



The birds of Araku, Visakhapatnam, Andhra Pradesh, India

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Documentation of the avifauna in Andhra Pradesh has been undertaken by several authors since early 20th century by the likes of Whistler & Kinnear (1930-37), Abdulali (1945, 1953), Raju & Price (1973), Price (1978, 1979, 1990), Ripley et al. (1987-88), and Srinivasulu (2004, 2006). Some of the notable works that covered the distribution, status and habitat of birds in the Visakhapatnam Hills were that of Raju & Selvin (1971) and Raju & Price (1973). In 1944, Abdulali (1945) collated a list of the 'Birds of Vizagapatam' that included 277 species from Anantagiri, Sankrametta and Lammasinghi. Ripley et al. (1987-88) in an extensive survey covering Lammasinghi, Valaspara, Sapparla, Bhadrachalam, Pedevalasa, Joythimamidi, Wangasara, Iankapakalu and Anantagiri reported 160 species of birds. However, detailed surveys on the avifauna of Araku Valley appear scarce. In recent years some of the hill ranges of this area and their neighbourhoods have been identified as potential sites for mining bauxite. In view of habitat degradation that is likely to happen with mining activities, it was felt vital to acquire baseline data on the biodiversity of the region; an attempt is made here to compile and categorize the avifauna of Araku hills and valley based on field surveys from December 2006 to September 2007.

Materials and Methods

Araku Valley (Fig. 1) forms an integral part of Anantagiri Hills of the Eastern Ghats in Visakhapatnam District of Andhra Pradesh. The Araku Valley (18°12'34"-18°25'12"N & 82°51'40"-83°06'53"E), spread over an area of 36km², is characterized by undulating terrain, valleys and plateaus at

the hilltops. The area has huge deposits of bauxite mostly on the hilltops (Chandra et al. 2007; Azeez et al. 2008) predominantly covered with lateritic soil (bauxite capping over khondalite). The vegetation in the area is of moist mixed deciduous forest and dry savannah forest types intermingled with scrub (Champion & Seth 1968). Apparently, forests in most of the area are secondary in nature, due to the extensive shifting or slash and burn cultivation (*podu*) that is in practice in the area since long. The altitude of the area ranges from 600-1600 m and the climate is very cold during winter (November to January) and warm during summer (March to May) with temperature varying from 10°C to 37.8°C. The annual rainfall in Araku Valley ranges between 800-1000 mm in the plains and 1000-2000 mm in the hills. The Araku Valley mandal has a total of 11,608 households with a rural population of 49,619 and 6,340 urban. The rural population of Araku comprises mainly of indigenous tribes such as Bhagata, Khond, Konda Reddi, Samantha and other communities which come under Schedule V of Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Rules 2007. They largely depend on local forest and natural resources for livelihood. *Phoenix* sp. dominating the hill-top vegetation is extensively used for several purposes by the locals. Several other plants in the area are important for the tribes and are exploited for timber, tubers, fodder and fuel-wood. Hunting for small forest animals and birds is a traditional custom among the indigenous people and probably a means of supplementary animal protein.

Birds were recorded by both direct sighting and calls. Field surveys were carried out during December 2006 to September 2007 by systematically walking along transects laid appropriately to representatively cut through the study area. The variable width line-transect method (Bibby et al. 1993) was adopted for the survey. In the three major hillocks (Raktakonda, Galikonda and Chittamgondi) identified for bauxite mining, eight variable width line-transects each of one kilometer length were laid in each site. Transects traversed agriculture land, silver oak plantation, scrub jungle, well wooded forest and *Phoenix* dominated plateaus. Opportunistic surveys in the nearby villages, valleys and plains were also done to document a comprehensive checklist of birds of the area. The birds sighted during the period were grouped into breeding birds or residents (B), local migrants (LM), and migrants (M). These categorizations were done largely based on Ali & Ripley (1983), Ali & Ripley (1969) and Grimmett et al. (1999).

