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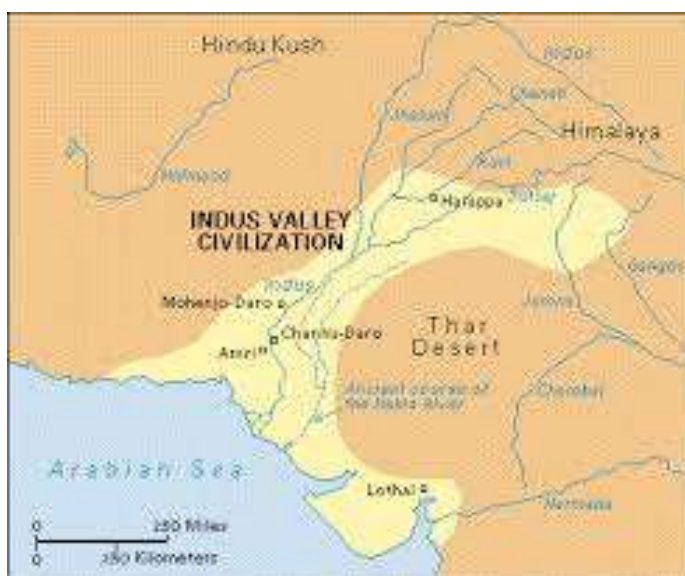


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Slow but steady process of defaunation in Pakistan



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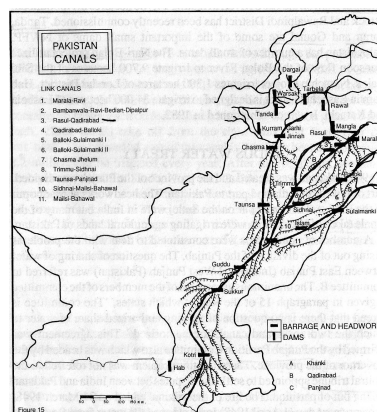
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Pakistan currently is in the grip of process of defaunation, started over more than 1000 years ago. The flora and fauna in the Indus Valley is disappearing so is the ecosystem (Khan 2006).

Continuously growing human population is pressing on, now aided by mechanical onslaught in reclamation and industrialization (Khan 1980). Vast areas in the plain are being cleared and consistently reclaimed to grow cash crops and establish industrial complexes to manufacture product to export (Khan 1990, 1991).

Deteriorating effects of urbanization on ecosystem

The subsoil bedrock prevents subsoil drainage, continuous irrigation activity for better growths and profuse canalization, since 1859, has raised subsoil water table, increasing soil moisture and salt concentration, resulting in waterlogging and salinity problem. Saline lakes now dot the valley landscape, with destruction of fauna and flora in Pakistan (See map 1 & 2).



The arthropods on which herps relish, are on the decline because of the poisonous sprays etc., couple withy mechanical ploughing has destroyed burrows and hideouts of the resident species, while irrigation water has flushed them out. The evicted animals struggle helplessly in the open, are at the mercy of enemies.

Within past few years, several species have been exterminated from the areas where once they abounded. Extensive interference in ecology has divided populations in small groups facing threat to be wiped out at any time. Presently, these factors are rapidly changing composition of ecosystems in the Indus Valley.

Destruction of life on land and inland waters

Beaches along coastline are visited by four species of sea turtles: *Caretta caretta*, *Chelonia mydas*, *Eretmochelys imbricate* and *Lepidochelys olivacea*, while sandy banks along rivers in the Indus valley by eight species of inland turtles: *Geoclemys hamiltonii*, *Hardella thurjii*,

Pangshura smithii, *P. tectum*, *Nilssonia gangeticus*, *N. hurum*, *Chitra indica*, *Lissemys punctata* to nest and lay eggs. The egg laying season is bonanza both for poachers and beasts, contributing decline in population of these turtles, only few survive to seed next generations (Das, 1991; Khan 2006).

1. **Plight of stray animals:** Flooding in silted rivers is a regular annual feature in rainy season. It washes turtles and other reptiles in plains for and wide. As water recedes, the stranded animals roam about in search of suitable habitat; several are crushed under unheeding, rather aggressive traffic. Several die of desiccation, some succumb to the mortal injuries sustained from playful adults and children who pelt them with stones.

Turtle nests are plundered and devoured by humans, jackals, foxes, mongooses, kites, falcons, etc., very few manage to survive. Turtle soup is a popular dish recommended by local physicians “*hakims*” cure for several human ailments (Vohora and Khan 1979; Das 1991).

2. **Pet trade:** Several nomadic tribes: “*sanyasies*”, “*gagras*” and “*Tapri-was*,” are actively participating in destruction and depletion of reptilian populations. They deal in pet trade supplying reptiles and other wild animals, are menacing natural populations throughout Pakistan (Minton and Minton 1964; Khan 1993). Pushed by greed larger species: *Varanus bengalensis*, *V. griseus*, *Sara hardwickii*, *S. asmussi*, *Trapelus agilis*, *Python molurus*, *Ptyas mucosus*, *Spalerosophis diadema*, *Naja naja*, *Spalerosophis species* etc., are hunted for skins, and body parts which are in great demand in local market, as native physicians use them in preparation of recipes for treatment of several common ailments (Konieczny 1969; Vohora and Khan 1979; Khan 1993, 2000).

