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REMARKS OF STANLEY A. CAIN, ASSISTANT SECRETARY
OF THE INTERIOR, AT DEDICATION OF THE
NORTHERN PRAIRIE WILDLIFE RESEARCH CENTER
JAMESTOWN, NORTH DAKOTA, SEPTEMBER 18, 1965

"Thoughts on a Completed National Wildlife Refuge System"

I am happy to be able to represent the Department of the Interior and Secretary Stewart L. Udall in the dedicatory services for the Northern Prairie Wildlife Research Center.

I am taking this opportunity to expose some thoughts about the National Wildlife Refuge System, not to talk about the important research that the staff of the Center will carry out on problems of migratory waterfowl production and "for other purposes," as they say in bills before Congress. This, I believe, can be taken as a compliment to the investigators because it implies that they know what they are up to better than I do. And that is a fact. At the same time, however, I will ask the scientists to reflect on wider matters than the investigations of their specialities. I want them to join in thinking about the program of the Fish and Wildlife Service as a whole.

I want to do a little academic quibbling about certain words. I will start with the expression "flood control". The Corps of Engineers does not guarantee flood control as a consequence of its structures, but a degree of flood hazard abatement that can be bought for a certain price in relation to a flood of a certain expectancy. It is the same with Ducks Unlimited. I have only admiration for Ducks Unlimited and the consequences of its program for migratory waterfowl benefits on breeding, feeding, resting and wintering grounds. The same applies to the lusty youngster, Trout Unlimited. It is, of course, the word "unlimited" that makes me uneasy, and this unease is probably due to my having been for most of my life a professor. One does not need to be an engineer,

hydrologist or meteorologist to know that control is not meant literally, and one does not need to be a wildlife biologist to know that we will never again have unlimited ducks on the American continent.

I can hear my wife, a one-time professor of English, saying, "Stanley, you cannot argue with words. You must not approach language as a scientist but as a humanist. I agree with you that clarity is lost by a sloppy use of words. But you are quibbling. Flood control and trout unlimited do not even intend to mean just what they say. They are a deliberate kind of shorthand used for a more laborious phrase." She does not really talk like that, even to me, and we both have a point. Naturally, I shall stick to my point, because the slogan becomes the fact for many people.

We need to be careful with words and how we string them together, for language is the central basis of communication, embellished by expression and gestures. We have all had the experience of being misunderstood, partly because we have not said what we think we said and partly because we tend to hear what we wish or expect to hear.

These generalized remarks are for a purpose, and that is to say that there are very strict limitations to the number of ducks -- in fact, all forms of wildlife -- that we can reasonably expect in the foreseeable future, and "unlimited" is misleading.

This has nothing to do with wishful thinking. It is much too late to go back to the unlimited bag, to record kills, and to menus of the fancy hotels, clubs and restaurants of the turn of the century.

Our short history as a nation on a rich and varied continent has been long enough to see our imported European culture overwhelm the Indians, produce a population perhaps a thousand times that of the aborigines, and leave scarcely an acre without the imprint of man. Yet we are also the people who have in this century developed a national park system, a system of managed national forests, a system of wildlife refuges, and in other ways given the word "conservation" a significant world-wide meaning. Yet what can we expect of our National Wildlife Refuge system in the future? Certainly not "unlimited" ducks.

In the first place, although the growth of the Refuge System has been phenomenal, and the pot-hole program is well underway, it cannot

be expected that the Federal effort, together with what the States can accomplish, will meet the need.

Here again is a word that should be looked at. What could I, or wildlife managers, or hunters mean by such an expression as "meeting the need"?

From one point of view the expression could mean a fair return on investment in relation to demand. And demand will be in relation to cost. How much will hunters of migratory waterfowl be willing to pay for their sport? How much will non-hunters be willing for Federal and State governments to expend for land, for management and for research? In the case of each acre that might be exclusively or primarily devoted to migratory birds there is the question of competing uses and the choice among possible alternate uses.

