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CONSERVATION PROGRAMS FOR SEA LIFE DISCUSSED AT WILDLIFE CONFERENCE

The sea has been aptly called an unknown jungle but great potentials exist for the control, cultivation and concentration of the harvest thereof, Donald L. McKernan, Director of the Bureau of Commercial Fisheries, Fish and Wildlife Service, told the Northeast Wildlife Conference January 11. The conference is meeting in Providence, Rhode Island.

Mr. McKernan, after touching briefly on the history of commercial fisheries in this country and reviewing some of the current operations and results of recent research, plunged into the problems and possibilities of practicing conservation in the oceans.

He cited the new concepts in conservation which are developing in the world's marine laboratories with interesting emphasis on the "weather" of the sea, the possibility of creating artificial "upwellings", the "farming" of bays and estuaries, the development of brackish water areas for fish culture, and the challenge of the nations of the world, one to another, for the fruits of the "rich ocean pasturages".

Marine scientists are recognizing, Mr. McKernan explained, that the important fisheries are not the only things which exist beneath the surface of the ocean. These fish live in complex communities and compete and struggle for their niche in their marine environment just as do land plants and animals. Studies of the environmental factors affecting the life and death of these marine communities seem to be essential for future conservation of the marine fisheries. Ocean "weather", that is, the conditions which exist below the surface, is a variable which affects the habits and life of all ocean fisheries. Conservationists must understand thoroughly the ocean environment and the various anomalies which affect the fishes living there.

Vertical currents of water, called "upwellings" which occur naturally in the vicinity of the equator, bring up minerals and nutrients from the ocean depths to

the surface and provide the basis for the start of the food chain for ocean life. Mr. McKernan stated that even now some oceanographers are considering the possibility of heating deep areas in the open ocean, or even heating localized areas, and creating artificial upwellings which would transfer the nutrients and minerals from the depths to the surface.

He stressed the growing importance of international fisheries and the accompanying problems. As nations turn to the sea for food and recreation, there is bound to occur the question of ownership of the resources, the problem of which nations shall share in the resources, and how the sharing can be done. He pointed out that not only have nations like Russia and Japan established huge fishing fleets which seek out and harvest rich crops from the sea but that they are also developing large and efficient oceanographic research vessels. He told his listeners that this is a challenge which the United States must meet to insure food and recreation for our citizens in the future.

Relative to the farming of bays and estuaries, Mr. McKernan pointed out that the United States has a problem of its own to solve. In Asia and in some of the countries of southern Europe where conditions are favorable, this type of fish culture is rather well developed. The possibilities of intensive sea farming similar to that practiced on land is, therefore, not an impractical concept. But in this country, the demand for estuarial areas for industrial purposes or for subdivisions, or for some other purpose, is already threatening this area of conservation. This definite trend can not be stopped by negative action but facts are not at hand for affirmative action. Therefore, Mr. McKernan reasons, "we need to get on the job on an emergency basis for developing the facts which, in turn, will be the basis for a sound conservation program in those areas".

Mr. McKernan went into considerable length on what has been learned and what must still be learned on the biology of fish, upon making intelligent harvests, and the economic and physical sciences involved if the nations of the world are to make the sea produce even a portion of its great potential.

He reviewed the work of many of the international commissions which now exist and showed their conservation successes in spite of what scientists concede to be only a fraction of the knowledge which man should have in formulating a conservation program for the various oceans.

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