A.V.C. College (Autonomous)

Mannampandal - Mayiladuturai

★★★★

AVC COLLEGE
GOLDEN JUBILEE
50
1955 - 2005

NATIONAL SEMINAR ON WILDLIFE CONSERVATION

25th & 26th February 2005

Organized by

Department of Zoology, Wildlife Biology, Bioinformatics and Biotechnology

25

YEARS OF EXCELLENCE IN WILDLIFE BIOLOGY

Faculty

S.No.	*Name*	*Designation*	*Qualification*
1.	S. Swetharanyam	HoD	M.Sc., M.Phil.,
2.	S. Venkatachalam	Lecturer	M.Sc., M.Phil,
3.	Dr. G. Ramaswamy	Reader	M.Sc., M.A. M.Phil., PGDCA.,Ph.D.,
4.	Dr. M.C. Sathyanarayana	Reader	M.Sc., Ph.D.,
5.	Dr. K. Thiyagesan	Reader	M.Sc., M.Phil., Ph.D.,
6.	Dr. M. Varadharajan	Reader	M.Sc., M.Phil., Ph.D.,
7.	Dr. K. Manimozhi	Reader	M.Sc., Ph.D.,
8.	Dr. J. Alphonse Jayabalan	Reader	M.Sc., Ph.D.,
9.	Dr. S. Asokan	Reader	M.Sc., M.A., M.Phil., Ph.D.,
10.	M. Baskaran	Lecturer	M.Sc., B.Ed.,
11.	Dr. R. Nagarajan	Lecturer	M.Sc., M.Phil., B.Ed., Ph.D (UK), Ph.D (India)
12.	A. Sankari	Lecturer	M.Sc., M.Phil.,
13.	V. Vanitha	Lecturer	M.Sc., M.Phil.,
14.	S. Sandilyan	Lecturer	M.Sc., M.Phil.,
15.	Dr.S. Rajkumar	Lecturer	M.Sc., M.Phil., Ph.D.,
16.	S. Balachander	Lecturer	M.Sc., M.Phil.,
17.	K. Balasankar	Lecturer	M.Tech.,
18.	N. Krithika	Lecturer	M.Sc.,
19.	P.B. Jaseetha	Lecturer	M.Sc.,
20.	V. Guruchandran	Lecturer	M.Sc.,
21.	H. Abirami	Lecturer	M.Sc.,

A.V.C. COLLEGE (AUTONOMOUS), MAYILADUTHURAI,

DIVISION OF WILDLIFE BIOLOGY

The maiden attempt to start a full-fledged Post-graduate course on Wildlife Biology was made by our former Principal cum Head of the Department of Zoology Prof. R. Balasubramanian in the year 1980. The first pioneering institute in the whole of India, which has grown year after year. Now people realize the importance of wildlife as a natural resource requiring conservation and management for which a systematic academic course is required.

The academic curriculum has special papers like Ornithology, Mammalogy, Ethology, Forestry, Forest Entomology, Wildlife Management Techniques, Management of Zoos, Sanctuaries & National Parks, and Recent Trends in Wildlife Biology, Computer and Mathematical Applications in Wildlife Science etc., the students understand the rich wildlife biodiversity and its importance of management and conservation through this course. In the final semester (4th semester) the students exclusively carryout an independent field project work in protected areas in collaboration with the Forest Department and other research organizations like Bombay Natural History Society (BNHS), Kerela Forest Research Institute (KFRI), Salim Ali Centre for Ornithology and Natural History (SACON), Indian Institute of Science (IISc), etc., Students of this course regularly participate in the wildlife census operations of several sanctuaries and national parks and hence theyby get a very good opportunity in field training.

The students with a Wildlife Biology degree can work in the Forest Department, Zoos, and in Protected Areas as biologists besides teaching as career. Thus the Wildlife Biology degree holders have additional avenues of employment.

