In the second quarter issue of *CHOICES*, William Reilly focused on environmental and health risk, and how these risks can be assessed and reduced. In this concluding part of the Batie/Reilly interview the former Administrator of the U.S. Environmental Protection Agency discusses his views on a wide range of topics — nonpoint water pollution, air pollution, wetlands, and NAFTA. In his discussion, Reilly comments on a variety of ways to reduce environmental problems including market trading schemes, regulation, cooperative activities with SCS, biotechnology, and environmental education. He offers helpful insights, and *CHOICES* is pleased to publish this interview.

An interview with William Reilly: part 2

by Sandra S. Batie

Batie: EPA does not have a significant field presence and delegates much research and planning to outside consultants; EPA also delegates much of the responsibility for nonpoint pollution to the States. Does this mean that nonpoint pollution should become the sole responsibility of USDA--an institution that has more "in-house" research, planning capacity, and field presence?

Reilly: The nonpoint source problem is the largest part of our remaining water pollution problem, and it's substantially unaddressed as a matter of national policy. The Coastal Zone Management Act has now begun to feature regulations agreed to by NOAA (National Oceanic and Atmospheric Administration) and EPA to require best management practices (BMPs) in the coastal areas and to condition the availability of grants under the Coastal Management Act on implementation of those practices. It remains to be seen how well the regulations will work and whether those grants are enough to "put teeth" into some difficult requirements.

I would welcome much greater involvement of USDA's Soil Conservation Service (SCS) in developing those BMPs. SCS has more expertise, they have a delivery system, and, not the least important, they have the confidence of the farmers. SCS will find that with respect to some crops in some areas, there will be some very difficult nonpoint pollution problems that could create confrontational situations with farmers. Confrontation would be difficult for SCS, I think. But this is a job government is going to have to undertake. More than 50 percent of the pollution of most of our rivers now comes from nonpoint run-off. If you do not address nonpoint pollution, you cannot solve the problem of polluted water.

Batie: What collaboration can you envision between USDA and EPA?

Reilly: There are some very imaginative concepts on which SCS and EPA can collaborate in the coming years. One is trading between point and nonpoint source pollutants. Look at a place like Long Island, New York, and there are other similar places around the country, where nutrients are a large part of the water pollution problem. Adding nutrient control to some of the waste water treatment plants would be a huge expense. It's frequently possible to get just as significant reductions in nutrients by making agreements for nonpoint pollution control with farmers. These agreements could be subsidized by cost savings obtained from the waste water treatment plants. Point-nonpoint trading is a method for putting money in the pockets of farmers, for managing a non-point source pollution problem, and for lowering the costs to water users in those regions where waste water treatment plants would otherwise have to be upgraded to meet water quality goals. Trading is not the kind of innovation associated with SCS, which, as an institution, does not have point pollution control experience. EPA,

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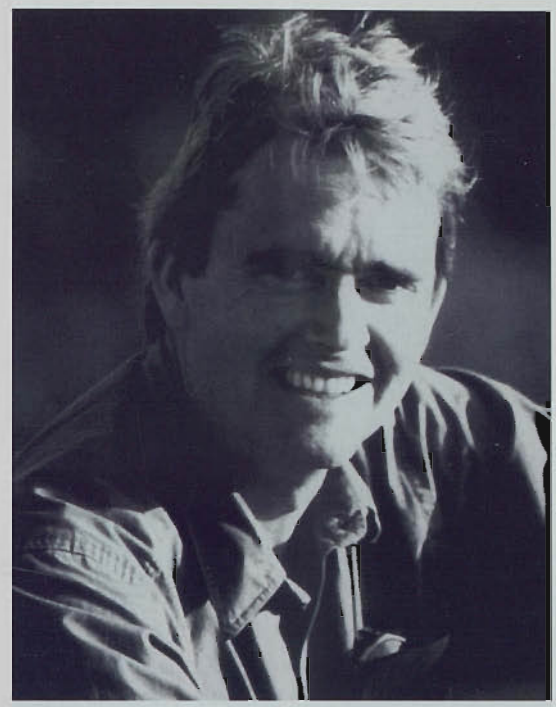

on the other hand, has experience with trading within the Clean Air Act with sulfur dioxides. I think trading is a promising direction in policy that could involve collaboration between the agencies.

