

Congress Asks, Is Nature Worth More than a Shopping Mall?

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But cost-benefit analysis is problematic.

By WILLIAM K. STEVENS

Increasingly over the last few years, Federal regulators have been criticized on the ground that they spent billions of dollars to attack environmental and health threats without adequately considering whether the benefits justified the costs.

In cleaning up toxic waste, for example, is it really worth the expense to make the site as spotless as a kitchen? Might some of the money be better spent on another problem?

In February the House of Representatives passed a bill requiring analysis of the costs and benefits, and comparison of the relative seriousness of environmental and health risks, before any regulation expected to result in an annual cost of \$25 million or more can be issued. Similar legislation is soon to be considered by the Senate.

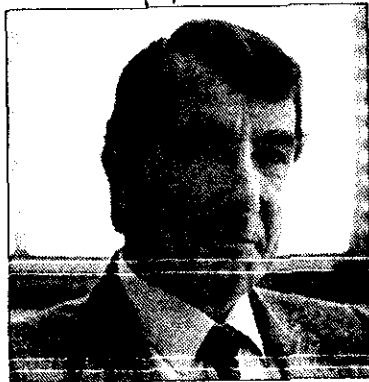
Who could argue with such a rational proposition?

Lots of people.

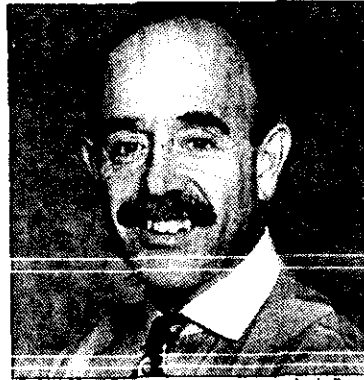
The main problem, say many experts in cost-benefit analysis and the assessment of risk, is that these analytical tools are too inexact, too prone to large margins of error, too dependent on assumptions and too riddled with value judgments — necessarily so — to be employed in the way in which the House bill stipulates.

How much, for instance, is an endangered ecosystem worth compared with the commercial or industrial development that could replace it? Many experts say that scientists and economists do not yet know nearly enough to answer the question quantitatively; that in the end, the attempt would often boil down to a subjective reckoning. Yet the emerging new legislation could require in some cases that the question of costs and benefits be addressed when land use is regulated under the Endangered Species Act. This would be especially true if, as has been discussed in the Senate, the requirement is broadened to include any case in which there might be a "significant impact" on the economy.

Risks to health as a result of environmental contamination — and therefore the benefits of reducing



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Thinking About Cost-Benefit Analysis

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Quantifying the value of nature is 'not ready for prime time' and may never be, one scientist says.

them — are considered somewhat easier to assess, but even there the ignorance quotient and the margin of error remain large, experts say. "At their best, risk assessments contain data gaps and rely on assumptions that can affect the outcome by 100 or 1,000 fold or more," seven prominent authorities on the subject said in a letter to the Senate earlier this month. They wrote that while cost-benefit analysis has a place in public policy, it is "no magic wand," and "public policy is not well served by pretending science can do what it cannot."

One of the seven, Dr. Nicholas A. Ashford of the Massachusetts Institute of Technology, an expert in cost-benefit analysis, says that the technique "is not ready for prime time, and I doubt that it will ever be."

The House bill appears to recognize the limitations of the method: it does not require regulatory agencies to base their decisions on a finding that benefits exceed costs, or even

that costs and benefits be expressed in dollar amounts where that is not possible. It merely requires the agencies to show that the benefits are "likely to justify, and be reasonably related to" the costs.

If the bill stopped there, some critics say, all might be well. But it goes on to give the courts the authority to review the risk assessments and cost-benefit analyses in the case of a challenge. Since the imprecision of such analyses makes their results highly arguable, the critics fear, judicial review would open the door to interminable challenges by regulated parties like chemical manufacturers and owners of endangered habitats, paralyzing the regulatory process. That result, some charge, is precisely what the Republican sponsors of the bill intend.

