

keys, were pathogen free. Using humane traps, Wagner hopes that a large fraction of the escaped monkeys can be recovered. According to Robert Whitney, deputy surgeon general and former director of the National Center for Research Resources at the National Institutes of Health (NIH), some 200 of Wagner's animals were part of an NIH-sponsored program to develop a colony of monkeys known to be free of retroviral infection that could be used for AIDS research. Whitney says the damage to the Florida facility "sets the program back about a year."

As for the botanists, many of their losses could be irreplaceable. Fairchild Tropical Garden, located between Miami and Homestead, right in the middle of the most devastated area, used to have one of the world's greatest collections of tropical plants, particularly palms and cycads—plants with a palm-like appearance that can live up to 1000 years. Fairchild was growing 127 of the 204 described genera of palms and 130 of 150 known species of cycads, most of which are rare or

endangered. The garden was "absolutely devastated by the storm. There isn't a plant that was untouched," says William Klein, the center's director. Klein estimates that 50% to 75% of the collection is seriously damaged and "much of it has been destroyed." Precisely how much has been killed won't be known for some time because some of the trees will die slowly. Klein is now assessing the damage with the help of teams of botanists from other U.S. institutions, including the Missouri Botanical Garden. They began by selecting the trees most likely to survive—"it gives a whole new meaning to triage," says Klein—and treating them with fungicides to prevent infection in badly bruised and broken tissues. Fairchild has established a restoration fund to help replant the destroyed collection.

Fairchild, which was established in 1938, is part of a national network of 25 botanical gardens administered by the Center for Plant Conservation (CPC). The CPC maintains the National Collection of Endangered Plants, a

genetic collection of about 400 endangered species. "The collections are literally priceless," says Don Falk, CPC executive director, "because they represent some of the last genetic diversity of these threatened plants."

According to Falk, Andrew should serve as a reminder to ecologists not to put all their eggs in one basket. "We're so accustomed to human actions causing massive environmental destruction that we tend to forget that the natural world is capable of doing the same thing," says Falk. "It's a sobering lesson for people concerned with conserving biodiversity that we need to have as many areas in as many parts of the world protected."

But Andrew proved that even the best protection sometimes isn't enough. "I'm 53," says Miami's Wagner. "If I live to be 253, I hope I never see something like this again."

—Donald C. Torrance

Donald C. Torrance is on the faculty of the Newhouse School at Syracuse University and is a free-lance journalist. With reporting by Dawn Levy.

INDIRECT COSTS

GAO Lays Out Some Options

When Representative John Dingell (D-MI) started turning up evidence early last year of indirect cost abuses, he unleashed Congress's financial watchdog—the General Accounting Office (GAO)—and set it loose on the universities' books. Last week, GAO told Dingell what it had discovered*: A set of accounting rules so complex that the government and the universities have a great deal of trouble following them; accounting systems in the universities that are generally so lax that auditors have so far identified \$400 million in unallowable costs that have been billed to the government; and oversight by federal agencies that has been so "inadequate" that problems have been allowed to fester for years. In short, the same problems that Dingell has been hammering away at for the past 18 months. GAO does, however, offer some suggestions for dealing with the problems that could stir considerable debate.

First, it points to widespread discrimination. The Department of Health and Human Services (HHS) negotiates the indirect cost rates of most universi-

*System for Reimbursing Universities' Indirect Costs Should be Re-evaluated, GAO, August 1992.

INDIRECT COST RATES		
	Average Rate %	Range %
Type of school		
Public	46	34 to 66
Private	61	39 to 82
Auditing Agency		
ONR	59	34 to 74
HHS	50	36 to 82
Overall	52	34 to 82

IMPACT OF A 50% CAP				
Schools with losses				
	Total	Number	Percent	Total Reduction (\$ millions)
Type of school				
Public	88	17	19	25
Private	49	36	73	197
Total	137	53	39	222

IMPACT OF A 50% FLAT RATE						
	Decrease			Increase		Net Reduction (\$ millions)
	Total	Schools	Amount (\$ millions)	Schools	Amount (\$ millions)	
Type of school						
Public	88	17	25	69	127	(102)
Private	49	36	197	9	11	186
Total	137	53	222	78	138	84

NOTE: Based on fiscal year 1989 rates. SOURCE: GAO

NOTE: Based on fiscal year 1989 rates. SOURCE: GAO

ties, setting rates that generally do not match the expenses claimed by the universities. The Office of Naval Research (ONR), in contrast, negotiates the rates for 39 institutions, including Stanford and the Massachusetts Institute of Technology, and generally provides full reimbursement for legitimate costs, GAO says. GAO's recommendation: assign a single agency to deal with the universities on indirect costs and use a consistent set of accounting rules.

The accounting office also examined what would happen if the government were to adopt a couple of widely discussed policies: Cap all indirect cost rates at the current average of 50%, or establish a consistent 50% flat rate for every institution. The results are shown in the accompanying tables. In either case, the private universities, which generally have higher indirect cost rates (top chart), would fare relatively badly. GAO doesn't actually recommend either of these two options, but it says they both bear further investigation.

A task force headed by the Office of Management and Budget is currently scheduled to recommend changes to the indirect cost rules late this month. Nobody is expecting it to come up with solutions quite as radical as those laid out by GAO, however.

—Colin Norman