

## A HISTORICAL ACCOUNT OF WILDLIFE PROTECTION AND MANAGEMENT IN TAMIL NADU

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### Introduction

India is gifted with rich and varied flora and their faunal associates. With approximately 500 species of mammals and 2,500 species of birds spread in its 32.5 lakh sq.km area, India surpasses most countries across the globe for its wildlife heritage. The rich diversity owes chiefly to its unique geographical position displaying a remarkable variation in its characters like temperature, precipitation and other climatic components, as its frontiers are extending over the snow capped Himalayas, the plateau of Ladakh, the deserts of Sind and Rajputana, the rain forests of Assam, the well clothed Western and Eastern Ghats, and its shores are washed by the seas and oceans (Badshah, 1962).

Abundance of wild animals was very high in the country at the beginning of 20<sup>th</sup> century. However, prevalence of intense hunting and trapping practices brought the status of wild animals to an extremely distressing position by the turn of independence. The cumulative effects of the world wars, country wide expansion of agriculture and the large number of gun licenses being issued since independence and the emergence of poaching activity for economic gains, needed urgent and concentrated efforts (Anon., 1961).

There was very little focused attention in designating specific wildlife rich areas as Sanctuaries or National Parks. India had about 80 sanctuaries notified across the country by the early 1960s, of which four were noted for the gigantic congregation of waterfowl during winter months. Tamil Nadu had at that time only three sanctuaries, including the Vedanthangal bird sanctuary.

### Pre-Independence scenario in the Madras Presidency

'Madras Wild Elephant Preservation Act of 1873', the first ever wildlife law in the Presidency was enacted to regulate the shooting or destroying of wild elephants found upon cultivated or waste lands, in the immediate vicinity of public roads or in self-defense or in defense of any other person through a system of licensing. Pursuit of game in the reserved forests of the Presidency was regulated under the Madras Forest Act. 1882 Rules were framed to regulate hunting and fishing and to prohibit the poisoning of waters and the setting up of traps or snares within the reserved forests. Single licenses to shoot in one forest division or 'Plural' licenses to shoot in

more than one division were issued on payment of prescribed fees. Closed seasons were prescribed to afford special protection to birds and animals during the mating and breeding seasons. Certain animals and birds were completely prohibited from hunting. The number of animals that may be shot under a license in a year was restricted to not more than two sambhar, one bison, two barking deer and two antelopes. Rules governing game pursuit in particular areas like the Nilgiris and Upper Palnis were also framed. For instance, a game law, namely 'The Nilgiri Fish and Game Preservation Act of 1879' came into being and was followed by a set of special rules called 'Nilgiri Game Rules' in 1911.

### Early-protected areas of the state

#### *Vedanthangal bird sanctuary*

Though Vedanthangal Bird Sanctuary is not situated within forest limits, the Forest Department is closely associated with its development as a sanctuary. Existence of this bird conclave has been recognized for more than two centuries. As far as back in 1798, Mr. Place, the Collector of Chingleput had issued a prohibitory order against shooting of birds in the Vedanthangal lake. In 1936, the Collector of Chingleput officially recognized the place as a sanctuary and sanctioned the first governmental expense towards its upkeep. The tank had earlier been declared as a Reserved land under the Wild Animals and Birds Protection Act 1912 and the Government had prohibited the shooting of water birds within a radius of 20 miles of the sanctuary (Saldanha, 1977).

#### *Mudumalai- The State's oldest sanctuary*

Mudumalai, then part of Wynaad, was the stage for intense exploitation of timber wealth, primarily of teak and terminalias for nearly a century from 1850. About 10,484 acres of Benne forests of Mudumalai was alone Government-owned in the early period of Madras Presidency's forest administration. Other parts of Mudumalai forests were later acquired from its owner, Tirumalapad of Nilambur in 1927, when it was declared as a reserved forest. Mudumalai was then a popular hunting ground and a game reserve. The Nilgiri Game Association, formed in 1877, took steps like closing the trunk road between Thorapalli and Theppakadu and a 100-yard strip on either side of the road to shooting in

order to discourage poaching from motorcar. For the first time in the forest history of Madras Presidency, an area of about 59.57 Km<sup>2</sup> of the forest of Mudumalai range was constituted into Mudumalai Wildlife Sanctuary in the year 1940. All shooting, hunting etc. were prohibited with an objective of preservation of the game within sanctuary limits. Unfortunately, the area suffered a brief set back during the latter part of the Second World War, when the Southeast Asian Command set up a jungle warfare training camp in Mudumalai in 1943 to train soldiers for deployment to the Burma front. This period witnessed the wild animals of sorts in the sanctuary falling prey to the ruthless gunnery of trainees and officers irrespective of size, age and sex (Sekar, 2004).

