and broad management of Federal projects. Insufficient funding has made support of research spotty and disproportionate among problem areas. Agency missions may inhibit long-term and comprehensive ecological studies. "Pollution" can cover an enormous variety of Federal agency programs ranging from water resources research to agricultural engineering. Limitations of definition will be necessary for effective program coordination.

These and other conclusions which can be reached about our capability to understand the complex interrelationships of society and the environment have generated a flurry of proposals aimed at remedying various aspects of the problem. It is my view that we must now examine all these proposals to identify those elements that are essential for a coherent and realistic national program. Our own attempt to achieve an overview has resulted in the conviction that an integrated three-part approach is necessary. It is my hope that the presentation which follows will contribute in a meaningful way and help bring the dialogue into focus.

I. NATIONAL ASSOCIATION OF REGIONAL CENTERS FOR ECOLOGICAL STUDIES

The expansion of human population and onrush of technology, two phenomena long in developing but only recently the items of widespread concern, are causing us to reassess man's role as a component in the systems of nature. Repeated testimony, before your Subcommittee and elsewhere, gives clear evidence that many of our activities are changing the environment in fundamental and profound, but often unknown ways. Unfortnuately, this realization is generally produced through a painful process of hindsight, and yet the development of principles sufficient in depth and scope to predict the consequences of many decisions that face us lags well behind our growing recognition of their need. Perhaps the central challenge of our times is to provide the understanding that will enable us to establish and maintain harmonious relationships between human society and its rapidly changing environment.

In large part the failure to achieve an adequate understanding of these matters stems from man's tendency to separate, and treat as independent, various aspects of the natural system. In a most extreme pattern man considered himself apart from nature. Examples of more subtle patterns are found in the consideration of animals apart from plants, cities apart from rural areas, energy apart from pollution, and many other erroneous distinctions.

We now know, although only in the barest essentials, that all of the living and nonliving components of the natural system, including man, exist in an interrelated, web-like relationship, and that an unfavorable alteration of one strand in the web may have profound effects on the system as a whole.

Institutional mechanisms directed at achieving an understanding of the ecosystem and making it relevant to public activity are lacking in our social organization. The structural weakness of the I.B.P. is a case in point. We must tap the intellectural resources at our disposal, principally in universities and research laboratories, and develop a process which will make possible the interdisciplinary study of ecological systems. The Smithsonian Institution feels that these resources