% and paddy field 7%. Most of the respondents (70%) assured that the species observed during the night time followed by evening (18%) time and other 12% respondents assured that the species observed both day and night time. The last seen of the animal in their habitat, huge number of respondents agreed within one month followed by two months, three months, four months it extended upto four years. The results compared with the Indian Mammals book context. It greatly explained their knowledge as same as book content.

**Keywords:** Indigenous ecological Knowledge; Common palm civet; Cauvery deltaic region; Population status and population trend.

### 1. Introduction

Much of the world's biodiversity has been in the hands of traditional peoples, societies of hunters and gatherers, herders, fishers, agriculturists, for a great many generations. Though, Indigenous knowledge is entering into the mainstream of sustainable development and biodiversity conservation discourse. Convention of Biological Diversity has contributed to this process by requiring signatories to: "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional life-styles relevant for the conservation and sustainable use of biological diversity". As the potential contribution of indigenous knowledge to key items on the global agenda gains widening recognition, an increasing number of scientists and policy-makers are calling for the integration of indigenous and science-based knowledge. Indigenous knowledge is a body of knowledge built by a group of people through generations of living in close contact with nature [1].

Indigenous knowledge systems are the complex arrays of knowledge, know-how, practices and representations that guide human societies in their innumerable interactions with the natural milieu: agriculture and animal husbandry; hunting, fishing and gathering; struggles against disease and injury; naming and explaining natural phenomena; and strategies for coping with changing environments. TEK is transferred from one generation to the

next, representing cumulative local knowledge, and is modified and amended as a result of new experiences and observations [2]. Because new knowledge is created all the time, recent Local Ecological Knowledge (LEK) is defined as knowledge, practices, and beliefs regarding ecological relationships that are gained through extensive personal observation of and interaction with local ecosystems, and shared among local resource users [3].

*Paradoxurus hermaphroditus* (Common Palm Civet) live in tropical forests, plantations, fruit orchards and settled areas and often finds its way into the roof of human houses. This species also often colonize the eaves of houses or outbuildings. Common Palm Civets are nocturnal, arboreal animal. The authors experienced some illegal hunting of Common Palm Civet in Cauvery Deltaic Region of Tamil Nadu. Moreover, the peoples explained why they are hunted the particular species. However, studies presenting cases using local knowledge in understanding animal species abundances and trends are few [4-8]. From the experience of the authors are designed to the investigation for carry out indigenous ecological knowledge on Common Palm Civet in Cauvery Deltaic Region, Tamil Nadu.

## 2. Study area

This study focuses on local peoples belong to the Cauvery Deltaic Region, Tamil Nadu. This study site was selected because authors have experience of hunting of this species for protection of cotton and coconut filed. Therefore, it was expected that the local people had some knowledge of animal abundances and qualitative population trends. Cauvery Delta Zone (CDZ) lies in the eastern part of Tamil Nadu between 10.00-11.30, North latitude and between 78.15 – 79.45 longitude. It is bounded by the Bay of Bengal on the East and the Palk straight on the South, Trichy district on the west, Perambalur, Ariyalur districts on the northwest, Cuddalore district on the North and Pudukkottai district on the South West.

## 3. Methods

Data were collected from March 2015 to February 2016. The questionnaire survey, which formed part of a broad study on human knowledge on Common Palm Civet, involved a sample of 155 local people drawn from 56 villages in belongs to Cauvery Deltaic Region. Questionnaires are particularly suitable tools for approaching studies of local knowledge and perceptions of ecological processes [9]. Current village registers of the 56 study villages formed the sampling pool, and households were randomly selected by picking numbers from a hat. Household heads or other permanently resident adults ( $\geq 18$  years) were targeted as the respondents and took part in the interviews in each respondent's residence and field.

The sample included 100 (65%) males and 55 (35%) females because male respondents have huge knowledge of field experiences better than females. Interviews were carried out in Tamil and English. Respondents were interviewed using a semi-structured questionnaire. Pre-testing was conducted in a village in the Nagapattinam District, outside the study communities, to ensure that all questions were clear, and a final version was prepared for sampling. Questions were constructed to gather information on local knowledge and perceptions of Common Palm Civet habitat, local population status and trend, causes of population decreasing, food habits, breeding season and area, method of hunting, activity pattern and last seen of animal sightings in the villages and/or adjacent areas. Each interview took between 45 and 75 minutes to complete.

## 4. Results

The results must be credible that most local people have some real knowledge of the species and that participation of local people could assist wildlife conservation. Villagers from Cauvery deltaic region found to be more familiar with Civets than the respondents from those villages located. The respondents were affirmed about the habitat, the Common Palm Civet was present in Coconut tree 40% (n= 62), followed by coconut and long trees 18.1% (n= 28), coconut and bamboo 17.4% (n=27) and coconut and mango tree 7.7% (n=12). Bamboos 3.2 % (n=5), Bamboos trees and sugarcane field 3.2% (n=5), mango trees and long trees 3.2% (n=5), long trees 2.6% (n=4), bamboos trees and long trees 1.9% (n=3), coconut trees and sugarcane field 1.9% (n=3) and coconut trees, mango trees and bamboos trees 0.6% (n=1) were also affirmed by the respondents. Nearly 127 (82%) respondents assured that the animal was single and 28 (18%) respondents observed in groups.

