

bled university system, with the goal of making universities more dynamic, flexible, and international. The ministry wants a \$500 million increase in next year's budget, to \$9 billion, and plans to double expenditures over the next 5 years on investments in higher education and research—such as renovating university laboratories and other facilities.

In an announcement that dovetails with the new German government's plans to phase out the nuclear power industry, Bulmahn also said some experimental and pilot-project facilities will be shut down or dismantled. A ministry spokesperson says the outmoded reactors include the THTR high-temperature reactor in Hamm, the FR-II research reactor in Karlsruhe, the HDR reactor in Kahl, and a reactor near the Bavarian town of Niederaichbach. A nuclear-energy expert associated with the German Physical Society told *Science* that he was unaware of any significant research now being done at those four reactors. A full list was unavailable.

Bulmahn also signaled that she would like to shift the focus of space science but lacks the flexibility to do so. She criticized her predecessor's decision to commit most of Germany's space resources to crewed missions, yet insisted that Germany would stand by its commitments to spend nearly \$1.5 billion on the international space station—about 40% of Europe's total contribution. Germany plans to keep working within the framework of the European Space Agency but will press to continue reforms to streamline the agency's administration.

At the Max Planck Society's annual news conference in Bonn last week, the society's president, biologist Hubert Markl, praised Bulmahn's ministry for agreeing to 5% annual budget increases for both Max Planck and the DFG granting agency and for giving Max Planck more leeway in how it spends its federal and state funds. "We need this autonomy to make us more flexible and innovative at a time of increasingly competitive international research," said Markl. He added that, with last month's opening of the Ethnological Research Institute in Halle, Max Planck had completed its 8-year expansion program into former East Germany, establishing 20 research centers there.

But the edge was taken off the good news by the furor created when members of a militant animal rights group made physical threats against Wolf Singer, a director of the Max Planck Institute for Brain Research. As a result, Singer, whose lab uses primates to research brain function, was guarded by po-

lice when he received an award in Frankfurt on 29 November. At least one other German neurobiologist, at the University of Bremen, also had received police protection this year as a result of similar threats.

Markl says he was outraged that Singer—an internationally respected researcher—has been threatened by "fanatical opponents of animal experimentation." He defended Max Planck's policies on the use of laboratory animals in research and says he regarded the threats against Singer as "an attack on the freedom of research in Germany."

—ROBERT KOENIG

Robert Koenig is a writer in Bern, Switzerland.



Boost for science. Research minister Bulmahn.

AUSTRALIA

Forest Pact Bypasses Computer Model

MELBOURNE, AUSTRALIA—Conservation scientists are reeling from the outcome of a fight over one of Australia's richest regions of biodiversity. An innovative and internationally praised scheme for reconciling conflicts over natural resources that tapped a 3-year, \$23 million biota survey proved no match this fall for old-fashioned political muscle. The result was a bill passed late last month by state legislators permitting extensive logging in diverse forest ecosystems in the northeast corner of the state.

"This is a massive waste," says Andrew Beattie, director of the Key Center for Biodiversity and Bio-resources at Macquarie University in Sydney. "The NSW [New South Wales] government paid for a world-class system for mediating forest conflicts through scientific knowledge but in the end chose to ignore a major part of its findings." Dailan Pugh, a negotiator for the Nature Conservation Council, an umbrella group for private-sector conservation efforts in the state, says the plan represents the worst "regional forest agreement" in the country.

Timber officials are hailing the new legislation as a shot in the arm for the industry. Col Dorber, executive director of the Forest Products Association, says that forest industry companies have already invested \$16 million since the agreement was struck, buying up land for plantations and to obtain carbon

credits that allow polluting industries to stay within government emissions standards. Government and industry officials also argue that the plan for the 380,000-hectare reserve, which creates 85 national parks, balances the interest of all sides. "It would be difficult for anyone to argue that the government has not met conservation targets given that the process has been recognized as world-leading," says Craig Knowles, the state's minister for planning.

That process was intended to showcase one of the most comprehensive ecological data sets anywhere in the world and state-of-the-art conservation planning software developed by scientists at the state National Parks and Wildlife Service (NPWS). It involved a program, called C-Plan, that allowed stakeholders to negotiate an arrangement that could meet both conservation targets and timber quotas (*Science*, 18 September, p. 1789).

C-Plan was used successfully in preliminary negotiations in 1996 that led to nine new nature reserves in the eastern portion of the state and logging moratoria in areas likely to be tapped as national parks. However, the assessments required a second round of negotiations based on the detailed data sets. And this fall the "world-leading" process broke down during negotiations over 10 million hectares in the northeast region, say Pugh and Beattie, leaving the conservationists standing out in the cold. Instead, state officials worked behind closed doors to produce a plan that covered an area less than half the size that conservationists have insisted is necessary for biodiversity and that doubled, from 10 to 20 years, the length of time industry could continue logging at its current quota.

Conservationists are also upset by the type of land to be included in the reserves. It's mostly unloggable escarpment forests already well represented, while diverse forest ecosystems in the foothills to the east and the tablelands to the west were left out. An analysis by

the C-Plan support team at the state NPWS shows that the plan meets only 30% of the conservation targets achievable on public land for the highest priority species. One species likely to face extinction as a result of the plan is the Hasting's River mouse. Its last refuge is scattered habitats from the

northeast NSW forests to the Queensland border, but the plan includes only 7% of its recommended conservation target.

Conservationists and scientists are not



Uninhabitable. Australia's Hasting's River mouse could become extinct under a new forest reserve plan.

