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Tiger Census from 1976 in Corbett Tiger Reserve: A study based on data analysis of Three decades, Future perspective, Ramnagar, UK, India

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Abstract

Tiger is an integral part of India ethos and finds a place in our mythology, legends, folklore and poetry. The morphological attributes of tiger are remarkable to enable the species for successful predation in nature. Now tiger have increased in their reserve and peripheral areas. However, these source areas require ongoing managerial support and protection with improved field delivery. Being a territorial carnivore which inhabits metapopulation, connectivity is required between "source and sink" populations. In addition, such populations need to be connected with other source areas as well as through corridor for gene flow. As the Kosi corridor of Corbett is merely vanishing. So for genetic viability between two regions i.e. Corbett and Ramnagar forest division should be maintain by protecting the corridor through strict action against anthropogenic stress without political resolution. Present study depicts the tiger census of three decades of its wilderness in Corbett Tiger Reserve.

Keywords: Tiger census, genetic viability, metapopulation, territorial carnivores.

Introduction

Corbett is a beautiful land for roaring of tiger. Current census of tiger in Corbett is 214 tigers. Census data had been collected from Corbett Research zone. The data from 1976 to 2010 were analyzed. But in 2008 the census of Leopard had been facilitated, but tiger were not count. Again in 2010 by the WII Dehradun through camera trapping method in areas of 1524 sq Km landscape. Total 214 tiger were estimated. Present study providing the tiger census year wise. From 1992 the area wise description is mentioned. Census of tiger is presented sex wise (male, female, cub and unknown). Data analysis depicts the year wise variation. But data shows regular increase in tiger population.

In 2007 census shows that in 1524 sq Km landscapes those were 164 tiger. On the other hand the official report shows that in 2010 census were done again by Wildlife Institute of India, Dehradun through camera trapping method and covered the 1525 sq km landscape and provided the data of 214 tiger. So till now after the data of WII, the tiger count is 214 (census 2010)¹⁻³. The 214 tigers are feasible in this geographical situation with wild ecology to survive kindly and how much ecological needs⁴ of tigers are fulfilling in this area. It may be possible that tigers of Corbett have developed the adaptation for feasibility to survive along with other sympatric species like leopard having prey⁵. If not so than chances of conflict and negative movement ⁶ (from core to periphery, human dominated places etc) will take place.

Material and Methods

Data had been collected from Corbett Research Range (shod range). Sex and year wise census of tiger was analyzed. From 1976 to 1991 the data were not shown area wise but after 1991right from 1992 census was categorize in Park area, buffer zone and KTR (kalagarh tiger reserve) in table-1.

Study area- So as far as study area is concerned, the Corbett the land of roar is chosen for this study.

Result and Discussion

Total 39 years data were analyzed for this study. From 1992 the data were categorized in area or zone wise like Park area, buffer zone, kalagarh tiger reserve and from2001 the Sonanadi and Binsar sanctuary are included.

Now total numbers of tiger in the Corbett are 214 as per 2010 census reported by WII through camera trapping.

On the other hand after analyzing the census the area wise ecological need must be fulfill than wild tiger can survive otherwise if carrying capacity⁷ in terms of prey biomass and other sympatric species like leopard etc will decrease than conflict and other ecological pressure will exert on tiger population⁸. Result show that number of male are increased while no. of female from 2005 are not in ratio. So this depicts the variation in genetic viability and sex ratio in wild.

Table-1 Detail of Tiger census in Corbett Tiger Reserve from 1976 (three decades data)

| Year | | T () | | | | | | | | |
|-------|------|--------------|------|----------|-------|--|--|--|--|--|
| | Male | Female | Cub | Unknown | Total | | | | | |
| 1976 | 25 | 23 | 9 | - | 57 | | | | | |
| 1977 | 27 | 31 | 15 | - | 73 | | | | | |
| 1978 | 36 | 37 | 6 | - | 79 | | | | | |
| 1979 | 37 | 39 | 11 | - | 87 | | | | | |
| 1980 | 34 | 39 | 14 | - | 87 | | | | | |
| 1981 | 42 | 41 | 6 | - | 89 | | | | | |
| 1982 | 39 | 45 | 7 | - | 91 | | | | | |
| 1983 | 38 | 48 | 6 | - | 92 | | | | | |
| 1984 | 35 | 49 | 6 | - | 90 | | | | | |
| 1985 | 36 | 49 | 6 | - | 91 | | | | | |
| 1986 | 34 | 51 | 4 | - | 89 | | | | | |
| 1987 | 29 | 51 | 10 | - | 90 | | | | | |
| 1988 | 39 | 50 | 3 | - | 92 | | | | | |
| 1989 | 43 | 42 | 6 | - | 91 | | | | | |
| 1990 | 42 | 43 | 7 | - | 92 | | | | | |
| 1991 | 35 | 45 | 11 | - | 91 | | | | | |
| | 1 | | 1992 | <u> </u> | | | | | | |
| Park | 36 | 50 | 6 | - | 92 | | | | | |
| Buf.Z | 1 | 3 | 1 | - | 5 | | | | | |
| KTR | 10 | 14 | 1 | - | 25 | | | | | |
| Total | 47 | 67 | 8 | - | 122 | | | | | |
| 1993 | | | | | | | | | | |
| Park | 32 | 51 | 5 | - | 88 | | | | | |
| Buf.Z | 3 | 5 | 1 | - | 9 | | | | | |
| KTR | 11 | 15 | - | - | 26 | | | | | |
| Total | 46 | 71 | 6 | - | 123 | | | | | |
| | | | 1994 | · | | | | | | |
| Park | 33 | 52 | 5 | - | 90 | | | | | |
| Buf.Z | 4 | 6 | 1 | - | 11 | | | | | |
| KTR | 9 | 17 | 1 | - | 27 | | | | | |
| Total | 46 | 75 | 7 | - | 128 | | | | | |
| 1995 | | | | | | | | | | |
| Park | 31 | 51 | 8 | - | 90 | | | | | |
| Buf.Z | 9 | 12 | 3 | - | 24 | | | | | |
| KTR | 9 | 11 | - | - | 20 | | | | | |
| Total | 49 | 74 | 11 | - | 134 | | | | | |
| 1997 | | | | | | | | | | |
| Park | 42 | 43 | 6 | - | 91 | | | | | |
| Buf.Z | 11 | 17 | 4 | - | 32 | | | | | |
| KTR | 5 | 5 | 5 | - | 15 | | | | | |
| Total | 58 | 65 | 15 | - | 138 | | | | | |
| 1998 | | | | | | | | | | |
| Park | 39 | 43 | 12 | - | 94 | | | | | |
| Buf.Z | 13 | 17 | 2 | - | 32 | | | | | |

