

Animal Investigators: How the World's First Wildlife Forensics Lab is Solving Crimes and Saving Endangered Species

By Laurel A. Neme

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Review by Brett Bannor, Atlanta, Georgia

In *Animal Investigators*, author Laurel Neme pulls no punches; she gives names. Oh, she makes up aliases for a few undercover investigators all right, but when in the chapter entitled "Buyer Beware" she notes that a long time director of a major American zoo purchased Amazonian tribal art that contained illegally exported parts from endangered species—including feathers from harpy eagles—she identifies the man and his zoo. I'm not going to repeat the name; if you don't already know who it is you'll have to go to the source to find out.

Ratting out wayward zoo directors is not the focus of the book, of course. *Animal Investigators* is not so much the story of who gets caught in illegal wildlife trafficking, but how they get caught. Neme's volume is a description of the people and processes at work at the United States Fish and Wildlife Service (USFWS) Forensics Laboratory in Ashland, Oregon. The book's introduction spells out nicely just how the lab came into existence in the 1980s. It's not surprising that a special wildlife forensics lab was necessary, because human crime labs simply couldn't devote time to examining ivory, claws, and feathers to see if wildlife smuggling had occurred; after all, the human labs were busy trying to solve murders, as shown on about a half dozen current television dramas. Also out of the question was taking wildlife evidence to museums or universities for the experts there to examine. A solid forensics case depends on agents being able to defend in court against charges that evidence could be tainted or contaminated, and to successfully make such a defense, required that animal parts not be sent to outside contractors. No, the USFWS needed its own forensics unit so that there would be an unbroken, recorded chain of custody to satisfy the legal process.

Animal Investigators focuses on three separate matters handled by the forensics lab. The first section of the book deals with walrus hunting off Alaska's west coast. This is followed by a consideration of the problem of bear gallbladders sold on the black market for medicinal use. Finally, the last third of the book focuses on the Amazonian artifacts, which often contain feathers from scarlet macaws, claws from jaguars, and other parts from protected wildlife.

I confess that in the walrus account, I found the nuts and bolts of forensics—how the investigators overcame the problems inherent in conducting necropsies of bloated carcasses on the beach—far less engaging than the discussion of the legal and sociological matters involved in walrus hunting. Specifically, the Marine Mammal Protection Act allows the native coastal cultures of Alaska to kill walruses as long as they aren't "wasteful" in their hunting practices. In other words, the local tribes can take walrus tusks to make artifacts, and even to sell them—but they cannot simply kill a walrus and only take the tusks; they are required to procure enough meat, blubber, and organs from the big animals to satisfy a "non-wasteful" standard. The book notes that there were issues defining exactly how much of the carcass needs to be harvested so that the taking can be considered a subsistence hunt. This matter was made particularly vexing because different groups of Native Alaskans differ in

their use of a walrus, so that, for example, while one village prized the livers as food, another did not; one village valued flippers, another did not. The take away lesson of the walrus section was, for me at least, less about forensics than about the importance of communicating with all parties involved in complicated wildlife issues.

The second portion of the book is essential reading not just for anyone interested in forensic science, but also for those passionate about bear conservation. As commonly known among wildlife protection enthusiasts, killing of bears is rampant for their gallbladders, or more precisely, the bile contained in these organs. A main point to retain from the bear discussion in *Animal Investigators* is that the medicinal value of bear bile is not just an old wives' tale—the substance actually is anti-inflammatory, anti-microbial, and fever-reducing. Neme notes that the chemically synthesized form of bear bile acid is used to dissolve gallstones, and to treat cancers and liver cirrhosis. Obviously, since the extract of *Ursid* gall bladders is effective for a variety of ailments, one cannot hope to end the bear slaughter in the same way we might if it was pure snake oil, that is, by eradicating superstition through better education. So conservationists are up against that—but as the book thoroughly details, at least the methods developed by the scientists in the USFWS forensics unit are helping to prosecute violators of the law.

The problem facing the forensics folks was simple, the solution complex. If someone is arrested with a stash of gallbladders, how can it be determined with certainty that the organs come from bears? The gallbladders of pigs are quite similar, and while a seller of pig gallbladders might be guilty of fraud if he represents them as coming out of a bear, there is in such case no illicit taking of bears involved, which is the forensics lab's main concern. One might think a standard DNA test would determine whether the part is pig or bear; alas, such tests don't work because of the corrosive nature of bile. Neme painstakingly describes how the lab employed techniques known as thin layer chromatography (TLC) and high performance liquid chromatography (HPLC) to separate chemical components and highlight acids peculiar to bear bile. Such tests could determine whether a gallbladder was from a bear or not, with sufficient accuracy to satisfy scientific scrutiny and—more important to the topic of the book—also reliable enough to withstand any challenges of an accused's attorney. (I should mention that for purposes of the discussion here, we're assuming bear gallbladders gathered, sold, or processed illegally—but as Neme makes clear, this is a convoluted issue because of farmed bears and those taken legally from the wild.)

