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online edition

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published by the Wildlife Conservation Society

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FEATURE STORY

TURTLE TRIAGE

By Sharon Guynup

Uniting to staunch the greatest loss of reptiles since the demise of the dinosaurs



JOHN L. BEHLER

On December 11, 2001, Hong Kong customs officials made a gruesome discovery aboard a trade ship arriving from Macau. Cardboard and Styrofoam boxes inside four 20-foot containers were crammed full of turtles, many with fish hooks still in their mouths—10,000 turtles in all. Dead animals were mixed among the living, and many of those still alive were sick or severely dehydrated. The turtles on the bottom were completely smashed by the weight of those piled above.

Officials confiscated the survivors and housed them at Kadoorie Farm and Botanic Garden in Hong Kong until they could be airlifted to the United States and Europe and placed with approved organizations and breeders. Twelve turtle species were rescued that day—among them, some of the world's rarest turtles, which are protected under CITES (Convention on International Trade in Endangered Species): the river terrapin, the Asian brown tortoise, the painted terrapin, and the Malayan box turtle. The animals were smuggled by air from Singapore to Macau, then shipped to Hong Kong. They were headed for dining tables in China, where demand for turtle meat has led to such heavy pillaging of wild populations that freshwater turtles and tortoises are now rare or nearly extinct in many regions of Southeast Asia.



The shipment would have fetched over U.S. \$400,000 in Chinese live animal markets. Dozens of chelonian (turtle) species from as far away as the United States and Madagascar are available in these markets, sold mainly for food, with softshell turtles being the preferred meal. Turtle eggs are also coveted. In addition, chelonians are sold widely for use in Traditional Chinese Medicine (TCM), and they are purchased as exotic pets or as religious objects to release into temple pools.

Since 1990, growing industrialization and reduced trade barriers have brought new-found cash to China, allowing many more of its citizens to afford delicacies such as turtle. The unprecedented demand has created the so-called "Asian turtle crisis." Experts warn that if the current trend continues, many of the world's turtles will be eaten into extinction.

"Tens of tons of live turtles are shipped every day to the major Chinese markets," says John Behler, curator of herpetology at the Wildlife Conservation Society (WCS). Many are smuggled illegally from faraway countries. They arrive by truck packed in



crates, concealed beneath frozen fish, in the trunks of cars, on the backs of motorcycles, carried in luggage on public buses—any way that works, says Peter Paul van Dijk, an executive officer of the Swiss-based World Conservation Union's (IUCN's) Tortoise and Freshwater Turtle Specialist Group. They are often transported under the worst of conditions, injured, crushed, overheated or frozen, dehydrated, or starved to death.

For the most part, enforcement of CITES regulations is ineffective, and smuggling is a profitable business. Most turtles and tortoises sell for U.S. \$1.30 to \$32 per pound—in a region where the average income amounts to a few hundred dollars per year. Peddling of the most prized species nets as much as a lucrative drug deal: One rare, three-striped box turtle from China and Vietnam can fetch \$2,000 or more on the black market. Traditional medicine made from the underside of this turtle's shell is believed to cure cancer.

Asia is home to one of most diverse populations of chelonians in the world—some 90 species—but, today, it is often easier to find many of the world's turtle species in Chinese markets than in their native habitats. As many as four Chinese species may already be extinct in the wild, according to experts. The IUCN lists more than 75 percent of all Southeast Asian turtles as threatened.

Based on national trade data compiled at a December 1999 turtle conservation workshop in Phnom Penh, Cambodia, the Asian turtle trade in 1999 amounted to an estimated 14,000 tons, or about 13 million animals. The number is thought to have held steady since then.

"There is no order of vertebrates under as much pressure as turtles," says Behler. "Turtles saw the great dinosaurs come and go, and now they're facing their own extinction crisis." Turtles have lived on Earth for approximately 210 million years.

Nearly all of the world's 300 species are being harvested, and many of those species have never been studied or surveyed in the wild. Little is known about their basic biology or habitat needs—information that is crucial to protecting them. It is known that depleted turtle populations do not rebound quickly. These long-lived animals mature late and lay relatively few eggs. They are not adapted to so efficient a class of predator as humankind. Adding to this dire situation is a wider concern: the effect on entire ecosystems. "You cannot collect millions of turtles from China and Southeast Asia without great impairment to the ecology of their wetland environments," explains Behler.

In Asia, people traditionally regard turtles as symbols of longevity, stability, and strength. They are commonly pictured on temple walls. In Chinese mythology, the tortoise is one of four celestial beasts that was present at the creation of the universe. Turtles play an overtly sexual role in many myths and folktales, which explains why turtle products are favored as aphrodisiacs.

