

U.S. OCEAN POLICY

Proposed Rule Would Limit Fish Catch but Faces Data Gaps

The U.S. government has proposed first-ever annual catch limits in an attempt to stop overfishing.

Environmentalists are welcoming the draft rule, published in the *Federal Register* on 9 June by the National Oceanic and Atmospheric Administration (NOAA). But experts caution that it will be difficult—and hugely expensive—for the agency to regulate the many marine species about which little is known. Some scientists also worry about economic repercussions if the rule ends up curtailing fishing in healthy populations. “It could have staggering consequences,” says fisheries biologist Ray Hilborn of the University of Washington, Seattle.

In December 2006, Congress made extensive changes to the federal law that governs fishery management policy (*Science*, 22 December 2006, p. 1857). The job of implementing those changes falls to NOAA’s National Marine Fisheries Service (NMFS), which manages more than 1000 marine species, not all of which are economically important. Some 41 of the 528 stocks that NMFS monitors are being overfished, mostly off the East Coast.

The rule spells out how NMFS intends to end the overfishing, rebuild depleted stocks,



Mysterious catch. A proposed regulation could lead to tighter catch limits for the red grouper and other species about which little is known.

and ensure “optimum yield.” All eight regional fishery management councils would be required to set annual catch limits, which must be approved by a council’s scientific advisory committee. The limits must

incorporate a safety margin to account for scientific uncertainty surrounding the stock assessment, as well as uncertainty about technical aspects of implementation.

There’s tough enforcement language in the new rules. If the councils don’t meet their deadline for rebuilding overfished stocks, they will have to cut the annual catch limits. Lee Crockett of the Pew Environment Group in Washington, D.C., calls the language “a pleasant surprise.”

One unanswered question is how to deal with so-called data-poor species. “It’s a big black box,” says Andrew Cooper of Simon Fraser University in Burnaby, Canada. He predicts that catch limits will be set low and that the fishing industry will agree to contribute more data and analysis to the agency.

Hilborn worries about the negative impact on trawl fisheries, which scoop up large numbers of a few abundant commercial species but also many low-value species about which little is known. Trawlers could be prohibited from catching anything at all in order to protect data-poor species that may not be in danger. “You’re going to give up a lot of fish,” he says. NMFS scientists are working on technical guidance about how to deal with data-poor species.

It won’t be cheap to fill in the data with ▶

2008 U.S. BUDGET

House Gives \$400 Million to Four Science Agencies

Science agencies are barely a footnote in the \$186 billion supplemental spending bill to continue funding the U.S. war effort in Iraq and Afghanistan approved by the House of Representatives last week. But the footnote includes a welcome bump-up of \$400 million for four agencies whose research budgets were flattened late last year by legislators.

“It’s not that much money. But as a statement of priorities, we’re very gratified,” says Howard Garrison of the Federation of American Societies for Experimental Biology in Bethesda, Maryland, referring to the \$150 million that the House approved for the National Institutes of Health for the 2008 fiscal year that runs until 30 September. That could fund 260 additional grants across most of the 27 institutes and centers. Lawmakers also doled out \$62.5 million each for the National Science Foundation (NSF), the Department of Energy’s Office of Science, and NASA (sciencenow.sciencemag.org/cgi/content/full/2008/620/1),

plus \$62.5 million for DOE’s environmental cleanup efforts at Hanford, Washington.

Science advocates have been lobbying for much more—\$900 million—for NSF, DOE science, and the National Institute of Standards and Technology to restore those agencies to levels requested by President George W. Bush in his 2008 budget and initially backed by Congress before a last-minute reversal (*Science*, 4 January, p. 18). Although the White House loudly opposed adding domestic spending to the war supplemental, last week it bent to pressure from House Democrats and agreed to accept expanded unemployment and veterans education benefits as well as \$8.5 billion in emergency spending for disaster relief. The Senate, which last month had approved \$1.2 billion more for research in its version of the war supplemental, was expected this week to accede to the terms of the House bill (H.R. 2642).

The DOE science funding is intended to

stave off layoffs at two high-energy physics laboratories, Fermi National Accelerator Laboratory and the Stanford Linear Accelerator Center (*Science*, 11 January, p. 142). Most of the additional NSF funding will go to improving precollege math and science instruction through its existing Noyce Scholarship program for undergraduates and a new master’s level program modeled on a 4-year-old initiative in New York City called Math for America. The NASA funding will bolster science and aeronautics programs cut to fix the shuttle system in the wake of the 2003 Columbia disaster.

The \$400 million in the supplemental represents what House and Senate Democratic leaders decided they could afford after agreeing to extend a helping hand to the scientific community. “Any split was as rational as any other,” explains a congressional aide about the allocation between NSF and NASA. “I’m not sure the [2008] requests had anything to do with it.”

—JEFFREY MERVIS

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rigorous stocks assessments and marine surveys. Accordingly, President George W. Bush has requested an increase of \$8.9 million to NOAA's \$31.6 million budget next year for fishery assessments, and Congress seems amenable to the hike. But Hilborn doubts that amount would be nearly enough. "To do it right would take a staggering increase in resources," he says.

Another regulation will give NMFS

more data on recreational fishing, which can rival the impact of commercial fishing in some parts of the country, by creating a registry of saltwater anglers. The agency will accept public comments through 11 August, and the catch-limit rule remains open for public comment until 8 September. The agency hopes to finalize both rules by the end of the year.

