

## ECOLOGICAL RESTORATION

## Plan to Quench the Everglades' Thirst

Vice President Al Gore last week presented Congress with a Herculean challenge: To restore a more natural water flow to the Everglades, the vast wetland in southern Florida, while safeguarding the booming region's water supply. The \$7.8 billion project, drawn up by the Army Corps of Engineers, would be the most expensive restoration effort ever undertaken. It calls for a 20-year overhaul of southern Florida's water management system that would, ironically, undo large portions of an equally ambitious plumbing system built by the Corps decades ago.

Often called the "River of Grass," the Everglades once was a 100-kilometer-wide, shallow sheet of water flowing south at a rate imperceptible to the eye from Lake Okeechobee to Florida Bay. It sustained a unique



**Ailing ecosystem.** Massive restoration of the Everglades could get under way next year.

ecosystem including marsh grasses, cypress trees, herons and other birds, alligators, and panthers. Agriculture and mushrooming urban centers have eaten away half the Everglades. But a particularly devastating blow was dealt after a disastrous flood in 1948 prompted the Corps to devise a system to curb flooding and create a dependable water supply: over 1600 kilometers of levees and canals that channel water from the area north of the Everglades to cities and plantations.

The waterworks also dump 6.4 billion

liters of freshwater into the Atlantic and the Gulf of Mexico every day. As a result, the Everglades has become drier, and its denizens are suffering. Since the turn of the century, wading bird populations have declined over 90%, and dozens of animals and plant species are near extinction. Meanwhile, the salt balance in the estuaries on both coasts is disturbed by too much freshwater, harming seagrasses and animals. "The irony is that we've made freshwater a pollutant," says David Guggenheim, co-chair of the Everglades Coalition, a group of national and Florida conservation organizations.

Now the Corps hopes to undo its grand mistake. Its plan ([www.restudy.org](http://www.restudy.org)), scheduled to begin next year, calls for stopping the diversion of water and letting it flow naturally. To do this, engineers would remove some 400 kilometers of canals and levees. To prevent flooding during heavy rainfall, the Corps would turn two limestone quarries near Miami into reservoirs and create 16 more reservoirs elsewhere. And in an unprecedented engineering feat, over 300 wells would be drilled around Lake Okeechobee to pump up to 6 billion liters of freshwater per day several hundred meters underground into the Floridian Aquifer. To give the River of Grass unfettered access to Florida Bay, state and federal agencies would buy 24,000 hectares of farmland—and allow it to flood—and build bridges to elevate 30 kilometers of U.S. 41, also known as Tamiami Trail, which connects the Florida coasts.

Most environmental groups applaud the plan. Its size and sophistication make it "a cutting edge project," says Stuart Strahl, vice president of the National Audubon Society. "We're really setting precedents here" for future restorations, he says. Others voice doubts: The Sierra Club, for instance, questions the wisdom of filling the aquifer. Drilling is expensive, and pumping unprecedented amounts of water into the ground could crack the aquifer, says the Sierra Club's Frank Jackalone, who would rather see more water kept in reservoirs. He worries the water may become contaminated if it reaches nearby underground waste pits.

But Jackalone and other skeptics say their minds are eased by an Interior Department decision to ask the National Academy of Sciences (NAS) to help organize a review of the project, after a trio of prominent ecologists last February warned of what they viewed as the plan's "deep, systematic" scientific failings. NAS plans to appoint a committee later this month. "We are now confident that the panel will make the necessary fixes," says Jackalone.

The plan also has the backing of Florida politicians, including Governor Jeb Bush and the entire congressional delegation. But it may face hurdles in Congress. In April the General Accounting Office, Congress's independent financial watchdog, concluded that the plan's cost—to be split between the state and the federal government—could rise to \$11 billion. It remains to be seen whether legislators from around the country will be willing to channel billions into one state.

However, administration officials and conservationists are confident the project will stay on track. "We're restoring a whole ecosystem instead of a single species," says Audubon president John Flicker. "The whole world is watching." —MARTIN ENSERINK

## ANIMAL WELFARE

## New Indian Rules Disrupt Research

**NEW DELHI**—Indian scientists have been unable to import animals for research this year because of inaction by a new government committee set up to review such requests. In the meantime, the relationship between biomedical researchers and government regulators has taken a turn for the worse as the Animal Welfare Board last week threatened to close the country's main center for supplying laboratory animals after it failed to follow new registration procedures.

The tensions grow out of a law that went into effect on 15 December 1998 to safeguard an estimated 5 million animals, from mice to primates, used at 5000 labs throughout the country. It gives authority for reviewing import requests to a Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), which has met several times but taken no action on scores of requests. Previously, Indian scientists could obtain animals directly from overseas sources once they obtained approval from their own institutions.

The delay has led some to take extreme steps. Neuroscientist Sumantra Chattarji of the National Center for Biological Sciences in Bangalore headed to Cambridge, Massachusetts, to use genetically engineered mice developed by MIT biologist Susumu Tonegawa for a project on learning and memory in the hippocampus. Immunologist Satyajit Rath of the National Institute of Immunology in New Delhi, awaiting approval to buy knockout mice from the Jackson Laboratory in Bar Harbor, Maine, warns that continued delays "are likely to prove disastrous to Indian science." CPCSEA officials say that they are working through the backlog "as quickly as possible."

Indian researchers can still use animals bred in the country, but the main lab animal

SOURCE: SOUTH FLORIDA WATER MANAGEMENT DISTRICT