Results

A total of 147 species of birds falling within 105 genera and 43 families were recorded during the study (Table 1). The birds in Araku Valley include four globally threatened species (BirdLife International 2001), namely - the Purple Wood-Pigeon *Columba punicea*, Greater Spotted Eagle *Aquila clanga*, Lesser Kestrel *Falco naumanni* and Pallid Harrier *Circus macrourus* (Table 2). Eleven species of owls were recorded from the area, of which four species built nest in scrub jungle. The 11 owl species have been recorded from the area by the earlier researches. The frequently sighted bird families and subfamilies were Pycnonotidae (bulbuls), Sylviinae (warblers), Muscicapidae (flycatchers) and Turdinae (babblers). Speckled Piculet *Picumnus innominatus*, Rufous Woodpecker *Celeus brachyurus*, Brown-headed Barbet *Megalaima zeylanica*,

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Table 1. Birds observed in the environs of Araku Valley (classification as per Manakadan & Pittie 2004)

| Common name | Scientific name | Status |
|----------------------------|--|--------|
| Ardeidae | | |
| Little Egret | <i>Egretta garzetta</i> (Linnaeus, 1766) | B |
| Median Egret | <i>Mesophoyx intermedia</i> (Wagler, 1829) | B |
| Cattle Egret | <i>Bubulcus ibis</i> (Linnaeus, 1758) | B |
| Indian Pond-Heron | <i>Ardeola grayii</i> (Sykes, 1832) | B |
| Accipitridae | | |
| Oriental Honey-Buzzard | <i>Pernis ptilorhynchus</i> (Temminck, 1821) | B |
| Black-shouldered Kite | <i>Elanus caeruleus</i> (Desfontaines, 1789) | B |
| Black Kite | <i>Milvus migrans</i> (Boddaert, 1783) | B |
| Brahminy Kite | <i>Haliastur indus</i> (Boddaert, 1783) | B |
| Crested Serpent-Eagle | <i>Splornis cheela</i> (Latham, 1790) | B |
| Pallid Harrier | <i>Circus macrourus</i> (S.G. Gmelin, 1770) | WV |
| Montagu's Harrier | <i>Circus pygargus</i> (Linnaeus, 1758) | WV |
| Shikra | <i>Accipiter badius</i> (Gmelin, 1788) | B |
| White-eyed Buzzard | <i>Butastur teesa</i> (Franklin, 1832) | B |
| Black Eagle | <i>Ictinaetus malayensis</i> (Temminck, 1822) | B |
| Tawny Eagle | <i>Aquila rapax</i> (Temminck, 1828) | LM |
| Changeable Hawk-Eagle | <i>Spizaetus cirrhatus</i> (Gmelin, 1788) | B |
| Falconidae | | |
| Lesser Kestrel | <i>Falco naumanni</i> Fleischer, 1818 | PM |
| Phasianidae | | |
| Painted Francolin | <i>Francolinus pictus</i> (Jardine & Selby, 1828) | B |
| Rain Quail | <i>Coturnix coromandelica</i> (Gmelin, 1789) | B |
| Red Spurfowl | <i>Galloperdix spadicea</i> (Gmelin, 1789) | B |
| Painted Spurfowl | <i>Galloperdix lunulata</i> (Valenciennes, 1825) | B |