—ERIK STOKSTAD

FUSION REACTOR

ITER Costs Give Partners Pause

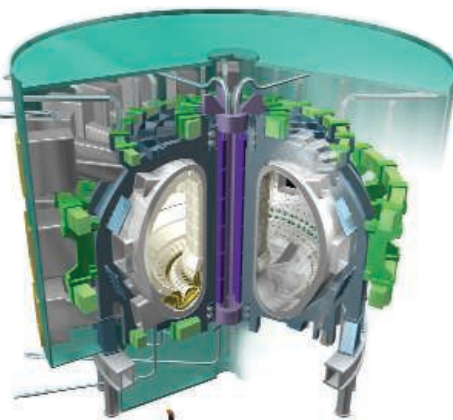
Last week, ITER scientists revealed a new cost estimate for the multibillion-dollar fusion reactor that was 30% higher than earlier calculations. Now the project's seven international partners must decide whether they can afford it.

ITER, or the International Thermonuclear Experimental Reactor, is designed to show conclusively that fusing together hydrogen isotopes at extreme temperatures—the process that powers the sun—can be harnessed on Earth as a practical energy source. Fifteen years of discussion and experiment led in 2001 to a "final" design for the 20,000-ton ITER reactor, twice the size in linear dimensions of the world's current largest. Since then, the partners—China, the European Union, India, Japan, Russia, South Korea, and the United States—have chosen Cadarache in southern France as a site and set up the organization that will build the reactor (*Science*, 13 October 2006, p. 238).

The current price tag is €10 billion, half of which will pay for construction. Last week, the project's governing council met in Aomori, Japan, to hear about a new review of that 2001 design that includes numerous refinements and upgrades to components, including magnets and heating systems, plus additional magnets to help control explosive discharges at the plasma edge (*Science*, 13 June, p. 1405). Those design changes will cost an extra €1.2 billion to €1.6 billion, ITER managers estimate, and the council immediately ordered an independent assessment of the costs in time for its next meeting in November. In the meantime, the council did approve a 2-year delay, to 2018, in the expected start-up of the reactor.

Fusion experts say that it's notoriously hard to keep such large projects within budget. "When they actually go out and build things, they always cost more," says Stephen Dean, president of Fusion Power Associates, a lobby group in Gaithersburg, Maryland. But

ITER scientists believe that the design changes are crucial to the project's chance of success and that the partners should approve the new cost estimate. "It will define what we can do and when we can do it," says David Campbell, assistant head of ITER's department of fusion science and technology. It won't be an easy sell, however: Some



Going up. As ITER's partners prepare to start construction, design changes are bumping up the cost.

ITER partner governments won't be happy at being asked to fork out more.

The panel tasked with assessing the new cost estimate will be led by Frank Briscoe, former operations director of the JET fusion reactor near Oxford, U.K. The European Union, which as host must bear nearly 50% of the cost, declined comment on the new estimate beyond saying, in the words of research spokesperson Catherine Ray, that "we're happy [Briscoe's] group has been set up." Meanwhile, the partners in the world's most expensive experiment will be debating its future. "There will be some very, very hard diplomatic negotiations over what the partners are prepared to pay," says a senior European researcher who asked not to be named.

—DANIEL CLERY

Hungary: Where Europe Will Be EITing

Budapest will host the headquarters of the new European Institute of Innovation and Technology (EIT). Conceived as a way to boost innovation à la the Massachusetts Institute of Technology, EIT has been roundly criticized by European scientists as misconceived and politically motivated (*Science*, 21 September 2007, p. 1676). But József Pálinkás, president of the Hungarian Academy of Sciences, says he hopes EIT will attract new investors to the region and inspire Hungary's students and young scientists. "It shows that Hungary is a player" in the European science scene, he says.

Hungary beat out Wrocław, Poland; Jena, Germany; the Spanish city of Sant Cugat des Vallés; and a twin bid by Vienna, Austria, and Bratislava, Slovakia, for the right to host the administrative headquarters of the virtual institute, which is slated to receive €300 million through 2013.

—GRETCHEN VOGEL

Council: Machine Won't Destroy Earth

With only weeks to go before particles begin whizzing around in the Large Hadron Collider (LHC), the world's most powerful particle accelerator, at CERN near Geneva, Switzerland, the lab's governing council sought last week to get one thing straight: Yes, it's safe. Honest.

Citing some of the more exotic theories of fundamental physics, online commentators have suggested that the LHC's particle collisions could create a microscopic black hole that, if stable, could swallow up Earth. Other potential threats include vacuum bubbles, magnetic monopoles, and strangelets. Two people even filed a lawsuit in U.S. federal court in Hawaii in March to try to halt LHC operations until a safety and environmental audit is carried out.

Although the lab looked into the issue in 2002, media interest in the perceived risks and new results and theories in physics drove the lab to reexamine it. CERN's 15-page report, released last week, concluded that "there is no basis for any concerns," principally because thousands of cosmic rays with energies much higher than LHC can achieve bombard Earth every day, yet no black hole or exotic particle has yet devoured the planet. "The Web has become a place where people can steer the scientific process in unpredictable ways," says CERN theorist Michelangelo Mangano, a co-author of the new report.

—DANIEL CLERY