

At 10:45 a.m. on Tuesday, November 27, Kenneth Doudt of Redsport was attacked and bitten while surfing. The attack came as Doudt lay on his surfboard facing seaward, about 100 yards from the beach in 12 to 15 feet of water. The shark seized the board and Doudt in its jaws.

After a bit of shaking, in which Doudt suffered massive wounds to chest, abdomen, and left side, the shark sank into the water and Doudt came free. He swam to his board and came to the beach on the next wave where friends helped him till emergency crews arrived.

After surgery, Doudt made a remarkable recovery and was released from a Portland hospital several weeks later. It was reported he will suffer little permanent impairment from the ordeal.

Following the attack, biologists took measurements of the bite on the surfboard which measured 12¾ inches across and 8¾ inches in from the board's edge. Shark experts confirmed that the attack was made by a great white shark (the species of *Jaws* fame) and estimates of its size range from 12½ to 16 feet.

The attack was believed to be one of territorial defense rather than feeding. White sharks apparently establish temporary territories covering a several-mile area where they may stay for several days to a week and sometimes longer before moving on. They will drive all other large animals from one of these temporary homesites.

Although not abundant, white sharks have been reported as far north as Alaska. Some may be in the Oregon coastal area off and on all the time but during the summer many travel northward in the warmer tuna waters offshore. The warm currents usually break up in the fall, and upwelling of deeper, colder water inshore breaks down, leaving warmer water along the beach from September to December. This, combined with fall salmon runs entering coastal rivers and the seal population in the area, may lure white sharks to the coastal zone.

Only one other confirmed shark attack is recorded off Oregon's shores. It occurred several years ago off the mouth of the Umpqua River. In that attack a large shark bit away the rear part of a surfboard, but its rider was unharmed—*Oregon Wildlife*.

Aspen as Cattle Feed

The package of meat in the supermarket looks like any other, except for the label: U.S. prime aspen-fed beef.

"Harrumph," the suspicious shopper says. "Probably need a saw to cut it."

Wrong. In fact, the beef cooks up juicier, more tender and flavorful than traditional corn-fed meat.

You won't find the wood-fed beef in the markets just yet. But it may not be long. Following extensive tests, the U.S. Food and Drug Administration has recently approved the use of aspen as an animal feed.

In Bigfork, Minnesota, farmer Chet Cook shovels pellets of aspen into feed troughs. His beef cattle see it's dinner time, mosey across the frozen barnyard, and begin gobbling up the wood.

"They can't get enough of it," Cook says with a satisfied grin.

The aspen has been pulverized into a sawdustlike consistency, dried and densified into chewable pellets. The aspen alone has only a small protein content—about 2 percent—not enough to maintain an animal. However, it can be combined with alfalfa or other grasses to produce a higher protein feed.

Steaks from beef cattle fed the aspen-alfalfa blend in University of South Dakota tests several years ago were sampled by a panel, said the university's Les Kamstra, one of the leading researchers in the field.

"Surprisingly enough, it had a higher rating than normal (corn-fed beef)," he said. "It was juicier, more tender and tasty than corn-fed. The test panel liked the wood steaks best."

Livestocks like the wood so well that their daily intake had to be restricted during tests. This should come as no surprise, say Kamstra and others who have worked with the aspen.

"We should have known this because wild animals have eaten aspen since the beginning of time," said Cook, who is also a small-scale logger. He noted that deer and grouse both thrive on aspen bark and buds.

Ted Niskanen of the Minnesota Department of Economic Security said farmers in Europe cut brush and trees for use as feed during droughts or other hard times when conventional feeds were unavailable.

But why would a farmer want to feed his cattle aspen instead of hay or other conventional feeds?

Cost, the men say. Kamstra believes aspen pellets can be produced cheaper than hay from material that, until now, was wasted. Sawdust from sawmills and tree tops and branches left behind during logging operations—which are 30 percent of the tree—have simply not been utilized, Cook said.

