Research News

Conservationists in Panda-monium

U.S zoos and conservationists tangle over the propriety of borrowing pandas—an endangered species—and exploiting them in highly lucrative exhibits

ON 6 MAY officials from the Toledo Zoo flew to Shanghai to pick up two giant pandas for their long-awaited and much publicized exhibit. They came back to a lawsuit by the World Wildlife Fund (WWF) and the American Association of Zoological Parks and Aquariums—a lawsuit that has pitted conservationist against conservationist, friend against friend, and has raised fundamental questions about the proper stewardship of critically endangered species.

Jessie Cohen, National Zoological Park, Smithsonian Institution

The panda: *Endangered and exploited.*

At issue is whether Western zoos, in what has been characterized as a "mad scramble" for panda loans, are actually contributing to the demise of that species. Implicit in this dispute is criticism, or at least concern, about the adequacy of China's conservation efforts—a touchy subject that WWF, which has been collaborating with the Chinese government in panda conservation, would like to avoid. Although the Chinese have made major strides, they are pursuing conservation with less vigor than their Western colleagues would like. How Western groups can help without becoming intrusive is not entirely clear.

The current case revolves around short-terms loans of giant pandas to Western zoos, or rent-a-panda deals, as the wildlife group has dubbed them. Without question, panda loans mean big bucks for the zoos and for the Chinese government, which receives up to a half a million dollars for a 3-month loan. The justification is that the exhibits, which draw people in droves, can raise awareness about the precarious plight of the panda as well as provide funds for China's conservation efforts.

But World Wildlife Fund and the zoo association maintain that these loans, which have been proliferating in the past few years, amount to little more than commercial exploitation and further imperil the species, which, with perhaps fewer than 1000 animals in the wild, is already well down the path to extinction. The Toledo loan is especially troublesome because it involves two animals of prime breeding age, taken from the captive breeding facility at the Wolong Reserve—in violation of China's stated policy to send only nonbreeding animals.

Charging that the Toledo Zoo's primary purpose is commercial gain, not conservation—the zoo is projected to bring in more than $3 million from the exhibit—World Wildlife Fund sued the Fish and Wildlife Service for issuing the import permit in violation of the U.S. Endangered Species Act and the Convention on International Trade in Endangered Species, known as CITES. Both prohibit commercial trafficking in endangered species. The groups are asking that the pandas be returned to China, as soon as it is safe for them to travel, and, meanwhile, for a halt to the exhibit.

After having spent hundreds of thousands of dollars to promote the exhibit, the Toledo Zoo reacted strongly. It joined the government as an intervening defendant, and then promptly countersued World Wildlife Fund for interfering with its contract with China. It then hit WWF with a $5-million suit for defamation of character.

Things are getting nasty. "The exhibit combines circumstances so rare that no reputable zoological institution would ever have mounted it. But Toledo has," says a WWF press release. The Toledo Zoo counters that the wildlife group, which has the panda as its symbol, engages in its own "pandamania" and that, in fact, the suit is nothing more than a glorified fund-raising campaign. One Chinese official, at least, has warned WWF that further interference may damage their relations. Invited in by the Chinese government in 1980, World Wildlife Fund has since spent $4 million on panda conservation in China.

World Wildlife Fund and the zoo group have essentially won the first round. On 17 June U.S. District Judge Norma Holloway Johnson granted their preliminary injunction and barred the zoo from collecting a special fee for the panda exhibit—a ruling that implies that, should the case go to court, the plaintiffs are likely to succeed.

Within days of that decision the Fish and Wildlife Service rejected a bid by the Michigan Department of Natural Resources to bring in two breeding-age pandas for exhibit at this summer's state fair, ruffling feathers in China, where the loan had already been approved. The service then suspended all loans until it announces a new policy, drafted with the help of World Wildlife Fund, that is expected to put stricter controls on panda loans.

All of which may come too late for the panda. This reclusive animal once roamed the lowlands and highlands of Southeast Asia, from Beijing down to Burma. Now most of its lush bamboo forest habitat is gone, and the 1000 or so remaining pandas have been pushed up onto high-elevation bamboo forests in easternmost China, flush up against the dry Tibetan plateau. They are hemmed in, with literally no place left to go.

They survive in six blocks of land, separated by hundreds of kilometers. Within these blocks, the population is further fragmented

into groups of 50 or less, isolated by roads, rivers, clear-cut forest, and human settlement. Many of the groups number ten or less. This situation is a "blueprint for extinction," says George Schaller of the New York Zoological Society, who in 1985 completed the first major study of the panda in the wild, *The Giant Pandas of Wolong*.

The wild population is being further depleted as animals are captured to shore up the faltering zoo population, a policy Western conservationists unanimously condemn, as do some Chinese conservationists. Much of the capture is done as part of well-intentioned "rescues" of starving pandas, although it has been several years since a massive bamboo flowering threatened to deprive them of food (see box). And once the pandas are captured, they are rarely reintroduced to the wild.