Batie: EPA has put emphasis on market-based mechanisms to control water pollution. However, the two cases pointed to as examples of point-nonpoint pollution trading schemes—Dillon Reservoir in Colorado and the Tar-Pamlico Sound in North Carolina—have never become functional. Will you comment?

Reilly: You know, pollution trading schemes, for a long time were the "darling" of resource economists at Resources for the Future and other places. Because of long time-lag between the conceptualization and publishing of materials about trading and experimenting with them, many people just lost interest in them. It takes time to run these experiments. There are going to be "bugs" in them. We are still learning things about the auction of sulfur dioxide pollution emission rights, about the their value, and about the political acceptability of the sulfur dioxide trading scheme. But the fundamental fact about the trading schemes in the Clean Air Act is that it promises to save consumers of electric energy about one billion dollars a year. It promises to get the maximum pollution reduction for the money.

I think that some of the air pollution trading schemes now proposed or under way are much more ambitious in terms of management than anything I can imagine in the nonpoint source area. The southern California approach to control of ozone or smog is going to involve tens of thousands of sources. The size of the trading community creates problems of monitoring, communications, evaluation, and penalty setting. Trading is not easy, but the command control system has proven itself uniquely cumbersome when trying to deal with a large number of small sources of pollution. We have had a system that has been very effective at dealing with a relatively small number of very large sources of pollution—the automobile industry, the steel industry, the chemical industry. But when you're managing, for example, thousands of small sources, I do not think that command control will prove as effective.

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Batie: As you are well aware, many landowners feel resentful of regulation. What would be your response to an angry farmer who is being told how to manage his or her property and does not feel it is fair?

Reilly: I am well aware of this reaction. My father is a farmer. We have a farm in Illinois. I think that one of the frustrations of anybody who's being regulated is a sense that: "I'm being made to fit into a cookie-cutter and to comply with a lot of abstractions developed by people who don't know my problems, who don't even know my land, never have been where I've been, and who aren't sensitive enough to the cost that I have to confront." The concept of putting money in the pocket of somebody who solves a problem is very attractive. What the trading scheme does, if it works, is to provide incentives for pollution reduction. Trading doesn't say you have to get a specific technology and impose it time after time. Unfortunately, historically, regulations have impeded the development of new technology, and all too often, even "frozen in" an obsolete technology. What trading does is reward the individual who can make the largest reductions in the pollution by giving him or her something to sell. He or she sells it to somebody who presumably

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has more difficulty and more costs associated with getting pollution reductions than he or she does.

Trading is a classic market solution to the problem, but it is a solution to the problem. This is what some critics sometimes overlook.

Batie: One complaint some environmentalists raise to trading schemes is that they do not stigmatize pollution. What is your response to such a complaint?

Reilly: Well, I think the tendency to see pollution as a moral issue can be overdone. Pollution is a fact of the lives we lead. We cannot wholly eliminate pollution any more than we can wholly eliminate waste. We can, however, significantly reduce pollution. I think when you set an ambitious regulatory scheme that sets environmental quality goals, you are addressing the problem in a very moral way. Furthermore, market-based incentives allow regard for all of the other things that our society values and respects—such as keeping a healthy farm community, providing livelihoods for parents and children, education, and housing and pensions and all the rest. So I would make no apologies about trading or other market-based approaches.

Batie: What is the future for environmental policies—particularly as they apply to the agriculture and forestry sectors of our economy?

Reilly: I would hope that some years from now we could see an agricultural economy that has made much more ample use of biotechnological breakthroughs to have pest resistant crops, to require less pesticides and less fertilizer. We should be able to reduce the amount of chemicals that are required based upon a more precise understanding of the correct timing of application, plant needs, and soil characteristics.

I also think that the future will bring a clarification in our regulations. I understand why wetlands regulations are so infuriating to some farmers. We can make wetlands regulation simpler by providing more certainty about wetland delineation—what land is in a wetlands, what's not. It is wholly reasonable that a farmer wants the answer to wetlands' delineation questions: "Am I in or am I out and can I get those answers in my lifetime?" We have to do a lot better job of delivering information; that is one reason I like the idea of more collaboration with the Soil Conservation Service. In the future we should have better mapping and clearer delineation.