Asian Buddhists believe that releasing a turtle in a temple pool—thereby preventing it from being eaten and saving a life—earns karmic merit in the next life. Some Chinese people rely on tortoises for spiritual cleansing or to manufacture good luck, scribbling wishes or pious phrases on their shells before releasing the animals. Unfortunately, this rich, venerable cultural significance has not shielded turtles from exploitation.

Turtle meat is not only an important source of protein in the region, but also a dish served to celebrate special events, much like a Thanksgiving turkey. Softshell turtles are prized as the main ingredient in an expensive gourmet soup. "In China, eating turtle is an ancient, time-honored tradition," explains Anders Rhodin, director of the Chelonian Research Foundation in Lunenburg, Massachusetts. Giving a turtle to a respected relative is like giving an American aunt a box of Godiva chocolates.

And in the past decade, hundreds of restaurants catering to exotic tastes have sprung up from Beijing and Kuala Lumpur to Bangkok and New York City. In many of them, on the way in, diners can choose their turtle from among a menagerie—much like selecting a lobster at a seafood restaurant.

But it is impossible to draw a firm line between the consumption of turtles as food and as medicine: People in many parts of Asia make dietary choices based on the medicinal value perceived to be

inherent in a particular food and certain foods are used to treat medical problems. "When we're sick [in America] we go to the drugstore. In China, they also go to a traditional medicine practitioner," says Bruce Weissgold, a senior CITES specialist for the U.S. Fish and Wildlife Service.

TCM ascribes a range of curative powers to the meat, blood, organs, shell, and other parts of a turtle. Purportedly, turtle products can purify the blood, speed difficult childbirths, offer a tonic for kidney ailments, eradicate various diseases from rheumatism to cancer, and imbue overall vitality. It has been reported that many East Asian athletes ingest turtle blood to boost their performances. A practice that became widespread after it was revealed that long-distance runner Wang Junxia, who cut 42 seconds off the 10,000-meter world record in 1993, had faithfully consumed TCM cocktails of turtle blood and cordyceps mushrooms as part of her training regimen.

The turtle trade in China originated with local species, but when most of the Chinese species had all but disappeared, it reached farther. "The trade is like a virus," says Douglas Hendrie, Asian turtle conservation coordinator for WCS and the Cleveland Metroparks Zoo. "First it hit China. Then it spread outward. Now the crest of the infection is in Myanmar, Cambodia, and Indonesia."

Typically, collectors are poor villagers or fishermen who sell their catch in nearby markets. Others supply small-scale dealers who funnel turtles into sophisticated trade networks. Big-time smugglers often follow the same routes as drug and weapon smugglers, relying on clandestine border crossings where bribery is welcome and enforcement is lax, according to TRAFFIC, an international agency that monitors trade in endangered wildlife. Based in the United Kingdom, TRAFFIC has branches across Asia.

Not all of the trade is illegal, however. Turtles are legally shipped to China from the United States in large numbers, as few laws, other than restrictions on minimum size, exist to govern the import and export of non-endangered turtle species, says Weissgold. Red-eared sliders are widely farmed in the U.S., and several million are exported annually, he reports.

In June 2001, China imposed a ban on turtle imports from Cambodia, Indonesia, and Thailand, and on the sale of internationally protected species. "I think China's starting to take this situation seriously," says James Compton, regional director of TRAFFIC Southeast Asia. "Whether it's because of international reputation, the realization that there's not an unlimited supply, or now the emergence of diseases, I don't know."

Globalization, international travel, trade in wild animals, and other human activities are causing people, livestock, and wildlife to come in contact like never before. That contact increases the risk of disease transmission. Since 1980, the World Health Organization has identified more than 35 emerging infectious diseases, including severe acute respiratory syndrome (SARS), which first broke out in China's Guangdong Province in November 2002. SARS infected an estimated 8,000 people, killing 774 in 27 countries before health workers brought the disease under control the following June. SARS may have passed to humans through civets (relatives of the mongoose), which are bred for food markets in China.

During the SARS outbreak, the Chinese government announced a ban on the hunting and sale of wildlife. That ban has not been well enforced. However, in 2003, officials confiscated over 800,000 animals from markets and restaurants and arrested more than 4,000 people for selling protected species, according to TRAFFIC. Those found guilty of trading endangered species in China can be sentenced to 10 or more years in prison.

The SARS outbreak has prompted some changes. Some wildlife markets are now smaller, and Chinese officials and international organizations have been monitoring markets more frequently. The China Cuisine Association has requested that their member restaurants and chefs no longer buy, slaughter, store, or serve wild animals as food. Trade enforcement has also improved slightly.

