ALL FLESH IS GRASS
[Program 3: Wisconsin Public Radio 1976]

Since its beginning Wisconsin has nourished great ideas in conservation, in how to use the land wisely, and in how to live in harmony with nature. It is an exciting story of true pioneers, the story of men and women who created a legacy which two hundred years after the birth of our nation stands as a rare insight into the future. ALL FLESH IS GRASS is a thirteen part series about Wisconsin men and women who dared to break new ground: today,

George Wehrwein, land economist.

Since the birth of this country, two views of man and the land have evolved and vied for the center stage in determining our life style and how natural resources are used. One view is that of economists, the other view is that of the conservation, or more recently, the ecological movement. Both views in their early conception were hysterical, dogmatic and ultimately self-defeating. But by the 1920's it could safely be said that the economic outlook had largely won out.

Conservation is any act of reducing consumption or exhaustion for the avowed purpose of benefiting posterity. It involves more than merely combining the factors of production and elimination of waste. It involves the deliberate use of restraint in the present in order to leave a supply for future generations. This can be applied to the entire gamut of natural resources, from flowers to minerals. It must be admitted that the crusade for conservation accomplished less than it should have and largely because the fundamental principles of economics and of social philosophy, the problems of property and the legal aspects of conservation were neglected or ignored.

Those were the words of George Wehrwein in the 1930's. The time was ripe for a new view of man and his relation to the land, a view that would bridge the gap between the old self-defeating policies, and the man for the occasion was George Wehrwein. During the last part of his life at the University of Wisconsin, he devoted his entire being to developing that bridge in a subject he called land economics.

The starting point of land economics is the relation of population to land. Land economics deals with the utilization of land by man, but more specifically, the relations of man to man arising out of the relation of man to natural resources. Land utilization takes place within three frameworks: the physical, the institutional, and the economic. Land policies must be based upon the operation of nature's laws as well as upon the economic drives of man. Too often the conquest of nature, benefiting immediate generations, has resulted in the conquest of man by those natural forces operating into eternity.

On January 31st, 1883, a son George was born to Adam and Dorothea Wehrwein at Newton, Wisconsin in Manitowoc County. It was the same year as that when the Agricultural School at Madison began to undergo a transformation under its new director Dean W. A. Henry. These two events would eventually coalesce.

Newton in east central Wisconsin was highly Germanic in its settlements, and it was said that these hardy farmers took a particularly dim view of formal education. So it's somewhat surprising to find young George, not only graduating from Manitowoc High School, but also completing in 1908 a two year teaching certification program at Oshkosh Normal. For a couple of years, George taught high school. However, he soon became disenchanted with a life that seemed to be going nowhere. A driving thirst for knowledge told him he should head for the big university at Madison.

Once at the university he was anything but certain about what field he should stake his claim in.

As he wrote to his future wife Anna Ruby: "Dear Ruby, Another thing that bothers me is in what I should major. It seems that all fields look promising enough, and I can't choose between them. The problem bothered him for some time but finally in another letter to Anna Ruby dated October 14, 1911, the call of destiny beckoned.

Perhaps I have wearied you with my discussions on my major. As I said in a former letter, it seems that in spite of the interest I take in the sciences, I find myself unconsciously drifting towards economics and history, and perhaps I'd better yield. I had a talk with Mr. Schoenfeld, and he thinks that the biggest field of all in agriculture lies in economics. It is a pioneer field, and besides, few take it.

The same letter reveals that all was not business with George.

When Taylor's class met up in Agriculture Hall the other Tuesday, October 10th, I could see across the lake to Mendota; the buildings were reflected in the water through a haze. The water was perfectly quiet, and the landscape had its autumn coloring. It seemed as if I was looking at some magic land, and I must admit it was hard to follow Mr. Taylor as he talked about Roman agriculture.

While at college his interest in land use problems grew. Wehrwein was particularly fascinated by the recognition that land development increased land value and therefore the taxes that might be collected from the land, something that wasn't the case until the industrial era. In 1913 Wehrwein received his bachelor's degree from the College of Agriculture and took a job as an extension teacher of marketing at the University of Texas where he stayed for the next three years. The land-tenant question was a major issue in the state of Texas at that time. Wehrwein initiated his own personal study of the situation which once again brought him into the area of land economics.

Then in 1917 he took a similar job at Washington State University, and a year later received an associate professorship at the State College of Pennsylvania. But like high school teaching before, marketing was not to be Wehrwein's destiny. There would be greater things.