Nearly 109 (70%) respondents assured that the animal is rare in their locality and 30% (n=46) respondents marked as a common species (Fig.1). Majority of respondents 80% (n=52) belongs to Nagapattinam District assured that the species increasing trend was observed. In Tanjore District nearly 21 (40%) respondents and Thiruvavur District 12 (30%) respondents agreed that the species has decreasing trend (Fig.2). Population trend and status showed strongly negative correlation. While discussed about causes of decreasing, majority of the respondents coded the hunting 53.3% (n=83) followed by combined accident and hunting 20.6% (n=32), habitat loss 11.6% (n=18), accident 7.7% (n=12), hunting and poisons 1.9% (n=3), poaching 1.3% (n=2), road kill 1.3% (n=2), combined accident, hunting & poisons 0.6% (n=1), hunting & habitation loss 0.6% (n=1) and hunting & road kill 0.6% (n=1). When discussed about method of hunting, the respondents assured that cages are used majority 63% (n=97) followed by poisons 21% (n=32).

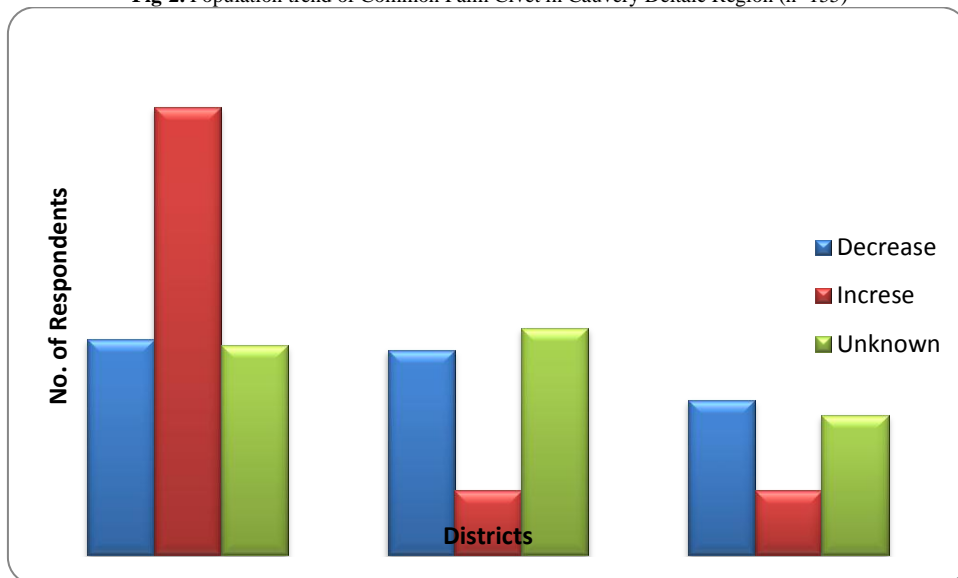
Nearly 21 combinations of food habits were recorded from the respondents during the study period. Among this food habits, 44 (28.4%) respondents assured that the coconut (both tender and ripened) is a major food source for the Common Palm civet followed by palm fruits, insects, rats, vegetables, mangoes, heron, etc., (Table. 1). While

discussed the breeding season of the species, 116 (75%) respondents expressed to us don't know, because the animal nocturnal habit. Some 31 (20%) respondents assured that the rain season is a breeding season of particular species. A little number of respondents (n=8) assured that the summer is suitable period for the breeding (5%). Likewise, the breeding area showed unknown is highest 72% (n=113) followed by shrubs 20% (n=31) and paddy field 7% (n=11). Most of the respondents 70% (n=108) assured that the species observed during the night time followed by evening 18% (n=28) time and other 12% (n=19) respondents assured that the species observed both day and night time. The last seen of the animal in their habitat, huge number of respondents agreed within one month followed by two months, three months, four months it extend upto four years.

