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PERSPECTIVE ON NATURAL RESOURCES EXTENSION FOR THE 21ST CENTURY

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Speaking to this group of fish, wildlife, and natural resources professionals is getting to be a habit with me, having talked at this workshop three times in the past 2 decades. This is the fourth.

The first time was in 1977, I was gainfully employed as Director of Wildlife Management for the U.S. Forest Service (USFS). I'm not quite sure why I was at your meeting. I expect my good friend, Jim Miller, trapped me because of some earlier discussions we had on grazing on the Ouachita National Forest in Arkansas. Regardless, at the time, I suggested that funding, in the Extension system, be specifically earmarked for natural resources programs. Also, that a Natural Resources unit be created in the Federal arm of the Extension Service to plan, develop, coordinate, and help implement natural resources programs at all three levels, local, state, and federal. That was exactly what was supposed to happen with the passage of the Renewable Resources Extension Act (RREA) of 1978.

This Act authorized \$15 million for a comprehensive and expanded program in natural resources management for the owners, managers, users, and processors of private forests and rangelands for a variety of renewable resources.

As Chief of the Michigan Department of Natural Resource's (MDNR) Wildlife Division, prior to joining the USFS, I helped develop an Extension Fish and Wildlife program with the Cooperative Extension Service at Michigan State University. Possibly, as a result of this experience, I was asked to compete for the new position as Deputy Administrator for Natural Resources in Washington. I was interviewed and got the job as head of the unit, created on 12 March 1979, the same day I arrived in Washington.

It was then I began to realize the Cooperative Extension Service was not quite as cooperative as the name implies. The new unit was authorized eight professional positions, four of which were filled with transfers from the former Agriculture and Natural Resources (ANR) and the Community and Rural Development units. The four remaining positions were vacant. A secretary was also assigned from the former ANR unit. I called her permanent/intermittent because she was permanent on the payroll, intermittent in attendance. It was pretty obvious why three of the four professionals were transferred. My theory was and is "a good vacancy is better than a poor appointment." A few months later, the unit was down to one professional besides me, resulting from a separation, voluntary transfer, a retirement, and a heart attack. The one that remained, Don Nelson, a forester, is a fine person, hard worker, and is still there.

I got a little revenge in October 1979 by hiring Jim Miller. He was put into the position of Fish and Wildlife Program Leader, a position that, at the time, had been vacant 41 of the 43 years since its creation in 1936. Now, I expect Jim has the longest tenure of any Fish and Wildlife Extension specialist at any level in our nation. He is a candidate for Vice-President of the Wildlife Society. I hope he makes it. He got my vote and I expect he'll get yours. He also was recently honored by receiving a 1996 Secretary of Agriculture's Honor award. I was somewhat nonplussed to read the announcement letter which stated in part, "recognition to acknowledge outstanding contributions to agriculture, to the consumers of agriculture products, and to the ability of the Department to serve America." That's one of our problems, our leaders fail to recognize the ecological concepts of natural resources in general, and a by-product, fish and wildlife, in particular. Regardless, congratulations, Jim, you deserve this recognition.

As I remember, RREA called for a comprehensive plan for all resources, with updating at 5-year periods, with linkage to the plans required by the Resources Planning Act of the USFS and the Resources Conservation Act of the then Soil Conservation Service. We were required to work with both agencies at the same time. It reminded me of a mouse trying to mate with an elephant. We know what we were supposed to do but we weren't too well equipped to do it. The original 5-year plan called for about 40% forestry, 20% range, and 10% fish and wildlife, the rest in related programs. When I left in December 1984, the approximate breakdown was 58% forestry, 12% harvest and of forest product; 10-11% of fish and wildlife; 9-10% range management; 5-7% environmental programs; and 2-3% for outdoor recreation.