Once more Wehrwein, now thirty-two years old, came back to Madison to study under Richard T. Ely, one of the most influential men in economics at the time. This time Wehrwein's efforts were concentrated on the newly emerging discipline of land economics. The subject had haunted him for many years. In 1920 he received his master's degree, and in 1922 his Ph.D. Ely, in addition to his university duties, was director of the Institute of Land and Public Utility Economics, an agency functioning on a basis independent of the university. So it was natural for Wehrwein, after graduation, to accept Ely's offer to serve as an assistant in the institute.

In 1925 there was a flare up between Ely and the university over retirement pensions and Ely left for Northwestern University, taking Wehrwein with him. But in 1928 Wehrwein came back to Madison and this time to stay. At this time Wehrwein was entering his prime, taking over where Ely had left off, and rapidly increasing the scope and depth of land economics. His whole life from then on would be devoted to this one endeavor.

Over half the students in agricultural economics would be working under Wehrwein. One of those students was Ray Penn. Penn, who would later step into Wehrwein's position after his death, had some thoughts [in this recorded interview] about the kind of man Wehrwein was during that period. "He always reminded me of the image I have of Abraham Lincoln. In physical stature he was tall and he was quiet. Anyone could go in and talk with him and feel like they amounted to something. Their ideas he would try to work out, and you went away feeling that here was a person who knew you and was interested in what you were doing. He was kind of a father. You never went in to see him that you didn't come out with an idea, thinking you were a pretty important person with an idea."

Wehrwein had many accomplishments to his credit--starting the first land use maps, sitting on

all the major National Resource Committees, etc.--but his greatest accomplishment was the production of the first textbook on land economics, called simply **Land Economics**. It was published in 1940, and to understand the insight and substance he brought to the subject of land economics, there is no better place to turn than to the book, for it is very readable and still fresh today.

Thomas Malthus, the British economist, was one of the first to state a relationship between man and land in the modern sense in his treatise on population. Malthus' statements that population eventually outstrips its means of support actually implies the possibility of a land use policy as Wehrwein points out.

The suggestion of Malthus to proportion population to food intimates the possibility of a national policy of limiting population to the availability of natural resources instead of allowing blind biological forces to determine numbers. This raises many difficulties. In the first place it calls for a proper determination of the man-land ratio. What is the optimum population? A population enjoying a high standard of living? Other elements in the solution might include ideas of having a high quality population, healthy in mind and body, proper distribution in the nation to avoid both congestion in cities and isolation of sparse settlements.

In order to do this land use had to be understood in economic terms. Wehrwein sets out in his book to do this.

Man is interested in land either for direct use as a consumption good, as for home sites or for recreation, or as a factor of production, a means of making a living. He uses it as an instrument for the creation of economic goods or services, either for the satisfaction of his own wants or to exchange with others who have their own goods and services to offer. Thus, man selects from the entire physical universe only that part or those resources which can serve in the production of economic goods or satisfy human wants. This serves to distinguish the economic supply from the physical supply. The economic supply of land is a constantly shifting one.

The supply shifts because land is more than mere surface. Land is natural resources. Not only is land minerals and water but also things like "x" hours of sunshine in the summer, a quantity that varies considerably across the globe.

Even though the physical facts concerning nature and natural resources belong to the realm of geography and other physical sciences, the economist must take them into consideration. In fact they are the framework within which the economics of land operates.

In other words the supply and demand of land is a function of how land responds when you try to do something with it, such as the difference between trying to grow corn in the northern and in the southern sections of Wisconsin, a fact commonly overlooked by economists.

Early economic literature often treated land as if it were homogeneous, having identical characteristics and an income of a peculiar nature called rent. However, as soon as land users were confronted with the practical problems of conserving our soils, growing forests, irrigating land, and taxing resources, it became clear that each type of land had its own attributes. There is no one principle of income, utilization, conservation, valuation or taxation which can apply to all of them.

If the economists were often blind to land as nature, conservationists equally often overlooked the value of land as space.

Whereas agricultural, forest, and mineral lands are useful because they yield physical products, urban land is valuable merely because it furnishes space, standing room or extension. It is paid for because people want to build a store, an office building, a bank or to park their cars. Instead of tangible products, urban land yields intangible services. However, this fundamental attribute is

common to all land, whether agricultural, forest, or urban. In fact it is the one thing that marks off the land from the material things which we regard as products of land.

