

Ignorance in a Sea of Knowledge

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The awesome volumes of data accumulated over the past three decades, in the environmental sciences as well as in related disciplines, make it imperative that we focus our collective interdisciplinary energies on the management and synthesis of scientific data, the orientation of citizen and scientific groups relative to those governing bodies responsible for developing environmental policy, and the improvement of mechanisms to assure proper communication within and between those involved in the generation of data and those charged with its application in the resolution of many of the pressing global problems of society. In its present state, much of the data generated has not been processed, even to the level of “information” and rarely has it been synthesized further to the useful levels of “knowledge” or “prediction”. Because of this, we do not really know what we know! Consequently, we repeatedly run the risk of supporting expensive duplication and repetition of research and the development of partial solutions based on incomplete information. The author will present examples of the excesses in data generation and consider the problems resulting from inadequate synthesis in a number of fields on which the environmental sciences depend.

Even when data have been properly synthesized to the level of providing useful information, lack of understanding of proper orientation on the part of many participating groups can result in serious gaps in the transfer of this information from the citizen and scientific bodies to those elected or appointed to develop reasonable environmental policies. The author will develop graphically a mechanism which could contribute to improved flow of information through this societal continuum.

Even with proper management of data and an adequate orientation permitting transfer from its source to those in positions to develop policy, difficulties in communication frequently confuse the proper understanding of the results of scientific research by those not trained in the ever increasing branches of the natural and social sciences. The author will develop the rationale for focusing on the use of Geographic Information Systems as a solution, providing examples of how this technique for the storage, retrieval, visualization, and manipulation of many types of data can contribute to bridging the gap between these various segments of society.