

Dr. BUCKLEY. Yes, I think some additional work is necessary whether it is a result of Senator Nelson's bill or something along this line, and without discussing whether it ought to be in the Department of the Interior or some other place. Clearly, I think it ought to be in the Department of the Interior or I wouldn't have returned to that Department to attempt to strengthen its work in ecology. So, laying my biases out in front of you, yes, I think this kind of thing is necessary on a rather vastly expanded scale.

On the other hand, when we are talking about money for this sort of thing, it need not be the kind of money we are talking about in space programs. We really are starting from a different base and some of the basic ecology that seems to be necessary and some of the survey information is something that would represent, I suppose, an investment of a few tens of millions of dollars rather than hundreds of millions of dollars or more on an annual basis. I sincerely believe that we need an assembly of the information that we now have—and I don't see the mechanism for doing this—a survey of what now is present and what is happening to it, and certainly an increase in basic research that tells us more about the basic processes that are at work in these environments.

Mr. DADDARIO. You said that our ability to detect change is not good because our experience has not been long. Harmful effects may well be occurring. Various life processes and cycles are in delicate balance so that if you upset one you may affect others, too. If we ignore this and if changes continue, it can have a disastrous effect throughout the whole life system.

Dr. BUCKLEY. Yes, I don't want to sound like a prophet of doom and I don't personally feel that this is that kind of problem.

On the other hand, I'm a strong believer in foresight rather than hindsight whenever it can be exercised.

Let's take the case of the oyster, not because the oyster is necessarily so important and not with any intent to influence its marketability or anything of this sort. The oyster processes a large quantity of water an hour. It takes in up to 40 liters of water in an hour so it is a remarkably effective filtering system. It has the capability of removing from the environment materials that are present in a very dilute way. There are some data which suggest that they have the ability of concentrating some pollutants by a factor of 70,000.

The question, it seems to me, that one needs to go to from that is—are there levels of these substances that are low enough in the environment that the oyster is not able to pick them up? And again I have very little information to offer on that.

I do know that if you go to levels of DDT of 1 in 10^{14} , that is one part of DDT in a hundred thousand billion, then the oyster in at least a period of 20 days acquires no detectable amount of DDT. I know that at about one part in a hundred billion, the oyster in 2 weeks will pick up quantities that you do detect. This is not to say that the oyster is damaged by that level. It is simply to say that he has the capacity to extract at that level.

Other organisms, including man, feed on oysters. It is conceivable that the oyster will store away quantities of these in sufficiently high concentration to be harmful to man if he eats them.