We proudly place on record that one of our alumni is the Additional Director in the Ministry of Environment, Forest and Wildlife many are as scientists at Salim Ali Centre for Ornithology and Natural History (SACON), Bombay Natural History Society (BNHS), Wildlife Institute of India (WII), Gujarat Government's Institute of Desert Ecology, Zoological Survey of India (ZSI), Central Marine Fisheries Research Institute (CMFRI), Centre for Cellular and Molecular Biology (CCMB), Snake Park Trust, and World Wide Fund for Nature. Furthermore a few alumini work as wildlife scientists in several countries viz., United States of America, United Kingdom, Singapore, Taiwan, China, and Israel. Moreover, more than 50 alumni are working in several ongoing projects in many

reputed institutions. One of our alumni has participated as a crew member in the Antarctica Expedition.

The Division of Wildlife Biology is a research department conducting full time and part time Ph.D., and M.Phil., programmes. 29 PhDs and 193 M.Phils degrees were awarded basing on their works on elephants, large carnivores, endangered primates, coastal and nocturnal birds, and on the diversity of amphibians and reptiles. The faculty members have successfully completed more than 25 major and minor research projects to a tune of more than a crore rupee financially assisted by National and International funding agencies. They are extending their expertise to several wildlife projects. Every year a national seminar on wildlife is conducted in the department to enrich the students with the recent trends in the field of wildlife.

DEPARTMENT AT A GLANCE

Teaching Staff	21
Doctorate	9
Non-teaching Staff	8
Projects completed	28
Total Amount	Rs. 89,83,593
Ongoing Projects	4
Total Amount	Rs. 14,65,160
Ph.D. Awarded	29
Ph.D. Scholars	18
M.Phil., Awarded	193
M.Phil Scholars	28
Seminar / Symposia / Workshop conducted	20
Publications	215

Journals subscribed : Foreign-04; National- 13; Newsletters-12

Special Honor:

1. Dr.G. Ramaswamy has been Nominated as a member of Tamilnadu steering committee for National Biodiversity strategy and Action plan of Tamilnadu.
2. Dr. K. Thiyagesan had been deputed as Joint Director to Research and Training, Dept.of Environment, Govt. of Tamilnadu, between 2002 and 2003.
3. Dr. M.C. Sathyanarayana awarded UGC Research Award-1999-2002 and Nominee of Ministry of Social Justice and Empowerment [Govt. of India]-Committee for the Purpose of control and Supervision of Experiments on Animals.
4. Dr. R. Nagarajan currently working as Honorary Research Fellow in Animal Behavior in the School of Psychology, University of Exeter, UK since October 2000.

Seminars and Trainings attended abroad:

Dr. K. Thiyagesan - United States, United Kingdom, Thailand

Dr. M.Varadharajan - United States, Thailand

Dr. M.C. Sathiyanarayana - Nepal

Dr. R. Nagarajan - United Kingdom (England, Wales, & Scotland), United States, Germany, France, Luxembourg, The Netherlands, Belgium

Ph. D. awardees

S.No.	Candidate	Guide	Year
1.	N. Sivaganesan	Dr. M.C. Sathyanarayana	1992
2.	K. Thiyagesan	Dr. M.C. Sathyanarayana	1992
3.	Justus Joshua	Dr. M.C. Sathyanarayana	1993
4.	Devi Swetharanyam	Dr. K. Manimozhi	1994
5.	Joseph A. Jerald	Dr. M.C. Sathyanarayana	1995
6.	R. Santhanakrishnan	Dr. R. Kanakasabai	1996
7.	S. Asokan	Dr. R. Kanakasabai	1996
8.	M. Sabesan	Dr. R. Kanakasabai	1997
9.	P. Neelanarayanan	Dr. R. Kanakasabai	1997
10.	G. Ramaswamy	Dr. R. Kanakasabai	1997
11.	J. Alphonse Jayabalan	Dr. K. Manimozhi	1998
12.	R. Chandra Bai	Dr. K. Manimozhi	1998
13.	S. Rameshkumar	Dr. M.C. Sathyanarayana	1998
14.	V. Kalaiarasan	Dr. R. Kanakasabai	1998
15.	N. Baskaran	Dr. R. Kanakasabai	1999
16.	R. Nagarajan	Dr. R. Natarajan	2000
17.	A. Manimozhi	Dr. R. Kanakasabai	2000
18.	K. Saravanan	Dr. R. Kanakasabai	2002
19.	C. Subramanian	Dr. M.C. Sathyanarayana	2003
20.	M. Varadharajan	Dr. K. Thiyagesan	2003
21.	V. Dhivakaran	Dr. K. Thiyagesan	2004
22.	J. Pandian	Dr. S. Asokan	2004
23.	S.R. Vasuki	Dr. K. Manimozhi	2004
24.	G. Jonas Gunasekaran	Dr. S. Asokan	2004
25.	A.S. Paul Ravindran	Dr. S. Asokan	2004
26.	S. Thiyagarajan	Dr. K. Thiyagesan	2004
27.	G. Sridhar	Dr. K. Thiyagesan	2004
28.	C. Vedhanayaki	Dr. K. Manimozhi	2004
29.	C. Subramanaian	Dr. K. Thiyagesan	2005