Every year as the American population grows and as the demand for land and water for a variety of recreational pursuits grows, there is more and more resistance to the establishment of areas primarily for game. Breeding grounds, wintering grounds, and the necessary feeding and resting habitat in between are a limited resource. Some losses to competing uses such as occur with drainage of farm land, the spread of urbanization, and the engineering structures on streams, together with dredging and filling, can be mitigated, but there are already apparent limits to that.

One of the best evidences of the competition for land and water is the market price of real estate. We see this in sharp relief from the deliberations of the Migratory Bird Conservation Commission. This Commission authorizes the acquisition of land for Refuges and approves purchases according to appraised values. When the Bureau finds that it cannot acquire property at the appraised price and negotiations drag on, it must return to the Commission for reapproval when the increase is 30% above the approved value. At the August meeting this year one large tract in Mississippi had a price increase of 52% in 14 months. At the preceding meeting in June the Commission gave reapprovals for a tract in Maryland that had increased 92% in price since the last approval two years before. In addition a tract in Minnesota had increased 40% in 22 months; one in Virginia 72% in 22 months; one in Mississippi 32% in 16 months; and another one in Maryland 303% in a little over six years. Part of such increases in the cost of real estate is due to speculation and part to venality, but part of it is simply the economics of

increasing scarcity of recreational land, especially that with water on it.

Our purpose here today is to dedicate a laboratory that has been needed to facilitate studies of migratory waterfowl, especially in the breeding phase and its ecological requirements. Those of you who are doing the research and developing the program that will be pursued here are competent to add significantly to the knowledge that will enhance understanding and management of several species. This is fine and we are all happy that a needed unit has been added to the system.

I admire the scientist who is a specialist, whether his interest and research are somewhere in pathology, physiology, genetics, population dynamics, nutrition, biometry or any other facet of biology. I would not ask you to change. I would ask something more of you, however, something in addition that you can mull over at odd moments and dream about. Without relinquishing your precious specialities, I would ask that you think always of the organism as a whole and of it as a member of a population and an ecological system. In addition, look beyond the particular habitat, or Refuge, to its surroundings and give some concern for the forests and farms who are your neighbors. But if you do dream about such matters, I trust that your dreams will not be nightmares and that they will reflect aspirations and not frustrations.

What I have said is partly enigmatic, so I will make one request explicit.

I would like for you to think about what a completed National Wildlife Refuge System would be like.

How would it differ from what we now have? I purposefully place this question in reference to Federal property dedicated to wildlife purposes, for I believe that the Refuge System is the keystone of the habitat on which we must depend in the future for migratory game. This statement is made with full recognition that much wildlife of all kinds finds suitable habitat on Federal lands other than refuges -- Parks, Forests, Public Domain -- on State properties and, of course, on private lands. Still, it seems to me that the National Refuge System, the associated pot-hole program and the research of the Fish and Wildlife Service do form the keystone for migratory wildlife. It is this fact that makes so important the research facility that we are dedicating here today.

I raise this question now because I think that the occasion is an appropriate one. Without minimizing what has been learned and can be learned by the careful, trained observation of old-fashioned naturalists, it becomes more clear everyday that only systematic investigations by qualified scientists can be depended on to produce the knowledge, to uncover the facts of nature, that will lead to solutions of our problems.

But my question is not to be asked only of scientists. It should be pondered, I believe, by administrators, politicians, duck hunters, and, in fact, by all of us who pay taxes and are concerned with what our country will be like in the future.

Still, the importance of the question should not be exaggerated. Our nation could get along without ducks to shoot. It would be a sad day, however, if we manage to mismanage our country so badly that any species were to become extinct, for we cannot afford to lose the natural beauty of these birds. We can get along in a world without ducks, but we cannot afford to get along without people for whom the beauty of ducks is precious. There are some meat hunters, of course, but I would give you pretty large odds that most hunters are strongly motivated by an implicit appreciation of the beauty of a marsh at dawn when the birds come winging over. They are not likely to verbalize it and would probably deny it if they were accused of having an aesthetic motivation.