Few question the dedication of the Chinese government, which has spent an estimated $25 million to save the panda. Rather, it is local implementation where things fall short. For instance, although the government has increased the penalty for killing a panda—the maximum is now death—there are still few poaching patrols on the reserves.

Complicating matters, oversight for the panda is divided between two ministries—the forestry ministry, which runs the 12 panda reserves, and the urban and environment ministry, which runs the zoos. Communication between the two is poor, which makes a unified effort very difficult.

Nowhere is that more evident than in the captive breeding program. About 90 or 100 pandas are in captivity, 60 in zoos, by the latest count, the rest on the reserves. But to date, there have been only 28 births—clearly not enough to offset the deaths in the captive population from old age and disease. The problem is that the Chinese have concentrated on artificial insemination, which has a success rate of only about one in four. And then only one in four cubs usually lives.

"If they used the good old fashioned sexy way, it would come out better," says William Conway, director of the New York Zoological Society, which runs the Bronx Zoo. "But that requires animal husbandry and observation. The Chinese do not appear to be taking that course at this time."

Without question, pandas are notoriously hard to breed—they are far from amorous, and their sexual proclivities are not fully understood. But Conway, for one, thinks the problems are not insurmountable if the animals are properly managed. And that, according to Devra Kleiman of the National Zoo in Washington, who is considered the Western expert on captive breeding, involves letting them select their mates and giving them time to socialize, especially when they are young and not in heat.

In China, however, most captive pandas are in zoos, scattered around the country, that have one animal or perhaps an incompatible pair. To date, there has been little or no cooperation among zoos, and few attempts to exchange animals. Chinese veterinarians are said to be first rate, but modern technology is sorely lacking.

"It is tearing apart the zoo community. No zoo is clean; everyone wants pandas."

"Just look at the National Zoo [in Washington]," says Christopher Elliott, director of WWF's China program. "They have all the resources one can imagine and pandas still don't breed there. Imagine what it must be like in a Chinese zoo."

At the Chinese government's request, Conway designed a captive breeding facility at the Wolong Reserve, with an outdoor pen where animals can socialize, but it is rarely used, according to visitors to Wolong. Since its completion in 1983, only one panda has been born there.

But it is unfair to judge Chinese zoos by the standards of U.S. zoos, says Conway, which are perhaps the most advanced in the world. "The Chinese are beginning to cooperate, they are making the transition to a modern zoo. The problem is that they are at a very early stage in this transition, and it is very late in the panda's path toward extinction."

In nature, says Conway, the key to the panda's survival lies in reconnecting fragmented habitat, thereby enabling isolated populations to interact. But building corridors and relocating people is a "terrible, terrible task," Conway admits. "I am not sure how feasible it is."

While it is clearly impossible to connect the six large blocks of habitat, within each block it may be possible to reconnect islands of habitat by planting both bamboo and forest canopy. That is what World Wildlife Fund is proposing in the management strategy it is preparing with the Chinese government. Coupled with that effort should be an active captive management program. A stud book, to match up far-flung but potentially compatible pandas, is a prerequisite.

"The Chinese have the manpower and the financial commitment, if they wish to use it," says Conway. "I have enormous respect for what the Chinese can do. If they have the will, they can do it. But we are asking them to do what we were unable to do with the grizzly, the black-footed ferret, and the condor. The Chinese have probably spent more on panda conservation than we spent on the grizzly. It is very discouraging."

Against this backdrop, the question of whether panda loans may be hastening the demise of the species takes on a particular urgency. The zoo community is deeply divided on whether these loans have a place in conservation, and passions run high.

To the Chinese, there is no question. They view the loans as a goodwill gesture that will educate the public about the plight of the panda and raise money for conservation. "This is good for both countries and for the pandas," says Dai Xing, head of the cultural office at the Chinese Embassy.

But World Wildlife Fund and the zoo association argue that as a source of much needed cash, the loans may be an incentive for the Chinese government to capture more animals from the wild. And, say the groups, the loans mean fewer pandas available for breeding programs.

The Chinese insist that the loans are carefully regulated, and that their policy is to send only animals that are not of breeding age. However, the loan last year of a breeding-age female to the Bronx Zoo and the current loan of a breeding-age pair to Toledo run counter to their claims.

Some zoo biologists blame western administrators, who accept, and in some cases, lobby for these loans. "It is tearing apart the zoo community," says one biologist. "No zoo is clean; everyone wants pandas."

When the short-term loans first began in 1984, there was little objection—indeed, World Wildlife participated in some. But as the loans have proliferated—there were five each this year and last, as opposed to two in 1984—they have taken on something of a circus air. Even those in favor of loans, like Terry Maple, director of the Atlanta Zoo, agree that they have gotten out of hand. Some 30 zoos and parks are now negotiating with the Chinese.