Ongoing Research Projects

S.No.	Name of the Staff	Project title	Funding Agency	Amount (Rs.)	Period
1.	Dr.K. Thiyagesan & Dr.R.Nagarajan	Patterns of diversity, abundance and habitat utilization in birds in the Pichavaram wetlands (Mangroves) Tamilnadu, with special emphasis on migratory water birds.	UGC (Minor Research Project)	1,00,000	2004 - 2006
2.	Dr. S. Asokan	Ecology and diversity of insectivorous birds in an agro-environment Nagapatinam district, Tamilnadu, South India).	Ministry of Environment, Forests and Wildlife	10,76,160	2003 - 2006
3.	Dr. M.C. Sathyanarayana	Food and Feeding Ecology of Grey Jungle fowl (*Gallus sonneratii*) at Theni Forest Division	UGC, New Delhi	2,66,000	2003 – 2006
4.	Dr. G. Ramaswamy	Studies on the effect of agricultural pesticides on amphibian fauna at Mannampandal	UGC (Minor Research Project)	23,000	2002 – 2004

Completed Research Projects

S.No.	Name of the Staff	Project title	Funding Agency	Amount (Rs.)	Period
1.	Dr.N. Sivaganesan	Field Training on the Management of elephant reserve for the forest field staff of Tamilnadu, India.	US Fish and Wildlife Service, USA	(47870 US$) 24,89,760	2002 –2003
2.	Dr. G. Ramaswamy	Survey of Amphibian diversity at the Indira Gandhi National Park (Western Ghats).	Conservation International (CI) and DAPTF	75,000 (1550US$)	2002 – 2003
3.	Dr.N. Sivaganesan	Management Training Programme of Elephant Mahouts, Mudumalai Wildlife Sanctuary	Tamilnadu Forest Department	14,500	2002-2002
4.	Dr.N. Sivaganesan	Management Training for various Co-ordinatorsfor the conservation of Asian Elephants (*Elephus maximus*) in Mudumalai Wildlife Sanctuary.	Tamilnadu Forest Department	35,500	2002-2002
5.	Dr.N. Sivaganesan	Management of Elephant reserves with special reference to community participation in the Nilgiri Biosphere Reserve.	US Fish and Wildlife Service, USA	(44982US$) 24,51,136	2001- 2002
6	Dr.K. Thiyagesan	Survey of Freshwater Lakes	United Nations Development Programme (UNDP)	25,000	2001 – 2002
7	Dr.K. Thiyagesan	Impacts of Exotic plant fire on vegetation and selected mammal communities in Mudumalai Wildlife Sanctuary, Tamilnadu.	Tamilnadu Forest Department	1,00,111	2000 – 2001
8	Dr.K. Thiyagesan	Impacts of fire on the Mudumalai Wildlife Sanctuary	Tamilnadu Forest Department	30,000	2000 – 2001