Some prominent economists who support cost-benefit analysis, while recognizing its limitations, agree on the pitfalls of judicial review. "I shudder at the thought of turning these things over to the courts to decide," said Dr. Paul R. Portney of Resources for the Future, a nonprofit research organization in Washington.

The courts, Dr. Ashford says, "are just not equipped intellectually to pass on cost-benefit analysis or risk assessment; they just don't have the expertise."

Even some of the strongest proponents of the general thrust of the

emerging new legislation think it goes too far on the question of judicial review. Carried out properly, judicial review "will favor those that have the strongest case in science and economic rationality," said Dr. John D. Graham, the director of the Harvard Center for Risk Analysis at Harvard University. But, he said, the House bill "is a little too aggressive." This could be cured, he said, if the challenger is saddled with the burden of proof while the regulating agency is "given deference."

The provision for judicial review goes beyond existing arrangements for risk assessment and cost-benefit analysis, concepts not unknown to the Federal bureaucracy. The Environmental Protection Agency, for example, has performed several cost-benefit analyses over the years. Some have supported proposed regulations while others have not, says Dr. Richard Morgenstern, a senior policy analyst who recently left the agency after 12 years. He is now employed at Resources for the Future, where he is working on a book on cost-benefit analysis.

Another proposed new feature, he said, is a requirement in the House bill that when the annual cost of a regulation is likely to be \$100 million or more, cost-benefit analyses and risk assessments must be reviewed by outside panels of experts. This, he said, is designed as a quality-control measure. Critics have attacked the

measure because some of the experts sitting on the panels would be designated by regulated parties. But Dr. Morgenstern points out that all panelists would have to declare their interests, as is commonly done in such situations, and that any overweening interest would tend to weaken a panelist's influence. Besides, he said, it is usually impossible to find qualified panelists who do not have some interest in one side of an issue or another, as has been amply demonstrated by efforts to assess the environmental effects of asbestos.

In the past, agencies have sometimes based their assessments of health risks on the worst cases — for instance, the effect of air pollution on the very old, the very young and those with respiratory or heart problems. The House bill would require that the impact on average people be assessed, as well. A regulation might then be based on the worst case or the average case, but this value judgment would be made explicit.

Similarly, in cases where benefits or costs cannot be well quantified — as in determining the relative value of an endangered ecosystem and the mall that might replace it — non-monetary criteria would be allowed, but they would have to be explained.

Generally speaking, environmental benefits are harder to measure than costs, but even cost estimates are "ballpark at best," the seven experts said in their letter to the

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Senate. History has shown, said Dr. Ashford, that costs usually have been overestimated and benefits underestimated.

It is especially difficult to measure the value of natural ecosystems, write scientists who in a broad sense that nature has enormous value — not least, it supports human life — economists and scientists have often been frustrated in trying to attach dollars to specific slices of nature or natural functions.

These experts have tried to calculate how much people would pay for the use and enjoyment of nature. And it may, for instance, be possible to gauge in narrow terms the relative economic value of clear-cut logging versus recreational use of a forest. But how much are undiscovered medicinal plants worth? Or an individual species or ecosystem with no obvious special utility that is on the brink of extinction? The answers are elusive, perhaps unobtainable.

To some scientists, the exercise is pointless, or worse, because it devalues nature. They point out that while insurance companies may be able to put a dollar value on a human life, moral arguments place human life beyond economics. What is true of an individual human, some say, is or should be true of a wild species.

In the view of Dr. David Ehrenfeld, a conservation biologist at Rutgers University in New Brunswick, nature "is not a subject for cost-benefit analysis." Not only is it impossible to quantify nature's benefits, he says, moral and ethical arguments for preserving species are more compelling than economic ones.

He notes that this is a minority view, but argues: "The reason cost benefit analysis has emerged is because, in fact, the moral argument against killing species are very powerful, even though economists like to pretend they are not. Cost-benefit is a kind of smoke screen that hides those arguments."