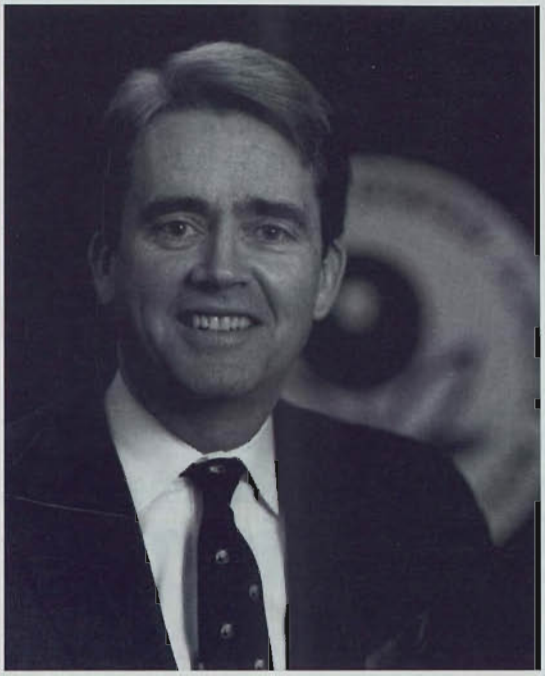
Batie: Could you expand on the role of biotechnology in meeting future environmental concerns?

Reilly: I have been a consistent enthusiast for biotechnology. I think some environmentalists get it wrong. They think biotechnology is like plastics, which have some consumer value but many inadvertent undesirable environmental byproducts. In my view, biotechnology is one of the most promising positive environmental innovations to appear. We have to make sure, among other things, that our environmental regulations don't frustrate its emergence. The environmental stresses that now confront our farmers can be really reduced, and in some cases positively eliminated, by biotechnologic products.

Batie: What advice do you have for the education of those who will in the future address environmental problems?

Reilly: As I travel to campuses across the country I am continually told of the enthusiasm generated by the inclusion of environmental issues in curriculums. We have the possibility of making a marvelous marriage between our environmental education priorities with students today, giving them an educational grounding in science to serve as a basis for their becoming more active and affecting the environment. At the same time, I think we can take a lot of their moral energy and enthusiasm and give it some rigor, give it some specific direction that will make future policy makers, consumers, and voters more sophisticated about environmental choices than was the last generation.

The principal lesson for all of us, is the degree to which people expect today both the economic and environmental problems they confront to be solved. The rhetoric of "either-or," of either jobs or environment, doesn't "sell." It didn't sell in the last



election. Senator Gore, particularly recognized this fact, and addressed specific ways to use technology to solve environmental problems while also creating jobs.

Others also understand that good economics can translate into good environmental citizenship. Of course the most obvious one is the "green" products. Ed Artzt, CEO of Proctor and Gamble, once showed me several of the products his company has developed to protect the environment. He is very proud of the packaging reductions accompanying new detergent concentrates (instead of water-added dilute detergents), of compostable diapers, and recyclable plastic containers. He completed his presentation to me by saying his company was not doing these things because of laws, rather, his consumers are demanding them. In a consumer-driven economy, such demands are going to affect the farm community just as much as they affect the manufacturers of detergents. These trends ought to be seen positively.

Batie: What is your opinion about the North American Free Trade Act (NAFTA) on enforcement of environmental regulations in Canada, the United States, and Mexico?

Reilly: From an environmental point of view, NAFTA is highly desirable. The mere prospect of a future NAFTA has already fostered unprecedented cooperation between the U.S. and Mexico on environmental enforcement and on environmental investments in the Border area. The Treaty explicitly protects the integrity of our environmental laws as well as the terms of key environmental treaties in the event of a conflict with a trade interest.

But fundamentally, NAFTA promises to make all three countries richer, according to all studies I've seen. Mexico's environmental problems are most fundamentally problems of poverty. They have good laws, but they lack the resources for the scrubbers, catalytic converters, waste water treatment plants, hazardous waste incinerators, and the rest that are critical to environmental protection. Currently, Mexico is spending one percent of its GNP on the environment, an effort greater than France's. Trade promises to make possible a better life, which will mean, among other things, better health and ecological protection.

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Batie: What do you think was your most important contribution as EPA Administrator?

Reilly: It's hard to say without more perspective of time and distance, but I like to believe that we significantly elevated the role and status of science with EPA. The result has been that the ideological component in policy and definitions of acceptable risk have been reduced and more consistent and rational policies have resulted. ◙

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Note: *AJAE* is the *American Journal of Agricultural Economics*, *JEEM* is the *Journal of Environmental Economics and Management*, *LE* is *Land Economics*.