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DNA study of Reptiles & Amphibians of Pakistan is initiated

has started DNA study on Reptiles and Amphibians
California, USA. This is probably the first time in
for the taxonomic study of Herpetofauna of Pakist
ZSD is involved in study of herpetology of Pakistan
been compiled under the title Herpetology of Pakistan

Dr. Theodore J. Papenfuss, Research Specialist and
known Herpetologist of University of California,
connection in October, 2003. Director, Hamid Iqbal
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Preservation Officer of Zoological Survey Department
with him for field surveys.

During his visit Uthal, Lasbela and Ormara areas of Balochistan and Mithi, Nabisar and Nagarparkar areas of Sindh were surveyed.

Special attention had been given to the DNA studies of the species *Chamaeleo zeylanicus* (Indian Chameleon), *Testudo horsfieldi* (Afghan Tortoise), *Testudo elegans* (Indian Star Tortoise) and *Uromastix hardwicki* (Indian Spiny-tailed lizard).

According to the previous reports of herpetologists the Star Tortoise is only found at Nagarparkar and Thar areas. ZSD team of herpetologist were given tough time to find out the actual distribution, location, population and status of Chameleon and Star tortoise. Team with the cooperation of the staff of Rangers and local guides succeeded to find out Chameleon in Nagarparkar surrounding, the headquarter of Rangers. After 40 years, this was the first expedition to trace out Chameleon in Nagarparkar. The liver samples of Chameleon have been taken for the study of DNA. The results will be helpful to find the relation between the other Chameleon species of Africa & Pakistan. This species of Chameleon i.e. Indian Chameleon occurs throughout Ceylon and peninsular India. This genus

is largely confined to Africa and Madagascar, but species occur in Arabia, the Mediterranean islands, India and Seychelles. The Indian species just enters in Pakistan that is why Chameleon is found at Nagarparkar one or two km nearby Pakistan, India border.



Field trip Lasbela

The study of DNA will be helpful to find or determine the relation the between the other Chameleon species of Africa and Pakistan. Similarly samples of some other species of lizards, frogs and toads collected during the surveys for DNA studies will be compared with species found in Iran, Afghanistan, China, Saudi Arabia and Africa. The results of DNA will give a drastic change in the species, sub species and also in genera of Reptilian and Amphibian fauna.

Development Project Approved

A development project of Zoological Survey Department under the title “Coastal Area / Dryland Biodiversity and Survey Management” is approved with total cost of Rs. 30.00 million. The

duration of the project is five years 2003 – 2008. The objective of the project is to determine the status, distribution and population dynamics of the coastal and dryland faunal species of Pakistan. The

area of operation is whole Pakistan. On the marine side special emphasis will be given to marine mammals, birds and reptiles. Marine mammals have been least explored in Pakistan and only few fragmented studies are available on birds and reptiles only. The project will help to study the status and population dynamics of these important marine groups. Under this project, a field office will be set up at Pasni or Gawadar to make an easy access to Balochistan coast. With the new development activities at Gawadar and construction of coastal highway from Karachi to Gawadar will have an impact on the coastal biodiversity. The project will be helpful to collect data of relevant species and better management of Balochistan coastal area in future.

The second part of the project will deal with the terrestrial areas of Pakistan. A field station will be established at Quetta and special attention will be paid to the reptiles especially the reptiles of Chagi and Kharan areas. Six species of reptiles are endemic to this area. Birds are the second important area and special emphasis will be given to CMS (Convention on Migratory Species) in

Pakistan. Among the mammals special attention will be given to the ungulates. Trophy hunting programme of Markhor and Ibex is on way in Balochistan & Sindh but authentic census of these species for issuance of hunting quota is not available. The census and survey of ungulates in Pakistan not only provide information regarding status and distribution of different ungulate species in Pakistan but also authentic statistic of the population of ungulate species qualifying for Trophy hunting. Besides that special emphasis will be given on the study of biodiversity of inland wetlands of Pakistan. Due to long dry spell in previous years and intensification of agriculture has put the future of wetlands and their biodiversity at stake.

It is expected that this project will be helpful in implementation of Biodiversity Action Plan based on National Conservation Strategy. It will cover the study of biodiversity of hot spots in Pakistan like Balochistan and marine areas beyond Karachi coast which have not been given proper attention in the past.