Though legislations exists in Pakistan to criminalize trade in animals and animal products, still unlawful export of live reptiles and their products is playing havoc with natural populations in the ecosystem. Several rare species are being exported illegally to the western countries, where they are in great demand as pets. A friend in Belgium recently accosted a dealer in Holland who had several hundred specimens of *Eublepharis macularious*, 200 *Echis carinatus* and more than 100 *Eristicophis macmahonii* (a rare snake found only in the Chagai Desert, adjoining Iran and Afghanistan) and about 30 *Naja naja* from Pakistan, available for sale. The poor animals were in very bad health, were being kept under unhygienic conditions.

3. The scincid lizards (genera *Mabuya*, *Eurylepis*, *Novoeumeces*, and *Ophiomorus*) are particularly in great demand in local markets, bring high price from local physicians “*hakims*.” While preparing the fresh catch for market, the animals are eviscerated alive, dried, and sold as “sand fish or *reg-mahi*” an important ingredient of recipes known to be strong sex promoters (M. S. Khan and M.R Z. Khan 1997).
4. Body fat of several reptiles is said to have curative properties for several diseases and is widely used in preparation of balms and rubs. The body fat from *Sara hardwickii*, usually sold as “sander oil” is considered to have special aphrodisiac properties (Vohora and Khan 1979; Khan 1991). It is extracted from living lizards, spine of which is broken to prevent it from escaping, belly of living animal is slit and pressed on hot plate, the animal struggles helplessly as its body fat simmers out, succumbing to the heinous treatment (Khan 2000).
5. Throughout India and Pakistan *Sara hardwickii* and *Hoplobatrachus tigerinus* are widely used in educational and research institutions to demonstrate vertebrate anatomy, and are used in physiology experiments. The reptile is dugout from its burrow, while frog is caught from ponds and puddles. In Balochistan instead *Euphlyctis cyanophlyctis* and *Chrysopaa*

sternosignata are used. Local populations of these animals are being depleted, and from certain areas around Lahore and other parts of Punjab, it is rare in not exterminated (Khan 1990, 1991).

6. **Snakes.** Local venomous species: *Bungarus caeruleus*, *Naja naja*, *Naja oxiana*, *Echis carinatus*, and *Daboia russelii* are supplied in hundreds to health institutions in Pakistan, to extract venom for antivenin production. Catching them from nature, damage done to nature is not cared for. The snakes are kept without food and water, in congested pens under bad unhygienic conditions. Those succumbing to the conditions are thrown away or burned.
7. **Public prosecution:** The grim picture is painted by general public, which has no soft corner for wild animals. They kill snakes etc., on sight, following the philosophy “kill it, before it harms you.”
8. **Road kills:** Almost all local species of amphibians and reptiles are killed especially during monsoon rains, while crossing roads in night. Some data is presented in Khan (Table 1,2, 1990). Khan (2006) records several other species, mostly killed by playful drivers just for fun and for the amusement of the passengers, the vehicle is purposely maneuvered to crush the animal (Khan 1993). While in countryside, strength of a turtle shell is sometimes tested by pelting the animal with heavy stones or putting it under vehicles, crushing or is mortally injuring it. Because of these mounting antagonistic pressures, populations of herps is fast being depleted in Pakistan.

Save Pakistan wildlife!

Herps and other wildlife in Pakistan are under great pressure, needing immediate practical attention of conservationists to educate general public, regarding importance of these animals to preserve healthy ecosystem. Moreover, there is need to organize a force of honest law-enforcement personal for strict implementation of the conservation laws.

IUCN Red Data Book

Twenty four species from Pakistani herpetofauna are listed in IUCN Red Data Book (Table 12.2), following Pakistani species now qualify to be included in the list come under the definition of endangered species i.e., any species of plant or animal that is threatened with extinction.

List of threatened Pakistani amphibian and reptilian species IUCN Red Data Book.

AMPHIBIA

Hoplobatrachus tigerinus

REPTILIA:

Turtles and tortoises: *Dermochelys coriacea*, *Geoclemys hamiltonii*, *Kachuga tectum*, *Lissemys punctate*, *Argriemys horsfieldii*, *Geochelone elegans*, *Aspideretes gangeticus*, *A.hurum*

Crocodiles: *Crocodylus palustris*, *Gavialis gangeticus*.

Spiny-tailed lizards: *Uromastyx asmussi*, *Uromastyx hardwickii*.

Varanids : *Varanus bengalensis*, *Varanus flavescens*, *Varanus griseus caspius*, *Varanus griseus*

koniecznyi

Snakes : *Python molurus*, *Ptyas mucosus*, *Spalerosophis diadema*, *Xenochrophis piscator*, *Naja naja*, *Naja oxiana*, *Daboia russelii*

Note: following species from Pakistan herpetofauna are recommended for inclusion in IUCN listing of endangered species.

The way amphibian and reptiles are persecuted and mercilessly killed continuously in Pakistan, the IUCN needs to recommend all 223 species of herps found in Pakistan, add to the list. Need immediate attention: All genera of family Scincidae (*Eurylepis*, *Novoeumeces*, *Mabuaya*, *Scincella*, and *Ophiomorus*: Threatened by extensive use in health recipes as “*reg mahi*”).”

Threatened by disturbance in specialized habitat for pet trade, in high demand in the west, it is now a fashion to keep one as pet! *Tropicolotes persicus euphorbiacola*, *Enhydris pakistanica*, *Eublepharis macularious* and *Xenochrophis cerasogaster*:

Threatened by poachers: *Eristicophis macmahonii*, *Python molurus*, *Spalerosophis arenarius*, *S. diadema*, *Naja naja*.

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