The Long, Sad Saga of Mount Graham

Astronomers and environmentalists ought to be allies, but in Arizona they're at each other's throats; the story of how things got to this point is a lesson in how not to handle controversy

IN THE ANNALS of environmental warfare, the battle over Arizona's Mount Graham is as nasty as they come: an exercise in recrimination and venom that ranks right up there with the strife over the snail darter and the spotted owl.

The struggle, which began in the mid-1980s, is reaching a critical point this summer as the University of Arizona prepares to break ground on a $200-million astronomical observatory in the middle of a mountaintop forest that also happens to be the sole habitat of an endangered subspecies known as the Mount Graham red squirrel. Environmental activists claiming that the observatory will destroy the squirrel have plastered the university campus in Tucson with "No Scopes" stickers. The radical group Earth First! has repeatedly hinted that the telescopes' mirrors will be smashed if the observatory is built. Last year, unknown vandals cut power lines to the nearby Kitt Peak National Observatory and mailed a dead ground squirrel to the home of the university's astronomy director, Peter Strittmatter. And this past February, someone mailed a death threat to Arizona biologist Conrad Istock, who supports the project.

In Washington, meanwhile, two congressional subcommittees have scheduled hearings for 26 June on allegations that the permitting process for the observatory was politically fixed by the university. And more than a dozen environmental groups are lobbying and litigating, claiming that the university has undermined the National Environmental Policy Act and the Endangered Species Act by getting a special exemption from Congress.

To universities and researchers facing animal rights demonstrations and genetic engineering protests, this kind of imbroglio will seem all too familiar. But to the astronomical community it just seems baffling.

Astronomers and environmentalists aren't natural enemies, says Peter Boyce, executive director of the American Astronomical Society: "Here are two groups that ought to be walking arm in arm with respect to protecting darkness, the night sky, and remoteness." The same issue troubles Robert Smith, Sierra Club representative in Phoenix. "These are not the enemies we would have chosen," he says. But then—couldn't this whole fight have been avoided?

The short answer is No: when one side says "Scopes" and the other side says "No Scopes," there's not a lot of room for negotiation. However, things did not have to get *this* bad. The fact is that the Mount Graham affair has been a public relations disaster for the University of Arizona—a long, sad saga of naïveté, poor communication, missed opportunities, and finally, desperation.

University of Arizona

Strittmatter and friend. *"There is no threat to the squirrel from this project," says the Arizona astronomer.*

To begin with, this was the first time that the university had ever had to cope with a major environmental controversy. So when the astronomers' plans began to take shape in the early 1980s, neither they nor the university administrators had any feel for the sensitivities involved.

To chief astronomer Strittmatter and his team, Mount Graham was simply a golden opportunity. Interest in building a new generation of high-technology telescopes was burgeoning worldwide—not least because of the methods being developed by Arizona astronomer Roger Angel to produce inexpensive telescope mirrors as much as 8 meters in diameter, or 60% larger than the venerable 5-meter instrument on Mount Palomar. So if Arizona could develop a new site to host some of these telescopes, Strittmatter reasoned, it stood to become a world-class power in astronomy.

Mount Graham seemed the natural choice. Although not the best astronomical site in the world—that honor goes to Mauna Kea in Hawaii and to the Andean peaks in Chile—its atmospheric quality was more than adequate. It was not threatened by light pollution. It was not locked away in a wilderness area or national park. And, most important for keeping the construction costs down, it was relatively accessible: It was only a 3-hour drive from Tucson, and it already had a road to the summit.

In retrospect, it's ironic that the environmental impact of the project seemed to be a minor concern at the time. As part of the Coronado National Forest, Mount Graham had long since been given over to vacation cabins, logging, and hunting—including squirrel hunting. If anything, the astronomers felt that they would be helping preserve the mountain by setting aside the summit as an astrophysical area with sharply restricted public access.

What Strittmatter and company were not bargaining for, however, was an increasingly radicalized cadre of environmental activists, who were already incensed by the Reagan Administration's extreme pro-development stance and by the unrelenting development pressures in the growing Sun Belt. "There are people who just feel Enough is Enough!" says Robert Tippeconic, who was chief forester for the Coronado National Forest during most of the controversy. To those people, the astronomers looked suspiciously like developers trying to lock up the last high mountain in southern Arizona that

didn't have telescopes on it already.

