



4.0 An Assessment of the Current Status of the Indian Peafowl (*Pavo cristatus*) in India based on Questionnaire Surveys

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Introduction

The Indian Peafowl (*Pavo cristatus*) has been an integral part of the people of the India and their culture for centuries. From religion and mythology to civilization and socio-culture, the Indian Peafowl occupies an important place in the lives of the people. In addition to this, the Indian Peafowl is well recognized for its ecological and aesthetical values, and hence aptly declared as the 'National Bird' of India in the year 1963.

The Indian Peafowl is widely distributed throughout India except for the Himalayan ranges, north east India and the Islands (Ali and Ripley 1983), but is now reported to be discontinuously distributed in its former distribution range. It was introduced into the Andaman and Nicobar Islands (Ali and Ripley 1983) and also in Kitam Wildlife Sanctuary, South Sikkim (Lachungpa, U., *this issue*). Although the Indian peafowl is widely distributed and locally abundant or fairly common in some areas, the present population status of this species is only speculative. Most of the Protected Areas (PAs) in India do not regularly monitor the populations of the Indian Peafowl within their areas despite this species being the 'National Bird' and even though it forms a prey for large carnivores such as the Tiger and Leopard.

Since the early 1990s, there have been reports of increasing illegal trade in peafowl feathers, large-scale mortalities due to increased use of insecticides/pesticides in agricultural lands, poaching, and retaliatory killings by people due to alleged crop depredation by peafowl. Several peafowl stronghold areas in the country are now concerned about the current declining status.

With this in view, a macro-level questionnaire based information collection and collation on the status of Indian Peafowl was initiated by the Wildlife Institute of India (WII), Dehradun, with the following objectives: (i) to assess the status of the Indian Peafowl in the different PAs and other forested landscapes; (ii) to assess the status of the Indian Peafowl in other land areas such as revenue lands and private lands; and (iii) to assess the range of threats to this species and their mortalities in Protected Areas (PAs), outside PAs, and the agricultural landscapes.

Methods

WII initiated the Questionnaire Survey in 2004 to determine the population status of the Indian Peafowl in the PAs. The questionnaires were sent to all the PA managers (N=448) of the Peafowl range states through their respective Chief Wildlife Wardens. In addition to this, during 2006, WII had initiated another similar Questionnaire Survey through a networking approach to determine the present status of the Indian Peafowl in areas that are not within the PA network or forested land areas (revenue lands, agricultural lands, and private lands) as it was believed that a large percentage of the Indian peafowl populations occur in such areas that are not under the control of the Forest or Wildlife Departments. This questionnaires were sent to members of the civil society (N = 1,720) which includes District Collectors (n=350), Members of Wildlife Network Groups such as Indian Bird Conservation Network (IBCN), Wildlife Rescue Network of the Wildlife Trust of India (WREN), Bombay Natural History Society (BNHS) and other NGOs and NGIs (n=1,470).

These questionnaires sought information on the presence/absence, relative abundance (encounter rates per km or hour), population estimates, threats to peafowl and their habitats, mortalities due to pesticide use in agricultural landscapes, illegal peafowl feather trade, and poaching cases both inside and outside PAs and forested landscape.

Results of the Survey:

Current distribution of the Indian Peafowl in India

As of September 2007, WII has received responses from 234 PAs (52% of 448 PAs) of which 193 (82%) have reported presence of the Indian Peafowl (Table 1). The PA managers also reported presence of peafowl in 19 other areas that includes Reserved Forests and forest land areas. Of the 519 Districts of India that fall within the Indian Peafowl distribution range, the Indian Peafowl has been reported from 345 districts (67%) and the information is not available for the remaining districts (Table 2). Out of the 1,720 questionnaires sent to members of the civil society, only 108 (6%) have responded as of September 2007.