S.No.	Name of the Staff	Project title	Funding Agency	Amount (Rs.)	Period
9.	Dr. Dr. K. Thiyagesan	Impacts of Exotic plant weeds on vegetation and selected mammal communities in Mudumalai Wildlife Sanctuary.	Tamilnadu Forest Department	1,00,000	2000 – 2001
10.	Dr.K. Thiyagesan	Impacts of fire on the Mudumalai Wildlife Sanctuary.	Tamilnadu Forest Department	30,000	2000 – 2001
11.	Dr.M.C. Sathyanarayana	Assessment of food preference by Peafowl.	UGC Major Research Project.	3,00,000	1999 – 2002
12.	Mr.M. Varadharajan	Evaluation of Pollination potential of the Indian Honey Beets *Apis cerana indica* in an agro ecosystem	UGC Minor Research Project	30,000	1999 – 2000
13.	Dr.M.C. Sathyanarayana	Ecology of Grey Jungle fowl	Ministry of Environment, Forests and Wildlife	8,17,486	1997 – 2000
14.	Dr.K. Thiyagesan	Ecology of Veeranam water birds	UGC Minor Project	23,000	1998 – 1999
15.	Dr.R. Kanakasabai	Rodenticide evaluation	UGC Major Project	3,50,000	1995 – 1999
16.	Dr.M.C. Sathyanarayana	Digeetic Trematodes of marine Fishes	UGC Minor Project	30,000	1994 – 1996
17.	Dr.M.C. Sathyanarayana	Helminth diseases of Black buck	Dept of Science and Technology	3,00,000	1993 – 1996
18.	Dr.K. Manimozhi	Species specific protein in the mosquito *Culex quinquefaciatus* and other species	UGC Minor Research Project	14,500	1993 – 1995

S.No.	Name of the Staff	Project title	Funding Agency	Amount (Rs.)	Period
19.	Dr.R. Natarajan	Impacts of sea level changes on the estuarine ecosystems.	CSIR Project	3,48,960	1993 – 1995
20.	Dr.M.C. Sathyanarayana	Preservation of ecosystem of coastal areas (Awareness Programme)	Ministry of Human Resource Development	48,000	1993 – 1994
21.	Dr.R. Kanakasabai	Barn Owl ecology	ICAR Major Project	5,50,000	1992 – 1997
22.	Dr.M.C. Sathyanarayana	Research work on Nilgiri Tahr	M/s. Madras Cements	15,000	1991- 1991
23.	Dr.R. Kanakasabai	Biological control of rodents by Barn owl	M/s. Pest Control (India) Ltd., Madras	86,000	1990- 1991
24.	Dr.M.C. Sathyanarayana	Integrated Environmental Research Programme on River Cauvery	Ministry of Environment, Forests and Wildlife	5,68,640	1989 – 1992
25.	Dr.M.C. Sathyanarayana	Epidemiological studies,	Ministry of Environment, Forests and Wildlife	1,25,000	1989 – 1990
26.	Dr.R. Kanakasabai	A study on the occurrence, burrowing habits, food, feeding and breeding of field's rats.	UGC Minor Research Project	15,000	1988 – 1988
27.	Dr.M.C. Sathyanarayana	Studies on digenetic trematodes from marine fishes of Tharangambadi coast.	UGC Minor Research Project	9,000	1986 – 1988
28.	Dr.M.C. Sathyanarayana	Studies on the helminth parasites of amphibians.	UGC Minor Research Project	2,000	1983 – 1985

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REPTILE STUDIES IN INDIA: AN OVERVIEW

Dr. S. Bhupathy

Salim Ali Centre for Ornithology and Natural History, Anaikatti (PO),
Coimbatore- 641108, INDIA

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India with its past and present geographical placement, habitat and climatic variability is endowed with a rich diversity of reptiles with 506 species reported so far. This figure (8.4% of the world reptile fauna) is astonishing as the landmass of the country represents only 2.2%. Yet, studies on them are still in the infant stage. Reptiles are little known, but are functionally important taxa, and provide vital clues on the quality of local environment. Therefore, studies on them would result in exciting information. Various socio-political reasons are attributed to this laxity. This attempts to review the research works undertaken in the country with respect to reptiles.