Could the conflict have been headed off at this point? Possibly. Strittmatter says that he did try. In 1984 he put out feelers to several environmentalist and citizen's groups to join an external advisory committee on the project, with the express purpose of maintaining a dialogue. There was even a fair amount of interest, he recalls. However, any such committee had to be approved by the Coronado National Forest. And chief forester Tippeconic's response was that the Forest Service could handle public relations very nicely by itself, thank you. The National Environmental Policy Act (NEPA) already allowed plenty of opportunity for public comment during the preparation of an environmental impact statement, he said.

So Strittmatter let the matter drop. Whereupon, he and his colleagues got to learn the hard way that there is a world of difference between having a dialogue with people *during* a project's design, when concerns can be worked out quietly, and letting people see it only during the NEPA public comment period *after* it is designed—when it tends to look like a fait accompli.

In 1984, for example, the astronomers were told that the environmental impact statement would require a description of the maximum size their project could ever possibly be. So, as the astronomers tell it, they innocently drew up a site design that crammed telescopes onto every spot that could possibly take one. There were 18 in total, far more than anyone had definite plans for. But when the environmentalists saw the design, they were outraged: they saw a total devastation of the mountaintop.

Still, by 1986, Strittmatter's vision of Mount Graham as a new world center of astronomy seemed to be coming true beyond all expectations. The Smithsonian Astrophysical Observatory, the Max Planck Institute in Germany, the Vatican Observatory—all were either interested or committed. And Arizona itself was forming a consortium with several other institutions to build the Columbus telescope, which would have two of Angel's 8-meter mirrors arranged like a pair of binoculars. Indeed, the Mount Graham project had far outgrown Strittmatter's department; overall authority for the effort was now vested in Laurel Wilkening, then vice president for research at Arizona and now the provost of the University of Washington.

However, by 1986 it was also clear to everyone on the project that the university had to get out in front on the environmental issues. Biological surveys conducted for the draft environmental impact statement had underscored the fact that the spruce fir forest on the summit had been an isolated "sky island" for some 11,000 years, since the last ice age. "In just 6 weeks of research we found six new species of insects," says survey leader Peter Warshall of the university's arid lands department. There were also several unique species or subspecies of plants, snails, and rodents. And, of course, there was the the Mount Graham red squirrel, whose estimated population of 328—considered dangerously low by Warshall and other wildlife biologists—made it a prime candidate for listing under the Endangered Species Act.

The university originally agreed not to oppose the listing. But then Wilkening got in touch with California attorney Robert Thornton, who had formerly worked on the Endangered Species Act as a staff counsel on Capitol Hill. "He advised us that listing the red squirrel and going through the entire process would likely tie the university up in litigation for a long time," says Wilkening. However, he also pointed out an alternative: protect the squirrel and its habitat so thoroughly that it wouldn't *need* to be listed. (The Endangered Species Act allows the Secretary of the Interior to consider existing conservation plans when deciding upon a listing.) That is, the university would immediately institute a Habitat Conservation Plan involving intense study and conservation of the entire mountaintop ecosystem, and would establish an ongoing dialogue with environmentalists and citizen's groups to monitor the plan while the observatory was under construction.

Wilkening and her colleagues loved it. "It seemed like a logical, rational plan to achieve our goals *and* to preserve the habitat for the squirrel," she says. Confident that they would be greeted as heroes, she and Thornton presented the plan in a public hearing on 26 August 1986.

The next day, the headline in the Arizona *Daily Star* read "UA asks U.S. to drop rare squirrel from endangered list," and the outraged activists were already dismissing Thornton's proposal as a hash of bizarre and cynical legalisms.

"We thought we were trying to do the right thing," sighs Wilkening. "But to present the plan at a public hearing and expect people to say 'Oh, how wonderful,' was naïve." Apparently it had never occurred to anyone to talk about the plan with the opposition groups beforehand.