The current distribution of Indian Peafowl constitutes the mainland India including Assam, excepting all other north eastern states and high altitude ranges (>2,000 m) of northern states. There is no change in the distribution of the Indian Peafowl in India with that of its past distribution (Ali and Ripley 1983) but appears to have become discontinuous in some areas from where information is not available. It is likely that some well developed highly populated urban and industrial areas may not hold Indian peafowl populations with the exception of a few pockets such as institutional or university campuses. A distribution map based on presence /absence of Indian Peafowl in the different PAs and Districts of India based on the responses of the questionnaire survey has been prepared (Fig. 1). The Indian Peafowl occurs in a variety of forest types and habitats in India (Fig. 2).

Relative Abundance and Population trends of Indian Peafowl in PAs

Of the questionnaires sent to 448 PAs that are located in the Indian Peafowl distribution range, only 234 PAs (52%) had responded. Of the 234 PAs that responded, only 61 PAs have reported population estimates for the Indian Peafowl in their areas and the total population in these 61 PAs range from 30,965 to 31,939. While some PAs provided encounter rates (# seen/hr effort) for the Indian Peafowl, many PAs did not report for this parameter. From the responses received, it appears that several PAs in Gujarat, Haryana, Himachal Pradesh, Madhya Pradesh and Orissa have the highest Indian Peafowl Encounter Rates of >50 birds/hr effort. While some PAs in Karnataka, Rajasthan, Tamil Nadu and Uttarakhand have reported Encounter Rates of 31-50 birds/hr effort; most of the PAs in India reported Encounter Rates ranging from 5 to 30 birds/hr effort (Fig.3). The peafowl population trend as reported by the PAs (N=167) indicate that the peafowl population is 'increasing' in 73 PAs (43.7%), 'stable' in 36 PAs (21.5%), decreasing in 6 PAs (3.6%), and for the remaining (31.2%) the trend is either 'unknown' or 'not reported'.

Relative abundance and population trends of Indian Peafowl outside PAs

The Indian Peafowl presence was reported from 19 localities other than forested landscape, of which, only 5 reported the population estimates which total to about 3,000 birds. The peafowl population status outside PAs but within the forested landscape areas was also reported from 13 localities. While the population trend was reported as 'increasing' in five localities (38.4%), and 'stable' in two localities (15.4%), it was reported as 'not known' in two localities (15.4%) and 'Not Reported' in the rest.

Responses from civil society members on the presence/absence, relative abundance and population trends of the Indian Peafowl in areas outside PA or Forest land areas indicate that there are at least 121 areas that have Indian Peafowl. Thirteen Respondents reported decline in Indian peafowl population from 18 localities across India. The total population reported in these areas excluding figures for Madhya Pradesh, Orissa, Tamil Nadu and Uttar Pradesh add up to a range of 14,176 to 16,201. The responses from Civil Society members indicate that the Indian Peafowl population outside PAs and forest land areas to be about 11,69,000 in Madhya Pradesh, 1,82,000 in Orissa, 77,000 in Tamil Nadu and about 91,000 in Uttar Pradesh. All of the above add up to an estimate of about 15,35,000 Indian Peafowl outside PAs and forest land areas. However, reliability of such estimates is questionable as the methods followed and the capacity of individuals who made such estimates are not known. At the best, these could be considered as guesstimates.

Overall status, distribution and abundance in India

From the above, we could summarize that the Indian Peafowl presence is confirmed in 345 districts of India and it is likely to be present in 174 other districts that fall within the Indian Peafowl distribution range. The Indian Peafowl populations are reported to be present with 193 PAs, 19 other forest land areas, and 141 revenue land areas. Of the total 353 localities that have reported Indian Peafowl presence, the population estimates are available for 195 localities only. The total population estimated within the 195 localities is over 15,00,000 birds. However, as mentioned earlier, such estimates have to be treated as guesstimates only.