I do not think that I am digressing from my question because the answer to it will be provided by the citizenry with its wide mixture of objectives and emotions. The question bears on many facets of our lives -- on agriculture, for example, and the decision to drain marshes and pot-holes. And that, in turn, may depend on the price of wheat; and the price of wheat may depend on the shift of political winds; and the shift of political winds may depend on our relations with Communistic nations, what we do about our merchant marine and the wages of seamen. This is a sort of house-that-Jack-built situation.

The answer to what would constitute a completed Federal wildlife program, specifically a National Wildlife Refuge System, could depend, in part at least, on how much the Nation remains devoted to the works of the Corps of Engineers, the Bureau of Reclamation and the Federal Power Commission, giving high priority in the use of water to navigation, flood hazard abatement, power development, irrigation and such forms of recreation as boating. Obviously the one-time

apparent need to make full use of hydropower may be relegated to the past by nuclear developments; the need for the highly consumptive use of water for irrigation of arid and semi-arid agricultural lands may be superseded by the greater economic efficiency of agriculture on humid acres; and much of the danger of property loss from floods may be avoided by zoning of floodplains. Changing technology and human attitudes and values may thus benefit fish and wildlife purposefully or indirectly. Granted that there has been in recent years some efforts to mitigate the losses of fish and wildlife habitat that result from impounding and channelizing streams, significant losses have been occurring.

But the future may be influenced not only by what I have already mentioned, the new concepts of wilderness preservation and of wild rivers will play their role in the future. Fish and wildlife in general, and migratory waterfowl in particular may benefit inadvertently from such new attitudes as they have been damaged in the past by the familiar concept that a river is fully developed only when it has been converted to a chain of ponds.

And most obvious of all, perhaps, in its influence on the answer to the question is our large and rapidly growing human population. Whatever the drop in birth rate may be in the near future, our population will almost certainly double within the lifetime of about half of us present. What would a population of 400 million persons in the United States mean for the National Wildlife Refuge System of that imminent future?

I believe that you biologists and wildlife ecologists have a considerable and growing store of knowledge. It is not perfect or complete, and it never will be, but it is already enough to determine with considerable precision how many birds make up the standing crop of each important game species, how many birds can be produced on a given amount of breeding habitat under certain conditions of water and weather, and how many breeders will return to the breeding grounds another year given the hunting regulations and conditions on the flyways and the wintering grounds. That is quite an accomplishment.

Also, just as man's modifications of the landscape for whatever his purposes has shifted the positions of animal populations, so the Fish and Wildlife Service, given the Refuges, can increase or diminish the supply of migratory waterfowl in one place or another, redistributing the kill by hunters.

The Federal Fish and Wildlife Service, like any other conservation agency, exists as a consequence of a felt public need. It is mission-oriented in the sense that its objective is to strive to achieve results compatible with the expressed public purpose. Its method of working toward such ends includes increased knowledge of the biology of the species, the interactions of the different species with one another, and the mutual relationships between life and environment. This growing knowledge of nature, as it is attained, is put to work in relation to competing demands for land and water, as I have already stressed. It is also put to work in the political and socio-economic arenas of decision making. The ecology of wildlife management, then, encompasses not only the complexity of natural ecosystems but also that of human society.

In view of these facts, my question is not answerable in a precise manner. It is answerable, however, on a basis of certain assumptions. When we know enough of the ecological life history of each species of duck, goose, or any other kind of wildlife, we can say what the population size of each species is that can be sustained over time, granted fluctuations associated with weather from year to year. This is based, however, on assumptions as to the acreage and quality of habitat that exists, whether the habitat is natural or enhanced by human management. Furthermore, the quantity and quality of habitat available during any decade in the future depend on what can be preserved or created and allotted to wildlife. This is no longer a biological or scientific matter. Finally, we must ask ourselves how many hunters a given wildlife population can support with certain regulations as to season, bag limit, and weapons.

