

## Patuxent Wildlife Research Center

# Wildlife Toxicology of Legacy and Emerging Contaminants in India



Dr. Rattner in discussion with colleagues at Salim Ali Center



Large colony of herons, ibis and storks at Vandanthal Bird Sanctuary



Painted stork eggs collected from Koonthankulam Bird Sanctuary

- **The Challenge:** In India, there is great concern over the effects of environmental contaminants on wildlife. Pesticides are used extensively, with current use estimates exceeding 60,000 metric tons per year. Large quantities of DDT continue to be used for control of malaria and leishmaniasis, and dieldrin is used for locust management in arid zones. Many hazardous pesticides banned in the United States are used in India today (e.g. lindane, monocrotophos). The nonsteroidal anti-inflammatory drug diclofenac used for treatment of livestock resulted in the decimation of vulture populations through secondary poisoning. Only a few studies have examined contaminant residues in eggs and tissues of birds in India; however, research is currently underway to examine exposure in fish-eating birds in Tamil Nadu. A broader geographic perspective of exposure, and more importantly potential reproductive effects, is needed to assess pollutant threats to avifauna in India.
- **The Science:** It is clear that avian ecotoxicological data for India are limited in geographic coverage, number of species and chemicals analyzed. Sampling sites have been rather geographically restricted, principally along the east coast and in Keoladeo National Park. Efforts to launch a nationwide forensic investigations and monitoring exposure to organochlorine compounds, anticholinesterase pesticides, and other toxicants in birds need to be initiated. Funding is needed to support this collaborative research project and capacity building effort.
- **The Future:** Information on the status of fish-eating birds, their distribution and breeding population is very essential to plan any management action. Similarly, the data on the levels of legacy and contemporary contaminants in the eggs and food items will help understand the current status of contamination and impending threat to the fish-eating birds in India. Collaborations have been initiated with the Salim Ali Center for Ornithology and Natural History.