REPTILE CONSERVATION IN INDIA

Dr. V. Kalaiarasan

Director, Chennai Snake Park, Chennai – 600 022, INDIA

In India, about 270 species of snakes, 150 species of lizards, 32 species of tortoise and turtles and 3 species of crocodiles are distributed in a wide variety of habitats. These fascinating reptiles are objects of fear and subject of worship in Indian culture. All snakes are dreaded and killed. This 'ophiophobia' may be product of human evolution and has to some extent proved an impediment in our conservation effort, as the lay public may not see any reason to conserve snakes. No attention being paid so far in case of lizards (except few groups of lizard and that too in 'biodiversity hotspots') in inventory and natural history for even common species Conservation efforts on crocodiles gained in prominence in 1970. As a result crocodiles were raised from eggs in captivity and released in wild and saved from extinction. Intensive protection and release of hatchlings from hatcheries to wild undertaken by various Government and non-Government organization, the marine turtles were saved from extinction in 1980. In the past two decades, statues of fresh water turtles and tortoises were well documented but the conservation efforts are still in infant stage.

This paper presents the ground reality in conservation of reptiles in India

STUDIES ON THE ECOLOGY OF INDIAN BARN OWL (*TYTO ALBA STERTENS*)

Dr. R. Santhanakrishnan

Lecturer (SS), Saraswathi Narayanan College, Madurai – 625022, INDIA

Studies on the Ecology of Indian Barn Owl (*Tyto alba stertens*) with special reference to feeding, and breeding was studied in an area of 140 km^2 around Mayiladuthurai in Tamilnadu.

Feeding studies were conducted using their regurgitated pellets collected from six different localities. A total of 5962 pellets analysed in which 6960 prey items were recovered and identified. In overall dietary composition, the smaller mammals accounted for 90.4% with rodents (67.8%) and insectivores (22.6%) were the primary prey groups. Owls took significantly more number of smaller mammals of 40-60grams weight class category except mice. The diet of Barn Owl can be described as highly stereotyped and restrictive in the study area.

There were 33 nest sites, and 54 nestings were documented with a majority of 76% in temple. The results of the present study indicated the beneficial role of Barn Owl as biological control agent against agriculturally vulnerable pest species like rats and mice.

AVIFAUNA OF INDIAN WETLANDS AND THEIR CONSERVATION

Dr. C. Sivasubramanian

P.G. & Research Department of Zoology, Khadir Mohideen College,
Adirampattinam – 614 701, INDIA

Wetlands are transitional areas between terrestrial and aquatic ecosystems. They are complex natural systems characterized by shallow water or wet soils during most of the year. They also support natural vegetation adoptable to wet conditions. India has a wealth of wetland ecosystem distributed over different geographical regions. Most of the wetlands are directly or indirectly linked with major river systems such as the Ganges, Cauvery, Krishna, Godavarai and Tepti. India has total of 27,403 wetlands of which 23,444 are inland wetlands and 3,959 are coastal wetlands. The wetlands are the ideal habitat for avifauna, many of which migratory 2,094 forms of birds belonging to 1,200 species and 400 genera in India, Sir Lanka, Pakistan, Bangladesh, Nepal, Bhutan and South East Tibet of these 417 forms belongings to 318 species and 146 genera are found in the wetlands of India.

The loss of wetlands leads to environmental and ecological problems such as urbanization, anthropogenic activities, agricultural activities, hydrologic activities, deforestation, pollution, salinization, aquaculture, introduced species and climatic changes. Which have a direct impact on the decline of the associated bird fauna. This paper discusses in detail the environmental setting of the wetlands and the ecological process affecting them. The classification of wetland is provided so as throw light on the major wetlands that attract a significant number of birds and also on their conservation.