Fig-1. Population status of Common Palm Civet in Cauvery Deltaic Region (n=155)



Fig-2. Population trend of Common Palm Civet in Cauvery Deltaic Region (n=155)



**Table-I.** Food habits of Common Palm Civet from the Respondents (n=155)

S. No	Food Habits	Frequency	Percentage
1	Coconut fruits (tender and ripened)	44	28.4
2	Coconut fruits & Palm fruits	27	17.4
3	Coconut fruits & Insects	25	16.1
4	Coconut fruits & Mango fruits	13	8.4
5	Coconut fruits & Vegetables	8	5.2
6	Coconut fruits & Banana fruits	7	4.5
7	Coconut fruits & Rat	7	4.5
8	Coconut fruits, Palm fruits & Insects	4	2.6
9	Coconut fruits, Palm fruits & Rat	3	1.9
10	Palm fruits & Vegetables	3	1.9
11	Coconut fruits, Palm fruits, Insects & Rat	2	1.3
12	Coconut fruits, Vegetables & Palm fruits	2	1.3
13	Coconut fruits, Vegetables & Rat	2	1.3
14	Coconut fruits, Vegetables & Palm fruits	1	0.6
15	Coconut fruits, Mangos & Palm fruits	1	0.6
16	Coconut fruits, Honey & Rat	1	0.6
17	Coconut fruits, Mango fruits, Palm fruits & Rat	1	0.6
18	Coconut fruits, Palm fruits & Mango	1	0.6
19	Coconut fruits, Rat & Heron	1	0.6
20	Mango fruits & Palm fruits	1	0.6
21	Palm fruits & Insects	1	0.6
	Total	155	99.6

## 5. Discussion

The study findings show that local people can recognize and distinguish the animal species, as well as notice and explain qualitative population trends and their habitats. The respondents were affirmed about the habitat, the Common Palm Civet occupied mostly in coconut tree followed by coconut and long trees, coconut and bamboo and coconut and mango tree. Nearly 82% respondents assured that the animal was single and 18% respondents observed in groups. They are gregarious, with a group size of 5-8 individuals, and live in a wide variety of habitats ranging from wilderness to the vicinity of human settlements. They seek refuge in the wooden attic of tiled houses and create havoc at night. The palm civets are frugivorous and are considered as very serious pests of fruit crops like cocoa, pineapple, coffee pods, and papaya [10, 11]. They wake up at dusk, move to the fields, feed on the ripest of fruits and are back at the attic, their safe and secluded resting spot without any human or animal interference, and thus create disturbance for humans. Locals report them to be extremely active following a fixed chain of activities except for brief spells of rest. Little is known about the behavior patterns of the palm civet.

Nearly 109 respondents assured that the animal is rare in their locality and 46 respondents marked as a common species. Majority of respondents (80%) belongs to Nagapattinam District assured that the species increasing trend was observed. In Tanjore District nearly 21 respondents and Thiruvavur District 12 respondents agreed that the species has decreasing trend. Population trend and status showed strongly negative correlation. While discussed about causes of decreasing, majority of the respondents coded the hunting followed by combined accident and hunting, habitat loss, accident, hunting and poisons, poaching, road kill, combined accident, hunting & poisons, hunting & habitation loss and hunting & road kill. When discussed about method of hunting, the respondents assured that cages are used majority (63%) respondents followed by poisons (21%). In the region has huge road construction for transport facility and good agricultural practices. So, the local people decided the species is pest for all the crops such as cotton, coconut, banana etc., Therefore, the animal hunted by local peoples by the help of cages, net, electric shock etc.,

Nearly 21 combinations of food habits were recorded from the respondents during the study period. Among this food habits, 44 (28.4%) respondents assured that the coconut (both tender and ripened) is a major food source for the Common Palm civet followed by palm fruits, insects, rats, vegetables, mangoes, heron, etc., While discussed the breeding season of the species, 116 (75%) respondents expressed to us don't know, because the animal nocturnal habit. Some 31 (20%) respondents assured that the rain season is a breeding season of particular species. A little number of respondents (n=8) assured that the summer is suitable period for the breeding (5%). Like wise, the breeding area showed unknown is highest 72% respondents followed by shrubs 20% and paddy field 7%. Because the animal nocturnal omnivore. They are expert climbers and spend most of their lives in trees. Some of studies noted that the same result in field study. They eat small vertebrates, insects, ripe fruits and seeds. They are very fond of palm sap, therefore their common name [12]. Most of the respondents (70%) assured that the species observed during the night time followed by evening (18%) time and other 12% respondents assured that the species observed both day and night time. Although not much is known about the palm civet, it is believed that its nocturnal habit was developed to avoid predators [12]. The last seen of the animal in their habitat, huge number of respondents agreed within one month followed by two months, three months, four months it extend upto four years. A few respondents assured that the species are maintained under the taples of flower shops for fragrance.

## 6. Conclusion

Indigenous Ecological knowledge express the experience of particular region peoples. In the present investigation clearly express the knowledge on Common Palm Civet in Cauvery Detaic Region. Most of the respondents assured that the answers were relatated with the Indian Mammals books context. Moreover the respondents belonging to the region is has huge knowledge on Common Palm Civet due to the aware of the species as a pest of several crops.

## 7. Acknowledgements

The authors are expressed their sincere thanks to Authority of AVC College (Autonomous) for their facility to successfully carried out of this particular work.

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