In any case, the issue was soon moot. The Forest Service's response to the university's proposal was that its own land use plan would protect the squirrel. The red squirrel was duly listed as an endangered species on 3 June 1987, and the protests started to

Cornell Got Out in Front

Not every environmental issue is destined to explode into a full-scale conflagration. Witness the experience of Cornell University in August 1989, when it collaborated with the nearby Boyce Thompson Institute for Plant Research and the New York State Agricultural Experiment Station to spray a genetically-engineered virus, made as part of a program for designing better viruses for pest control, onto a quarter-acre cabbage field in Geneva, New York. The experiment might have been a public relations nightmare since it was the first time a recombinant virus, albeit a disabled one, had been introduced into open fields. Yet there was minimal controversy about the spraying, and local and national media coverage was largely positive.

So what went right? The answer, says John F. Burness, vice president for university relations and the top public relations officer at Cornell, is that a few administrators anticipated the concerns, both scientific and emotional, of a wary public, and acted to deflect them. "We could not wait until someone else controlled the story," he explains. "The story had to be focused on hard fact rather then emotional innuendo."

Thus, Cornell/Boyce Thompson officials issued a series of news releases at key stages of the research project, such as the time of application to the Environmental Protection Agency for approval to do the experiments, and hosted a press conference at the field site on the day of the spraying. They also prepared faculty and staff for dealings with the media, and one Boyce Thompson administrator spent days speaking to mayors and other elected officials in and around Geneva. The EPA, for its part, gave a detailed presentation on the project to every environmental and citizen's group that might have any interest in the matter—including activist Jeremy Rifkin.

The goal, says Ralph W. F. Hardy, president of the Boyce Thompson Institute, "was to operate in an open manner and to make sure that the people in the local community and in a broader area were informed early and at each significant step." The strategy paid off.

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become venomous.

By the summer of 1988, the university's Mount Graham team was frantic. After 2 years of complex negotiations, a university task force had finally come up with a site plan that was acceptable to the Forest Service under the NEPA guidelines. In the process they had reduced the number of telescopes from 18 to the currently planned maximum of 7, with the total affected area—including a buffer zone as well as the actual construction sites—to be no more than 24 to 38 acres out of a total squirrel habitat of some 11,000 acres. Declares astronomer Angel, "The environmentalists *won*!"

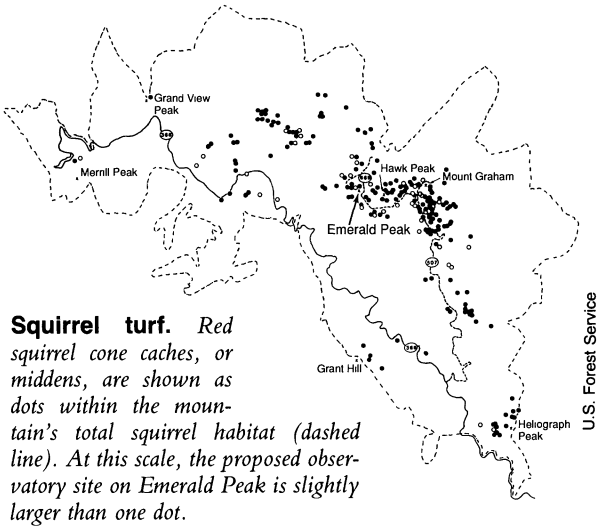
Yet the protests kept getting worse, with demonstrators roaming the campus in squirrel suits and Earth First! talking eco-sabotage of the telescopes: to the activists, seven telescopes were still seven too many.

To Strittmatter, the delays were not just annoying; they were potentially catastrophic. His coalitions were not going to hold together forever. The University of Texas had already pulled out, and the Germans were starting to grumble. The final straw came on 14 July 1988. As one of the last steps in the environmental review process, the U.S. Fish and Wildlife Service formally issued a Biological Opinion containing three "reasonable and prudent alternatives" under which the university could build its telescopes without an intolerable jeopardy to the red squirrel. The third alternative in that list was one that Strittmatter and the astronomers thought they could live with: first the university would close and reforest the existing road to the summit, which mostly runs through prime squirrel habitat. And then it would cut a new and much shorter road, running mostly through mediocre squirrel habitat, to a wide crag of the mountain known as Emerald Peak; there they could build three telescopes, with the other four possibly to come later once the impact of the first three on the squirrel was known.