STATUS, DISTRIBUTION AND CONSERVATION OF WETLAND BIRDS IN THE KOLE WETLANDS OF KERALA

Dr. C. Sivaperuman and Dr. E.A. Jayson

Division of Forest Ecology and Biodiversity Conservation,
Kerala Forest Research Institute, Peechi - 680 653, Kerala, INDIA
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The study was conduction in the Kole wetlands of Thrissur, Kerala from November 1998 to October 2001. The name "Kole" refers to the peculiar type of paddy cultivation carried out from December to May and this Malayalam word indicates bumper yield of high returns in case floods do not damage the crops. The method of total count was employed to census the bird populations. The information on conservation problems was collected through questionnaire survey, direct interview and field observations. A total of one hundred and eighty two species of birds belonging to 50 families under 16 orders were recorded. Of the recorded species 100 species were resident, 81 migrants and one species was a straggler. One vulnerable and five near threatened species were recorded, namely *Pelecanus philippensis*, *Anhinga melanogaster*, *Mycteria leucocephala*, *Threskiornis melanocephalus*, *Aythya nyroca*, and *Circus macrourus*

. The highest species richness was recorded in December 1999 and the lowest in June 1999. The highest number of birds was recorded in November 2000 and the lowest in June 1999. The highest diversity Index (H') was recorded in December and lowest in October. The important conservation problems were habitat alteration, poaching, fire and fishing. The conservation problems and solutions to mitigate them were also discussed in this paper.

IDENTIFICATION OF BIRDS THROUGH DNA BARCODES

Dr. J. Pandiyan

Department of Zoology & Biochemistry, Government Arts College (Autonomous), Kumbakonam - 612 001, INDIA

Our world home to approximately 10 million species of biological organisms, but our mind able to recall recognize perhaps only 1000 species. Taxonomists traditionally have classified organisms on the basis of their physical characteristics, which is easy to say the correct name of the animal or plant but there is a possibility to get error with regard to the taxonomy of species specific. Now-a-days most of the scientist use latest technology *i.e.* DNA Barcoding Method to find out the specific species. "A uniform system to use DNA to identify all plants and animals which would allow many more people from environmental regulators to nature lovers to identify organisms". For humans, birds are probably the easiest species to identify. They're big, they're colored differently, and they sing different songs. Yet even in that easy to identify group, there are hidden species," The task of identifying Earth's estimated 10 million species has daunted biologists for centuries - fewer than two million have been named. Researchers at Rockefeller University and two Canadian institutions have uncovered four new species of North American birds by using the DNA barcoding technique. The findings were reported in the September 28 issue of *Public Library of Science (PLoS) Biology*. The result is an important step towards proving the sequence of a short stretch of DNA which is called as 'DNA barcode' can be used genetically to identify both the known and unknown species which are in question.

EVALUATION OF THE STATUS, LAND USE PATTERN AND HABITAT UTILIZATION OF ELEPHANTS IN CORRIDORS BETWEEN WESTERN AND EASTERN GHATS THROUGH MUDUMALAI WILDLIFE SANCTUARY AND NILGIRIS

NORTH DIVISION, NILGIRIS, TAMILNADU

R. Arumugam[1] and K. Ram Kumar [2]

[1] Department of Zoology, A.V.C. College (Autonomous), Mannampandal, Mayiladuthurai, INDIA

[2] World Wildlife Fund Field Research Station, Thengumarahada, Nilgiris, INDIA

A study on the status of land and land use pattern in elephant corridors between Western and Eastern Ghats through Mudumalai Wildlife Sanctuary and Nilgiris North Division was carried out between May 2003 and April 2004. Three corridors, Singara road, Flume channel and Mavinhalla were selected for intensive study. Elephant and cattle during density was monitored throughout the study period. We also marked 50 dung piles, visited the dung piles regularly until they completely disappeared from the place to calculate dung decay rate. Flume channel and Singara corridor's were intensively used by elephants followed by Mavinhalla corridor. Elephant and cattle dung density and elephant dung decay rates were estimated using Gajaha program. Elephant density during the study period in Flume channel corridor was 1.03/km^2 in Singara migratory route was 0.6/km^2 and in Mavinhalla corridor was 0.3/km^2. Biotic pressures such as wood cutting and lopping of branches of trees were recorded in all the study sites. There seems to be heavy biotic pressure such as cattle grazing and wood cutting in the corridor areas especially in Flume channel and Singara corridors. Cattle dung density in Flume channel, Singara and Mavinhalla corridors per square kilometer was 3826, 3579 and 2061 respectively. Wood cutting density per hectare in flume channel corridor, Singara corridor and in Mavinhalla corridor per hectare was 54, 70 and 53 respectively. Other animals found in the corridor includes larger herbivores such as gaur, sambar, chital, black-buck and carnivores such as tiger, leopard, dhole (wild dog) and striped Hyaena. Indiscriminate land use pattern in revenue lands abutting elephant corridors has severely affected the movement of elephants. We have identified nine unoccupied revenue lands with forest cover in the corridors that needs to be transferred from revenue department to forest department in order to increase the width of the corridors. We have also identified six crucial patches of patta lands that fall in the corridors that will have to be acquired and included in the reserve forest in order to increase the width of the elephant corridors. Recommendations to augment the corridor are also given.

