

A second concern is one of organization. The nine-man council your bill proposes should avoid the problem of communications which frequently plagues councils with too many members and results in less productivity. The only problems I see with the council are recruitment and selection, finding the proper leadership, obtaining the strong commitment of time and energy from members, and providing a strong supporting staff. We have in NASA a similar high level planning board, the Lunar and Planetary Missions Board. We were fortunate in getting some of the richest scientific talent in the country. Many of these individuals have had past association with the space programs and so identification was not a great difficulty. Locating appropriate individuals for the Council of Ecological Advisors may be more difficult since they may require an even broader scope than the space scientists. Solely to understand their duties the members will deal with environmental problems which touch upon meteorology, marine biology, biochemistry, geography, forestry, soil science, and more, for this is the fabric of which ecology is made. Furthermore, relating ecology to man's welfare involves engineering, economic, community planning, health sciences, psychology, etc. The nation has spent a great deal of time, effort, and money to train our engineers and scientists in the inter-disciplinary specialties needed for the space program. Undoubtedly there will emerge a new breed of scientist who is some hybrid between classical ecologist, practical engineer, and waste disposal administrator.

Among the duties posed for the Council of Ecological Advisors is to "seek long-range solutions to environmental and ecological problems created by both man and nature." This implies to me capabilities and resources which would not appear to be available to the Council itself. It should be within the resources of the Council to identify such problems, but the solutions, as you emphasized in your speech before the House of Representatives on 27 September 1967, rest on an understanding of the environment which we do not yet entirely possess. The necessary scientific appreciation of the full scope of environmental interaction must be gained within an institution or institutions which have laboratory research capabilities and the means to test proposed solutions to specific problems.

The last problem I see is one of authority. My concern is that the Council while having the responsibility for reporting, advising, coordinating, promoting and gathering information, will feel the need for some authority. I realize this is an executive affair and that this bill may be only a first step in the long road of legislative corrective measures to restore and preserve the national environmental resources. However, it is probably not too early to consider how a next step can be taken to provide the necessary authority.

Whatever the scope of authority, I believe the actual results of the Council will be more of prevention than correction. Once a practice has been established, it is most difficult to reverse. On the other hand, we are certainly headed for some new ecological problems that can be rectified if we can understand them and act upon this knowledge. What will be the secondary and tertiary environmental and economic results of the large-scale uses of herbicides, the changes in salinity of fresh water likes, the removal of stand of timbers, heating of stream waters? The secondary and tertiary effects alone will be significant. Lo-