



CENTRAL ZOO AUTHORITY

APPLICATION FOR SMALL GRANT FELLOWSHIP

Please read appendix I for instructions (last page of this document)

Form must be filled in English

Internal Project Number (To be filled in by CZA).....

1. GENERAL INFORMATION

Date of application:

Name of Zoo/Organization: Padmaja Naidu Himalayan Zoological Park

Contact person/project leader: Sri A.K.Jha IFS Director, Padmaja Naidu Himalayan Zoological Park.

2. CLASIFICATION OF THE PROPOSAL

Improvement Of the Zoo	Scientific management	Ex-situ Conservation	Welfare of the animal	any other, please specify
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Scientific Management of Pheasants for ex-situ conservation

2a. Name of the Project: Studies on biology, breeding behaviour and aviary practices for improved performance of captive Himalayan Pheasants

3. DATE OF INITIATION OF THE PROJECT:

4. DURATION OF THE PROJECT: Two years

5. LOCATION OF THE PROJECT: Padmaja Naidu Himalayan Zoological Park

Region/State: West Bengal

Closest main city: Darjeeling.

6. STAFF INVOLVED IN PROJECT (please include curriculum vitae of the individuals):

1. Name (title) – Main Research associate to be selected after advertising from suitable candidates.

Zoo/Organization

Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal.

Period to be spent on the project from:

(day/month/year) for

6 days/per week / for two years

7. PROJECT PROPOSAL

7a. Background and history of the project (max. 300 words)

Increasingly, forested habitats are being cleared to make room for urban settlements or for road building and reservoir construction. For instance, habitats for Satyr Tragopan and Koklass pheasant have been lost to urban expansion at Jorebunglow and Ghoom (S. Khaling in litt.). Survey works on the Satyr Tragopan in Singalila National Park from 1994-1997 indicated that birds were avoiding areas near human habitation, presumably due to habitat disturbance or degradation. These areas were heavily grazed by cattle, trees were lopped for firewood, and bamboo was removed for construction (Khaling et.al. 1998). Besides ecological importance of pheasants they also have aesthetic values which mainly contribute to their decline in population in their local native habitat. Padmaja Naidu thus started a captive breeding programme in early 1990's for the indigenous pheasants for their subsequent reintroduction into its suitable habitat.

Padmaja Naidu Himalayan Zoological Park has been assigned as a *Coordinating Zoo* for breeding Satyr Tragopan (*Tragopan satyra*) and a *Participating Zoo* for Grey Peacock Pheasant (*Polyplectron of bicalcaratum*), Blood Pheasant (*Ithaginis cruentus*) and Himalayan Monal (*Lophophorus impejanus*). Apart from the pheasants mentioned above the zoo has a stock of Red Jungle Fowl (*Gallus gallus*), besides, the zoo is actively involved in breeding other indigenous species of pheasants like Kaleej Pheasant (*Lophura leucomelana*), Cheer Pheasant (*Catreus wallichii*) and Temminck's Tragopan (*Tragopan temminckii*)

The present study will be a sincere effort to study the pheasant's behaviour and how it responds to changes in captive environment during different stages of life. The ultimate goal of the project is to provide better captive management so that the reproductive performance of the pheasants is improved and they can be reproduced in sufficient number to be released into the wild.

7b. Main problem or question (max 200 words)

- Basic data on breeding behaviour (breeding season, courtship display, clutch size and egg laying, Incubation and Incubation period) of Satyr Tragopan (*Tragopan satyra*), Himalayan Monal (*Lophophorus impejanus*), Temminck's Tragopan (*Tragopan temminckii*) and Cheer Pheasant (*Catreus wallichii*) are not available.
- Limited data available on the Pheasant management, aviary exhibit design and feeding management of captive pheasant.
- Problems like infertile eggs, early chick mortality and disfigurement of limbs are quite common in pheasantry and in many a cases the remedial measures are not known.

- Captive breeding and rearing of species like Satyr Tragopan (*Tragopan satyra*), Himalayan Monal (*Lophophorus impejanus*), Temminck's Tragopan (*Tragopan temminckii*) and Cheer Pheasant (*Catreus wallichii*) is a challenging task.

7c. AIMS AND OBJECTIVE OF THE PROJECT (MAX. 200 WORDS)

- To study the breeding behaviour of the captive pheasants like Satyr Tragopan (*Tragopan satyra*), Himalayan Monal (*Lophophorus impejanus*), Temminck's Tragopan (*Tragopan temminckii*), Cheer Pheasant (*Catreus wallichii*) Red Jungle Fowl (*Gallus gallus*) and Grey Peacock Pheasant (*Polypectron bicalcaratum*).
- To standardize the exhibit design, feeding management and husbandary practices for the pheasants in captivity.
- Finding out the cause and remedial measures of different problems in captive pheasants.

7d. METHODOLOGY AND/ OR PROPOSED ACTIVITIES (MAX. 300)

- **Study Species:** The study Species includes six species of pheasants all housed at Padmaja Naidu Himalayan Zoological Park.
- **Study Enclosure:** Pheasantry at Padmaja Naidu Himalayan Zoological Park.
- **Data Collection Procedure: Behavioural Sampling**
 - ❖ An Ethogram of all the pheasant species behaviour shall be created during the study.
 - ❖ Each individual for each species will be identified by particular characteristics in morphology/coloured leg bands.
 - ❖ A pre printed data sheet will be used to record the data and prior to each individual bird observation the date, time and weather conditions shall be noted.
 - ❖ During observation any additional observations shall also be recorded.
 - ❖ Each pheasant will be observed for ten minutes with a new individual observation starting from every 12 minutes, allowing for two minutes interval between the sampling individual to locate the next study subject.
 - ❖ Daily observation will be for four hours in a day Morning – 9:00 a.m.- 10:00 a.m. / Midday 11:00 a.m.- 12:00 noon/ Afternoon 3:00 p.m.- 4:00 p.m.