At the Forest Service, however, Tippeconic ruled that because the road was something new in the plan, NEPA would require a new round of public comment. Strittmatter and his colleagues erupted. Officially, the comment period was 60 days. But unofficially, he says, Forest Service insiders estimated that there could be another 2 to 4 years of litigation and appeals. "And what certainty did we have that there wouldn't be another 4 years after that?" he exclaims.

To Michael Cusanovich, who succeeded Wilkening as vice president for research in August 1988, there was only one course to take: go to Congress, where the Arizona delegation had long since declared its support for the observatory. "Either we could exercise our constitutional rights," he says, "or we could cancel the project." In Washington, he had the high-priced lobbying firm of Patton, Boggs, and Blow ask Congress to exempt the project from any further requirements under NEPA and the Endangered Species Act. Language to that effect was accordingly added to a collection of miscellaneous land use measures known as the Arizona-Idaho Conservation Act. And after a delay occasioned by House interior committee chairman Morris K. Udall (D–AZ), who insisted the measure be redrafted to explicitly rule out any exemption from the Endangered Species Act, the bill was passed and signed into law in November 1988.

Back in Tucson, the Mount Graham team was (and is) exultant. "At the very least, we kept the project going," says Strittmatter. And indeed, maybe they did. But virtually everyone else contacted by *Science* considers it a Pyhrric victory. Many of the Arizona faculty were outraged. "The university was saying, If you don't like a law, buy yourself a new one," says biologist Warshall.



Squirrel turf. *Red squirrel cone caches, or middens, are shown as dots within the mountain's total squirrel habitat (dashed line). At this scale, the proposed observatory site on Emerald Peak is slightly larger than one dot.*

Meanwhile, what had largely been a local environmental issue became a national issue overnight: the Arizona-Idaho Conservation Act, whatever its disclaimers, was widely viewed as a horrible precedent undermining the Endangered Species Act itself. In Tucson, a whole new wave of activists entered the fray. In Washington, lobbyists for the major environmental groups started pounding down congressional doors on the issue. A consortium of many of those same groups, with the Sierra Club Legal Defense Fund in the lead, filed suit in federal court to force the Fish and Wildlife Service to redo its Biological Opinion on the grounds that the red squirrel population has drastically declined since 1988 and now stands at roughly 139 individuals. (The government's position is that population fluctuations of this magnitude are within the range anticipated by the Biological Opinion.) The hearing is scheduled in Tucson for 16 July.

As if that weren't enough, Congress' General Accounting Office (GAO) is investigating statements by two Fish and Wildlife Service biologists that they were ordered by their superiors—allegedly under political pressure from the university through the Arizona congressmen—to write the "reasonable and prudent" alternatives that would allow the observatory to be built, even though they did not believe those alternatives were valid. The GAO will give its report on 26 June in a hearing before the Fisheries and Wildlife and the National Parks and Public Lands subcommittees.

Meanwhile, the university, which has completed the new road to Emerald Peak, is holding off on all further work until after 26 June. What happens then depends on the GAO. If its report does identify serious irregularities, then it may well give Congress a compelling reason to rethink the Arizona-Idaho Conservation Act. On the other hand, if the GAO finds nothing amiss, the university is free to go ahead with construction—assuming that the lawsuit doesn't force another delay. But the astronomers can expect demonstrations, protests, and fresh litigation at every step of the way.

And the red squirrel? If the observatory is built as now planned, the university's agreement with the Forest Service does call for a 10-year program of squirrel research and habitat conservation on the mountain, at the rate of $200,000 per year. But the creature will undeniably suffer some marginally reduced chance of survival in the near term—although how much is a matter of endless debate. "The squirrel will not die from the telescopes alone," says biologist Warshall. "The squirrel will die because of a catastrophe such as a fire or a spruce bud worm infestation"—with the habitat lost to the observatory perhaps making the critical difference. But against that chance has to be counted what the American Astronomical Society, in a statement issued 10 June, called "an outstanding new site . . . important to American astronomy."

Either way, the Mount Graham affair seems destined to go on record as one environmental conflict that passed beyond all reach of goodwill and reason—unnecessarily. "People will look back," says the Forest Service's Tippeconic ruefully, "and cite this as one of the classics of the genre."

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