From the above, it is clearly evident that there is an urgent need to obtain basic information on Indian Peafowl presence/absence, encounter rates and population estimates from the PAs, outside PAs, including revenue and private lands for the better management of the National Bird. It appears that substantial portions of Indian Peafowl distribution range and populations are outside the PA network or Forest land areas.

Indian Peafowl - People Interface

The Information on use of agricultural/horticultural lands adjacent to and/or near PAs by the Indian Peafowl was reported by 146 PAs. While 64 PAs (44%) reported use of agriculture/horticulture lands by peafowl as 'occasional', 15 PAs (10%) reported the use of such lands as 'very often', 58 PAs (39.8%) reported that there was no such use and the remaining did not provide this information. Cases of crop depredation by Indian Peafowl from agriculture lands near the PAs were reported as 'occasional' in 55 PAs (37.7%), 'very often' in 7 PAs (4.8%), 'nil' in 42



PAs (28.8%), 'not known' in 1 PA, and the rest (28.1%) did not report.

In the 13 forest land areas outside PA network where the Indian Peafowl was reported to be present, reports of Indian Peafowl using agricultural/horticultural lands was received from 10 localities. The cases of crop depredation by Indian Peafowl from agriculture lands near the forested areas were reported as 'occasional' in 8 areas.

Indian Peafowl: Mortalities, Poaching and Trade

The information on Indian Peafowl as prey for carnivores, mortalities, poaching and trade was compiled from responses received from 146 PA managers. Seventeen PAs reported that Indian Peafowl was preyed by wild carnivores such as tiger, leopard, leopard cat, jungle cat, caracal, wild dog, wolf and jackal. Over 80% of the PAs did not report mortalities of peafowl in and around their PAs and only 5% reported such cases in the agricultural landscapes near PAs. The remaining PAs did not respond.

Encounter of shed peafowl feathers were reported as "occasional" by 98 PAs (58.7%), and 'very often' by 22 PAs (13.2%). Thirty nine PAs (23.3%) reported that shed peafowl feathers were 'not encountered' in their areas, and the remaining did not provide this information. The collection of shed peafowl feathers by people was reported as 'occasional' by 43 PAs (25.7%), 'very often' by 5 PAs (3%), and 'no such collection' by the rest. Only 10% of the PAs reported instances of poaching / illegal trade in their areas. Most of the PAs (79%) reported 'no poaching and / or illegal trade' in their areas, and the remaining did not provide information.

In the 13 forest land areas outside PA network where the Indian Peafowl was reported to be present, none of them reported mortalities of Indian Peafowl from agricultural landscapes. Encounter of shed peafowl feathers were reported as "occasional" in seven localities, and as 'not encountered' in five. The collection of shed peafowl feathers by people was reported as 'occasional' in eight localities, as 'no such collection' in four. No poaching and/or illegal trade of Indian Peafowl or its feathers from these areas was reported. Response for the above parameters for one locality was not received.

Of the 108 responses that were received from civil society members regarding the mortalities, poaching and trade of Indian Peafowl outside PAs and forest land areas, 19 Respondents reported Indian Peafowl in the diet of species such as leopard, bear, fox, jackal, mongoose and feral or domestic dog. Twenty eight Respondents reported about 1,000 cases of poaching or trade and mortalities of Indian Peafowl from 15 localities across India. Mortalities due to increased use of pesticides and insecticides in

agricultural landscapes, and decline in population due to habitat loss as a consequence of changing land use patterns, some levels of poaching for meat by tribal or local people, retaliatory killings to reduce crop depredation, were the reasons.

From the above, it is evident that the Indian Peafowl forms one of the important prey for large and small carnivores both within and outside PA network or forest land areas. There are reports of Indian peafowl mortalities in agricultural landscapes due to effects of insecticides / pesticides, poaching for meat, and retaliatory killings to reduce crop depredation. The Indian Peafowl populations outside PAs, including revenue and private lands appears to be facing problems due to changing land use practices, and some level of poaching or retaliatory killings.