- ❖ Focal sampling shall be used for focusing on one individual and on every minute the behaviour of the individual recorded.
- ❖ Statistical analysis

8. COLLABORATION (IF ANY): Please specify with which institution/ organization will collaboration take place and type of the collaboration and support should also be indicated.

NGO'S	NAME	LOCATION
Ministries: Wildlife Wing, Forest Department, Govt. of West Bengal		
Universities: None		
Research institutes/ or any other:	Centre for Cellular and Molecular Biology (CCMB), Hyderabad. and Indian Veterinary Research Institute.	

8a. Support from host zoo: (Please specify what support the host zoo will be providing, it could be in the form of laboratory, equipment, space or personnel).

The existing laboratory, veterinary facility, old records and manpower shall be utilized for the study

9. BASIC TIME SCHEDULE:

Two years can be extended upto three years.

10. OUTPUT

10a. Describe which output can be expected from this project (reports, (scientific) publications, management plans, educational tools, etc.) and how they will be disseminated.

- Behavioural patterns of different species of pheasants between the male and the female pheasants especially during the breeding season can be evaluated.
- Rates of activities such as feeding, movement, resting, scratching, mating and aggression can be estimated.
- The evaluation of different exhibits in various zoos and Pheasant breeding facilities will help to standardize the exhibits at the Park.
- Datas obtained on various diseases from different sources will result in formulating protocols for prevention of frequently occurring diseases.
- The datas obtained from the project will be used as a resource for publication in the form of guidelines, handbook and research paper and also towards formulating new conservation action plans.

10b. Describe the (practical) relevance of this project for ex-situ conservation and scientific management of animals in general

The findings of this research project shall ensure a scientific management of the pheasants at the Park and will help in the captive breeding practices of the endangered

and threatened pheasant species so that they can be reintroduced in their natural habitats. The research findings will also facilitate the production of reports in international and peer- reviewed journals.

10c. Describe how results/ output will be evaluated (timelines and benchmarks)

During the first six months, the ecology, behaviour and other related aspects for ex-situ conservation of pheasants shall be studied through reviewed and peer- reviewed journals. Behavioural observation shall also be done at the Park

The remaining periods shall be devoted to field visits, continued behavioural observations, data analysis and report writing.

11. How these risks are dealt with).

Feasibility of the project is very good as the study is of low cost, and is concentrated in small geographical area. Since Wildlife wing Forest Department Govt. of West Bengal is also a party, the field visit shall be facilitated.

12. FINANCIAL ASPECTS (Please include budget overview (in Rs.) in an appendix)

YEAR I

SI No.	Items	Budgets	Justification
1.	Scholar's Honorarium Rs. 16,000 per month including HRA, in LS	1,92,000.00	Honorarium of the scholar inclusive of house rent.
2..	Cost of Books, Periodicals Stationaries, subscription to e- journals , e books and membership of World Pheasantry Association	94,000.00	To cover the cost of purchase of books, periodicals, e- journals e books and stationeries including membership of World Pheasantry Association
4.	Cost of rings for tagging.	20,000.00	To cover the cost of purchase of rings for tagging.
5.	Postage and Communication	20,000.00	Cost of communicating with resource persons.
6.	Cost of travel etc.	80,000.00	To cover the cost of travel to different pheasantries and zoos in India.
	Total	4,6,000.00	

YEAR II

SI No.	Items	Budget	Justification
1.	Scholar's Honorarium Rs. 16,000 per month including HRA, in LS	1,92,000.00	Honorarium of the scholar inclusive of house rent.
2.	Cost of Books, Periodicals Stationaries, subscription to e- journals and e books	94,000.00	To cover the cost of purchase of books, periodicals etc.
4.	Postage and Communication	10,000.00	Cost of communicating with resource persons
5.	Cost of travel, field trip etc.	70,000.00	To cover the cost of travel to different pheasantries and zoos in India.
6.	Cost of workshop.	65,000.00	Cost of workshop with 6-8 experts for evaluation of the work before preparing final draft.
7.	Publication of report.	1,50,000.00	Publication of report in a book form.
	Total	5,81,000.00	

Total cost= Rs. 4,6,000.00 + Rs. 5, 81,000.00 = Rs.9, 87,000.00 for two years.


Director

PNHZ Park, Darjeeling.

12a. Other financial sources applied for and / or guaranteed

- In case of Forest Dept./ Corporation/ Trust: please also mention the details
- Indicate if source is applied for or already guaranteed

No other financial resources

2. Name Department/ Institute: Self

Address: Padmaja Naidu Himalayan Zoological Park, Darjeeling.

Amount applied for or guaranteed:

Rs. 9, 87,000.00 for two years. (applied for)

3. Name Department/ Institute: Self

Address: Padmaja Naidu Himalayan Zoological Park, Darjeeling.

Amount applied for or guaranteed:

Rs. 9, 87,000.00 for two years (applied for)

13. DECLARATION

The information is submitted in this application is true, to the best of my knowledge. Should any significant developments arise after this application is made, I shall notify the Member Secretary, Central Zoo Authority.

SIGNATURE

Director/ Curator/
Officer-In-Charge of the Zoo
(Supervisor of the Research)

Research Project Leader

Chief Wildlife Warden/
Municipal Commissioner/
Owner/ Zoo Operator

Director
Padmaja Naidu Himalayan Zoological Park
Darjeeling

Signature:
Date: 6/12/12

Signature:
Date:

Signature:
Date: