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Miscellaneous

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## A Comparative Study of the Diversity of Birds in Three Man-made Reservoirs in Vavuniya, Sri Lanka.

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Despite its small size (65,610 km<sup>2</sup>) and high human population density (290 people/km<sup>2</sup>), Sri Lanka supports a rich and diverse avifauna. Of the 426 species and subspecies that Harrison & Worfolk (1999) have recorded from Sri Lanka, 216 (or 50.7%) are residents, 123 (or 28.9%) regular winter visitors, and 87 (or 20.47%) are vagrants. They also recognize 23 species as being endemic to the island, although according to Wijeyeratne *et al.*, (2000) the number of endemic species could be 26. The remarkable diversity of birds in Sri Lanka is a reflection of the variety of habitats and climatic conditions available to both resident and migrant species. On the basis of climate and rainfall, Sri Lanka can be broadly divided into the following three main zones: (a) low country dry zone, (b) low country wet zone, and (c) hill zone.

Vavuniya is in the southern half of the region known as Vanni situated in the low country dry zone (Fig. 1). It is 95 m above sea level. The dry zone comprises about 60% of the land area of Sri Lanka, and includes the whole of the northern half of the island and the east and south-east. The Aruvi aru forms the south-west boundary between Vavuniya District and the North-Central Province. Given the seasonality and unreliability of the monsoons, water shortages are inevitable during certain parts of the year. It was to meet this challenge that the early colonists developed a system of irrigation reservoirs or tanks in the dry zone (Seneviratna, 2002). The term tank is applied to the immense reservoirs built by the ancient kings for impounding rainwater for irrigation (Henry, 1955). Vavuniya District is particularly studded with such ancient irrigation reservoirs, "in the vicinity of which the bird-life congregates during periods of drought" (Phillips, 1978). According to Lewis (1895), there are no fresh water lakes properly so called, all tanks

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being artificial, and they for the most part, form a connected series, one above the other, those lower down receiving the surplus water of the higher tanks. There were 533 tanks in the Vavuniya District in 1890, of which 390 were more or less in some state of repair (Lewis, 1895). The tanks are bordered by large tracts of paddy fields. The villus on the other hand, are natural formations, and are mostly of fresh water. They are especially numerous in the northern part of the flat country, where for much of the year the climate is hot and dry, with heavy rainfall only during the north-east monsoon from December to the end of February, a period that corresponds to the winter in more temperate countries (Phillips, 1978). The wet season, according to Lewis (1895) begins with the burst of the north-east monsoon in October, and generally lasts until the end of December, but in some years it may begin some weeks earlier and end rather later. The annual rainfall varies from under 760 (at times) to over 1770 mm in the low country dry zone. The average rainfall for Vavuniya is about 1,397 mm (or 55 inches) per year. The south-west monsoon sets in May or June, when there is sometimes heavy rain for a short time. February and March are the driest months in the year, while November and December are the wettest. The two periods of March-April and October-November are neither in the south-west monsoon nor in the north-east monsoon. Each of these periods forms a stage of transition from one monsoon to the other (Jayamaha, 1955).

As Lewis (1895) describes, the forest in places is composed of almost entirely of one or two species of sombre-looking trees, such as *Manilkara hexandra* (palai) and *Drypetes sepiaria* (virai) intermixed with *Salvadora persica*, and *Eleodendron glaucum*. Along the course of the rivers and streams, and along the bunds of the tanks, large trees such as *Terminalia arjuna* (marutu) predominate. Tamarind (*Tamarindus indica*), though not indigenous, is the most conspicuous tree in every village in Vanni (Lewis, 1895). The surface of many tanks is covered with lotuses, sometimes of the red and sometimes of the white variety. But when the water level goes down, the tanks in Vavuniya are distinguished for their large tracts of the beautiful pink lotus.

With the exception of the study by Wijeyamohan *et al.*, (2002) on the birds of the Giant's Tank (in the Mannar District), no other studies have been carried out in the north in general and in the Vavuniya District in particular. It is to

determine the diversity of birds associated man-made reservoirs that the present study was undertaken in Vavuniya.

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