RUSSIAN SCIENCE

Danger to Peer Review Is in Eye of Beholder

MOSCOW—Is peer review in Russian science on the way out? It depends on whom you ask. The heads of two foundations that follow a Western-style peer-review system have very different views on the impact of management changes designed to reduce the foundations' freedom.

"It would be a step back, like from a human being to an ape," contends Yevgeni Semyonov, director-general of the Russian Humanitarian Sciences Foundation (RHSF), which funds social science. But Mikhail Alfimov, head of the Russian Foundation for Basic Research (RFBR), which funds natural sciences, argues that the new structure won't harm peer review.

Last year, conditions improved slightly for Russian scientists, who for the first time in more than a decade received their regular paychecks each month. But the paltry salaries don't include money to operate their labs. In addition to tapping into Western funds to buy equipment and supplies, scientists also compete for grants from the two Russian foundations. Although the grants aren't for huge sums—about $3500—they provide young scientists with work and the opportunity to travel to conferences and field sites within Russia.

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>
> **—Yevgeni Semyonov**

The foundations are also sterling examples of the positive influence of the West on Russian science. Set up by the government in the early 1990s, the two organizations employ a peer-review system modeled after that of the U.S. National Science Foundation. Each Russian foundation has a scientific council that arranges for Russian experts to review and make decisions on grant proposals. Separately, each foundation has a directorate that manages its affairs, from administering the grants to interacting with the government.

Last summer, however, the Putin Administration decided that the foundations enjoyed too much freedom. Although both distribute government funds, they operate independently from the state. By converting each foundation into a state establishment, the government can require its scientific councils to become subordinate to the directorates.

Such an arcane change would wreak major damage on the peer-review system, asserts Semyonov. "The directorate [would] obtain the right to interfere in the decision on the grants distribution," he says. "This would lead, if not to the complete undoing of the institution of independent evaluation, then at least to its substantial deterioration." Semyonov says that he speaks for many scientists who serve on expert panels or who consult for the RHSF.

> **"No one will encroach on the basic principles of the foundation."**
>
> **—Mikhail Alfimov**

Alfimov disagrees. In a recent position paper, he insisted that the change in status is merely a formality. "No one," he wrote, "will encroach on the basic principles of the foundation." Alfimov, who declined to be interviewed for this article, warned Semyonov "not to scare the scientific community."

Alfimov has support from some rank-and-file scientists. Alexei Ryskov, a biologist at the Institute of Gene Biology in Moscow who has served on RFBR review panels, doubts that changing the status of the foundation will corrupt the peer-review system—if only because the grants it hands out are so small. "If we [were speaking] about, say, a $50,000 grant, that might be different," he says.

Just who's right should be determined in the coming weeks. Alexandr Dondukov, minister of industry, science, and technologies, has granted a reprieve to the humanities foundation, which plans to spend about $600,000 on grants this year. The natural sciences' body, meanwhile, has dutifully filed the papers for the change in status. Now observers are watching to see whether the science council will be able to spend the RFBR's $3.5 million in grant money this year before it must report to a new boss.

–VLADIMIR POKROVSKY

Vladimir Pokrovsky is a writer in Moscow.

ECOLOGICAL RESTORATION

NRC Panel Pokes Holes In Everglades Scheme

An expert panel that has taken a first cut at reviewing the controversial $7.8 billion Everglades restoration plan is sounding a note of caution about one of its essential elements. In a report released last week,* the National Research Council (NRC) panel raises concerns about the planned use of wells drilled in southern Florida's Upper Floridan aquifer—a vast, porous layer of limestone—as storage tanks to regulate water levels in the region. "There are significant uncertainties associated with aquifer storage, and you have to answer the questions," says aquifers subcommittee chair Jean Bahr, a hydrogeologist at the University of Wisconsin, Madison.

The panel looked at a crucial piece of the Everglades restoration plan—storing water in aquifers. The plan, drawn up by the U.S. Army Corps of Engineers and other federal and state agencies, would attempt to help ailing wildlife by restoring the natural flows of fresh water that once stretched from Lake Okeechobee south to the Everglades. But

Water world. Everglades plan would shunt water stored in aquifers through canals like these.

CREDIT: SOUTH FLORIDA WATER MANAGEMENT

* www.nap.edu/books/0309073391/html

rather than undoing all the canals, levees, and dikes that have diverted the water to agriculture and cities, the idea is to pump the water they carry into more than 330 wells drilled in the Florida aquifer and then release it during dry spells. Congress approved a down payment of $1.4 billion for the 20-year restoration last fall, and the Army engineers plan to begin two pilot projects in 2003 that will involve drilling test wells and collecting water-quality and geological data.

But some ecologists and hydrologists have taken issue with the idea, arguing that it would be better to remove more barriers to natural water flows. The NRC's Committee on the Restoration of the Greater Everglades Ecosystem (CROGEE) was set up a year ago in response to such criticisms.

