

# U.S. Fish and Wildlife Forensics Lab

By Edwin Battistella

Who nailed a protected spotted owl to a park sign? Are ivory tusks from modern elephants or Ice Age mammoths? Are fish eggs sold as caviar actually from a sturgeon, or are they really from a paddlefish? Did a dried penis sold as an aphrodisiac come from a tiger or from some other animal? These are just some of the mysteries that end up at a very unusual laboratory in Ashland.

The U.S. Fish and Wildlife Forensics Laboratory is the world's only full-service police laboratory specializing in wildlife forensics. It supports the work of enforcement agents and inspectors who protect threatened and endangered species; who prosecute illegal hunting, poaching, and smuggling; and who investigate multi-billion dollar international black-market criminal enterprises trading in hides, skins, eggs, organs, and other wildlife specimens.

The 40,000-square-foot lab employs scientists and technicians working in genetics, morphology, pathology, criminalistics, and the analysis of electronic evidence. These men and women determine the causes of an animal's death and connect suspects to crime scenes. And while some work is the traditional forensic science of analyzing fingerprints, ballistics, and weapons, the lab also works extensively with blood, hair, feather, hides, and other biological material from animals.

In order to identify species and habitats, the lab maintains a large bank of tissue samples and has created a genetic database of wildlife DNA identifiers. Scientists use specialized techniques to identify species by comparing antibodies and blood proteins, or by using infrared spectroscopy or electron microscopy. One famous case early in the lab's history involved using electron microscopy to distinguish modern elephant ivory, which is illegal to trade, from ancient mammoth ivory, which can be traded.

In addition to the wide assortment of scientific equipment and samples, the Forensics Laboratory houses evidence and specimen collections and even a colony of flesh-eating beetles used to clean carcasses. Until 1995, the lab was also home to the National Eagle Repository, where the bodies of bald and golden eagles were stored before being distributed to Native American tribes who use them for religious purposes.

The Forensics Laboratory also helps identify illegal logging, which has an impact on the environment, funds organized crime, and hurts legal timber management. The lab analyzes the unique chemical fingerprints of trees. Using a mass spectrometer, investigators weigh the molecules of an unknown wood and match them to reference specimens in the lab's database. A thirty-foot mobile lab, called The Woodshed, is used to travel to seaports and airports where investigators determine species of protected timber to make the legal timber trade more efficient and to stop the illegal importation of protected trees.

The U.S. Fish and Wildlife Forensics Laboratory has been headed since its inception by Ken Goddard—who is also a successful writer of crime novels—and has grown from an original staff of ten to about thirty. The lab received accreditation status from the American Society of Crime Lab Directors/Laboratory Accreditation Board in 1997 and a year later became the official crime lab of the Wildlife Working Group of Interpol and the Convention on International Trade in Endangered Species. The lab is not open to the public.

The lab officially opened in 1989 in a 23,000-square-foot building on the Southern Oregon University campus. In 1991, it was named the Clark R. Bavin National Fish & Wildlife Forensic Laboratory. A 17,000-square-foot addition was completed in 2008, with expanded and upgraded labs, an airtight bug room for the flesh-eating beetles, and an outdoor forensics garden that doubles as its homeland security barrier.

## Sources

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