

FWS biologist Bill Lehman.

The Keystone report argues that the ESA should be amended "to give explicit congressional endorsement" to the expanded use of safe-harbor agreements. Of course, the landowners would be free to raze the very land they nurtured for the woodpecker. But, says Bean, the arrangement may provide a chance for the bird to recover to the point where nesting pairs could be trapped and relocated. "We are taking a chance, but we're taking a chance in an area where we aren't doing very well," says Lori Williams, the agency's legislative director.

Not everyone agrees with the Keystone group's conclusions. One analyst who dropped out of its discussions, R. J. Smith, senior environmental scholar at the Competitive Enterprise Institute, a conservative think tank in Washington, D.C., says he left because "it seemed to me like there was a conclusion reached before the group had

even started." Smith, who favors replacing the act with voluntary, nonregulatory incentives for protecting species, says the Keystone participants started from a premise of improving, rather than erasing, the act.

The Keystone incentives appear to be a big hit with Congress. Pending bills in the Senate and the House use incentives outlined in the Keystone report as a major tool to reform the ESA, congressional aides told *Science*. One bill, expected to be co-authored by Representative Don Young (R-AK), chair of the Committee on Natural Resources, which is considering the act's reauthorization, "is having every incentive but the kitchen sink" written into it, says a House aide. Similar language is part of a bill being drafted by Senator Dirk Kempthorne (R-ID), chair of the Committee on Environment and Public Works, which earlier this summer held ESA reauthorization hearings.

The bills will not please everyone, how-

ever. The Kempthorne bill, for instance, may require the Secretary of the Interior, whose department enforces the act, to rank endangered species according to their potential value to society. Although such a controversial provision—one scientist says a scaling system "has no basis in science whatsoever"—may well be toned down, a Senate aide predicts that the Interior Secretary is still likely to end up with "considerable latitude" in choosing which species to protect.

Although difficult issues remain, most prognosticators see a political compromise on the horizon for ESA. "The story now isn't where we disagree [on how to change the act], but where we agree," says Doggett. If he's right, that's good news for woodpeckers and property owners.

—Richard Stone

*Richard Stone is on leave from Science with a Fulbright Fellowship to teach at Rostov University in Russia.*

## SUPERCOMPUTING

### Panel Suggests Fewer NSF Centers

The four supercomputing centers that have played a key role in making supercomputers available to researchers across the country are facing an uncertain future. A special task force is preparing to recommend that the National Science Foundation (NSF) should support fewer centers, which would be chosen by a national competition. The panel, whose recommendations were circulated last month in a draft report, says the 10-year-old program has done a good job serving the scientific community, but future centers should work more closely with existing state and regional supercomputing facilities.

The panel, headed by Edward Hayes, vice president for research at Ohio State University, was set up last winter after the National Science Board (NSB), NSF's governing body, rejected a plan drawn up by a previous panel to renew the centers' contracts without holding an open competition (*Science*, 17 March, p. 1585). The board, noting that the centers' role has changed, decided that their *raison d'être* should be re-evaluated. NSF created the centers to make supercomputers available to scientists studying problems like protein folding and global climate change and linked them with a high-speed network—part of the embryonic Internet. Now they are also involved in developing software and providing support services for academic and industrial researchers. NSF currently provides about \$60 million a year for the program, which covers about half the operating funds for the activities of the National Center for Supercomputing Applications in Urbana-Champaign, Illinois; the Cornell Theory Center; the San Diego Supercomputing Center; and the Pittsburgh Supercomputing

Center. The board told the task force to assume a flat budget over the next 5 years.

The draft report endorses the centers' current mission and rejects the idea of eliminating the program. But the panel concluded that an open competition to choose two or three "leading-edge" centers would be the best use of limited resources. Under that plan, the winners would form partnerships with half a dozen or more universities, smaller supercomputing centers, and other NSF research centers to serve the larger scientific community. Such partnerships would increase the staff available to help scientists develop their algorithms and would provide a broader range of computing power that could be tailored to a particular user's needs, the panel says. "The goal is to find a mechanism that gives us the biggest bang for the buck," Hayes says.

The panel's recommendations are drawing a mixed reaction from center officials. "I think it's very reasonable," says Cornell's Malvin Kalos, although he adds that the recompetition will "mean a great deal of work for me and my staff." Kalos says he expects the current centers to compete separately rather than join forces. Indeed, Kalos says the prospect of a contest has already hindered an existing partnership aimed at projects such as networking the supercomputers to create a unified environment. "It's been an uneasy marriage" among the centers,

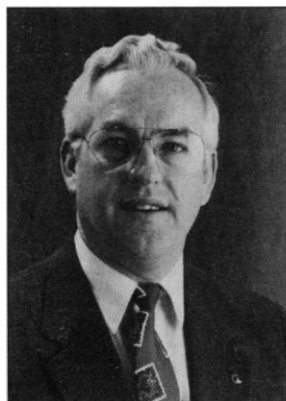
agrees task force member Peter Kollman, a computational chemist at the University of California, San Francisco.

Some observers worry that the selection process might open the door for political deal-making. Larry Smarr, director of the Illinois center, says Congress has played a major role in starting other non-NSF supercomputing centers and that the same thing could happen with site selection for the new centers. A competition, he says, will also provide a forum for lobbyists from companies such as IBM and Cray, which supply machines to the current centers. "It's just a very dangerous environment to try to do a rational, calm, scientific analysis," Smarr says.

Politics aside, the draft report endorses the centers' record of allocating computing time among researchers. The panel found that scientists who receive funding from the supercomputer centers also do well in competitions held by other NSF directorates. The draft report says NSF should "increase the involvement of the directorates" in approving proposals but suggests no specific changes. "They say ... we basically need minor tuning of the present system," says Princeton University cosmologist Jeremiah Ostriker, a center user.

The report is being circulated for comments, but Hayes expects few changes in the final version that will go to the board this fall. The centers' contracts expire in 1997 after the board extended them last fall for 2 years.

—Jocelyn Kaiser



**Numbers game.** NSF panel chair Ed Hayes believes that less is more.