Niskanen and others admit the immediate future of wood pellets may be as a fuel rather than a feed. The same pellet that cows munch burns like coal in furnaces. But if costs of other feeds increase, or their availability decreases, say, from a drought, aspen could become a lucrative alternative, Niskanen says.

This is one of the reasons the testing of wood fiber as a feed began in South Dakota, Kamstra noted. "There was a ter-

rible shortage of hay in 1976," caused by a drought, he said.

In addition, the South Dakota Department of Game, Fish and Parks began extensive cutting of mature aspen forests in the state to improve wild game habitat. A use had to be found for all wood. Thus, Kamstra's program began.

Mature trees can be ground up in chipping machines, then pulverized, Kamstra said, utilizing the entire tree. However, tests have shown there is much more protein in immature trees and limbs. Niskanen believes farmers may someday plant and harvest forests of small, pole-like aspen trees.

"Because juvenile growth has the highest level of nutrients, we will see plantations of forests for cattle feed," Niskanen predicts.

"It's going to cause a new use of poor quality farmland. And there will be a more complete utilization of the biomass, rather than leaving the tree tops out there," he said.

Mechanized harvesting equipment will lower costs and facilitate such operations, he predicted.

Meanwhile, Cook has been feeding his cattle blends of aspen off and on since 1976, and has actively encouraged development of the budding industry, despite skepticism and criticism.

"We were laughed at. People said we were out of our tree," Cook said, straightforward.

"It's no joke now."—Doug Smith, Duluth News-Tribune

Congress Considers Future of Three Endangered Species

Whether or not a butterfly species and two plant species will be allowed to survive is a question now being considered by Congress. The three species, classified as endangered by the U.S. Fish and Wildlife Service, receive protection under the Endangered Species Act of 1973. All are known only from California's Antioch Dunes. The dunes represent a unique, now-decimated habitat which borders the San Joaquin River in Contra Costa County, east of San Francisco Bay. Formerly occupying an area of about 500 acres, only about 80 acres remain, and much of this has been substantially altered.

The endangered Antioch Dunes butterfly, known as Lange's metalmark (*Apodemia mormo langei*), is a small, multi-colored species, belonging to the Riodinidae family, which flies during the late summer months. As a caterpillar, it feeds on only one species of plant, a buckwheat (*Eriogonum latifolium* var. *auriculatum*). The total Lange's metalmark population has recently been estimated at about 400. Sand excavation and rototilling has reduced the butterfly 17



Lange's metalmark (*Apodemia mormo langei*). Photo courtesy L. Orsak.

population directly and through destruction of the buckwheat plant.

The two endangered Antioch Dunes plants are the Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*) and the Antioch Dunes evening primrose (*Oenothera deltoides howellii*). Both were placed on the Endangered Species List in 1978. Approximately 1,500 plants of the cream-colored primrose survive. The condition of the yellow-blossomed wallflower, with only about 250 individuals left, is even more precarious. Both plants received publicity in 1979 when they were portrayed on the "endangered flora" U.S. commemorative postage stamp series.

These endangered organisms can survive only if the undeveloped dune remnants are preserved, say conservationists. The Fish and Wildlife Service has secured options to purchase the two remaining parcels, which total 56 acres. Purchase price is approximately \$2.2 million. The area is prime industrial land, accounting for the high purchase price. Once obtained, the remnants would become a national wildlife refuge. Conservationists point out that attempts could then be made to increase populations of the three species so they could eventually be removed from the Endangered Species List.

Acquisition of the Antioch Dunes cannot proceed, however, without Congressional approval. Monies must be appropriated from the U.S. Land and Water Conservation Fund. In view of the continuing decline of both butterfly and wallflower populations, conservationists are anxious to see that the bill to appropriate funds is not held up in Congress and is passed prior to the expiration of the purchase options. If the purchase is not approved, claim conservationists, the dune parcels will almost certainly be developed or severely altered, resulting in extinction for the endangered species.

The Lange's metalmark is only one of 18 eight protected United States endangered

or threatened butterflies. Six of these inhabit California, a region of increasing human population and diverse habitat. All these butterflies generally inhabit unique and diminishing habitats which are home for other very rare species.

