

regard to their biological needs." Janzen is a University of Pennsylvania scientist who has conducted research in Costa Rica's Guanacaste province for 20 years and has helped galvanize international support for conservation here.

Stipulations by the International Monetary Fund have inadvertently compounded the problem because the organization restricts the number of new employees hired by federal agencies to hold down government debt, Janzen and Lovejoy say.

Mario Boza, executive director of the Fundacion Neotropica, which is Costa Rica's main nonprofit conservation organization, says that the Fundacion and others need to demonstrate the economic benefits of conservation by attracting even more tourists and scientists to the country's protected areas. "Then we can ask the government for more money. That's the way to sell parks," Boza says. "You can argue that conservation is important for our heritage and good for our children and grandchildren. But if you do, you're lost. No one is interested in future generations. People want their reward now."

Boza, who founded the park service and served as its director from 1970 to 1974, is working closely with Umana to push several reforms. Umana says, "We want to buy out the inholdings in parks, improve the management of the parks, and develop management plans for buffer zones with integrated rural development."

Boza says that the Fundacion's main goal until the year 2000 is to enlarge the existing parks from 10% to 15% of the nation's territory. Fundacion is managing the purchased land until the government has the resources to take it over.

He advocates that three categories of parks be established: "large, self-sustained parks; medium-size parks where some species will disappear, such as big cats; and small parks, where many species will be lost and will be just green. These will be heavily used for recreation, but they won't be important for ecology."

Umana's financial wish list for the parks includes another \$10 million to buy inholdings in parks, \$6 million to add to Guanacaste, \$10 million for other conservation activities over the next 2 years, and the expansion of a permanent endowment for which they already have \$10 million. "One of the policies I established, not out of want, but out of need, was that we wouldn't declare any more parks unless they were self-financed," Umana says. For reforestation programs separate from the parks system, he says the country needs another \$10 million to match government expenditures to plant trees on 37,000 acres a year.

Representatives of American foundations shy away from calling Costa Rica a conservation model for other developing countries because of its unusual political and social achievements. Barnard says, "We hesitate to use the term 'model' [for Costa Rica] because it makes teeth grate in other developing countries. They like to say they're different. But if Costa Rica's not a model, then it's an illustration of the characteristics of success."

Alvaro Ugalde, who succeeded Boza as park service director and served for 12 years until 1985, says that one of Costa Rica's keys to winning foreign funding has been the creation of well-defined conservation projects. "Money is the problem, but it's not necessarily the solution," says Ugalde, who has won international honors for his conservation work. "We started [our conservation efforts] without financial resources, but that hasn't stopped us. There are resources for concrete ideas." Barnard says, "It's often

overlooked that the Costa Ricans invested first."

There is evidence the Costa Rica's conservation ethic is rippling across regional borders. Last month, Costa Rican officials signed a letter of intent with Nicaraguan authorities to establish a "Peace Park" along Costa Rica's northeast border. That will be a challenge because the Contras are using the land on the Nicaraguan side as a staging area. Costa Rica and Panama are trying to work together to manage a border park called Amistad. Ugalde is spreading the conservation message in Paraguay and is currently trying to set up a conservation summit among Latin American leaders. "It is possible. This is an issue above politics," Ugalde says.

Martin of the MacArthur Foundation says, "Costa Rica intrinsically is worth supporting. It's inspiring. If there's an effect on other countries, that's a bonus." ■

MARJORIE SUN

Big Science Falters at First Hurdle

Spending for two of the Reagan Administration's highly touted science projects, the Space Station and the Superconducting Super Collider (SSC) could be far below the President's request for 1989 if preliminary recommendations by the House Budget Committee stand. The congressional Budget Committee process of devising a budget resolution is just the start of the annual process of funding research, but already it appears that many science programs will see little or no growth.

At *Science's* press time, a House budget committee working group was recommending that the overall funding for the National Aeronautics and Space Administration (NASA) be held to an increase of \$1.4 billion over its 1988 budget of \$8.96 billion. NASA officials say they need at least \$1.9 billion more next year to operate the space shuttle orbiter and to move ahead with the space station. The space station program is likely to be cut back sharply if Congress provides less growth, according to NASA.

The budget working group, in fact, was divided on how much money to provide NASA. It left the decision to the full Budget Committee, which was slated to meet 16 March. In an effort to win more funding for the space station and other science programs, members of the House Science, Space and Technology Committee sent House Speaker James Wright (D-TX) a letter on 10 March pleading for a larger allocation for science programs funded through a budget category

known as "function 250."

Chairman Robert Roe (D-NJ), and ranking Republican Manuel Lujan, Jr. (R-NM), and 29 other members of the House science committee complain that the Budget Committee does not appear to "fully recognize the importance of vital efforts . . . such as the Space Station, the basic energy sciences, and the National Science Foundation." They warned Wright that they would "vote against any budget resolution which we believe will not serve the nation's best interest. . . ." Notably absent from the letter was any mention of the SSC.

The outlook for the Department of Energy's general science program is bleak. On 9 March, the working group recommended freezing spending for general science. This probably means that the White House proposal to spend \$363 million in fiscal 1989 to begin construction of the SSC is effectively dead, according to an aide of Representative Denny Smith (R-OR).

The one bright spot is that the working group proposed funding the National Science Foundation at the President's request—\$2.05 billion, a 19% increase. NSF officials, however, expressed concern that this recommendation might not hold up.

Indeed, the Budget Committee's spending allocations cover broad budget functions. The final spending decisions for specific research programs will be made by the House and Senate appropriations committees, possibly as early as June. ■

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