PERIYAR TIGER RESERVE: A HOLISTIC APPROACH TO BIODIVERSITY CONSERVATION

Dr. A Veeramani

Ecologist, Periyar Foundation, Thekkady, Kerala, INDIA

In Indian scenario, the exclusivity of Protected Areas is not always feasible due to human dominated landscapes wherein the fringe area population depends largely on the resources of the PA for their subsistence. This often leads to severe stress on the already fragile and fragmented forest ecosystems and the conservation of genetic resources and meeting the legitimate needs of the people become nightmarish for natural resource managers. Periyar Tiger Reserve is a typical example for this complex situation. Located in the sylvan Southern Western Ghats of Kerala, Periyar Tiger Reserve symbolizes the rich biological heritage of India with the total extent of 777 km^2. Known throughout the world for its immense tourism value, religio-cultural heritage and the rich assemblage of flora and fauna, it derives its name from river Periyar whose catchments form the major portion of the Reserve.

Periyar Tiger Reserve falls within the Anamalai High Range Centre, one among the five centers of hyper-endemism in southern Western Ghats. Out of the estimated 3800 flowering plants found in Kerala, more than 50% are reported from Periyar Tiger Reserve. The wealth of faunal diversity is also equally amazing.

People, both tribal and others, who live on the fringes of the Tiger Reserve, depend directly and indirectly on these forest resources. Six tribal groups show distinct economic-cultural associations with the forests of Periyar. Amidst the astounding repository of biological opulence, Periyar Tiger Reserve is circumvented by a plethora of problems. Typical of any developing country, more than two and half lakh people living around Periyar Tiger Reserve depend on these forests for their livelihood. This livelihood induced forest

dependency in the form of poaching, grazing, fire wood and thatching grass collection, removal of non-timber forest products, ganja cultivation and the unregulated pressure on fringe area forests for economic sustenance, the large number of devotees visiting Sabarimala shrine and the resultant forest disturbance and the ever increasing number of tourists etc. form the root cause of all protection problems of Periyar.

In the changing scenario of Protected Area management, in order to tackle the above mentioned issues new approaches are being tried. Along with the traditional way of policing the forests, participatory approach is attempted to resolve people–park interface conflicts. Where as the former is largely a technology driven approach requiring competence at all levels of staff hierarchy, the later is an initiative to develop mutual trust and respect among forest staff and local people for jointly building social development programmes leading to conservation of fringe area forests. An area of such an astounding biodiversity, Periyar Tiger Reserve is to be conserved eternally. The issues and problems concerning the reserve cannot be solved within the limits of the tiger reserve alone. On the other hand various agencies which have direct and indirect link with the reserve have to be involved in its future management and strategy making.

THE ROLE OF ARIGNAR ANNA ZOOLOGICAL PARK IN WILDLIFE CONSERVATION EDUCATION

Dr. A. Manimozhi

Biologist, Arignar Anna Zoological Park, Vandalur. Chennai-600 048, INDIA

In the future all zoos will become conservation and education institutions with sound scientific base. All zoos will be run in a more holistic way with best experience for visitors. They will affect human emotion and change of human behavior. They will empower people to act positively in environmental issues and decisions. All the zoos will work together to this end.

