

agriculture. In September, several thousand farmers gathered in a village in the state of Karnataka. There, 97 small farmers had given their land, a collective 100 acres, to a new center for sustainable agriculture, with educational programs, a school of civil disobedience, and a seed-bank to collect and maintain India's indigenous and traditional seeds. Co-founder Professor M.D.

Nanjundaswamy told *Terrain* that the center, called Amrita Bhoomi, or The Eternal Planet, is the culmination of a decade-long Seed Satyagraha. Created by 500,000 farmers converging on Bangalore in 1993, the Satyagraha, or "soul force," favors community control of food sources and strongly opposes the patenting of organisms. "Seed Satyagraha," as Nanjundaswamy put it, "is a continuous non-violent battle against

intellectual property rights in agriculture."

In Kentucky, the farmers can identify.

"What we like to see [the settlement money] go to," Robben said, "are some obvious things: farmers' markets, anything that pushes toward a local food economy — tobacco farmers going into vegetables."

Info: Food First, (510) 654-4400, [www.foodfirst.org](http://www.foodfirst.org)

## Does the Public Own Yellowstone's Microbes?

by Robert Ito

For decades, researchers have braved the simmering geothermal springs of Yellowstone National Park looking for heat-resistant microbes. The "bioprospectors" may be driven by the thrill of intellectual discovery in an area rich with countless tiny life forms. But every year, park officials estimate, US and international companies make billions of dollars by developing the microbes into products — everything from paper bleaches and stain removers to industrial strength paint removers. In 1966, enzymes plucked from the microbe *Thermus aquaticus* were used to develop a DNA "fingerprinting" process that now makes \$500 million a year. Despite all that money changing hands, Yellowstone — much to the chagrin of the current park administration — has yet to see a dime.

Yellowstone's desire for a piece of the action led park officials to make a "benefits-sharing" pact in 1997 with the San Diego-based research firm Diversa Corporation. Under the agreement, Diversa would pay royalties to the park if the company developed a marketable product from its finds. Environmental groups, including the Washington-based Edmonds Institute, filed a lawsuit against the US Department of the Interior and the National Park Service to block the deal — and by implication all such deals. A federal court ruled against the suit, but put the



Environmentalists have sued to block Yellowstone National Park's deals with "bioprospectors," who extract potentially lucrative microbes from pools and geysers like this one, Midway Geyser Basin, shown after a 1989 fire. Photo Joe Holly ©2001

Yellowstone/Diversa deal on hold pending an Environmental Impact Statement, which is to be completed early next year.

What's wrong with Yellowstone getting its cut? According to Beth Burrows, president of the Edmonds Institute, commercial endeavors like the Diversa contract place the Park Service into two conflicting roles: protector and profiteer. "I don't happen to think that we own the microorganisms," she says. "We're their stewards." Money, Burrows believes, may shift park loyalties — along with its management, priorities, and staffing — from wildlife to royalty payments.

Joseph Mendelson, legal director of the International Center for Technology Assessment, also questions the ethics of issuing patents on "products of nature." While one can't acquire exclusive rights on, say, a California redwood, there are

hundreds of patents for flora and fauna that have been manipulated in the lab or on the stem, from roses and apricots to microbes and mice. Tweak a chicken's genetic makeup and it's no longer a chicken; in Yellowstone Park lingo, it's a "research result," and potentially the sole property of a single company. Mendelson sees this as simply bad public policy. "The free exchange of information without commercial motive," he argues, "directs research to things that are more beneficial to society."

But the issue goes beyond research, says Burrows. "The whole history of the patenting of life shows that it's one big slippery slope," she says. "Once we consider everything a commodity, it's no step at all to consider ourselves

commodities. At the end of that slippery slope, we can have no social contracts. Commodities do not have social contracts with each other."

Details of the Yellowstone/Diversa contracts — including the amounts of the royalty payments — are considered confidential business information by the two parties. Burrows finds this secrecy untenable. "The parks belong to the people of the United States," she says. "Whatever happens in those parks should be the conscious decisions of the owners. It should not be something done behind their backs."

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