In its first report, a review of two planned aquifer pilot projects, the CROGEE notes that the overall aquifer plan, which would require storing up to 6.3 million cubic meters of water per day, is "unprecedented" in scale. Showing that it will work "will require studies that go beyond the scope of the proposed ... pilot projects," the report says. It urges agencies to go forward with a proposed regional modeling study of how the new wells would affect the aquifer. The panel also recommends that more data be collected during the pilot projects, including studies of whether storing water in the aquifer would degrade the water quality, leading to harmful effects on ecosystems.

Corps officials say they've already begun responding to these comments since they were aired at a CROGEE workshop last fall. "It's a good report. It gives us some good guidance," says Stu Applebaum, ecosystem restoration chief for the corps in Jacksonville, who says the agency expects to carry out the regional study when the pilot projects begin.

Those data, however, will be only a beginning. CROGEE's first report notes that more analysis, including an assessment of energy costs and evaporation rates, is needed to determine whether aquifer storage is preferable to surface storage. And the committee is now reviewing the environmental measures that will be used to assess whether restoration is working. **–JOCELYN KAISER**

PLANETARY SCIENCE

Caltech Picks Insider To Lead JPL

The Jet Propulsion Laboratory (JPL) in Pasadena, California, has had a hard time of it in the past 18 months. Two prominent Mars failures sullied its formidable reputation, its longtime director stepped down, and its dominant position in solar system exploration is being threatened by NASA's decision to open up a Pluto mission to competition.

But the center soon will have a new leader who promises to confront the lab's troubles. Charles Elachi, now chief of space and earth science programs at JPL, will take over as director on 1 May. "I'm not afraid of competition," he said at a 31 January press conference. He said he plans to spend the interim developing a plan to handle a bevy of smaller missions within NASA's constrained budget.

The decision by the California Institute of Technology (Caltech), which runs the lab under contract from NASA, surprised many in the space science community who assumed the job would go to an outsider. But Elachi's knowledge of the lab, scientific credentials, and vision vaulted him to the top of a list of 74 candidates. "We're not merely anointing a prince here," said Caltech President David Baltimore. "He simply provided insurmountable competition."

Propelling JPL. New Director Charles Elachi says he's "not afraid of competition."

Elachi has had a management role in the Mars program, which had to be revamped after the failures of the Mars Polar Lander and the Mars Climate Orbiter in late 1999. But several NASA officials and space scientists say that Elachi's responsibility for those failures was minimal. "He was the fall guy," adds one senior researcher who knows the lab well. The departing director, Ed Stone, was blamed by NASA officials for failing to speak out more publicly about the lab's responsibility. Stone, age 65, will return to teaching at Caltech after 10 years as head of the lab.

The 53-year-old Elachi studied physics, geology, and business administration and earned his electrical engineering doctorate from Caltech before joining the lab in 1971. He helped develop a series of radar instruments used on the space shuttle that revealed archaeological sites just under Earth's surface in Egypt, China, and Saudi Arabia. He also is team leader for a radar experiment on the Cassini mission to Saturn.

At the press conference, NASA Administrator Dan Goldin told Elachi exactly what he must do: "Figure out how to double the number of missions with a similar workforce—and maybe double that again." One former NASA official who has worked with Elachi says he's up to the task. "Elachi

CREDITS: (TOP TO BOTTOM) JPL/NASA; PALLAVA BAGLA

ScienceScope

Climate Costs How hard will greenhouse warming hit the global pocketbook? The United Nations Environment Programme (UNEP) has an answer: $304.2 billion per year in 2050, according to a study released this week by insurance company members of UNEP's financial services initiative. The big number prompted UNEP executive director Klaus Toepfer to plead at UNEP's Governing Council meeting in Nairobi for more funds to implement his organization's work.

But the $304.2 billion figure is hardly as imposing as the decimal point would imply, economists say. It works out to just a few tenths of a percent of world gross domestic product (GDP), notes economist James Edmonds of the Washington, D.C., office of the Pacific Northwest National Laboratory; the United States already spends about 2% of its GDP on pollution control. And most experts would not even attempt to put a price tag on global warming. "There are just so many difficulties in making that kind of estimate," says Neil Leary of UNEP's Intergovernmental Panel on Climate Change (IPCC) office in Washington, D.C.

On 19 February, the IPCC working group that Leary manages will be releasing its own 5-year report on the impacts of climate change. But he promises that "there won't be any dollar cost"—with or without decimal points—in the report.

Aftershocks India is scrambling to conduct a "scientific postmortem" of the Bhuj quake last month that killed more than 20,000 people in the western state of Gujarat. The research program will include extensive monitoring of the surface with global positioning system units for clues to what may be happening deep within the Indian plate, some 30 kilometers underground near the quake's epicenter. "A major event like this can cause long-term changes in the Indian plate, and we do not want to miss the opportunity to understand them," says V. S. Ramamurthy, secretary of the Indian Department of Science and Technology. He also promised "rapid, interim clearance" for proposals to help scientists sidestep the "long, drawn-out" review process. The region has been the subject of ongoing paleoseismic studies by the Center for Earth Science Studies in Thiruvananthapuram, Kerala.