Already I've mentioned a bit about the book's third section, the illegal exports of harpy eagle feathers and other wildlife parts from Brazil. Mostly this section follows a long term investigation and subsequent arrest of a Florida man who imported an astonishing amount of contraband goods, but I'd rather mention a brief anecdote Neme writes about a similar case, as it demonstrates the vigilant nature of USFWS agents—and the foolishness of some of the people they take down. In March of 2003, the co-owners of an upscale art gallery in Chicago proudly showed off their collection of ivory carvings, feathered artifacts, and other items for an article in the home and garden section of the *Chicago Tribune*. As luck would have it, a USFWS agent saw the article and apparently the text and photos convinced him that these items were likely not legal imports. The next month, the gallery owners returned from a buying trip to China; when customs agents at O'Hare Airport searched their baggage they found still more ivory carvings and a comb made from a sea turtle shell. Two days later, a search of their home turned up artifacts containing parts of threatened and endangered species having a value of one million dollars. Prosecutors called it “one of the largest seizures ever in the U.S. of such artifacts.” One guesses that if the art gallery owners had it to do over again they would behave as many Chicago politicians do, and when the Tribune called said “No comment.”

Laurel Neme is, according to the biographical sketch on the back of the book, an environmental journalist rather than a scientist. I mention this because the animal care professional reading this book will note a few zoological misstatements here and there. Discussing Amazonian fauna on page 132, she refers to the night monkey as “a white-haired ape” as though there is no difference between

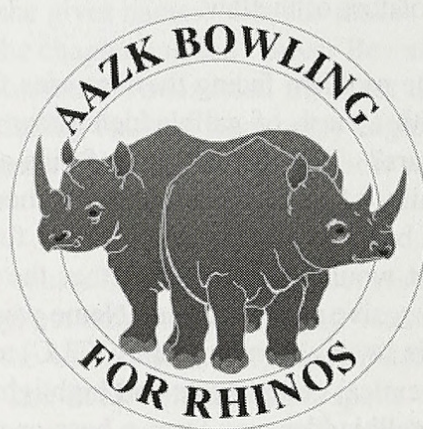
a monkey and an ape. She also writes on page 156 that “most birds possess about five thousand feathers”, a statement that had me rushing to the nearest ornithology text to confirm that swans have over 25 thousand feathers and most songbirds have between two and four thousand. Alas, Neme’s odd feather tally carries no citation, so who knows where she got her information. Not to dwell, but this book is put out by an academic publisher rather than a general interest publisher, so it is especially disappointing to find such errors creep into the text.

Overall, however, *Animal Investigators* tells an important story well. There is an appalling amount of illegal trade in wildlife parts—the book notes, for example, that a shipment of 6.5 tons of contraband ivory was seized in Singapore in 2002—and it is wise for animal care professionals to know the widespread nature of the problem and the laudable efforts of the people trying to stop it. Writing this book is a feather in Laurel Neme’s cap—and I’m sure that unlike naughty zoo directors, the feather won’t be from an endangered harpy eagle.

A Message from the International Rhino Foundation

Every single day, another rhino is killed in South Africa...

Poachers are exterminating rhino after rhino, solely for their horns. Rhino horn, made of keratin (the same material that makes up your hair and fingernails), sells on the black market for prices equivalent to diamonds and gold, for use in traditional Asian medicine. As the demand for rhino horn in China, Vietnam, and other Asian countries increases, poaching rates in southern Africa have soared sky high. More than 400 rhinos have been lost this year in South Africa alone.



Responding to high demand and high prices, poaching gangs are becoming more sophisticated, more vicious and much harder to catch. South African authorities estimate that only 3% of rhino poachers are convicted – they are literally getting away with murder. But there are thousands of dedicated, passionate rangers in South Africa and Zimbabwe, standing in between the rhinos and the poachers.

Try to imagine that you are one of the brave rangers committed to protecting these beautiful animals. You’ve agreed to spend weeks at a time on patrol in the bush, away from your home and family, to monitor rhinos and to protect them from poachers. You’re tasked with tracking and arresting poachers, often without even basic equipment like binoculars, radios, GPS, flashlights, or tents. And you’re facing well-organized criminal gangs armed with machine guns, sophisticated animal tracking equipment, and even small planes.

It’s an unbelievably difficult and dangerous job, and yet, every day, hundreds of rangers in Zimbabwe and South Africa put their lives on the line to protect rhinos – and they need our help.

The project is simple. The impact is big.

The poaching losses in Africa are heartbreaking. Every day, we see pictures of rhinos with their horns cut off, left to bleed to death on the ground. But there is hope. Rhinos are resilient, and the tireless rangers working to protect them will not give up. With just a little help, we can paint a different picture – of healthy rhino moms with newborn calves, and of rhino populations growing and spreading out across southern Africa.

2011 has been a tough year for rhinos, but 2012 doesn’t have to be. Help us make 2012 “The Year of the Rhino,” and create a safer world for African rhinos.



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