Circuitous trade routes, on the other hand, make the rules easy to circumvent. Middlemen in Malaysia often illegally arrange to relabel Indonesian shipments on flights bound for Laos or Vietnam; from there, the contraband is trucked into China. Between four and ten tons of turtles are funneled through Malaysia each week, says Behler. Singapore and Thailand are also key transit countries. Along the way, documents declaring country of origin or contents are altered or forged to feign compliance with CITES.

In many countries, what's inspected is limited to what's declared. "Mislabel, or mix in other stuff, and there's a good chance you'll get it through," explains Weissgold.

It's also extremely difficult for inspectors to identify restricted species. "To most border guards, a turtle is a turtle," says Behler. To help wildlife officers identify at-risk animals, herpetologists have compiled field guides in many languages. However, even armed with proper information, regulatory agencies and wildlife authorities too often lack the staff to stem the multimillion-dollar trade, turning conservation laws into paper tigers. "It's like shooting rubber bands at a charging rhino," adds Weissgold. But new

conservation laws in Vietnam and Myanmar are steps forward, says van Dijk. Hendrie concurs, saying that enforcement is better than it was five years ago. "In the mid-1990s, smugglers simply wouldn't get caught. Now, that's not the case."

Across the region, authorities are making more frequent seizures. In November 2001, customs officials at Bangkok International airport confiscated 2,000 rare and protected Malaysian turtles. In July 2002, Singapore airport officials apprehended a man smuggling 1,092 endangered star tortoises into the country from India. That same summer, customs officials at Jakarta's international airport intercepted more than 1,500 Indonesian turtles. And in March 2004, Vietnamese authorities stopped a truckload of 900 turtles in Da Nang en route to the border with China.

When the seized turtles are healthy and can be released into suitable habitat, they are returned to the wild. But hundreds of turtles cannot be set free to overrun national parks, and it does little good to release turtles in places where they would simply be recaptured.

Biologists hope that with better law enforcement and campaigns to educate the public about the plight of turtles, patterns of consumption will change. "But if not, we need to find a sustainable way of meeting the demand that takes the pressure off wild populations," says Rhodin. He believes part of the answer is turtle farming, which is becoming more widespread in Asia. "In the last couple of years there's been a shift: One-third to one-half [of traded turtles] now originate from farms," states van Dijk.

Farms can take pressure off wild populations, but only if breeding stock doesn't come from the wild and the farms are not fronts for illegal trade. Turtle farms raise other problems, too, according to Elizabeth Bennett, director of WCS's Hunting and Wildlife Trade Program. "Many of the turtle farms are for species outside their native ranges. They are exotics," she says. For example, in Malaysia, farms mostly breed Chinese softshell turtles, *Pelodiscus sinensis*, an exotic species there. "It breeds twice as fast, is more aggressive than the natives and is becoming an invasive species across the country, displacing native species in local rivers," explains Bennett.

The turtle crisis has ignited emergency conservation initiatives. To save the rarest species, the IUCN's Turtle Survival Alliance has established dozens of captive-breeding centers across the U.S. and Europe. These "assurance colonies" target the most imperiled species, including 19 critically endangered Asian species, and are populated by turtles confiscated from both the illegal trade and food markets. In the event that a species' wild population disappears, animals from these colonies could be reintroduced into former habitat. Some species, like the great Asian river turtles and softshells, will not survive without heroic intervention.

Critics of captive breeding charge that more effort should be placed on conserving turtles in nature because reintroduction is never the best option. "I think captive breeding is an addendum to a global turtle conservation plan—a supplementary activity for desperate cases," says Peter Pritchard, director of the Chelonian Research Institute in Oviedo, Florida. The long-term goal is to have viable populations in the wild.

Toward that end, conservationists are trying to develop ways to protect wild animals in their native habitats. "We need to determine what countries have what left—and what we need to do to save them," says Weissgold. "It's a triage situation now."

Experts say that Southeast Asian countries must improve enforcement of existing regulations and upgrade laws that are inadequate. Customs and wildlife personnel need better training. And there's a push for CITES to list all Asian turtles as regulated species and upgrade the rarest to Appendix I, which prohibits all international trade. Simplifying CITES enforcement would help protect all species that are being eaten into extinction.

On another front, TRAFFIC and other organizations are trying to harness fears about SARS and other diseases to reduce the demand for wild meat.

The demand for turtles is not going to go away. "There's cause for grave concern," says van Dijk. "But we've made progress—and the prospects are not as bleak as they were a few years ago. There's greater awareness among lawmakers and officials in Southeast Asia and improved legislation in some countries. There is hope."

Sharon Guynup is editor of State of the Wild, a WCS book series. The first volume will be published later this year.



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