#### Developments in the post independence period

Setting up of protected areas for rare and unique fauna gained some attention after the 1952 National Forest Policy. Though the State had a Wildlife Board to guide the activities of wildlife development in line with the directions of the Central Government, post of a separate State Wildlife Officer was created only in the early 1960s to look after wildlife preservation in the State.

#### *Vedanthangal sanctuary (1956)*

Vedanthangal sanctuary, mainly consisting of a 29.94 ha rain-fed tank was formally declared as a wildlife sanctuary in 1956. The tank has a slightly off center grove of *Barringtonia acutangula* trees and a bund running almost along its western limits that supports shady semi-ever green vegetation. The mixed heronry in Vedanthangal is said to be most spectacular of its kind in the country because in no other heronry can thousands of birds of so many different species be found breeding in such closely packed promiscuity. The commencement, extent, duration and end of the nesting enterprise of both the indigenous birds and visitor species at the sanctuary are all very much dependent on rainfall. November to January are the best months for a visit to the sanctuary.

While recounting the history of this sanctuary, one can't help referring to the foresight and sustained vigilance of the local villagers who were responsible for the development of this sanctuary through the ages. The villagers had realized in time when fertilizer was unknown that the birds' droppings enriched the tank waters, which were used by them for irrigation and so zealously protected the avian visitors even though they preyed to some extent on their valuable crops.

#### *Expansion of Mudumalai sanctuary (1958)*

Two years later in 1958, the extent of Mudumalai

sanctuary was expanded to an area of 318.7 km<sup>2</sup>. The area encompassed four botanically distinct tracts viz., the southern sub-tropical semi evergreen forests, the moist and dry deciduous forests and the southern high-level thorn forest. Mudumalai tract is exceedingly rich in wildlife, harbouring a bewildering variety of mammals, including one of the largest populations of elephant and tiger in the state. The array of avifauna, reptilian and amphibian fauna of this region is equally impressive. The sanctuary has one of the oldest elephant homes of the country, where a permanent camp of captive elephants was established at Theppakkadu in 1920. This camp boasts of an excellent package of practices in captive management of elephants.

Four checking stations were formed for controlling poaching and shooting wildlife near Thorapalli, Kakkannallah, Masinagudi and at the interstate border on the Gudalur – Sultan Bathery road. Part of the sanctuary, measuring 103.23 Km<sup>2</sup> was subsequently declared as Mudumalai National Park in 2005, in view of its higher conservation significance.

#### *Mundanthurai, the first tiger sanctuary (1962)*

A wildlife sanctuary was formed in 1962 to protect the tiger habitat in Mundanthurai Range of Tirunelveli district. This area forms part of the southern segment of the Western Ghats and the diversity of forests provided the habitat for rich and abundant wildlife population. Forests here are the source of many principal rivers including the perennial Tamiraparani that are draining into the plains of the district.

The natural forest blocks witnessed many human-induced developments, as they were brought under plantation forestry, primarily with timber species like teak, terminalias, rosewood in the pre-independence decades, which was followed with pulpwood and softwood plantations during various Five Year Plan periods. There was also a system of felling of fuel coupes that was in vogue for several decades. The six odd reservoirs put up by 1970s augmented the irrigated area in the district, even while submerging substantial chunk of pristine forests. Despite all the above difficulties, there was considerable variety of wildlife.

The area had also been subjected to licensed hunting, competitive poaching and follidol poisoning, as a result of which tiger numbers were decimated. The entire extent of Ambasamudram Range and part of Nanguneri Range, comprising of the Papanasam Reserve (336.94 Km<sup>2</sup>) and the Singampatty Ex-zamin Forests (221.63 Km<sup>2</sup>) were declared closed for shooting from 1<sup>st</sup> October 1962 and was termed as the 'Sanctuary for Tiger'

under the Wild Birds and Animals Protection Act 1912, as per the decisions taken in the VII meeting of the State's Wildlife Board (Srinivasan, 1977). This was almost ten years before the nation wide Project Tiger was launched on 1<sup>st</sup> April 1973. The very concept of the sanctuary for tigers and attempts at providing preferential treatment for a carnivore are pioneering actions, contemplated ahead of times and stands as one of the foremost, if not the first of its kind in the annals of wildlife management in the country.