To the biological and ecological questions of population size and dynamics we have added the question of harvestable surplus, or crop, and the more difficult question of what regulations and conditions of hunting will sportsmen accept and still support a public management system. To the quantitative aspects of the problem we have added, and quite properly I would say, the question of the quality of the hunting experience that makes it attractive and causes the hunter to be willing to make a certain investment of time and money.

When the scientists can say for each species of wildlife that, given certain acreages of habitat of certain quality and geographic distribution, certain numbers of animals can be sustained for a certain annual cost for maintenance and operations, the public and its

representatives in government can determine the level of investment in habitat and its upkeep. It can then be determined how many hunters can be allowed the privilege of sharing in the harvest of the surplus crop, and the conditions under which they share this opportunity.

We are not without information on every aspect of this complicated problem. The knowledge of the ecological life histories of wildlife species is considerable and growing, and we have the scientific methodology to improve this kind of knowledge. Our knowledge of the other parameters of the problem is less precise, but we do have considerable information. We have the history of the participation by licensed hunters, and the change of their numbers with growth of the total human population and with changes in licenses and other costs, changes in the convenience of hunting sites and the quality of the hunting experience, and with changes in the hunting regulations. Such historical information can be used for forecasting the future, albeit cautiously and for the short term only. We know what the public has been willing to stand in investment in refuges, in land programs off refuges and in yearly management costs. But we are not very safe in projecting the latter information into even the near future. This is because of the skyrocketing price of land, due to its scarcity, and the growing resistance to the commitment of land to wildlife purposes.

I return now for the last time to my question: What would a completed National Wildlife Refuge System be like? If it takes so many "ifs", "ands" and "buts" to answer it, what is the use of asking it? I think the use is this: Thinking about it will help clarify the problem. The scientist can direct his studies more advantageously. The citizen can think about his role more clearly. The legislator and the administrator can examine their roles more realistically. The "pure" conservationist can look at the problem from his non-consumptive point of view. The result could be salubrious.

Taking a long, hard look at the question could help. To a considerable extent the growth and development of the National Wildlife Refuge System has been somewhat opportunistic. Refuges have been added to the System for political reasons. Proposed Refuges have failed to be added to the System for political reasons. I am certainly not opposed to the political process, but I would like to see the contribution of the scientists to political decision making, that is to public decision making, have the strongest possible ingredient of sound scientific fact -- and so would those others who must make the decisions.

I would like for the Fish and Wildlife Service to be able to present testimony at a hearing, or before the Migratory Bird Conservation Commission, or before sportsmen's groups which would have such scientific validity that it could be said without equivocation that a proposed Refuge is necessary if certain goals are to be reached. On the other hand, I would like it to be feasible to say that a proposed Refuge is not necessary. If the political decision should go against the scientific position, I would not be disturbed, for science is qualified only to solve scientific problems. I would be disturbed, however, if the input of science into the decision-making process were inadequate. In the same vein we would all find it easier on the nerves if we could devise a method of determining Federal Regulations that would avoid or at least reduce the annual argument of the "States versus the Feds". The increasing quantity and quality of scientific information will help but it will not by itself result in unanimous opinions.

The time is past for the Refuge System, in fact, for the wildlife program in all of its aspects, to harbor a large opportunistic element. It is time for stock-taking and reflection on what it is, after all, that we are working toward. Given the realities of the situation, it would, I know, be a relief to State Legislatures, to Congress, and to the Bureau of the Budget to have a reasonably solid framework for consideration of proposals as they are confronted by them piece-by-piece. It would be good to know that an end is in sight -- including, perhaps, an end to my remarks.

It is now my privilege to declare this Northern Prairie Wildlife Research Center dedicated. I do this for Secretary of the Interior, Stewart L. Udall, for Director John Gottschalk and all of the Bureau of Sport Fisheries and Wildlife, and with real personal pleasure.