The Proposed Plan of Action

We realized the limitations of this Questionnaire Survey as the responses were much less than expected, and that some of the information provided on population estimates may not be very reliable. Information on availability and collection of shed feathers was also not provided by most of the respondents. There were also problems in interpreting dissimilarities between media reports versus responses on Indian peafowl mortalities in agricultural landscapes.

As a follow up of the questionnaire survey, WII proposes to coordinate a national level Indian Peafowl Monitoring Programme networking with five regional institutions in the country, NGOs, NGIs and the State Forest/Wildlife Departments. WII also proposes to use and analyse the field based data generated by Phase-I of the "All India Tiger, Co-predators, Prey and Habitat Monitoring Programme", in which information on the presence/absence and relative abundance of the Indian Peafowl at the Beat Level for all the 17 Tiger Range States has been collected. This could serve as the baseline for regular monitoring of Indian Peafowl in the Tiger landscapes of the country.

References

Ali, S., and Ripley, S.D. (1983) *Handbook of the Birds of India and Pakistan*. Oxford University Press, Delhi.



Table 1 Indian Peafowl Presence / Absence in Protected Areas of India as of 15 September 2007

Name of States/UTs	TotalNo. of PAs	No. of PAs that reported Indian Peafowl as 'Present'	No. of PAs that returned the Questionnaire
Andhra Pradesh	26	11	15
Assam	23	2	22
Bihar	11	3	3
Chandigarh	2	0	0
Chattisgarh	13	2	2
Delhi	1	0	0
Daman and Diu	1	0	0
Dadra and Nagar Haveli	1	0	0
Goa	7	4	4
Gujarat	25	2	2
Haryana	12	12*	10
Himachal Pradesh	34	8	25
Jammu and Kashmir	19	0	0
Jharkhand	11	11	11
Karnataka	26	24*	15
Kerala	19	6	17
Madhya Pradesh	34	13	13
Maharashtra	42	40*	28
Orissa	20	13	14
Punjab	11	9	11
Rajasthan	28	10	10
Tamil Nadu	24	15	24
Uttarakhand	14	1	4
Uttar Pradesh	24	6*	4
West Bengal	20	0	0
Total	448	193	234

* Indian Peafowl presence reported by CWLW of the state, but questionnaires from PA managers in a few cases is awaited

**Table 2** Presence / Absence of the Indian Peafowl in the Districts of the Range States and Union Territories of India, as of 15 September 2007

Name of States/UTs	No. of Districts	No. of Districts that has Peafowl	No. of Districts where Peafowl Presence is 'unknown' but likely to be 'present'
Andhra Pradesh	23	23	0
Assam*	10	10	0
Bihar	37	5	32
Chandigarh	1	0	1
Chhattisgarh	16	16	0
Dadra and Nagar Haveli	1	1	0
Daman and Diu	1	1	0
Delhi	9	2	7
Goa	2	2	0
Gujarat	25	25	0
Haryana	20	9	11
Himachal Pradesh*	9	9	0
Jammu and Kashmir*	4	4	0
Jharkhand	23	14	9
Karnataka	28	25	3
Kerala	14	7	7
Madhya Pradesh	48	48	0
Maharashtra	35	27	8
Orissa	31	31	0
Punjab	17	6	11
Pondicherry	4	1	3
Rajasthan	32	32	0
Tamil Nadu	30	23	7
Uttar Pradesh	70	13	57
Uttarakhand*	11	6	5
West Bengal	18	5	13
Total	519	345	174

