



10.0 Status, Distribution and Management of Galliformes in Arid and Semi-arid Zones of India

Rajiv S. Kalsi

M.L.N. College, Yamuna Nagar, Haryana-135 001

Email: rajivkalsi@yahoo.com

Introduction

The agro-ecological regions in India fall into six major climatic regions viz. arid, semi-arid, dry sub-humid, moist sub-humid, humid and per-humid (Velayutham, 1999). The hot arid zone occupies major parts of Rajasthan, Gujarat, southern parts of Punjab and Haryana and a small portion of Deccan Peninsula in the states of Andhra Pradesh, Karnataka and Maharashtra while cold arid regions are located in the Trans-Himalayan regions of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh. The semi-arid zone is spread over ten states in the country.

The Arid Zone

The arid zone of India covers about 15.8% of the geographical area including 31,900 million km² of hot desert located in parts of Rajasthan (61%), Gujarat (20%), Punjab and Haryana (9%), and Andhra Pradesh and Karnataka (10%). The arid regions of India cover over 300,000 km² and are spread over six states, mostly in the northwestern parts of the country. The Great Indian Desert or Thar Desert lies in western Rajasthan and comprising an area of 196,150 km². In addition, an area of 78,300 km²

of cold desert is located in the state of Jammu and Kashmir (Table 1, Fig. 1).

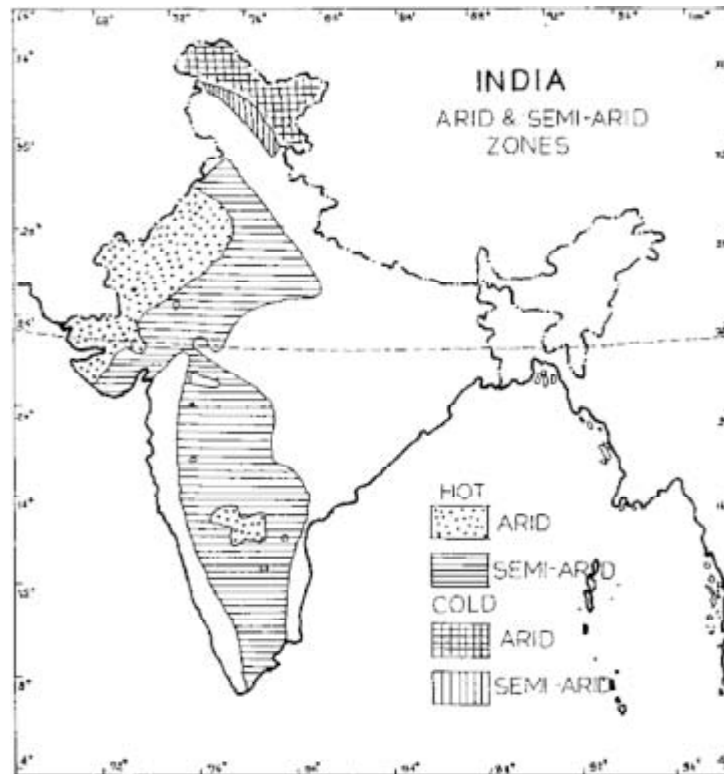
The climate in the arid regions has erratic rainfall, frequent droughts, high evaporation, intense heat and high velocity winds. The human population in the Indian arid zone is high, a part of which is nomadic maintaining a considerable livestock population. The density of both human and livestock population is moderately higher as compared to the national average, which has put the scarce natural resources of this zone under severe stress. There are a number of tribes such as the *Gujjars*, *Rathis*, *Banjaras*, *Raikars* and *Rabaris* which are nomadic and follow a pastoral system of living. The nomadic lifestyle has over the years been replaced by agrarian system in regions not suitable for arable cropping system, which has further degraded the fragile ecosystem. In arid zone, the growing season being very short, millets and short duration pulses dominate the cropping systems. Livestock farming forms an integral part of this ecosystem. There are six National Parks and Wildlife Sanctuaries in the deserts covering 16,076 km² or 7.45% of the bio-geographical area of the country.

Table 1 : Area under arid and semi-arid zones in India.