One such butterfly, the El Segundo blue (*Euphilotes battoides allyni*), is a Los Angeles resident. It survives at only two locations. One is a 2-acre parcel owned and protected by Standard Oil of California. The species flies in greater abundance at the second site, part of the Los Angeles International Airport.

Motors Banned in Grand Canyon

After 10 years of public involvement and three of research, the National Park Service (NPS) has issued its management plan for the Grand Canyon section of the Colorado River. The plan, which begins a five-year phase-out of motorized craft this year, has brought strong opposition from concessionaires and applause from conservation groups. NPS Director William Whalen stated that a trip down the whitewater section through the Canyon should be "the epitome of a wilderness experience on a river in America." The plan hopes to protect the wilderness by spreading out use over a longer running season, instituting environmental safeguards (limiting boatload size, carrying out waste), and increasing the number of private permits (as opposed to commercial).

The Boating Industry Association, a trade association of marine manufacturers, charges that NPS is "limiting the river whitewater experience to those with the time, money, and endurance to take a float trip," adding that the running time will double and cost increase 60-70 percent on the 235-mile trip. However, the new plan will permit trips from one to 20 days' duration.

Ice Conditioners?

Researchers at the University of Delaware are studying a new version of an old way to keep cool. Old way: put a block of ice in front of a fan to cool the air. New way: freeze a special salt water gel at night when energy rates and demand are lower, then use it during the day for cooling. Because the chemical involved freezes at approximately 55 degrees F., a home central air conditioning system can be used to freeze it, then to fan air across the frozen gel. Wide use of such "storage-assisted air conditioning systems" could reduce utility companies' oil consumption and investment in generators to meet peak loads. The estimated initial cost of \$680 could save about \$230 a year on electricity bills. Marketing is three years away, say researchers.

Wildlife Imports Increase

U.S. imports of wildlife items skyrocketed more than 9,000 percent between 1972 and 1977, reports TRAFFIC (Trade Records Analysis of Flora and Fauna in Commerce), the trade monitor for World Wildlife Fund-US. Game trophy imports rose 589 percent; skin and hides, 26 percent; live animals, 2 percent; and plants 446 percent, to total 164.6 million items in 1977.

Although the U.S. was the first of 51 countries to ratify the Convention of International Trade in Endangered Species (CITES), the federal government is having a difficult time monitoring trade increases at the nation's 8 wildlife and 14 plant ports of entry. For example, the Miami airport only has one U.S. Fish and Wildlife Service inspector at any one time to check hundreds of incoming shipments. TRAFFIC hopes to serve as a privately-operated data source to support and improve government efforts to regulate the boom. Initial efforts will focus on species, such as sea turtles, macaws, cacti, orchids, elephants (ivory), and crocodilians (leather), hardest hit by the international trade.

Environmental Protection Agency Announces "Seek and Find" Hazardous Waste Hot Line

The Midwest Regional Office of the U.S. Environmental Protection Agency (EPA) recently announced a new program, "Seek and Find," to uncover improperly managed hazardous waste disposal sites throughout Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. By calling the toll-free Hazardous Waste Hotline, citizens can report known or suspected sites where hazardous waste material has been improperly disposed of or stored.

"Hazardous waste generation in the United States has increased dramatically since the end of World War II," said John McGuire, U.S. EPA regional administrator, "but the impacts of improperly managed hazardous wastes have only recently been recognized by the public as a critical issue. Until all such waste sites are located, potential threats to our health and the environment may sit unattended in fields and warehouses like ticking time bombs. The potential danger is too great to ignore."

The "Seek and Find" program will enable citizens to report suspected disposal sites in their community via the Hazardous Waste Hotline, a toll-free number. Illinois residents may call 800/972-3170, and residents outside Illinois may call 800/621-3191, Monday through Friday, 8:30 a.m. to 4:30 p.m.



1980. "Congress Consider Future of Three Endangered Species." *Field Museum of Natural History bulletin* 51(5), 17-18.

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