The Toledo Zoo, in that sense, is a victim of timing. Although World Wildlife Fund and the American zoo association were troubled by the zoo's willingness to accept two breeding-age pandas, they sued in large part because the Toledo Zoo was the next in line. Nonetheless, a few things set this loan apart, says Ken Cook of WWF. For one, it seemed more clearly commercial than other loans, especially with only $300,000 of the $3-million projected income going to conservation in China.

"What finished them off was the way they

tried to push it through politically" says Cook. When it looked as if the permit application was in trouble, Representative Delbert Latta of Ohio intervened with the Interior Department on the zoo's behalf. Within days, the permit was granted.

What makes it more galling to World Wildlife Fund is that only 2 months earlier Fred Dunkle, director of the Fish and Wildlife Service, had announced that the service would not issue any more permits until the Chinese demonstrated that the loans were not having a deleterious effect on captive or wild populations, and until they explained exactly how the funds were being used for conservation.

William Dennler, the Toledo Zoo's director, could not be reached for comment, but in his affidavit and his statements he says they have been unjustly accused, caught in the midst of shifting sentiments and policies.

To the Chinese, the fracas is a slap in the face, and they are reported to be very angry. Their public statements are moderate, however, and they are treating it as an internal American problem. The same dispute is said to be raging within China, if not so openly. In early June the government released its official policy on panda loans, which, although it largely reiterates existing—if previously unenforced—policy, is nonetheless significant. What is new in this policy is an aggressive new program for captive breeding, with coordination among zoos and what seems to be the beginning of a stud book. The Chinese are also tackling poaching with new fervor, reports Elliott.

The Fish and Wildlife Service's new guidelines are expected out any day. They will probably restrict loans to animals over age 15 and regulate how these funds will be spent on conservation in China.

And there is talk of a settlement of the lawsuit. World Wildlife Fund has little more to gain through a suit and would settle, they say, if the zoo would contribute more money to panda conservation in China.

At the Atlanta Zoo, which is also awaiting news of a permit, director Terry Maple is undeterred. Like Conway and others, he genuinely believes that panda loans, if properly regulated, can be of tremendous benefit to conservation. "If we did not believe it, we would not be in the zoo business. But to be fair," he adds, "too little money from these loans has gone into panda conservation."

Chinese officials recently revealed which animals are earmarked for Atlanta—two nonbreeding males, ages 16 and 11, from the Shanghai Zoo. "If anyone can show me they are needed for breeding, we won't take them," says Maple. "If there is one single criticism, we will not take them. I am in no hurry." ■ LESLIE ROBERTS

When the Bamboo Blooms

Sometime in its evolution over the past 3 million years the semicarnivorous panda switched to an exclusive diet of bamboo—linking its fate inextricably with that of bamboo itself. This evolutionary switch, still not fully understood, explains in part why pandas must spend most of their waking hours—about 14 hours a day—either eating or preparing bamboo: they still have the unspecialized digestive tract of a carnivore, but the specialized diet of a herbivore. Poorly equipped to digest bamboo, they must eat about 25 pounds of it a day. And that, in turn, explains George Schaller's observation that they defecate some 48 times a day.

When the bamboo flowers and dies, as it is wont to do on a massive scale every 40 or so years (actually, every 15 to 120, depending on species) the panda's specialized diet can spell doom—at least in the fragmented habitat it now occupies. When pandas had access to lowland bamboo as well, the periodic flowering was not such a problem. Although they are fussy eaters, preferring one species above all others, they will switch, recent research by Kenneth Johnson, George Schaller, and Hu Jinchu has shown, when there is an alternative. Says Don Reid, who has continued this work at the Wolong Reserve: "The key point being that they need diversity."

And that is the problem. In many pockets of habitat, there is no alternative—only two, and sometimes just one, bamboo species remains. In the massive flowering of the mid-1970s, when three species flowered simultaneously in the Min Mountains, at least 138 pandas died of starvation.

When the bamboo flowered again in 1983, this time in the Qionglai and Qinling Mountains, the Chinese government mobilized the countryside—teams of villagers combed the dense bamboo in search of starving pandas, which were brought in and when possible nursed back to health. The downside of this enthusiasm, however, is that pandas are still being "rescued" who are not in danger of starvation, further depleting the wild population.

Rescue may be necessary, as a desperate measure, the year of a bamboo flowering, says Christopher Elliott, director of World Wildlife's China program, but not 3 or 4 years later. "The Chinese agree with us in principle, but in practice, local officials sometimes get carried away and decide that a panda is starving when it isn't. The government has tried to clamp down on this, but it is difficult, after having whipped up all this enthusiasm for rescuing pandas." The financial rewards the government offers, no doubt, play a part, and so, suspects Schaller, does the desire of all 171 zoos to have their own panda. ■ L.R.