I learned very quickly in my stint with the Extension Service that authorization did not necessarily mean appropriation. One would expect with a grass roots system like the Extension Service, that program leaders and administration would be able to orchestrate \$15 million in a single budget year. By using a team approach, organized within the International Association of Fish and Wildlife Agencies, we were able to almost triple the appropriation for the Forest Service's fish and wildlife program in 2 years from \$10.9 million to \$27 million (1975-77). Now, it's well over \$100 million. But, this didn't happen in the Extension Service's cooperative system. There were and are too many jealously guarded programs, unwilling to recognize program priorities, other than their own. It reminded me of a loose federation of absolute monarchies.

However, an appropriation of \$2 million was first made in FY82 and has gradually increased to a little over \$3.3 million, annually. About \$32.6 million was appropriated to the renewable resources program between FY82 and FY94. FY95 improved to a little over \$3.2 million with FY96 and FY97 slightly higher at almost \$3.3 million. These past 2 years sound better, but considering inflation, etc., it is basically level funding. But, one should be optimistic and pleased that an increase, however slight, was recommended. On a brighter note, in one of my earlier talks to foresters of the Southern Region, I noted that the RREA allocation attracted an almost equal number of dollars from other sources. I expect that is true today.

But, the need for natural resources programs and, specifically, fish and wildlife has not diminished. In fact, the need is even greater now than it was in the early '80s when I supposedly retired. I say, supposedly, because a willing, local volunteer soon becomes extremely busy. The only thing missing from the full time job is the pay check. Regardless, if I didn't like it, I wouldn't do it. But, if you are thinking of retirement, practice saying "No" at least part of the time.

Enough of history, I am flattered to be asked to speak on perspectives for natural resources extension past the year 2000. That's quite a challenge for one that doesn't buy green bananas and is not too sure he'll outlive his dog. But, I'll give it a try anyway.

In preparing for this talk, I reviewed many, many items, beginning with Aldo Leopold's, *Sand County Almanac*, written about 50 years ago. Dr. Leopold had great foresight and told it the way it was. What he said in the '40s was true then and, unfortunately, most of it is still true today, except the problems are magnified by the pressure of people, resulting from a burgeoning human population caused by what the demographers call "momentum." The phenomenon of momentum is like a fast-moving train; an increasing population has a strong tendency to keep on increasing, even if every measure of population control is applied very hard. And, you know the emotionalism and politics of many types of population control.

On the first Earth Day in 1970, I spoke at the University of Michigan. I titled my talk "Our Environment Dilemma" and, subsequently, presented it 68 more times. In 1970, the population of the United States was 205 million. My opinion then was that the optimum population for the United States was about 160 million, which had been reached in the 1940s. In 1970, our population was 205 million, and the population of earth was estimated at 3.3 billion. On Earth Day in 1990, the U.S. population was 250 million; the earth's population was 5.3 billion. Today, our population is about 256 million, with the earth's closing in on 6 billion. And very little concern is expressed in this nation or elsewhere regarding this circumstance, except to provide the opportunity to open McDonald's restaurants at 10 times

the rate of 20 years ago. Better management of our fish and wildlife population might help people realize there are other forms of recreation than procreation.

Currently, it is calculated that the total net terrestrial primary production of the biosphere being appropriated for human consumption is around 40%. It is also predicted that human consumption will increase to about 80% by 2020. These numbers say nothing about carrying capacity but they do put the scale of the rapidly expanding human presence on the planet in perspective.

In my first Earth Day talk I suggested that this planet and its inhabitants, human and otherwise, were in great danger of irreversible catastrophe. Four basic threats pointed to this ominous possibility: overpopulation, pollution, resource depletion, nuclear war. Frankly, I see no real change in these threats during the past 2 decades, expect possibly for the latter, nuclear war. This threat has lessened, I believe, although there are some nations that regard terrorism as a viable option and they have access to nuclear bomb materials. I suggest that overpopulation constitutes the greatest single threat, simply because it's people who cause pollution, deplete resources, and make wars.