CREDITS: (TOP) FRANK OSSERINK/SYGMA; (BOTTOM) GEOFF BIDDLE/NPWS

the only ones unhappy with the turn of events. Federal officials say the state ignored national rules requiring the negotiations to be open and transparent. "These were back-room deals in smoke-filled rooms" is how Wilson Tuckey, federal Minister for Conservation and Forestry, describes the process, which he says lays the groundwork for the "rape and pillage" of the northeast forests.

With the failure of science, conservationists have returned to pre-1995 tactics, complete with blockades and protesters chained to bulldozers on land where timber activity had been occurring despite the moratorium. It's the sort of confrontation, says Pugh, that C-Plan was supposed to make obsolete.

—ELIZABETH FINKEL

Elizabeth Finkel writes from Melbourne.

2000 CENSUS

Supreme Court Gets Lesson in Enumeration

The bitter battle over how to conduct the 2000 census has finally landed at the Supreme Court. Last week the justices heard arguments over whether the Census Bureau may use statistical sampling techniques to estimate the U.S. population. The court may choose not to issue an opinion, a decision that would toss the question back to a deadlocked Congress. But if the court does try to undo the tough scientific, legal, and political knot, its ruling will likely decide how the count will be conducted, experts say.

The stage for the high-stakes hearing was set last summer, when the Clinton Administration appealed two U.S. District Court decisions that the bureau's plan for the once-a-decade count violates the Census Act. That plan would use sampling to estimate some 10% of the nation's population, an approach the bureau says will catch millions of people missed in a head count and save \$675 million. The scientific community has, for the most part, rallied to sampling's defense (*Science*, 6 February, p. 798). Statisticians "overwhelmingly support" sampling, says Paul Voss, a statistician at the University of Wisconsin, Madison.

But House Republicans and others are demanding a traditional person-by-person tally, arguing that the sampling procedure is subjective and would be prone to error and partisan tampering. It is also, they contend, unconstitutional. The political stakes are high: The numbers are used to divide House seats among the states, parcel out at least \$180 billion in federal funds, and carve up states into congressional districts.

The case before the court focuses on whether sampling numbers may be used to divvy up House seats among the states, a procedure called apportionment. The Census

Bureau estimates that sampling corrections applied to the 1990 census would have shifted one seat to California. Critics and defenders agree, however, that if sampling data had been used to redraw congressional district lines, it might have changed the electoral outcome in several seats.

Both sides found reason for optimism after the 90-minute court session. Sampling foes were buoyed by an exchange regarding the Constitution's call for an "actual enumeration" to divide up House seats. "Most people would think actual enumeration would mean a count—how do you get around that?" asked Justice Sandra Day O'Connor. Solicitor General Seth Waxman, arguing on behalf of the Census Bureau, replied that the founding fathers had meant a "good faith empirical effort." So, Justice Antonin Scalia asked, "What is excluded? Rolling the dice?"

Sampling supporters had reason to smile when Justice John Paul Stevens asked what the bureau should do if it knew an apartment was occupied but no one answered the door. Would the Constitution require census takers to put down zero? "Your honor, they can't guess," said attorney Maureen Mahoney, arguing for the House of Representatives. "Even if the lights go on and off in the evening?" asked Justice Stephen Breyer. At the end of the day, says Tom Hofeller, staff director for the Republican-led census subcommittee, "I don't think anybody could have walked out thinking it went either way."

Even if the court finds the bureau's plan unconstitutional for apportioning House seats, it might still be legal to use sampling to derive a second count for redistricting or divvying up federal funds. One Republican staffer says that redrawing congressional district lines according to sampling numbers in 1990 could have cost the party as many as 10 House seats. Census panel chair Dan Miller (R-FL) asserts that Democrats are keen on sampling only for the sake of such political gains. "That's the reason they want to change things," he says.

Proponents are ready to push the bureau to use sampling to provide more accurate numbers for redistricting and distributing federal dollars. "If we lose in court, we would definitely be moving toward a two-number census," Representative Carolyn Maloney (D-NY) told *Science*. But bureau director Kenneth Prewitt has reservations: "Once you have two numbers, why not three, four, five, six?" Compiling inaccurate tallies, he says, "is like giving up on the scientific underpinnings" of the endeavor. A ruling that sampling is constitutional, on the other hand,

would throw enormous weight behind the bureau's plan. "If that happens, the party's over," concedes one Republican staffer. "But I don't think it will."

Alternately, the Supreme Court may rule that the lower courts should have thrown the case out. Waxman argued that neither the House nor the other plaintiffs had been harmed by the bureau's plan and had no right to sue. If the Supreme Court accepts that argument, House members will have to



Mystery job. The bureau is hiring, but census plan is uncertain.

slug it out for themselves. The court is expected to rule by the end of June, but Congress may have to take up the matter sooner. Because of squabbling over the census plan last summer, the Census Bureau's authority to spend 1999 funds is set to expire on 15 June.

—DAVID KESTENBAUM

ASTRONOMY

Sky Survey Racks Up Record-Setting Quasars

CHICAGO—Just a few days into its 5 years of scanning the heavens, the Sloan Digital Sky Survey has already begun setting records. Within a narrow strip of sky along the celestial equator, the Sloan's 2.5-meter telescope has bagged three of the four most distant quasars ever seen, including a new record-holder. It also found another nine of these distant beacons, thought to be the cores of young galaxies set ablaze by mysterious central engines, at distances nearly as great. At that rate, the entire Sloan survey is likely to pick out 1000 quasars at distances close to the current record-holder, says Michael Turner, an astrophysicist at the University of Chicago and the Sloan's spokesperson.

"Anybody who had any doubt that the Sloan was going to completely revolutionize quasar studies probably has a lot fewer doubts," says an elated Turner. Patrick Osmer, a quasar hunter at Ohio State University in Columbus, says that the Sloan "is going to be as powerful as we all hoped in this