* Only Districts in the Indian Peafowl Distribution Range

** Absence of Indian Peafowl in the districts based on published information and secondary sources

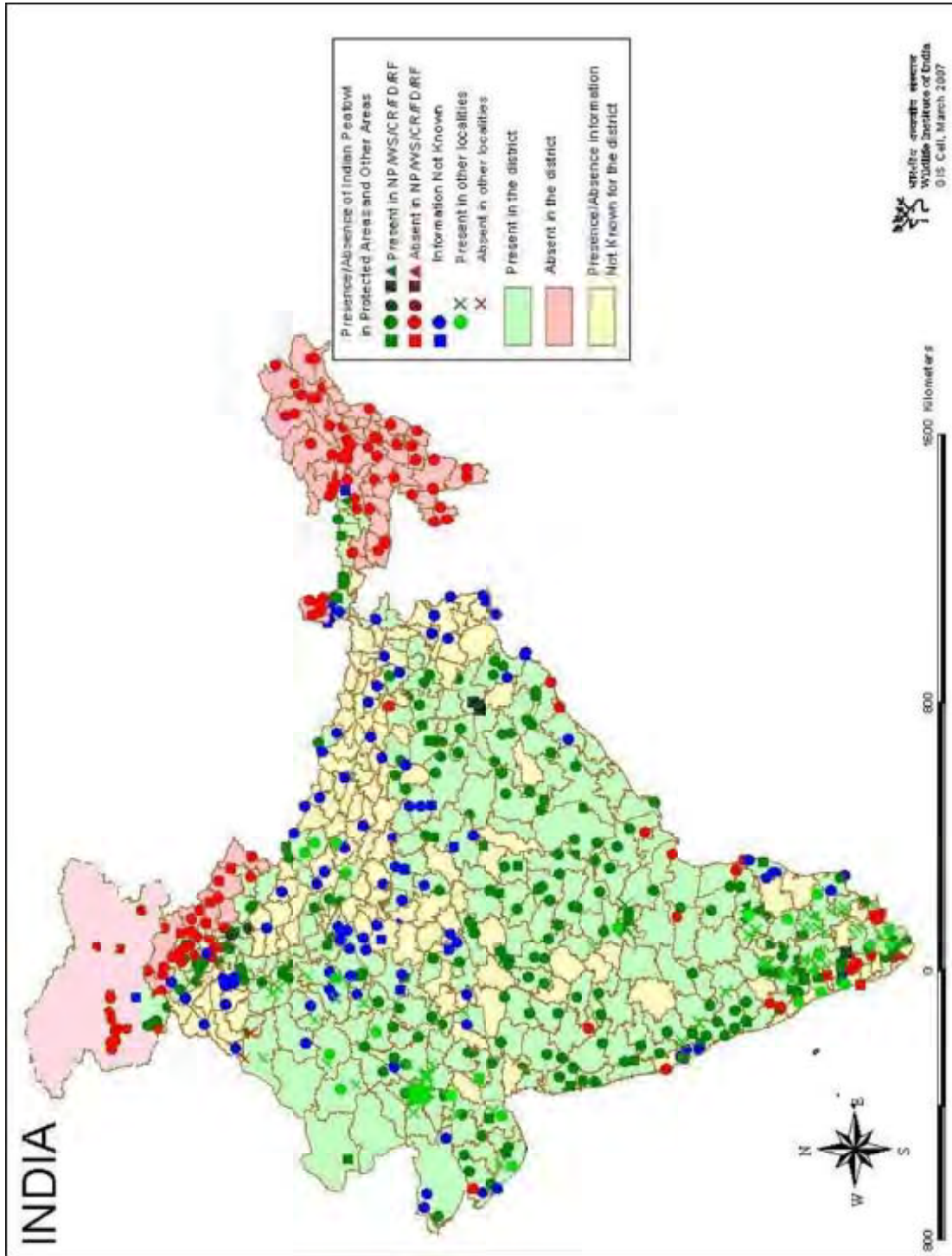


Fig 1: Presence/Absence of the Indian Peafowl in the Protected Areas and Districts of India

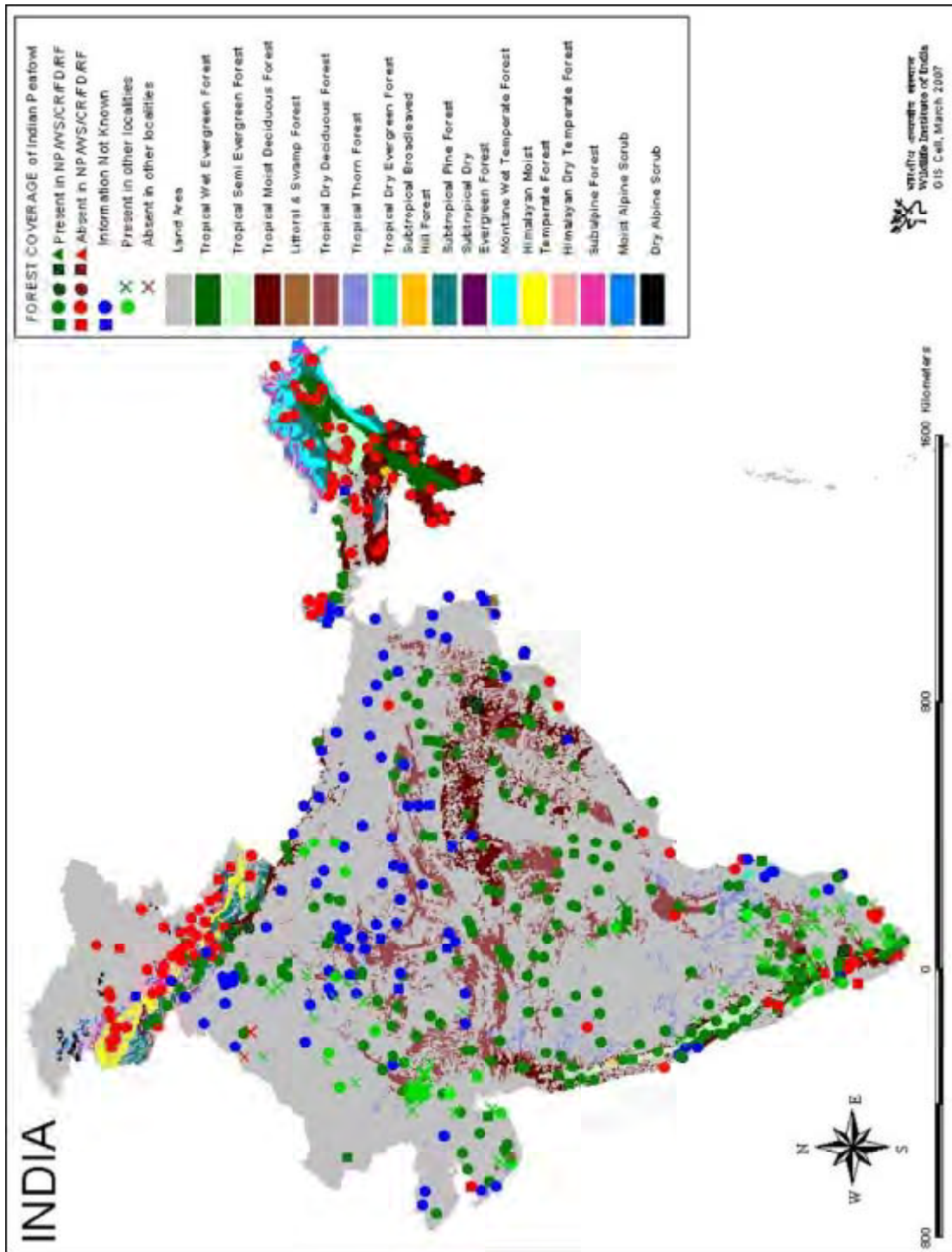


Fig 2 Distribution of Indian Peafowl in different Forest types of India