Proposed sanctuary for white coloured bison in the Anamalais (mid- 1960s)

Present Udumalpet and Amaravathy Ranges of Anamalai Tiger Reserve supports a sizeable population of Indian Gaur in its entire stretch. T.V. Venkateswara Ayyar in his plan for Coimbatore South Division (1941-42 to 1950-51), constituted an area of approximately 20,000 acres in the then Udumalpet Range as Bamboo working circle, but prescribed exclusion of bamboo working in those areas largely on account of the fact that it contained white bison. As the white bison wasn't known elsewhere, protection of this species was given special attention so much so, shooting of white bison in this area was prohibited by a Government Order issued in April, 1933. Abundance of bison in the forests in the area prompted subsequent Working Plan Officer J. Wilson to suggest the constitution of a 'bison sanctuary' in the Udumalpet Range and construction of roads connecting the Kallapuram, Manthorai cart tract with Thalini and Manjampatty in his plan for the period 1965-66 to 1974-75. The Government too approved in principle, the proposals for setting up a wildlife sanctuary in the Udumalpet Range for the preservation of the 'Ash coloured bison' and called for draft notifications for approval of the Government in 1966. Though the proposal for the constitution of the bison sanctuary and construction of roads at an estimated cost of Rs. 1.92 lakh were submitted in January 1967, the Government passed the following orders in the matter in October 1968 "*...the forest department should concentrate on the full development of the existing sanctuaries instead of including programmes of opening many small sanctuaries. In view of the above observation and in view of the heavy expenditure involved in the proposals, Government consider that the formation of the road can wait for better times*" (Sekar and Ganesan, 2003). Constitution of the bison sanctuary wasn't pursued beyond this and further action was dropped.

Other than a few narrations of occasional sighting of these unique creatures by the field staff of Udumalpet Range in the past, we have no record of its sighting in

recent times. Romulus Whitaker recorded the occurrence of these animals in the issue of Hornbill during 1979 "*On 4<sup>th</sup> July 1978, Tom Lutz and myself saw a white gaur 300 m from the saddle between the big peaks of NNE of Kukkal cave, north of Kukkal village, the Palni hills in Tamil Nadu.... The gaur was a medium sized female in a herd of 23..... The gaur later went into the Manjampatty Valley below..*". Even while an air of mystery surrounds these animals - whether they are ash-coloured or white - the Manjampatty valley, presently a part of Indira Gandhi National Park hopefully continues to provide a secure habitat for them.

*Point Calimere wild life and bird sanctuary (1967)*

The Point Calimere sanctuary, located in Nagapattinam district was created in 1967 with an aim to conserve the black bucks, the sole representative of the Genus 'antelope' in the State. Point Calimere sanctuary, with an extent of 17.26 Km<sup>2</sup> is a unique mix of grasslands, backwaters, mudflats, sand dunes and tropical dry evergreen forest. The tropical dry evergreen forest of the sanctuary is considered as the richest tract in the entire country with about 364 species of flowering plants. *Manilkara hexandra* is one of the predominant species. The grasslands located on the southern part of the sanctuary is the natural habitat of the Black buck. The population of Black buck was dwindling due to poaching and lack of legal protection, whose number was only around 600 at the time of the creation of the sanctuary. As per the 2010 census, its population has grown to more than 1,850 animals. The other mammals include the spotted deer, jackal, bonnet macaque, monitor lizard, wild boar, short nosed fruit bat, small Indian civet, common mongoose, black-naped hare and feral pony.

The sanctuary, an important shorebird habitat, is also known for a variety of migratory water birds, notable among them being Greater flamingoes that visit every season for winter-feeding. The Great Vedaranyam swamp is the scene of one of the greatest avian spectacles with a peak population of over one-lakh birds, reported during the winter months. Of the total avian faunal diversity with 269 species, 103 species of migratory water birds have been recorded here. It was reported that about 5,00,000 waders wintered here during the winter of 1980 (Balachandran and Tirunavukkarasu, 2009). The bottlenose dolphin is the important sea mammal sighted here. This is also a regular nesting site of the endangered Olive Ridley turtle. Artificial hatching of eggs, laid along the Vedaranyam coast by this turtle species, is being continued since 1982.