| KTR | 6 | | 9 | - | - | 15 | | | | | |
|--|----|----|--|------------|-------|---------------------------------|--|--|--|--|--|
| Total | 58 | 65 | | 15 | - | 138 | | | | | |
| 1999 | | | | | | | | | | | |
| Park | 29 | 44 | | 10 | - | 83 | | | | | |
| Buf.Z | 16 | 19 | | 1 | - | 36 | | | | | |
| KTR | 5 | 10 | | - | - | 15 | | | | | |
| Total | 50 | 73 | | 11 | - | 134 | | | | | |
| 2001 | | | | | | | | | | | |
| Park | 32 | 44 | | 9 | - | 85 | | | | | |
| Buf.Z | 11 | 17 | | 2 | - | 30 | | | | | |
| KTR | 8 | 14 | | - | - | 22 | | | | | |
| Bs.S. | - | - | | - | | - | | | | | |
| Total | 51 | 75 | | 11 | - | 137 | | | | | |
| 2003 | | | | | | | | | | | |
| Park | 33 | | 51 | 8 | - | 92 | | | | | |
| Buf.Z | 18 | 17 | | 2 | - | 37 | | | | | |
| Sn.S | 5 | 8 | | 1 | - | 14 | | | | | |
| Bs.S. | - | - | | - | | | | | | | |
| Total | 56 | 76 | | 11 | - | 143 | | | | | |
| 2005 | | | | | | | | | | | |
| Park | 28 | 54 | | 10 | - | 92 | | | | | |
| Buf.Z | 12 | 18 | | - | - | 30 | | | | | |
| Sn.S | 7 | 12 | | - | - | 19 | | | | | |
| Bs.S. | - | - | | - | - | | | | | | |
| Total | 47 | 84 | | 10 | - | 144 | | | | | |
| | | | | 2007 | | | | | | | |
| 1524 sq.km LANDSCAPE | | | In 2007in CTR total 1524 sq.km area, by WII through Camera trapping method | | | 164 Tiger Without Cubs | | | | | |
| 2008- Only Leopard census was done, tiger census was not | | | | | | | | | | | |
| done | | | | | | | | | | | |
| 2010 | | | | | | | | | | | |
| | | | In | 2010 agai | 214 | | | | | | |
| 1524 sq.km LANDSCAPE | | | tot | al 1524 so | Tiger | | | | | | |
| | | | covered by WII through | | | Without | | | | | |
| | | | Camera trapping method | | | Cubs | | | | | |

Source- Corbett Research Range (Official)

Discussion: As current data shows that numbers of male tiger are increased while female are not accordingly. It indicates that disturb sex ratio in wild for tiger wilderness. Corridor is nearly vanishing in eastern boundary of Corbett linked with Ramnagar forest division along with Kosi river. We have to come over with this futuristic problem for gene flow and genetic viability between two vital region⁹ i.e. Corbett and Ramnagar forest division. Overall the data provided by Corbett research range showing the increasing number of big cat its good but for future perspective carrying capacity of area must be analyze scientifically.



Figure-1 Showing the census data sex and age wise from the year of 2001-2010

Conclusion

In 1524 Sq.km. Landscape there are 214 total tiger are roaring as per WII (2010) report. So if this area is divided by the number of tiger than we can estimate the area of one tiger and it may be 1524/ 214= 7.12 Sq. km. per tiger. It may be possible that tiger have a big challenge in terms of prey biomass¹⁰ and carrying capacity etc. In future the inter and intra specific struggle will occur.

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