Demarcation of land earmarked for Zoo-cum-Botanical Garden started

Zoo-cum-Botanical Garden, Islamabad is a mega project of Zoological Survey Department, Karachi. With the keen interest of Ministry of Environment, the

funds has been released within shortest possible time for the demarcation and erection of boundary pillars at site. Minister for Environment Maj. (R) Tahir

Iqbal, Secretary, Mr. Javed Zafar, Inspector General of Forests, Dr. Bashir Ahmad Wani, Joint Secretary, Mr. Khalid Masood and Director Zoological Survey Department Mr. Hamid Iqbal Javed, are the persons behind this initiative. In the previous two months Secretary Environment and Inspector General of Forests held several meetings with the officials of CDA and Survey of Pakistan to finalise the demarcation issue. In the second week of December, 2003 funds have been released to Survey of Pakistan to complete the task. Survey of Pakistan Party 8 under the supervision

of Maj. Tipu Sultan has started the work. Mr. Qayyum Nazar and Mr. Akhtar Munir of Zoological Survey Department are permanently attached with survey team to facilitate them in demarcation of the area. Hopefully the work will be completed in eight to ten week. After the completion of demarcation and erection of boundary pillars the construction of watcher huts, erection of main gate will be taken up. Meanwhile an international consultant on designing and landscaping of Zoo-cum-Botanical Garden will be engaged for further development.

A Training Course on Census and identification of Freshwater turtle conducted

After a long gap of about 20 years, Zoological Survey Department arranged a training programme from 10 – 13 December, 2003 for officers and officials of Punjab Wildlife Department, at Taunsa Barrage, district Muzaffargarh. Mr. Muhammad Azam, Zoologist and Mr. Shamim Fakhri, Field Observer of ZSD conducted the training course. The course was attended by Ch. Muhammad Afzal, Deputy Director Wildlife, D.G.Khan, Mian Muhammad Abbas, Assistant Director Wildlife, D.G.Khan, Ch. Muhammad Akbar, Assistant Director Census, Punjab Wildlife Research Institute, Gatwala, Faisalabad, Mr. Khurshid Azam, District Wildlife Officer Layyah, Mr. Muhammad Hussain, Supervisor Taunsa Game Sanctuary and other officials of Punjab Wildlife Department.

Theory and field work both were included in the training course. In theory a complete description, identification characters of all the eight species i.e. *Chitra indica*, *Aspederates gangeticus*, *Kachuga smithi*, *Kachuga tecta*, *Aspederates hurrum*, *Hardella thurgi*, *Lissemys punctata* and *Geoclemys hamiltonii* of freshwater turtles was elaborated with the help of pictures.



A glimpse of practical training of identification of turtle at Tunsra Barrage

Different census techniques used for census of freshwater turtle were also taught to the participants. Surveys of the adjacent area of Taunsa Barrage were

undertaken for practical identification and implementation of census technique in the field. The said course was concluded on 13th December and participants learned a lot about the taxonomy and census of freshwater turtle.

Natural Resource Damage Assessment study is in progress

Zoological Survey Department is involved in Birds, Mammals and Carcasses study to evaluate immediate effects of crude oil under the study titled “Natural Resource Damage Assessment” in collaboration with Pakistan Environmental Protection Agency (PEPA) under Ministry of Environment from October, 2003 till January, 2004.

The first phase of this study is to focus on mortality rate of marine fauna and assessment of damage. For the birds and mammals study, two surveys are being conducted in a week regularly. The purpose of bird study is to monitor their general distribution and abundance in comparison with both pre spilled information and non affected sites (control) on Karachi coast. These surveys will be useful in selection of indicator species for further studies (Phase II studies).

Surveys for marine mammals including vessel surveys are being undertaken to confirm their distribution within crude oil impact zone. The available information after oil spilled can be compared with pre spilled information or

information gathered from other non affected regions treated as control.



Oil spill affected Clifton Beach

Three regular surveys are being undertaken weekly to evaluate the immediate oil spill mortality by finding and collecting carcasses of different groups of animals in the oil spill impact zone. Carcasses have been transferred to laboratory for identification, measurement, weighing and necropsy to assess potential injury to various fish and other marine fauna and probable cause of death.

The results of the study will be disseminated as soon as the laboratory work will be completed.

Zoological Survey Department will launch its website

Zoological Survey Department is launching its website soon. Construction of website is almost near to completion with the help of IUCN. The website will provide information regarding vertebrate fauna of Pakistan alongwith its distribution. Besides that it will provide complete information about rare and

valuable collection of books, journals and periodical in the library of ZSD. It will also provide information about National Zoological Collection with the department for researchers and general public. The construction of website will definitely provide classified information on fauna of the country to the users.

NATIONAL PARKS – BIODIVERSITY HOT SPOTS

Hamid Iqbal Javed
Director

The first protected areas were established during the last quarter of 19th century. Industrialized countries of that time started to set-aside areas of particular scenic beauty or uniqueness for conservation. In USA, in 1872 Yellowstone National Park was established on a tract of hot springs and geysers in North Western Wyoming. The inhabitants of the Yellowstone National Park were driven out by the Army, which then manage the Park until 1916. The same idea for establishment of National Park have been conceived by the developing world and people's

participation in the management and conservation activities of the park had been completely negated. Decisions on which land and water areas of the country should be incorporated in the National Parks are made by state, which also independently design and execute park management plans.