Post 1972 scenario

With the enactment of Indian Wildlife (Protection)

Act in 1972 and the requirement of the States to bring larger contiguous areas that are rich in wild animal population under Protected Area (PA) management, efforts were taken to declare more areas as wildlife as sanctuaries. With the elevation of the status of such forest tracts to that of sanctuaries and National Parks, focused attention was given to promote the principles of conservation forestry, wildlife protection and management.

#### *Kalakkadu sanctuary (1976)*

Tirunelveli South division was formed with a total extent of 943.12 Km<sup>2</sup> with Tirunelveli and Nanguneri ranges in Tirunelveli district and the Kulasekaram, Azhagiapandipuram and Boothapandi Ranges of Kanyakumari district. Development priorities placed enormous pressure on the forests and wildlife of this forest division. Construction of hydel projects across the Kothayar river and large-scale conversion of forests into rubber and softwood plantations led to the shrinkage of the natural forest areas of the division. Hunting and poaching also accounted for decline in the population of many a wild animal species. Increased focus on wildlife conservation in the area had moved the Government to declare the entire Tirunelveli South division as prohibited from shooting from 1<sup>st</sup> April 1968.

Studies by noted biologist Stephen Green on the critically endangered species, the Lion-tailed Macaque (LTM) led to the notification of entire 221.07 Km<sup>2</sup> Kalakkadu Reserve of Nanguneri range, comprising of 221.07 Km<sup>2</sup> as Kalakkadu wildlife sanctuary in March 1976 with the main object of protecting LTM (Kadakshamani, 1977).

This animal is found occurring in small troupes in shola forests, generally around Manjolai, Kakachi and Nallamukku and Sengaltheri forests.

#### *Indira Gandhi wildlife sanctuary (1976)*

Anamalai hills of erstwhile Coimbatore South Forest Division represent an important segment of the Southern Western Ghats. The mosaic of forest vegetation ranging from southern dry thorn/scrub to dry deciduous, from moist deciduous to evergreen and montane temperate grassland- shola supports myriad floral and faunal life forms. Areas falling within the then Ulandy range (present day Top Slip range) were declared as a sanctuary during 1973. Upon the suggestion of the then Chief Conservator of Forests, the entire contiguous areas of Coimbatore South division was formed into a sanctuary with headquarters at Pollachi for the purpose of protecting, propagating and developing wildlife and its environment. Consequently, Government declared the

entire forest area over an extent of 958 Km<sup>2</sup>, occurring in the Valparai, Pollachi and Udumalpet taluks of the then Coimbatore district and a portion in Kodaikanal taluk of the then Madurai district as Anamalai Wildlife Sanctuary in 1976. Harboursing many endemic species, this unique ecological tract can rightly be called a 'bio diversity hotspot'. This sanctuary remains as the largest protected area of the State.

#### *Indira Gandhi National Park*

Government of India had indicated that there could be a National Park in the core area of the Indira Gandhi Wildlife Sanctuary, while the remainder could continue to remain as a sanctuary. As only about 10% of the sanctuary area was free from grazing and settlements, Government of Tamil Nadu declared its intention in 1989 to constitute the Grass hills, Karian shola and Manjampatty valley in Coimbatore district and Kukkal, Kilanavayal and Samikanal RFs, totaling an extent of 117.10 Km<sup>2</sup> as Indira Gandhi National Park.

The above areas hold considerable ecological significance in that they are covered by varied forest types with unique associations viz., the montane temperate grass land-shola in the Grass Hills, lower elevation wet evergreen forests in Karianshola and the dry savannah forests in Manjampatty valley. These areas represent one of the least disturbed and relatively little damaged ecosystems in the Southern India.

