

Moon Bear Phylogeography

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Since 1999, I have been conducting a study of moon bear (*Ursus thibetanus*) phylogeography in Southeast Asia. This work has been conducted in conjunction with the Royal Forest Department of Thailand, the Thai Society for the Conservation of Wild Animals, the national zoo and the Army of Laos, and the Wildlife Protection Office of Cambodia. During calendar years 2003 and 2004 my work has been significantly supported by the IBA Grants Program, for which I am extremely grateful.

Mitochondrial DNA has been extracted and sequenced in the laboratory of Dr. Lisette Waits at the University of Idaho. The sequenced portion of DNA includes the segment coding for proline and threonine tRNAs, plus parts of the "control region" and the cytochrome b gene.

Foci of my work are:

- To describe mitochondrial DNA variation in Southeast Asian moon bears.
- To correlate DNA haplotypes with geography.
- To use the above data to investigate Pleistocene and/or Holocene migrations and extinctions of these bears.

- To make my data available to authorities who may wish to release captive bears into the wild, and who understandably wish to match such animals genetically with local haplotype(s).

Hair samples for DNA extraction are taken harmlessly from captive bears for which capture locality data exist. Locating such bears is often difficult; there are many captive moon bears, but valid locality data are often lacking. Extensive travel has been necessary, sometimes to remote areas. Field work has been conducted in the summer months and/or in December, due to academic duties at other times of year. Data have been acquired for western Cambodia and for parts of Thailand and Laos. This summer samples were obtained from the area of the Phang Hoi Mountains of central Thailand and from the area around Pa La-U in peninsular Thailand/Myanmar.

A tentative hypothesis has been formed on the basis of existing data, which may or may not be borne out when the study is completed. Certain samples from

the western and eastern extremes of my study area may represent remnants of an ancient haplotype lineage that died out in the center of Southeast Asia during a glacial period (when monsoons virtually terminated, and the interior of this region became much drier). Two apparent lineages that today are widely distributed in the region's interior may have migrated south relatively recently, occupying areas previously inhabited by the original clade. Helpful in assessing this model could be greater availability of data for evolutionary "out-groups" of moon bears, from localities distant from my study area. Individuals who might be able to provide relevant hair samples or mitochondrial DNA sequences are urged to contact the author.