All zoos must be committed to developing and implementing education or learning initiation which attract a wide audience, inspire a sense of wonder in the natural world and enable people to take action that makes a difference for wildlife, the natural world and the society they live in.

Working together, zoos have the potential to be extremely important of change in creating a sustainable future and ensuring the conservation of species and habitat on a global scale.

ROLE OF NATIONAL SERVICE SCHEME IN ENVIRONMENTAL EDUCATION

Dr. B. Rammanohar

District NSS Liaison Officer & PG Teacher, Govt. Boys Hr. Sec. School, Pattukkottai
Thanjavur (Dt), Tamil Nadu – 614602, INDIA

Around the world, Science and Technology developments are improving in all aspects. However, the Human population is burgeoning and the earth has been polluted. The flora and fauna are at the verge of extinction. Therefore "Action oriented social education" related with Biosphere, Agriculture, Social forestry. Water management, Conservation of Natural resources and Wild life is the need of the hour for school children.

National service scheme, a voluntary service students organization are formed in Tamilnadu Higher Secondary schools. These units have been teaching and giving training to the students to face the community with leadership quality, helping tendency during the problems etc., Here our Pattukkottai (Thanjavur Dt) Town School NSS volunteers have done the project on "Environmental awareness" among the villages surrounded in the coastal area, Mangrove forests, Birds sanctuary, Sacred groves etc., during the 1998, 1999, 2000, 2001.

Above mentioned projects conducted by a team of NSS volunteers under the guidance of the NSS programme officer. This Action research project conducted on the basis of the following aspects like 1.Problem Area 2.Knowing the problem 3.Causes for the problem 4.Action Hypothesis 5.Research data collection methods 6.Action plan 7.Conclusion 8.Follow-up of the Action taken during the projects (Stephen M.Corey, 1955).

This above innovative action oriented scientific Project methods among the particular school students made them to form "Youth Naturalists Society" (YNS) in their Native Town during their college days. This successful teaching practices created the scientific temper among them and the society. NSS organisation's role in creating awareness about the Environment and Wild life is to be placed on the Record.

WILDLIFE TRADE – NEED FOR GREATER CONTROLS AND INCREASED AWARENESS: AN OVERVIEW

M. Maranko

Wildlife Inspector, Ministry of Environment & Forests, Govt. of India, Chennai, INDIA

This paper presents the general aspects of Wildlife protection from internal and international trade originating from India. It also explains ways to curb illegal activities under the Wildlife (Protection) Act, 1972, CITES, Export-Import Policy, and the Customs Act, 1962. The paper also deals with animal products commonly traded, the methods of prevention under various laws to unearth the kinds of modus operandi indulged in by unscrupulous traders.

The significant role being played by the field officials is of paramount importance in the conservation of fauna and flora of our country. Successful implementation of wildlife Act in all the wildlife divisions in our country depends how best the field staff are trained on the theoretical aspects of this important Act and transforming the enactment in to practical implementation. The crying need of the hour at this juncture is to protect the wildlife from poachers and smugglers, besides encouraging wildlife research-based activities and funding various Projects and Schemes for the development of protected areas and endangered wild species.

The Paper also tries to bring out the role of Central and State officials like forest personnel, Custom officials at the entry/exit points, DRI, etc., in wildlife protection. Utilizing the informers by developing intelligence network, involving general public, trade rivalries, paid informers NGOs, wildlife researchers, enthusiasts and students. Increasing the level of awareness about the necessity of wildlife and environment issues among the public residing in fringe areas of forest reserves and seashores. Ways to plan raids successfully, and bring the culprits to book.

PEOPLE PARTICIPATION IN CONSERVATION OF MEDICINAL PLANTS IN INDIA

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Medicinal Plant Conservation is not possible without the full support and involvement of local people living in and near the Protected Areas. Conservation of medicinal plants in India also depends substantially on the protection offered to habitats by the local and tribal people. In India many species of medicinal plants are under serious threat due to cattle grazing, browsing and habitat degradation. Encroachment is the major problem to the Reserve Land and Reserve Forest in the Protected Areas. The major threats to the medicinal plants and suggestions in the Protected Areas will be discussed in detail.