| Red Junglefowl | <i>Gallus gallus</i> (Linnaeus, 1758) | B |
| Grey Junglefowl | <i>Gallus sonneratii</i> Temminck, 1813 | B |
| Indian Peafowl | <i>Pavo cristatus</i> Linnaeus, 1758 | B |
| Columbidae | | |
| Blue Rock Pigeon | <i>Columba livia</i> Gmelin, 1789 | B |
| Purple Wood-Pigeon | <i>Columba punicea</i> Blyth, 184 | B |
| Little Brown Dove | <i>Streptopelia senegalensis</i> (Linnaeus, 1766) | B |
| Spotted Dove | <i>Streptopelia chinensis</i> (Scopoli, 1786) | B |
| Eurasian Collared-Dove | <i>Streptopelia decaocto</i> (Fridvaldszky, 1838) | B |
| Emerald Dove | <i>Chalcophaps indica</i> (Linnaeus, 1758) | B |
| Green Imperial-Pigeon | <i>Ducula aenea</i> (Linnaeus, 1766) | B |
| Psittacidae | | |
| Rose-ringed Parakeet | <i>Psittacula krameri</i> (Scopoli, 1769) | B |
| Cuculidae | | |
| Brainfever Bird | <i>Hierococcyx varius</i> (Vahl, 1797) | B |
| Indian Cuckoo | <i>Cuculus micropterus</i> Gould, 1838 | B |
| Indian Plaintive Cuckoo | <i>Cacomantis passerinus</i> (Vahl, 1797) | B |
| Drongo Cuckoo | <i>Surniculus lugubris</i> (Horsfield, 1821) | B |
| Asian Koel | <i>Eudynamis scolopacea</i> (Linnaeus, 1758) | B |
| Small Green-billed Malkoha | <i>Phaenicophaeus viridirostris</i> (Jerdon, 1840) | B |
| Greater Coucal | <i>Centropus sinensis</i> (Stephens, 1815) | B |
| Tytonidae | | |
| Barn Owl | <i>Tyto alba</i> (Scopoli, 1769) | B |
| Strigidae | | |
| Oriental Scops-Owl | <i>Otus sunia</i> (Hodgson, 1836) | LM |
| Collared Scops-Owl | <i>Otus bakkamoena</i> Pennant, 1769 | B |
| Eurasian Eagle-Owl | <i>Bubo bubo</i> (Linnaeus, 1758) | B |
| Brown Fish-Owl | <i>Ketupa zeylonensis</i> (Gmelin, 1788) | B |
| Mottled Wood-Owl | <i>Strix ocellata</i> (Lesson, 1839) | B |
| Brown Wood-Owl | <i>Strix leptogrammica</i> Temminck, 1831 | B |
| Jungle Owlet | <i>Glaucidium radiatum</i> (Tickell, 1833) | B |
| Spotted Owlet | <i>Athene brama</i> (Temminck, 1821) | B |
| Brown Hawk-Owl | <i>Ninox scutulata</i> (Raffles, 1822) | B |
| Short-eared Owl | <i>Asio flammeus</i> (Pontoppidan, 1763) | WV |
| Caprimulgidae | | |
| Common Indian Nightjar | <i>Caprimulgus asiaticus</i> Latham, 1790 | B |
| Franklin's Nightjar | <i>Caprimulgus affinis</i> Horsfield, 1821 | B |
| Apodidae | | |
| Asian Palm-Swift | <i>Cypsiurus balasiensis</i> (J.E. Gray, 1829) | B |
| House Swift | <i>Apus affinis</i> (J.E. Gray, 1830) | B |
| Trogonidae | | |
| Malabar Trogon | <i>Harpactes fasciatus</i> (Pennant, 1769) | B |
| Alcedinidae | | |
| White-breasted Kingfisher | <i>Halcyon smyrnensis</i> (Linnaeus, 1758) | B |