State	Arid Zone	Semi-arid Zone	Arid Zone	Semi-arid Zone
	Km ²	Km ²	Percentage	
Hot				
Rajasthan	1,96,150	1,21,020	61.0	13.0
Gujarat	62,180	90,520	19.6	9.0
Punjab & Haryana	27,350	58,650	9.0	6.0
Maharashtra	1,290	1,89,580	0.4	19.0
Karnataka	8,570	1,39,360	3.0	15.0
Andhra Pradesh	21,550	1,38,670	7.0	15.0
Tamil Nadu	-	95,250	-	10.0
Uttar Pradesh	-	64,230	-	7.0
Madhya Pradesh	-	59,470	-	6.0



Source: http://cee45q.stanford.edu/2003/briefing_book/images/india_climate_map.jpg



Source: <http://www.unu.edu/unupress/unupbooks/uu17ee/uu17ec0y.gif>

Fig. 1. Maps showing arid and semi-arid zones in India



The Semi-arid Zone

The semi-arid zone is a transition zone between desert and dense forests of Western Ghats. The semi-arid zone comprises 970,530 km², which is 37% of the total geographical area of the country. The semi-arid zone is distributed in the states of Punjab, Haryana, Rajasthan, Uttar Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu (Table 1, Fig. 1). In the semi-arid zones, the crops and cropping systems are quite diverse depending upon soil types and length of growing season. Sorghum, soyabean, groundnut and pulses are the major crops grown in this zone. The dominant grass and palatable shrub layer in this zone supports a high wildlife biomass. In the semi-arid zone, there are 91 National Parks and Wildlife Sanctuaries covering 15,302 km² or 2.8% of the bio-geographical area of the country.

Status and distribution of Galliformes species

In the arid and semi-arid zones of India, 19 galliformes species are reported to be present (Ali & Ripley 1987, Grimmett *et al.* 1998, Tables 2 & 3).

There are 11 species belonging to the partridge, quail and francolin (PQF) category and three pheasant species. The PQF species are Painted Francolin (*Francolinus pictus*), Grey Francolin (*Francolinus pondicerianus*), Black Francolin (*Francolinus francolinus*), Blue-breasted Quail (*Coturnix chinensis*), Rain Quail (*Coturnix coromandelica*), Common Quail (*Coturnix coturnix*), Rock Bush Quail (*Perdicula argoondah*), Jungle Bush Quail (*Perdicula*

asiatica), Painted Bush Quail (*Perdicula erythrorhyncha*), Painted Spurfowl (*Galloperdix lunulata*), and Red Spurfowl (*Galloperdix spadicea*). The three pheasant species found in arid and semi-arid zones are Red Junglefowl (*Gallus gallus*), Grey Junglefowl (*Gallus sonneratti*) and Indian Peafowl (*Pavo cristatus*).

Rain Quail (*Coturnix coromandelica*) is the only species found in all the states throughout the arid and semi-arid zones in India (Table 3). Grey Francolin and Indian Peafowl are distributed uniformly throughout the hot regions of the arid and semi-arid zones in the country while Black Francolin remains restricted to northern, western and central regions. Painted Bush Quail and Painted Spurfowl are distributed in the central, western and southern parts of the arid and semi-arid zones.

Threats to galliformes in the arid and semi-arid zones in India

Although the arid and semi-arid zones in India have a better Protected Area network, there is immense pressure from human population growth and economic development, and these habitats face a huge challenge to balance human needs with the protection and management of natural habitats. The main causes of threats are expansion and intensification of agriculture, infrastructure development and excessive livestock grazing. Clearance, conversion and degradation of habitats are by far the most important causes of threats to galliformes species in these regions. Poaching is the second most common category of threat. These species are poached for food and sport and captured for the wild bird trade. Levels of exploitation of some species are clearly too high to be sustained. Habitat destruction has led

Table 2. : Number and distribution of Galliformes species in the states comprising of arid and semi-arid zones in India.

State	Number of Species		
	Pheasants	Partridge, Quail and Francolin	Total
Rajasthan	2	10	12
Gujarat	3	8	11
Punjab	1	5	6
Haryana	1	5	6
Maharashtra	3	10	13
Karnataka	2	10	12
Andhra Pradesh	3	9	12
Tamil Nadu	2	7	9
Uttar Pradesh	2	9	11
Kerala	2	9	11
Madhya Pradesh	3	11	14

