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The Impact Statement Boondoggle

The demand for "impact statements" evaluating the environmental consequences of human activities in natural ecosystems seemed a natural outgrowth of the rise in ecological awareness of the 1960's. This idea, designed to protect our natural resources, has to some extent pacified the demands of ecologically concerned citizens. These citizens should have another look. Having seen the results of many of these impact studies, and evaluated proposals for second-generation studies, I believe that the idea has backfired.

Many politicians have been quick to grasp that the quickest way to silence critical "ecofreaks" is to allocate a small proportion of funds for any engineering project for ecological studies. Someone is inevitably available to receive these funds, conduct the studies regardless of how quickly results are demanded, write large, diffuse reports containing reams of uninterpreted and incomplete descriptive data, and in some cases, construct "predictive" models, irrespective of the quality of the data base. These reports have formed a "gray literature" so diffuse, so voluminous, and so limited in distribution that its conclusions and recommendations are never scrutinized by the scientific community at large. Often the author's only scientific credentials are an impressive title in a government agency, university, or consulting firm. This title, the mass of the report, the author's salary, and his dress and bearing often carry more weight with the commission or study board to whom the statement is presented than either his scientific competence or the validity of his scientific investigation. Indeed, many agencies have found it in their best interests to employ a "traveling circus" of "scientists" with credentials matching these requirements. As a result, impact statements seldom receive the hard scrutiny that follows the publication of scientific findings in a reputable scientific journal.

The advancement of the scientific method is also in jeopardy. First-rate natural scientists are finally learning to set and test hypotheses and to study mechanisms and processes that are important in natural systems, rather than simply to survey and catalog the systems. They are, however, usually not attracted to the undefined scientific problems, complex committee hierarchy, and unrealistic time constraints that are usually attached to impact studies. Instead, such studies are often done by scientists who cannot successfully compete for funding from traditional scientific sources. In general, their methods are ancient, descriptive "textbook" techniques, which do not reflect either the many scientific advances of the past decade or the problems unique to the study undertaken. The same tired old bag of tricks is applied to studies of every type, regardless of the type of impact anticipated. The type of data generated cannot usually be extrapolated from one ecosystem to another, because studies were not planned with that as a major objective. As a result, each new study begins with little or no logical background, and no master plan for studying environmental processes is emerging. How well a particular study is funded is a direct function of the value of the resource to be affected, with no consideration given to the amenability of the system to study or to the quality of science which might result. Enormous sums are therefore spent with little or no scientific return.

The continued application of such studies can have several effects, including increased prices for natural resources; a declining credibility for environmental science and scientists; a reduction in the overall quality of scientific personnel; and the degradation of our natural resources, not as the result of the direct activities of industry and government, but because of the ineffectual groping of environmental scientists.

If we are to protect both our resources and scientific integrity, environmental scientists must seek to put their studies on a scientifically credible basis—to see that problems, terms of reference, funding, time constraints, reports, and conclusions are all within a bona fide scientific framework.—D. W. SCHINDLER, *Leader, Experimental Limnology Project, Freshwater Institute, 501 University Crescent, Winnipeg, Manitoba, Canada*