I'm not suggesting that fish and wildlife specialists go into the population control business, although we should be firmly aware that population is the root of the problem that magnifies our needs to do a better job of helping people understand their natural resources and their responsibility for them. But, are we and our administrators doing that? The need for good extension educational programs in natural resources is greater now than ever in the past. Most of us will agree that more and better programs, not less, will be needed in the future. Unfortunately, most agricultural administrators still look at fish, wildlife, and other natural resources education as adjunct to agriculture programs. This is reflected not only in funding levels but in filling vacant positions and in changing program priorities. I'll give you an example of the latter. When I was with Extension, I had an opportunity to visit one of the New England States to discuss forestry programs. During the '30s, the state was about 10% forested and 90% open, pasture land. At the time, there were 23 dairy specialists and one forester. When I visited there, about 50 years later, the state was 90% forested, and dairy was a dead and dying industry. What was the ratio of dairy specialists to foresters? You guessed it!!! Still 23 to one. We did succeed in getting the ratio changed a bit, but it was a bitter struggle.

I understand that many of you specialists now serve in split appointment positions, research, teaching, or both. This can be good or bad, but I'm certain it can lead to complex, difficult situations. Jim Miller says, and I agree with him, that an effective extension fish and wildlife specialist is the best outreach that a Department can have. Not only do you have direct ties to the county programs, but you can be effective translators of research information for implementation on the ground.

According to the Agriculture Fact Book for 1994, less than 2% of the U.S. population lived on a farm, and farm operators represent less than 1% of the total U.S. population. Yet, during two recent reviews of Land Grant Universities, where enrollment in natural resources was expanding, and declining in traditional agriculture, the inequity of the budgets for operating funds, teaching, and research was unbelievable. These inequities result in pressure from organized agricultural groups and support my dairy/ forestry story. Unfortunately, trees and rabbits aren't pressure groups and the people that enjoy them are often disorganized and disinclined to speak. Extension can help these kinds of people understand natural resources problems and enunciate support for them.

For many years of my professional life, I worked in two "headquarters" towns, Lansing, the capital of Michigan, and Washington, D.C., our nation's capital. One thing I learned was the thinking in a headquarters town is not necessarily the panacea for all problems. In Washington, where this thinking seems more prevalent, it's called "Potomac fever," and is defined as a softening of the brain. The symptoms are forgetting there is a United States west of the Potomac River, forgetting the perspective and needs of our constituencies, and thinking that only you know what is best for them and their resources. I expect symptoms of this disease may be present in some of our land grant universities. That's why I firmly believe one should start locally in solving our problems. I realize the problems of pollution in the Potomac River and Chesapeake Bay, but I feel more strongly that I should periodically pump out our septic tank to avoid polluting the lake on which we live.

I am Chair of our county's Soil and Water Conservation District in northeast Michigan. In southern Michigan, the MDNR Wildlife Division supports a biologist that works closely with the Soil Districts on wildlife extension activities. I understand a similar assignment is being considered for the area where I live. This will be a boon to us and the people we serve. We have an unusual Board of Directors, elected by members owning 3 or more acres within the County. Although many Boards, nationwide, are dominated by agricultural interests, we have no farmers on our Board. I wish we had one to represent agricultural interests, although our farming community is small, 18,000 acres out of about 350,000 acres in the county. Our Board is made up of a soil scientist, forester, two educators, and me. It is my feeling we better represent the diverse interests of the community than a board of five farmers, the way it was a few years ago.

We have been faced with funding problems ever since I can remember. Actually, this has been the story of my life, in state, federal and now, local scenes. Although we are not housed with a federal agency as many District are, we receive housing, etc. from the county. Our county commission has real concern for the natural resources of our county. During the past several years, they and we

have been faced with the exploitation of natural gas (Antrim formation) in our county and neighboring counties. There are over 3,000 wells in an adjacent county and more than 1,400 in our county, with many more permitted and planned. This Antrim exploitation is considered the largest environmental upheaval in North America today, and I doubt if any of you have ever heard of it. It is a gross example of Leopold's comment, "Economic provocation is no longer a satisfactory excuse for unsocial land use."