#### *A sanctuary for Nilgiri Tahr, the state animal (1986)*

In a comparison of the natural history of Western Ghats with that of the Himalayas, one is bewildered by the presence of a sizeable number of endemic plant and animal forms in the Western Ghats, whose nearest congeners are found only in the Himalayas, separated from each other by over 2400 km or more. Among the most outstanding examples of this phenomenon is the mountain goat called tahr. The Nilgiri tahr (*Hemitragus hilocrius*, presently named as *Nilgiritragus hilocrius*), popularly called as 'Ibex' has its cousin in *H.jemlahicus*, found in the Himalayas ranging from the Pir Banjal Range to Bhutan. Extremely sensitive to the human presence, Nilgiri tahr occurs nowhere else in the world outside the precipitous slopes of the Western Ghat hills with the species range, spanning over Nilgiri, Anamalai, Palni and few other locations of the State, besides in the adjacent Kerala (Sekar, 2004).

Some vivid accounts are available in the forest literature about tahr conservation efforts in the Nilgiris. Once found in plenty all along the precipitous rocks forming the line of ghats skirting the Nilgiri hill, their numbers were thinned at such a rapid rate owing to

incessant persecution during the British regime, pushing their population to an imminent danger of extermination. Absolute prohibition of tahr shooting, which followed the enactment of Nilgiri Game and Fish Preservation Act, 1879 did more for the protection of tahr. There was such a steady increase in the herds that by 1908, when the Nilgiri Game rules were framed, Nilgiri tahr was included as one of the games permitted for hunting with a license. While granting game licenses, certain specific areas were further declared as closed to Ibex shooting. Limit of the 'shooting bag' in a season indicated that Ibex hunting was permitted only in single and that too restricted to 'saddle back' (old males with saddle marks).

Recognizing the urgent need to preserve one of the six last known landscapes supporting Nilgiri tahr, the upper plateau of Nilgiris district over an extent of 78.46 Km<sup>2</sup> comprising of rolling grassy down, interspersed with temperate pocket shola was declared as Mukurthi wildlife sanctuary in 1986. Mukurthi is home for many endangered and endemic flora. This sanctuary bears relatively undisturbed natural vegetation including many species of grasses, epiphytic and terrestrial orchids and endemic balsams. Besides over 600 numbers of Nilgiri tahr, the area supports a fascinating mixture of plain and mountain animals and many endemic species of hill birds. The status of this conservation unit was elevated to that of a National Park in 2001.

#### *Gulf of Mannar Marine National Park (1986)*

The Gulf of Mannar (GoM) along the east coast in Tamil Nadu has rich biological and ecological assemblages with very high levels of productivity. The GoM region is identified to be one of the important coral reef areas in India. It contains extensive sea grass beds and Dugong, an endangered marine mammal. With about 3,600 species of flora and fauna, a part of the region extending over 560 Km<sup>2</sup> and encompassing 21 islands and their surrounding area was declared as Gulf of Mannar Marine National Park (GoMNP) in 1986 by the State Government (Melkani and Naganathan, 2010).

Till the time the Park was brought under Forest Department's control, biodiversity conservation, natural resource management and community development efforts in the buffer zone were not integrated at the ground level. As a result, there was a lack of a co-operative relationship between management and the buffer zone communities, which hampered enforcement of the ban on coral mining and other ecologically detrimental activities. The Forest Department took over the management of the Gulf of Mannar area in 1989, the

coral reef rich islands in 1991 and the park administration was brought under a Wildlife Warden. Initially, enforcement of existing laws within the Park was limited to *ad hoc* patrols and interventions. The importance of involving local community in marine resource management came to be recognized soon. As a consequence, UNDP-supported project for 'Conservation and Sustainable use of GoMBR's coastal biodiversity' involving strategies like joint marine management and eco-development was commissioned in 2002 and is being implemented to ensure holistic conservation of the marine park.

#### *Vallanadu, a sanctuary for black buck (1987)*

Occurrence of a secluded population of black buck was recorded in Vallanadu RF, one of the isolated hillocks, abutting the Tirunelveli-Tuticorin highway, much away from the Western Ghat hill ranges in the erstwhile Tirunelveli South forest division even in the early 1950s. Surrounded on all sides by habitations and farm activities, survival of this isolated population in a compact forest block of 16.41 Km<sup>2</sup> in the face of vulnerability of these animals to poaching was of great concern. Despite such risks, sustenance of this population had been a matter of some comfort. Strict enforcement of protection of this species was prescribed in the Working Plans. Having recognized the importance of this area as the southern most black buck country, the RF was declared as Vallanadu sanctuary in 1988. With the formation of the protected area, several habitat protection and improvement measures including fencing, anti-poaching, water augmentation etc. had been initiated in the area that are proving to be increasingly useful for conservation of this endangered species in the wild.