Protected areas are the cornerstones of national and regional conservation strategies. They provide refuge for species that cannot survive in managed landscapes and allow the continuation of natural ecological processes, evolution

and where necessary ecological restoration. Many indigenous and local people are given a secure homeland by protected areas, which also help to conserve traditional, cultural and spiritual sites. We all benefit directly from the genetic material from the environment services protected areas provide: for instance a disproportionate amount of world's drinking water comes from forest protected areas. Marine protected areas and protected mangrove forests help to maintain coastal fishes. National Parks provide space for people to relax, practice sports and experience nature and wilderness. Most people also believe that we have an ethical obligation to prevent extinction caused by our actions.

An underlying assumption of national and international conservation strategies is that protected areas should remain protected in perpetuity. Investing time and effort in the selection and designation of protected areas only makes sense if there is a reasonable chance that they can be secured for the foreseeable future. This expectation is central to the whole concept of protected areas.

However there is a growing evidence that the values of many world's protected areas are under threat due to reduction of governments expenditure on environment and increasing pressure on natural resources. Risks are increased because many protected areas are not actually protected in any very real sense at all. A significant proportion have been declared by a government but never implemented: a phenomenon known as "Paper Parks", while declaration can itself help protect the area from some pressure and creation of corresponding

management plans, appointing staff, raising funds for management and building up relevant infrastructure takes far longer and we may hope that many of today's paper parks will be tomorrow's successfully managed protected areas.

There are now close to 8500 major protected areas throughout the world. Worldwide growth in National Park and protected areas has been relatively rapid over the last three decades. Protected Areas now exist in 169 countries and cover about 5.2% of earth's land. In 115 countries 1328 sites have marine and coastal elements within them. At least another 40,000 protected areas of various sorts have been established that do not meet the criteria set by commission on National Parks and Protected Areas (CNPPA). As the parks and natural resources are instrument for conservation of biological diversity and it is recommended that at least 10% area of each country must be declared as protected areas. Several countries have already included more than 10% of their area as protected areas. These include Costa Rica with 29%, Honduras with 22%, Bhutan with 22% Botswana and Panama with 18%, Guatemala with 16%, Nicaragua with 14%, Central African Republic with 12%, Malaysia, Benin and Tanzania with 11.5% each, Senegal with 10.8% and Rwanda with 10.4%).

How the concept of management of protected areas is changing with the recognition on wide spectrum of categories ranging from strictly protected nature reserve to managed resource protected areas. In the new concept protected areas should be managed in ways that sustain both local livelihood and conservation of nature.

Pakistan:

Very few protected areas were set-aside by the colonial authorities before 1947. At the time of partition in 1947, Pakistan was facing huge problems which needed to be addressed on priority basis. Wildlife and natural resource conservation was, understandably, a low priority inspite of West Pakistan. Wildlife ordinance was adapted in 1959. In mid 1960's. Federal Govt. felt the deteriorating state of wildlife and natural resources in the country and immediately commissioned the World Wildlife Fund (WWF) to carry extensive surveys throughout the country. The survey team pointed out that 34 mammals, 20 birds and 5 species of reptiles were in danger of local extinction. This team further pointed out that there was little actual wildlife conservation practiced. The survey team pointed out that except province of Punjab, no other province had its own wildlife staff and wildlife of these provinces was managed by the Provincial Forest Departments. This was the cause of mismanagement.

This investigators recommended the creation of protected areas in Pakistan to offer more comprehensive protection to significant habitats. They envisaged that these protected areas would also provide a haven for endangered species and reduce the alarming rate of attrition in wildlife population in general

(Mountfort, Guy & Duncan Poore, 1965).

On the recommendation of WWF survey Federal Cabinet approved a high points Wildlife Inquiry Committee (WEC) in 1968 under Ministry of Food and Agriculture. Keeping in view the initial report of WWF Wildlife Inquiry Committee forwarded eight recommendations emphasizing on establishment of protected areas in the country and their management on scientific basis, strengthening of Zoological Survey Department and establishment of Botanical Survey Department, development of specific curricula at the tertiary education level to provide university training to field staff, wildlife scientists and researchers and the adoption of new wildlife legislation.

Now all the provinces and territories administered by Pakistan have new wildlife conservation legislation between 1972-79. These new laws superseded and replaced all older laws including these inherited from colonial period.

In terms of article 22 of draft legislation drawn by WEC that Government was empowered to declare any tract of land to be protected area in one of the there categories i.e. National Park Wildlife Sanctuary and Game Reserve.

To be continued...