| Common name | Scientific name | Status |
|---------------------------------|---|--------|
| Lesser Pied Kingfisher | <i>Ceryle rudis</i> (Linnaeus, 1758) | B |
| Meropidae | | |
| Small Bee-eater | <i>Merops orientalis</i> Latham, 1801 | SV |
| Chestnut-headed Bee-eater | <i>Merops leschenaulti</i> Vieillot, 1817 | B |
| Coraciidae | | |
| Indian Roller | <i>Coracias benghalensis</i> (Linnaeus, 1758) | B |
| Upupidae | | |
| Common Hoopoe | <i>Upupa epops</i> Linnaeus, 1758 | LM |
| Capitonidae | | |
| Brown-headed Barbet | <i>Megalaima zeylanica</i> (Gmelin, 1788) | B |
| Coppersmith Barbet | <i>Megalaima haemacephala</i> (P.L.S. Müller, 1776) | B |
| Picidae | | |
| Speckled Piculet | <i>Picumnus innominatus</i> Burton, 1836 | LM |
| Brown-capped Pygmy Woodpecker | <i>Dendrocopos nanus</i> (Vigors, 1832) | B |
| Yellow-fronted Pied Woodpecker | <i>Dendrocopos mahrattensis</i> (Latham, 1801) | B |
| Rufous Woodpecker | <i>Celeus brachyurus</i> (Vieillot, 1818) | LM |
| Lesser Golden-backed Woodpecker | <i>Dinopium benghalense</i> (Linnaeus, 1758) | B |
| Pittidae | | |
| Indian Pitta | <i>Pitta brachyura</i> (Linnaeus, 1766) | PM |
| Alaudidae | | |
| Rufous-tailed Finch-Lark | <i>Ammomanes phoenicurus</i> (Franklin, 1831) | B |
| Hirundinidae | | |
| Red-rumped Swallow | <i>Hirundo daurica</i> Linnaeus, 1771 | B |
| Motacillidae | | |
| Large Pied Wagtail | <i>Motacilla maderaspatensis</i> Gmelin, 1789 | B |
| Yellow Wagtail | <i>Motacilla flava</i> Linnaeus, 1758 | WV |
| Grey Wagtail | <i>Motacilla cinerea</i> Tunstall, 1771 | WV |
| Paddyfield Pipit | <i>Anthus rufulus</i> Vieillot, 1818 | B |
| Eurasian Tree Pipit | <i>Anthus trivialis</i> (Linnaeus, 1758) | WV |
| Campephagidae | | |
| Large Cuckoo-Shrike | <i>Coracina macei</i> (Lesson, 1830) | B |
| Black-headed Cuckoo-Shrike | <i>Coracina melanoptera</i> (Rüppell, 1839) | B |
| Small Minivet | <i>Pericrocotus cinnamomeus</i> (Linnaeus, 1766) | B |
| White-bellied Minivet | <i>Pericrocotus erythropygus</i> (Jerdon, 1840) | LM |
| Scarlet Minivet | <i>Pericrocotus flammeus</i> (Forster, 1781) | LM |
| Common Woodshrike | <i>Tephrodornis pondicerianus</i> (Gmelin, 1789) | B |
| Pycnonotidae | | |
| Black-crested Bulbul | <i>Pycnonotus melanicterus</i> (Gmelin, 1789) | B |
| Red-whiskered Bulbul | <i>Pycnonotus jocosus</i> (Linnaeus, 1758) | B |
| Red-vented Bulbul | <i>Pycnonotus cafer</i> (Linnaeus, 1766) | B |
| Irenidae | | |
| Common Iora | <i>Aegithina tiphia</i> (Linnaeus, 1758) | B |
| Jerdon's Chloropsis | <i>Chloropsis cochinchinensis</i> (Gmelin, 1788) | B |
| Gold-fronted Chloropsis | <i>Chloropsis aurifrons</i> (Temminck, 1829) | B |
| Laniidae | | |
| Brown Shrike | <i>Lanius cristatus</i> Linnaeus, 1758 | WV |
| Bay-backed Shrike | <i>Lanius vittatus</i> Valenciennes, 1826 | B |
| Rufous-backed Shrike | <i>Lanius schach</i> Linnaeus, 1758 | WV |
| Turdinae | | |
| Blue-headed Rock-Thrush | <i>Monticola cinclorhynchus</i> (Vigors, 1832) | WV |
| Blue Rock-Thrush | <i>Monticola solitarius</i> (Linnaeus, 1758) | WV |
| Orange-headed Thrush | <i>Zosterops citrina</i> (Latham, 1790) | WV |
| Tickell's Thrush | <i>Turdus unicolor</i> Tickell, 1833 | WV |
| Eurasian Blackbird | <i>Turdus merula</i> Linnaeus, 1758 | B |
| Oriental Magpie-Robin | <i>Copsychus saularis</i> (Linnaeus, 1758) | B |
| White-rumped Shama | <i>Copsychus malabaricus</i> (Scopoli, 1786) | B |
| Indian Robin | <i>Saxicola fulicata</i> (Linnaeus, 1776) | B |
| Black Redstart | <i>Phoenicurus ochruros</i> (Gmelin, 1774) | WV |
| Common Stonechat | <i>Saxicola torquata</i> (Linnaeus, 1766) | WV |
| Pied Bushchat | <i>Saxicola caprata</i> (Linnaeus, 1766) | B |
| Timaliinae | | |
| Spotted Babbler | <i>Pellorneum ruficeps</i> Swainson, 1832 | B |
| Indian Scimitar-Babbler | <i>Pomatorhinus horsfieldii</i> Sykes, 1832 | B |
| Yellow-eyed Babbler | <i>Chrysomma sinense</i> (Gmelin, 1789) | B |
| Common Babbler | <i>Turdoides caudatus</i> (Dumont, 1823) | B |
| Jungle Babbler | <i>Turdoides striatus</i> (Dumont, 1823) | B |

| Common name | Scientific name | Status |
|---------------------------|--|--------|
| Sylviinae | | |
| Franklin's Prinia | <i>Prinia hodgsonii</i> Blyth, 1844 | B |
| Jungle Prinia | <i>Prinia sylvatica</i> Jerdon, 1840 | B |
| Ashy Prinia | <i>Prinia socialis</i> Sykes, 1832 | B |
| Plain Prinia | <i>Prinia inornata</i> Sykes, 1832 | B |
| Blyth's Reed-Warbler | <i>Acrocephalus dumetorum</i> Blyth, 1849 | WV |
| Booted Warbler | <i>Hippolais caligata</i> (Lichtenstein, 1823) | WV |
| Common Tailorbird | <i>Orthotomus sutorius</i> (Pennant, 1769) | B |
| Hume's Warbler | <i>Phylloscopus humei</i> (Brooks, 1878) | WV |
| Greenish Leaf-Warbler | <i>Phylloscopus trochiloides</i> (Sundevall, 1837) | B |
| Common Lesser Whitethroat | <i>Sylvia curruca</i> (Linnaeus, 1758) | WV |
| Muscicapinae | | |
| Asian Brown Flycatcher | <i>Muscicapa dauurica</i> Pallas, 1811 | WV |
| Ultramarine Flycatcher | <i>Ficedula supercilii</i> (Jerdon, 1840) | WV |
| Verditer Flycatcher | <i>Eumyias thalassina</i> (Swainson, 1838) | WV |
| Tickell's Blue-Flycatcher | <i>Cyornis tickelliae</i> Blyth, 1843 | B |
| Grey-headed Flycatcher | <i>Culicicapa ceylonensis</i> (Swainson, 1820) | B |
| Monarchinae | | |
| Black-naped | <i>Hypothymis azurea</i> (Boddaert, 1783) | B |
| Monarch-Flycatcher | | |
| Rhipidurinae | | |
| White-browed | <i>Rhipidura aureola</i> Lesson, 1830 | B |
| Fantail-Flycatcher | | |
| Paridae | | |
| Black-lored Yellow Tit | <i>Parus xanthogenys</i> Vigors, 1831 | B |
| Sittidae | | |
| Chestnut-bellied Nuthatch | <i>Sitta castanea</i> Lesson, 1830 | B |
| Velvet-fronted Nuthatch | <i>Sitta frontalis</i> Swainson, 1820 | B |
| Dicaeidae | | |
| Tickell's Flowerpecker | <i>Dicaeum erythrorhynchos</i> (Latham, 1790) | B |
| Nectariniidae | | |
| Purple-rumped Sunbird | <i>Nectarinia zeylonica</i> (Linnaeus, 1766) | B |
| Purple Sunbird | <i>Nectarinia asiatica</i> (Latham, 1790) | B |
| Zosteropidae | | |
| Oriental White-eye | <i>Zosterops palpebrosus</i> (Temminck, 1824) | B |
| Fringillidae | | |
| Common Rosefinch | <i>Carpodacus erythrinus</i> (Pallas, 1770) | WV |
| Estrildidae | | |
| White-rumped Munia | <i>Lonchura striata</i> (Linnaeus, 1766) | B |
| Black-headed Munia | <i>Lonchura malacca</i> (Linnaeus, 1766) | B |
| Passerinae | | |
| House Sparrow | <i>Passer domesticus</i> (Linnaeus, 1758) | B |
| Sturnidae | | |
| Brahminy Starling | <i>Sturnus pagodarum</i> (Gmelin, 1789) | B |
| Asian Pied Starling | <i>Sturnus contra</i> Linnaeus, 1758 | B |
| Common Myna | <i>Acridotheres tristis</i> (Linnaeus, 1766) | B |
| Bank Myna | <i>Acridotheres ginginianus</i> (Latham, 1790) | LM |
| Dicruridae | | |
| Black Drongo | <i>Dicrurus macrocercus</i> Vieillot, 1817 | B |
| Ashy Drongo | <i>Dicrurus leucophaeus</i> Vieillot, 1817 | WV |
| White-bellied Drongo | <i>Dicrurus caeruleus</i> (Linnaeus, 1758) | B |
| Bronzed Drongo | <i>Dicrurus aeneus</i> Vieillot, 1817 | B |
| Corvidae | | |
| Indian Treepie | <i>Dendrocitta vagabunda</i> (Latham, 1790) | B |
| Grey Treepie | <i>Dendrocitta formosae</i> Swinhoe, 1863 | LM |
| House Crow | <i>Corvus splendens</i> Vieillot, 1817 | B |
| Jungle Crow | <i>Corvus macrorhynchos</i> Wagler, 1827 | B |

B = Breeding birds or Residents, WV = Winter Visitor, LM = Local Migrant, PM = Passage Migrant, SV = Summer Visitor

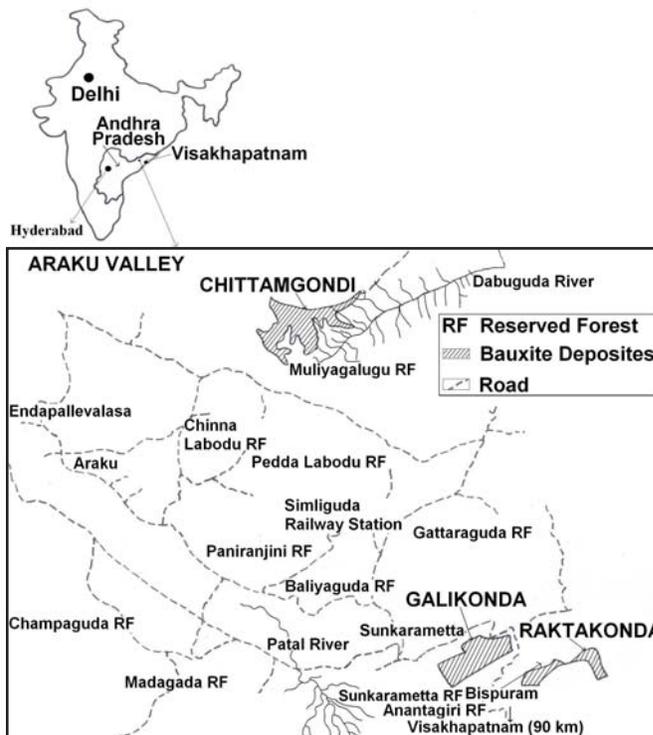


Figure 1. Study area map

Table 2. List of globally threatened birds observed in Araku Valley

| Common name | Scientific name | BLI category |
|-----------------------|---|-----------------|
| Purple Wood-Pigeon | <i>Columba punicea</i> Blyth, 1842 | Vulnerable |
| Pallid Harrier | <i>Circus macrourus</i> (S.G. Gmelin, 1770) | Near Threatened |
| Greater Spotted Eagle | <i>Aquila clanga</i> Pallas, 1811 | Vulnerable |
| Lesser Kestrel | <i>Falco naumanni</i> Fleischer, 1818 | Vulnerable |

BirdLife International (2001)

Common Hoopoe *Upupa epops*, Plain Prinia *Prinia inornata* and White-rumped Shama *Copsychus malabaricus* were commonly nesting in the scrub jungle and wooded forests. As many as 112 species of birds in Araku Valley are resident breeders, 23 species winter visitors, 09 species local migrants, two species passage migrants and one species (Small Bee-eater *Merops orientalis*) was summer visitor. Most of the bird species use more than one habitat for their activities such as nesting, roosting and foraging. Fifty-five species were sighted in the agriculture mixed urban area, 54 species in plantation, 114 species in scrub jungle, 63 species in well wooded forest and 31 species in the *Phoenix* dominated areas. However, these habitats were not exclusive to the species.

Discussion and Conclusions

The animal diversity of the Araku Valley region is facing serious threats due to habitat loss and habitat degradation. Three mammalian species: Leopard *Panthera pardus*, Sloth Bear *Melursus ursinus* and Indian Giant Squirrel *Ratufa indica* under Schedule I of the Indian Wildlife Protection Act (1972) inhabit the area. *Podu* cultivation, fuel wood collection, customary hunting, forest fire and cutting trees are amongst threats from the locals. However, mining is a much more serious issue. Activities including opencast mining that

adversely affect the ecosystem are likely to negatively impact the avifauna of the region. Large scale mining for bauxite is proposed almost all along the Eastern Ghats by various organizations. Vehement protests by the locals are also on against many such projects. Hunting, shifting cultivation, pastoralism, and settled cultivation are common practices among the indigenous people of the Eastern Ghats in deriving livelihood from the local environment. Earlier the people here followed a shifting cultivation system with a longer cycle, leaving the land untouched and fallow for longer periods to recoup. But with gradual increase in population, *podu* cultivation with shorter cycles has led to drastic loss of natural resources, causing serious erosion of the surface soil, particularly in the slopes, repeated with short-period cycles, the *podu* cultivation has serious long-standing impacts. As a common ritual during April, the whole Araku Valley tribes celebrate hunting festival, during which many species are hunted.

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