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cells strikingly similar to those found in Alzheimer patients. Researchers are fairly certain that Alzheimer's, too, is caused by a virus but have been unable to isolate it.

If scientists do locate the Alzheimer virus, their task will have only just begun, notes Trubo. What will they do with it? The Creutzfeldt-Jakob virus, for example, does not trigger an immune reaction from the body—a prerequisite for manufacturing antigens.

"It could be that all of us are infected sometime during our lives" with Alzheimer's virus, suggests Dr. David Kingsburg, a virologist at the University of California, Irvine. Yet some people succumb sooner than others. Susceptibility seems to be influenced—but not determined—by heredity. If researchers can find a way to prolong the virus's incubation time past the human life span, the infection called senility will no longer pose a problem.

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Of Dams and Snail Darters

"The Endangered Species Act and the Search for Balance" by Winston Harrington, in *Natural Resources Journal* (Jan. 1981), School of Law, University of New Mexico, Albuquerque, N.M. 87131.

In 1978, federal officials trying to save the tiny snail darter from extinction barred the Tennessee Valley Authority from damming the Tellico River. U.S. Senator Jake Garn (R.-Utah) complained that "there are enough obscure species of plants and animals to guarantee that nothing at all will happen in this country."

Congress quickly granted the TVA an exemption to the 1973 Endangered Species Act and in 1978 amended the law. But Harrington, a researcher at Resources for the Future, argues that the legislators ignored the real issue: Who will pay the local costs of protecting vanishing species from threatening economic development projects?

The 1973 law, which protects some 200 kinds of plants and animals, empowered the U.S. Secretary of the Interior to designate certain regions as "critical habitats" for certain endangered species, ranging from the grizzly bear to the furbish lousewort (a flower). The department could ban or require changes in most projects that might alter the habitat. Alterations or cancellations were required *regardless of cost*.

Harrington praises Congress's initial decision to ignore "cost-benefit" considerations. While the financial burden of saving a species is always clear, the benefits are often unknowable (as in the case of miracle drugs that future scientists may derive from wild plants) or intangible (i.e., the psychic satisfaction given to nature lovers). As it happened, the act's overall economic impact has so far been minor. Of 20,000 controversial projects referred to the Interior Department, only a handful pro-

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duced "irresolvable conflicts," and only one project besides the Tellico Dam was cancelled outright.

But the expense of court-ordered compromises falls entirely on industry. When the Grayrocks Dam in eastern Wyoming was challenged in 1978 on the grounds that it would dry up whooping crane habitats downstream, a utilities consortium had to pay \$7.5 million to remedy matters.

Congress's 1978 procedural reform will not solve the equity problem, Harrington warns. Extensive hearings must now be held before plants and animals are declared endangered. But the interagency board created to hear appeals on threatened projects can delay decisions for nearly two years. And its verdicts can be challenged in court.

The Endangered Species Act is, unfortunately, a law that imposes "concentrated costs and diffuse benefits," the author notes. Further changes in the act are likely, including some that may, in fact, allow certain species of flora or fauna to vanish.

The Greenhouse, North and South

"The Politics of Carbon Dioxide" by John Gribbin, in *New Scientist* (Apr. 7, 1981), New Science Publications, Commonwealth House, 1-19 New Oxford St., London WC1, United Kingdom.

For years, scientists have warned of the so-called greenhouse effect—asserting that extensive burning of fossil fuels will dangerously increase heat-trapping carbon dioxide in the atmosphere, causing the Earth's climate to warm. Now, some have added a new twist. Climatologists at the University of East Anglia, in England, contend that the change will probably benefit the world's tropical regions but hurt the temperate zones. So reports Gribbin, a *New Scientist* consulting editor.

Fossil fuel use among the industrialized countries is leveling off. But growing Third World fuel consumption could contribute to a rise in the global mean temperature of 2–3°C by the year 2025. The change will not be uniform, according to the climatologists, who have compared colder and warmer years over a 50-year period (1925–74). During a warm year, a 3°C mean temperature rise in the Soviet Union, for example, is matched by only a 1–2°C increase in North America. Meanwhile, temperatures in the Middle East, around the Mediterranean Sea, and in the tropics hold steady or even drop in some areas. Rainfall becomes heavier in the tropics but diminishes in the United States, Europe, the Soviet Union, and Japan. The cause, scientists say, is a shift in the atmospheric circulation patterns when the atmosphere warms.

What would such a shift, over a long term, do to world agriculture? In the American corn belt, each 1°C rise in temperature can trim yields by 11 percent, even without a decline in rainfall. And in Soviet Kazakhstan, a 1°C increase can slash wheat crops by 20 percent. On the other hand, rice yields in India and other parts of Asia, Africa, and Latin America could soar by 10 percent or more. These changes are not likely