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LETTERS

Volunteers and the NBS

This winter, Congress will decide whether to prohibit the new National Biological Survey (NBS) from using data gathered by volunteers. Based on our experience with the National Audubon Society Christmas Bird Counts (CBC), we believe that volunteer data can and do provide important biological information. We strongly urge that they remain fully available for national resource management.

As reported in *Science* (News and Comment, 20 Aug., p. 976), the NBS will assemble the scientific functions of the Department of the Interior into a single agency to measure and monitor the biological state of the nation. Legislative mandate for the NBS awaits reconciliation of Senate and House bills. The House version includes an amendment that specifically forbids the NBS to use data gathered by volunteers. Author Representative Billy Tauzin (D–LA) argued that volunteers would likely have a special environmentalist agenda and will collect biased data. Representative Jack Fields (R–TX) added that "in essence we are creating an environment Gestapo that will go on people's private property."

Both arguments are spurious and insulting to the tens of thousands of volunteers who participate annually in the CBC (*1*), the longest continuous record (unbroken since 1901) of avian diversity and distribution in North America. CBC data have been used for hundreds of unbiased, scientific studies on a range of spatial and temporal scales that no other biological data for the continent permit (*2*). Comparison to data collected by U.S. Fish and Wildlife Service professionals has validated the accuracy of CBC data except for numbers of extremely gregarious species and incidence of extremely rare ones (*3*); contrary to the alleged environmentalist agenda, CBC data often underestimate the latter. Contrary to Fields' Gestapo vision, our participation in CBCs has impressed us with the respect volunteers show for both private and public property. For example, on the Corvallis, Oregon, count for 1993, one team leader had obtained permission from farmers whose fields and ponds were visited, and even from the Department of Transportation to visit a state gravel pit.

Ironically, while Congress contemplates excluding volunteer participation from the NBS, a growing number of efforts to characterize biological systems on the national level are heralding the benefits of volunteer data collection (Random Samples, 24 Dec., p. 1976). As the CBC and other programs have found, these benefits include not only the data but also individual pride in learning about and appreciating our national natural heritage.

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Research on Chemical Demilitarization

I write to describe unusual problems in the funding of an international study of how best to destroy chemical warfare agents ("poison gases").

In 1991, the International Union of Pure and Applied Chemistry (IUPAC) set up a special Task Force on Scientific Aspects of the Destruction of Chemical Warfare Agents and designated me to chair it. The main objective of the task force is to identify research needed to guide the choice of methods to destroy the world's enormous stockpiles of chemical warfare agents (reportedly 32,000 tons in the United States, 40,000 tons in Russia, and more than 100,000 tons at the bottom of the shallow Baltic Sea, as well as major caches elsewhere). The task force comprises 12 scientists who come from seven nations, some of them distinguished for fundamental research in relevant areas, others leaders in the chemical warfare units of military organizations.

But impoverished IUPAC provided no funding in 1991, and only $2000 in 1993.

The study is estimated to cost in toto about $200,000, most of it for travel expenses of Task Force members (none receives any salary or fees). We have received about $78,000 from The John D. and Catherine T. MacArthur Foundation for expenses of the chairman's office in Santa Cruz, $18,000 from the Italian Consiglio Nazionale delle Ricerche, plus a small get-organized grant from the University of California. Proposals for substantial grants submitted to appropriate authorities in several other nations, including the United States, have been denied or (it seems) shelved indefinitely.

Our difficulty in obtaining funding appears to be related to a lack of appreciation of research by officials with responsibility to destroy chemical warfare agents. The prevailing attitude is "let's just do it, not study it." The U.S. Army decided in 1982 that incineration was the way to do it and promptly ceased research on chemical demilitarization, as they call it. Now, 12 years later, only a small fraction of the U.S. stockpile has been destroyed. The program is stalled by public opposition to incineration so effective that Congress has put on hold the building of incinerator plants beyond two major ones that now exist. The Army had no fall-back plan. A major European nation declined support for the task force, saying "we have no need for research." The Chemical Weapons Convention, the multinational treaty that will require destruction of all chemical weapons by signatory countries within 10 years, makes no provision for research on how to accomplish destruction.

Some prosperous nations have on-going programs to destroy miscellaneous munitions left over from battles decades ago. The methods used are expensive on a cost per unit basis. Little effort has been made to find ways to convert the agents into materials that may be useful in civilian life. Those cost and utility angles may be desperately important to less prosperous nations. As one expert has said, they may be faced with choices between destroying their chemical weapons by expensive technologies or supplying their people with enough food to avoid starvation.

No doubt the task force's difficulties are complicated by the fact that it doesn't fit the standard categories. There are programs to support research by national groups, but none to support study by an international group of what kinds of research are needed.

Obviously I hope that this disclosure of the situation may stimulate funding of our study. Apart from that, our experience may be of general significance with regard to research policy.

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Lung Cancer Risk for Female Smokers

Gary Taubes, in his Research News article of 26 November (p. 1375) about the possibility that female cigarette smokers may be at higher risk of lung cancer than male smokers, states that a higher absolute risk of lung cancer for male nonsmokers compared with female nonsmokers may account for our findings (*1*), and that there are insufficient data to compare, with any degree of statistical precision, these baseline nonsmoking risks. We agree that some of the difference in relative risk between males and females may be attributable to differing baseline risks. The nine studies to date with baseline risk data demonstrate that the