Much of the book, **Land Economics**, is devoted to uniting these two facets of land into a single coherent view of land utilization. The result was that land utilization became scientific and objective. On such clear example is how the law of diminishing returns fits into the land utilization picture.

Land in itself is not productive. It yields wheat, forest products, or office space only when labor and capital are applied to it. While land yields great returns with the application of more labor and capital, and while we say that the yield is greater under intensive than extensive utilization, there comes a point where the static law of diminishing returns sets in and the yield is no longer proportional to the input. The law applies not only to farm land but also to all other resources and all other factors in production. It should be noted furthermore that it is based on physical phenomena and is therefore independent of socialism, capitalism, or any other economic system.

Wehrwein preferred an historical treatment of the subject matter to the statistical approach which has become so popular in recent years. Typical of the way he handled the problem was his analysis of the soil conservation problem. Wehrwein starts with finding the man-land relation.

The conservation of the value of agricultural land consists of maintaining the productive power of of the soil and protecting it from erosion. Before man used the soil for the production of cultivated crops, the components of the soil, plants, animals, and inert matter had become adjusted to one another. Plants and trees died and added to fertility. When agriculture replaced natural vegetation, plants were removed either whole or in part, thereby depleting both chemical elements and humus. Even grazing exhausts the soil.

After dividing the problem into components--one, fertility maintenance, and two, soil erosion--he contrasted the two.

Cropping takes certain elements out of the soil which can be replaced, and by good management the humus and organic matter can be kept at a par. Erosion on the other hand takes the soil body itself and with it all the soil elements.

He of course points out that there are two kinds of erosion and then goes on to describe the scope of the problem in the United States.

Erosion takes one of two forms: sheet erosion which takes a more or less uniform sheet of soil and gully erosion in which deep gullies are cut into the hillside. The second is visible to all but the first is really more important and more subtle. It is estimated that approximately fifteen million acres of arable land have lost almost all of their top soil or been so severely gullied that they are useless.

Then after more facts and figures, he begins his historical analysis.

It would seem that agricultural land should be one of the natural resources easy to conserve. No weighting or carrying costs are involved, merely such practices as would keep up the fertility of the land as nearly on a par with the original fertility as possible and hold the soil in place. Yet in the very brief history of the United States an area equal to the size of Minnesota has been completely devastated by erosion. Indestructible agricultural land is a myth, and the reason why it has been depleted and destroyed must be because it paid the farmer to do so.

It is useless to argue that one should maintain and build up the fertility of the soil unless the farmer has a long term interest in the soil. Soil has an exhaustion value similar to a forest or a mine. The American farmer has often found it more profitable to exhaust the virgin fertility of one farm and move to a new farm than to try to maintain or restore the fertility on his old one. The farmer who

claimed he was a good farmer because he had exhausted the soil on four or five farms was not far from the truth if judged by narrow economic standards.

After 1900 the time seemed ripe for a stable agriculture, a less commercial attitude towards land, similar to the subtle relationship between land and man which is so characteristic of European farming. The question is still unanswered. Why should farmers allow basic wealth to vanish when you can no longer get land for the asking and farms are worth thousands of dollars? The reason is that many of them did not realize what was happening until it was too late, especially in connection with sheet erosion, and now the problem is no longer prevention but cure.

The farm, whether rented or owned, was not looked upon as a home but as a factory. This view is quite in contrast with the old world feelings for the soil. In older nations land has become more than a mere object of utility. It has become sacred ground, the national organism, the foundation of the lives of those who were, who are, and who are to come. Such land may indeed be cultivated and used by the individual but may never become the object of arbitrary action by any individual.

Wehrwein, unlike today's economists, was not afraid to come to the conclusion that the solution to a problem depends upon the spirit and will of people.

Despite his enormous contribution to ideas and concepts, Wehrwein was no ivory tower professor. He took an enormous leadership role in Wisconsin's largest land use problem, the cut-over northern counties. In fact outside the state of Wisconsin, Wehrwein is known as the father of land zoning. It is not surprising that Wehrwein was able to recognize early the recreational value of land. As he put it, the northern counties had two tasks.

The first task then is the reforestation of all land not needed for agriculture. If the population curve should take a sudden twist upward, it is easy enough to convert any forest land into farms, but it is the work of generations to reverse the process. The second task should be the further development of recreational land. The three lake states are the summer playground for the eight states, rural and urban, lying at the head of the Mississippi Valley. Wisconsin lies in the very heart of this region. We have in our lakes, the Great Lakes, and our wooded areas an immense and valuable resource.

