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REMARKS OF UNDER SECRETARY OF THE INTERIOR JOHN A. CARVER, JR., BEFORE THE ATLANTIC STATES AND GULF STATES MARINE FISHERIES COMMISSIONS, MIAMI, FLORIDA, OCTOBER 6, 1965

THE OCEANS -- A CHALLENGE TO FEDERAL-STATE LEADERSHIP

From Sealab II to Gemini V, Scott Carpenter, an astronaut himself, but now an aquanaut, communicated with his former colleagues. Sealab II was but feet away from man's normal environment; Gemini V was about as many miles away. In each case, man had constructed a capsule wherein he could take the essentials of normal life into an alien and forbidding world--there to study himself and the environment and push outward the frontiers of his knowledge about each.

When I became Under Secretary 10 months ago, the world of the oceans and fisheries was opened to me, new and different from the parks, Indian, and land management world which I'd known as Assistant Secretary for Public Land Management. I have been impressed by some similarities between these apparently dissimilar worlds.

For example, I sense a parallelism between fisheries and conventional agriculture. Fisheries is now in a transition equivalent to that of a couple of hundred years ago when we moved from the age of pastoral hunters to the age of the plow and disciplined farming. I've heard a lot about "marine engineering." Is it not really nothing more than a more complicated way of talking about "farming"?

The fisheries biologist's theories for "aggregation engineering" is putting a complicated handle on a principle known to the cowboy as "herding." A sheep herder's dog has been practicing "olfactory engineering" for a long time.

The temptation to make the frontiers of oceanography more esoteric than they really are has some hazards in it. I suspect a lot of people fall off the sled as a result of the technological jargon

and fail to appreciate either the logic or the necessity for the effort. No cattle or sheep raiser today would question the need for applying the principles of herding or would deny the validity of fences as a means of keeping his stock where he wants them at the time he wants them there. The far-out proposals for chemical fences, air bubble curtains, and artificial attractants are solidly proven principles of ranch and farm management that don't take any magic to sell.

The time which man took to move from the age of hunting to the age of farming amounted to at least several thousand years. Civilized man has been hunting for fish for about as long as he has hunted for other food. Agriculture now replaces the process of hunting for fruits and vegetables and the like, and we have domesticated the animals which provide much of our meat.

Because the seas were difficult to explore and offered man a hostile environment, we have stayed in the age of the hunter for our fish. The current national oceanographic program represents a really monumental effort to telescope the transition from the age of hunting to the age of farming into a decade or two because we will not be patient enough to wait thousands of years for this revolution.

It helps to understand the science of oceanography by putting it in a familiar context and I am convinced most people would understand the relevance of oceanography if we were less often so mysterious about it.

I would like to carry my analogy one step further by suggesting that fisheries problems and the conservation issues of fisheries are not at all unlike those we have faced before. Take the buffalo. The heartland of our continent was settled and westward migration nourished on the carcasses of millions of buffalo. By the time we became conscious of our foolishness this great animal was near extinction. The national conscience said "stop" at a time only barely short of the point of no return. The Wood Buffalo, one species, is gone forever.

Isn't this exactly the same issue we face with the world's population of whales?

For 100 years the oceans' stock of whales fed a thriving New England industry and nurtured the economic development of the

northeastern United States. The lusty tales of down-East whalers have a quality comparable to the raucous history of the mining camps in the West. Both breeds of men are gone now, and the whaling industry which supported New Bedford, Mystic and the other whaling ports of New England.

However, the conservation issue involving whales is unresolved, and, like the buffalo, time is running out for us to act. Some authorities think we may already be too late to save the great Blue Whale from extinction. Almost no authorities deny the whale catch now exceeds a sustainable supply.

We were fortunate in the case of the buffalo to have had it as a problem within the grasp of national action. This is not true of whales. The United States has no whaling fleet of consequence and our leverage is limited to a moral dimension. This makes it all the more essential.

The technological horizons in fisheries easily excite the imagination. On a recent inspection visit to the Bureau of Commercial Fisheries laboratory in Hawaii I saw experiments with tuna that may in a short time take much of the guesswork out of that fishery.

The scientific breakthrough represented by control of the sea lamprey in the Great Lakes is comparable to the introduction of insecticides into the agricultural economy, though in the case of the lampreycide, rigorous scientific assumptions will hopefully avoid the hazardous implications of widespread use of agricultural pesticides.

One of the more intriguing technological developments in fisheries is nearing payoff. After many years of research effort an economically feasible means of producing large quantities of fish protein concentrate seems near at hand. The availability of low-cost high-quality protein in large quantities has implications for world-wide human nutrition of revolutionary dimensions. This kind of approach is also representative of a new dimension of the conservation effort itself--namely, to find economic ways to translate material regarded as waste--this case trash fish--into an economic asset. This same principle supports current research efforts to clean up the gases coming out of coal-burning industrial plants by extracting marketable sulfuric acid under methods that will make the process of cleaning up our air pay its own way. Similar research is being made on junked cars.

If I have tried to simplify the technological frontiers of the ocean sciences--and I have--I find it considerably more difficult to simplify the governmental and industrial hurdles over which the United States fishing industry must somehow climb if the industry is to keep pace with the scientific innovations being made available to it. I say nothing new with the observation that the United States fishing industry is substantially behind the other world's major fisheries in almost every category by which industrial progress can be measured. The fleet is not modern. Ports are too small and confined too much of the fishery effort to small-scale operations inshore. The economic units of the industry are often too small to be viable and too dependent to see utility in cooperative action. The ability of the industry to lift itself is severely handicapped by various forms of economic inertia and the unpredictable fluctuations of a resource the supply of which the industry has no control. The fishing industry works in an environment of water, the quality and quantity of which cannot be controlled. The inshore fisheries resource is often at the mercy of distant agricultural land practices which produce silt or from which flow minute but significant traces of chemicals capable of changing or wiping out a local fishery.

The Department of Interior sees these problems of American fisheries as inadequately understood. We see that the ecological framework and interdependence of the resource on the land and in the sea must be better understood.

There is a gap between the goals of fishery conservation and the laws by which they are managed. A law, for example, which limits oyster harvesting to inefficient hand tongs, channels the inventive genius of an industry away from concern with the resources to concern with the tools.

Laws which would require foresters to cut trees with axes instead of power saws and move logs with horses instead of hauler trucks would be laughed at. But we require hand tonging and sail power for oyster vessels. Isn't this really a kind of backward approach to conservation--legislating tools instead of legislating conservation goals.

Along with the cooperative efforts between all levels of government to assist needed technological change in the exploration and use of ocean resources, it seems to me that one of the major opportunities for Federal-State leadership and cooperation lies in

the field of conservation law and the definition of conservation goals. As a future source of food, of minerals, and even large quantities of fresh water, the oceans are the last frontier on the planet. It may be a fact that man will stand on the moon long before very much is known about the seas, but under the opportunities offered by such cooperative programs as the new Commercial Fisheries Research and Development Act, this frontier cannot fail to give way to the thrust of knowledge.

President Johnson stated the challenge of the seas when he said,

> "For tens of thousands of years--ever since man has possessed the power to sense and reason--he has been aware of the seas around him. This awareness has varied from disdain to superstition, as man alternately sailed and fished the sea on the one hand, and worshipped it on the other.
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> "But never until recently did man seek great understanding of the oceans, because he saw little necessity. There was always a new frontier, an unexplored land, unexploited territory.
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> "Now our view of the seas has had to undergo a drastic change. We have always considered them as barriers to invasion; we now must see them as links, not only between people, but to a vast new untapped resource."

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