DNA Testing for Fish & Wildlife Conservation, Forensics and Management

Applications:

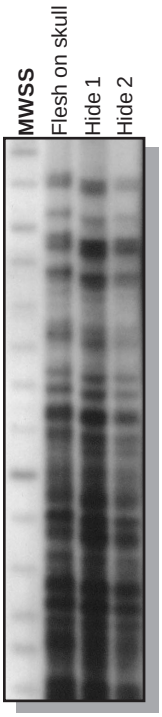
- Forensic Sample Matching
- Species / Subspecies Differentiation
- Stock Identification
- Parentage Verification
- Individual Identification
- Estimation of Genetic Variation Within Populations
- Estimation of Genetic Distance Among Populations

The DNA testing services offered by Therion International, LLC can be a valuable tool for Fish and Wildlife Agencies. Data on the genetic parameters within or genetic identity of populations/species are essential when designing programs for the conservation and management of fish and wildlife species. In addition, DNA-based evidence such as DNA profile sample matching or parentage verification is often a critical factor effecting the outcome of forensics cases concerned with illegal hunting activities, animal/meat trafficking and/or lost or stolen animals. Therion offers a full range of DNA-based testing services including DNA profile testing, DNA amplification and DNA sequencing. During the past two decades our laboratory staff has successfully analyzed samples from well over 400 species/strains of animals. Depicted on this fact sheet are examples of results produced from several studies relating to wildlife forensics, population genetics and stock identification.

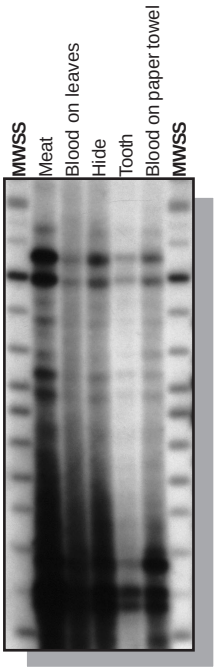
Wildlife Forensics (Sample Matching)

•Deer and Bear

Therion has provided critical forensic evidence for numerous cases involving alleged illegal hunting of wildlife, illegal sale of meat or animal parts, stolen animals/stock and the fraudulent misidentification of fish/meat species. Two cases involving the illegal hunting of deer and black bear are depicted to the left and right, respectively. In both cases DNA samples collected from meat or tissue found in the suspects' possession were tested to determine genetic similarity with forensics samples collected at the site of the kill. Note that in each case the DNA profile banding patterns matched across every sample collected by case investigators. Variation in the intensity or clarity of the banding patterns is due to the quality of the DNA obtained from the forensics samples.



Mule Deer



Results from a given set of forensics samples can be compared to database sample sets to allow for statistical analysis. In the vast majority of cases for which Therion has provided DNA evidence the courts have stipulated to the final written report. In the few remaining cases, the senior scientific staff of Therion was able to provide successful expert testimony.

Black Bear