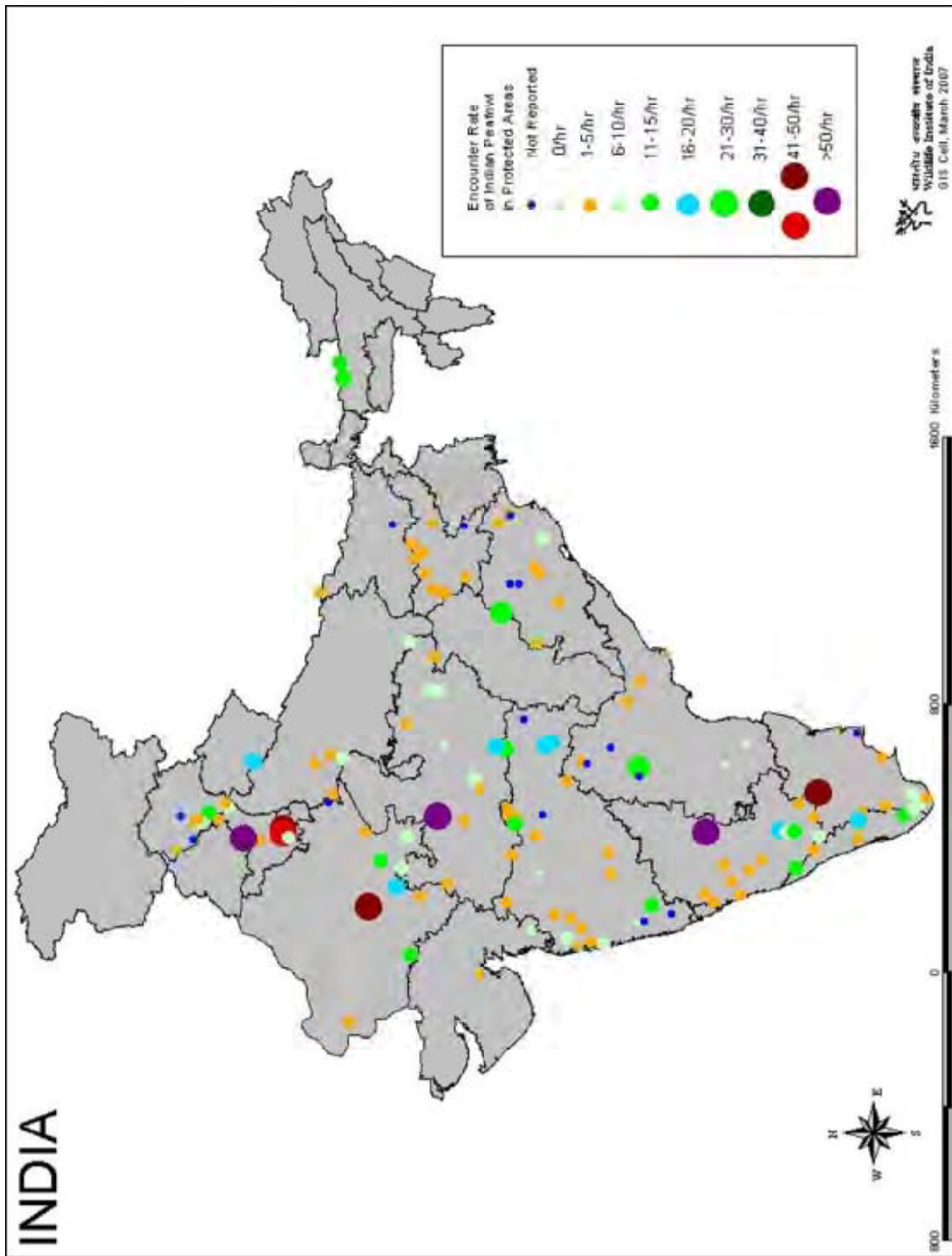


Fig 3: Map showing Encounter Rates of Indian Peafowl in the Protected Areas in India