#### *Srivilliputhur Grizzled Giant Squirrel Sanctuary (1988)*

The erstwhile Ramanathapuram division comprised mainly of ex-zamin forestlands, which were later transferred to Forest Department's control. The division's hill range supports deciduous fuel and timber forests at lower elevation and shola at altitudes more than 1300 m. The forests have a thriving population of elephant, panther and other mammals. Seven isolated pockets of mixed deciduous and riverine forests up to 800 m elevation are known to harbour a viable population of Grizzled Giant squirrel, an endangered species. About 50% of the estimated population of 793 animals has been recorded in Shenbagathoppu and Alagarkoil alone. With an object of protecting and conserving the habitat of this flagship species, then Kamaraj division was constituted into a wildlife sanctuary

in 1988. Other than this area, the species is also recorded in small numbers in Amaravathy range of Indira Gandhi wildlife sanctuary and along the Cauvery river in Hosur division.

Administration of most of the wildlife sanctuaries in the State continued with the respective District Forest Officers even many years after their formal declaration. Thus, Mudumalai, Mundanthurai, Kalakkadu and Anamalai sanctuaries were part of concerned territorial forest division under the control of the District Forest Officer. These areas were then managed as per Working Plan prescriptions, in which only miscellaneous regulations were suggested for wildlife conservation. For bestowing better attention and fostering integration of forestry and wildlife management in the sanctuaries, separate wildlife units were constituted. Management Plans drawn up for those areas and their administration brought under respective Wildlife Warden around late 1970s. The efforts have borne fruit and the number of wild animals registered perceptible increase.

#### Biosphere Reserves

Under the aegis of UNESCO's Man and Biosphere (MAB) programme launched in 1970, a network of sites were declared as Biosphere Reserves (BR) to innovate and demonstrate approaches to three complimentary and mutually reinforcing functions, namely conservation, sustainable development and logistic support in certain identified PA/forests and their adjoining buffer areas. Tamil Nadu can take pride in that Nilgiris BR (NBR), comprising areas of Tamil Nadu along with Kerala and Karnataka to an over all extent of 5,520 Km<sup>2</sup> was the first to be launched in the country in 1986. The Gulf of Mannar biosphere reserve, the first World marine BR of the South east Asia covering 10,500 Km<sup>2</sup> was established in 1989. Agasthiyamalai BR was established in 2001 comprising Agasthiyamalai in Tirunelveli, an area of great conservation concern. The Agasthiyamalai Landscape Site (ALS) occupies a trans-border expanse of vast dimensions lying in the Southern Western Ghats region of the states of Tamil Nadu and Kerala, occupying a gross area of 9,202 Km<sup>2</sup> with 5,518 Km<sup>2</sup> under PA/Government forests and 3,684 Km<sup>2</sup> in the fringe villages. The ALS boasts of the richest species diversity and endemism, of all the six sites selected countrywide for the Biodiversity Conservation and Livelihoods Improvement Project (Neelakantan, 2010).

#### Bird sanctuaries

The State has a vast network of 39,308 tanks and ponds that are fed by rainwater and/or serviced through canal systems. Many of these tanks are ideal home for

aquatic birds and serve as their winter nesting grounds. Few of the wetlands have been declared as bird sanctuaries for providing safe habitat and breeding ground for the migratory and resident bird populations. Till the turn of the century, 12 such water bodies with about 170.75 Km<sup>2</sup> of area were declared as bird sanctuaries, prominent among them being Vedanthangal, Point Calimere, Pulicat, and Koonthakulam.

Recognizing the international importance of the Point Calimere Wildlife and bird sanctuary, the area was designated as a Ramsar site in 2003, the only site in the State and the 19<sup>th</sup> to be announced in the country.