Our county commission led the way in a soil erosion control program, because of this gas development, which is a prototype for northeast Michigan. They are now providing leadership for a ballot millage proposed to fund natural resources programs in the county, with implementation the responsibility of the Conservation District. The vote is 6 August. I'm optimistic it will pass. Why am I telling you this? Because you and I have the tough job of helping people better understand the need for better stewardship of all natural resources in the face of economic provocation. Food for thought is in a paper by Robert Costanza and Carl Folke, presented in July 1994.

"To achieve sustainability, we need to incorporate ecosystem goods and services into economic accounting. The economic values we seek for ecosystem management are much broader than financial values or merely the cash flow generated by a resource. For any good or resource to have an economic value, it must meet two conditions: (1) provide some agents (but not necessarily all) with improved well being; (2) the resource is scarce in that agents desire more than is currently available. Fish, wildlife, recreation, wetlands, old growth forests, natural grasslands communities, etc. all meet this definition of having an economic value to society even if none of these resources or the services they provide are marketed. While old growth forests on public land can provide timber, timber will be provided by private lands due to the profit motive. But old growth forests also provide for recreation (a direct use) and habitat for unique species such as the spotted owl, something the private lands often underproduce.

The case of the spotted owl highlights the "passive use" or existence/bequest values that ecosystems provide to members of the general public who may never set foot in the forest. Existence value is the satisfaction gained from knowing that a particular species or entire ecosystem continues to exist and function. Bequest value is the satisfaction gained from knowing that protection today will provide future generations with a particular species or ecosystem. Randall and Stoll (1983) describe the recreation use, existence and bequest values as "Total Economic Value" as it captures many of the motivations people have for carrying about resources.

These motivations are quite broad and can arise from a variety of concerns and may partially include such important but overlooked sources of benefits as spiritual or cultural values....

Surveys..... have shown that these existence and bequest values can be 2–10 times larger than the direct on-site recreation use values.... This is not surprising. While per person visitors have much higher benefits than non-visiting members of the general public, the number of visitors is often limited to a few thousand and is never larger than a few million. The value per household may be small (\$5–40), but there are literally millions of households, depending on the geographic extent over which people care. This, of course, depends on the uniqueness of that ecosystem. The Grand Canyon has a geographic extent of North America and, perhaps, worldwide.”

Makes one wonder about the value of Michigan’s endangered Kirtland’s Warbler and the young jackpine habitat it requires for breeding. These economic values support a suggestion I made when I was Chief of the Wildlife Division that our programs should receive an equivalent of \$5 for every man, woman, and child in Michigan because wildlife improved their quality of life. I didn’t get far but I still think it was a good idea.

Last week, Secretary of the Interior, Bruce Babbitt visited our state. The purpose of his trip was to encourage outdoors people to take a leading role in the battle to protect the environment, as Teddy Roosevelt and other hunters and anglers did in establishing the movement 100 years ago. He divided the history of American environmental protection into three chapters. The first was with Teddy Roosevelt and the protection of national parks and wilderness areas. The second chapter was the Rachael Carson era when we began to understand toxins. We are now in the third chapter where we must begin to understand how the various systems affect one another. He believes that grassroots involvement is the key to environmental protection. I agree with him when he says the most effective counter to an assault on the environment is an informed, willing-to-be-involved electorate.

When I spoke to you in 1984, the situation for natural resources was critical. When you consider that during the 22 minutes that I have been visiting with you the population of the United States has increased by 147, and over 3,000 worldwide, the situation becomes catastrophic.

Some will say that developing technology will come to our rescue. This may be true, but there is a quality to our lives that is lessened with human population irruption and the increasing demands on the earth’s resources and its finite space.

That is our challenge, to provide such an electorate with the knowledge and skills to ensure the future of natural resources.