#### Wildlife conservation efforts in the new millennium

##### *Sanctuaries of the new millennium*

With a view to increase the areas under PA management, more forest areas that are known to support viable population of wild animals were declared as sanctuaries. An extent of 1195.86 Km<sup>2</sup> of forest areas have been added to the State's PA network by constituting three new sanctuaries, namely Kanniyakumari (Kanniyakumari district), Sathyamangalam (Erode district) and Megamalai (Theni district) in the post-2000 period. Kanniyakumari is known for its biodiversity rich wet evergreen and moist deciduous forests, part of which have been converted into teak plantations. The sanctuary is also dotted with numerous estates, declared as private forests. Sathyamangalam sanctuary supports the highest number of elephants in the State and is found to be a growing tiger country, with a sizeable number of tigers constituting the spillover population from the adjacent Nilgiris- Mudumalai landscape. Megamalai is known for its high ranges with steep slopes and peaks and is contiguous to the Periyar tiger reserve of Kerala. Though containing many private holdings as enclosures, forests of this sanctuary are known for their biodiversity abundance. Today, the State has an extent of 4,578 Km<sup>2</sup> under PA network, accounting for 20.01% of the total forest area.

#### Elephant Reserves

With the launching of specific project for elephant protection in 1991, focus on wildlife conservation moved from that of a sanctuary to landscape level. Larger and contiguous forest habitats overlapping many protected areas and reserve forests and crossing the administrative boundaries of the States came to be recognized as Elephant Reserves (ER). In Tamil Nadu, four elephant reserves sharing their management boundaries with adjacent Karnataka and Kerala were notified in 2003.

They are Nilgiri-Eastern Ghat Elephant Reserve (Karnataka and Kerala), Nilambur-Silent Valley-Coimbatore (Kerala), Anamalai-Parambikulam (Kerala) and Periyar-Srivilliputhur (Kerala) and put together they cover an extent of 7936.35 Km<sup>2</sup> (Neelakantan, 2010).

The landscape approach followed in the management of elephant ranges help in maintaining the genetic flow among elephant populations by facilitating their movement over larger forest spaces. The synchronized elephant census held in 2005 indicated a population of 4,015 elephants in the elephant reserves of the State. The census results revealed a sizeable increase in the elephant numbers, recorded populations with healthy demographic profiles, besides significant improvement in the status of male:female ratio. Ministry of Environment and Forests, Government of India later notified a total of 10 elephant landscapes covering 13 elephant states, of which part of the Bhramagiri-Eastern Ghat, Anamalai-Nelliampathy high range and Periyar-Agasthiyamalai elephant range landscapes occur in Tamil Nadu (Anon., 2010).

#### Tiger Reserves

The two adjoining sanctuaries of Kalakkadu and Mundanthurai were formed into the State's first and the country's 17<sup>th</sup> Tiger Reserve in 1989 and was named as the Kalakkadu-Mundanthurai Tiger Reserve (KMTR) with a total extent of 895 Km<sup>2</sup>. IUCN has recognized Agasthiyamalai, core area of KMTR as one of the five centres of plant diversity and endemism in India. KMTR is also described as 'super hotspot of biodiversity'. This tiger reserve, identified as among the type-1 Tiger Conservation Units (TCU) worldwide, representing the tropical wet evergreen forests, has 261 Km<sup>2</sup> of West Coast Tropical Wet evergreen forests. A unique World Bank assisted eco development project implemented in the tiger reserve in 1994 adopted an innovative approach to provide alternate sources of sustenance to local people, improve the ecological productivity in the buffer zone and ensure active involvement of local communities in protection and management. The KMTR experiment in eco development is a well-accomplished model of participatory management of PAs.

In view of the emergence of the area as a growing tiger country, supporting one of the very high tiger densities in the country, Mudumalai sanctuary was formed into Mudumalai Tiger Reserve (MTR) in 2007. Likewise, the entire PA complex of Anamalai has been declared as Anamalai Tiger Reserve (ATR) in the same year.

In the 2010 census for the large carnivore, encouraging trend of tiger population in the State has

emerged, indicating an upper limit of 163 animals. Tiger sighting has been noticed over larger part of Sathyamangalam forest division and adjacent Sirumugai range of Coimbatore division through camera trap records, thus indicating extension of home range of the species in the State.

#### Management concerns

Because of the vast length of interstate forest boundaries, the threats to forest and wild animal resources of the PAs from the forest fringe habitations are imminent. The department has been undertaking several habitat improvement and protection measures to augment the forest habitat and contain the poaching pressure. The anti-poaching system, with a wide network of anti-poaching camps employing men of the local tribal community, developed around the new millennium in the PAs of the State, is a widely acclaimed model in wildlife protection against poaching in the country.

Extensive plantation areas, breaking the contiguity of forest habitats, presence of human enclaves inside forests and developmental pressures among forest fringes has caused forest fragmentation, habitat loss and degradation. As a consequence, frequent incidents of wild animals straying out of forest areas are happening, which result in damage to crops, properties, in injury and death of human being. The Department has been taking several mitigation measures including habitat improvement, augmentation of water resources, erection of physical barriers, and creation of awareness among the vulnerable population besides awarding compensation for damages to the affected persons. Acquisition of private lands in the migratory corridors falling in the elephant reserves is also being pursued to maintain habitat integrity.

The PAs are largely visited by large number of tourists and have all the potential to develop as viable eco tourism destinations. The sanctuaries in the state enjoy relatively easy access due to good connectivity. Scope for viewing wildlife is considered to be the prime reason for growing popularity of the sites. Sighting of wild animals enhances the visitors' experience in the sanctuaries. However, Tamil Nadu Forest Department is moving with a cautious approach in promoting tourism in PAs, so as to minimize any undesirable environmental effects due to uncontrolled tourism activities.

All wildlife rich areas represent intensively researched forests in the state, the results of such studies providing useful insights into the past management of sanctuaries. The findings are found to be of use for current and future management.

## SUMMARY

India is endowed with rich biodiversity and a vast array of natural landscapes. The State of Tamil Nadu has also got varied forest types and is characterized by diverse flora and associated fauna. Wildlife protection in the Madras Presidency received some attention by way of promulgation of few laws and declaration of certain areas as sanctuaries in the early period of forest administration prior to independence. More Protected Areas were established in the post-independence decades. With the enactment of Wildlife Protection Act 1972, species-specific conservation programmes gained momentum. Between then and the close of 20<sup>th</sup> century, many more sanctuaries and national parks were constituted. The new millennium witnessed addition of more areas to protected area network and introduction of landscape-based approach for wildlife conservation, particularly for elephants and tigers. The State has at present 4,578 km<sup>2</sup> of forests, accounting for 20% of the total extent of forest area brought under PA management. The unique biodiversity significance of these areas, conservation measures taken and their results in improving the population status of many flagship species have been discussed.

**Key words:** Wildlife Protection, Protected Areas, Wildlife Sanctuaries, National Parks, Tamil Nadu.

## तमिलनाडु में वन्य प्राणियों की सुरक्षा और इनके प्रबन्ध का ऐतिहासिक वृत्तांत

टी. शेखर

सारांश

भारतवर्ष सुसम्पन्न जैवविविधता और अनेक प्राकृतिक भूदृश्यों का वरदान पाया देश है। तमिलनाडु राज्य में भी विविध प्रकार के वन प्रारूप और तरह-तरह के पेड़ पौधे और उनसे सम्बद्ध पशु पक्षी पाए जाते हैं। स्वतंत्रता प्राप्ति से पूर्व वन प्रशासन की प्रारम्भिक अवधि में कुछ कानून प्रचलित कर और कतिपय क्षेत्रों को अभ्यारण्य घोषित करके मद्रास प्रेजिडेंसी में इस पर कुछ ध्यान दिया गया। स्वातन्त्रोत्तर दशकों में कुछ और सुरक्षा प्राप्त क्षेत्र स्थापित किए गए। 1972 में वन्यप्राणी सुरक्षा अधिनियम अधिनियमित हो जाने पर जाति-विशिष्ट संरक्षण कार्यक्रमों को बढ़ावा मिला। तब से बीसवीं शताब्दी की समाप्ति तक कितने ही और अभ्यारण्य और राष्ट्रीय उपवन बनाये गए। नई सहस्राब्दि में पहले से भी कुछ अधिक सुरक्षा प्राप्त क्षेत्रों का जालकर्म तथा वन्यप्राणियों, विशेषतः हाथियों और बाघों के लिए, भूदृश्य-आधारित दृष्टि अपनाई जाती देखने को मिली। इस समय इस राज्य में 4578 किमी<sup>2</sup> वन क्षेत्र, जो समूचे वन क्षेत्र का 20x बैठता है, सुरक्षा प्राप्त क्षेत्रों के प्रबन्धन के अन्तर्गत हैं। इन क्षेत्रों की जैवविविधता के विलक्षण महत्व पर ध्यान देते हुए संरक्षण उपाय किये गए हैं तथा उनकी संख्या स्थिति में हुआ परिष्कार जानने के लिए कई निर्देशक प्राणिजातियों का विवेचन किया गया है।

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