When asked what was Wehrwein's significance, Ray Penn replied that he built a bridge between the worlds of economics and conservation, another bridge between the pragmatic political world and the academic world, and perhaps even more importantly, he instilled this same attitude into a whole generation of students, who have become a living tribute.

On January 10, 1945 Wehrwein died of a heart attack, pushing cars out of snowbanks during a Madison snowstorm. He was sixty-one. Upon his death, his colleagues wrote:

Professor Wehrwein was one of the best of teachers, due largely to the fact that wherever he went, whomever he saw, whatever he read contributed to his teaching. To him the world was full of his subject--man's relation to the land. Few indeed are the people who are able to fill their lives with one subject as did he. Instead of being monotonous, it was charming.

Professor Wehrwein knew the history of the world back when the Nile Valley, and the little spot around the Dead Sea, were among the most fertile of any known territory. These people fought with their neighbors. The world is still waiting for some gentle soul like Wehrwein to teach us how we may live together, peaceably exchanging our goods, all well fed and well clothed. We need great teachers along many lines, but surely we are in need of a few great ones to take up the work, left by Wehrwein, among other things, teaching us how to live quietly and decently. Then we shall know how to make the earth produce all the goods that humanity can use.

ALL FLESH IS GRASS is Sponsored by the Wisconsin Environmental Education Council with additional funding from the Wisconsin Educational Communications Board and from the Wisconsin American Revolution Bicentennial Commision.

Wehrwein's status as an authority in the field of soil conservation first came to the fore when he was chosen from among the nation's scientists as the one to rewrite the chapter **The Land** in the revision of President Van Hise's monumental **CONSERVATION OF NATURAL RESOURCES IN THE UNITED STATES.** Van Hises' book was the first work to address the topic for a popular audience, and it captured the field unchallenged for two decades. By the end of the 1920's it became apparent that the problems of conservation had changed so considerably that a revision of his classic work should be undertaken.

It was clear that no one scientist could claim the competence to do so in all the fields. In fact, President Van Hise was only able to do so because of the exhaustive report of the National Conservation Commission, which appeared in the years following Theodore Roosevelt's famous White House Conservation Conference in May 1908, which has been described as "the most distinguished gathering of Americans since the Constitution Convention." That conference launched Van Hise into his crusade for conservation and the writing of his famous book.

The rewriting, it turned out, called for almost complete revision of each chapter, although relevant historical data and descriptions of methods and processes that still continued were retained. I have made no attempt to compare the original and the revised edition for the 70 pages Wehrwein wrote, with its descriptive text, tables of data, and many maps depicting various characteristics of our national lands. I will quote two passages because they are themes that endure in Wehrwein's thought.

In the section The Soil, Wehrwein wrote: "The surface layer of soil manufactured by the processes of nature through millions of years is the most precious natural resource of the nation. Of all of our duties to our descendants that of maintaining the soil unimpaired in the thickness and in richness is the most serious." (p.321) And in introducing the section Conservation of the Soil, he wrote: "Even though the demand for agricultural land is less urgent than it seemed to be in the first period of the present century, this is no excuse for permitting the soil to deteriorate. If we keep our better soils in as high a state of fertility as is economically practicable, we will not have to reclaim lands near the margin in order to get our food supply. Much waste in reclamation and shifting of agriculture can be avoided. The two chief causes of soil deterioration are erosion and the loss of valuable elements." (p.359)

Another significant evidence of Wehrwein's expert knowledge in soil conservation is his inclusion on the four-member Erosion Sub-committee of the Science Inquiry Committee at the University of Wisconsin, 1933-35. Science Inquiry was a major multidisciplinary effort at the university in the 1930's to bring together both natural and social scientists. Their task was to analyze problems in the state of Wisconsin, summarize the curriculum offerings related to the problem in all colleges and their departments, assess the research projects already underway at the university that were relevant to the problem, suggest new directions for research, and identify multidisciplinary curricula for undergraduate and graduate study. President E.B.Fred, in his contribution to the oral history of the university, hailed Science Inquiry as the most important event during his years as Graduate School Dean, in great part because it broke the insularity that often plagues the departmental structure of the university.

The first Science Inquiry Bulletin appeared in 1935, **The University & the Erosion Problem.** In no other bulletin (there were nine in all) was the vision of a multidisciplinary approach to problems more strongly stated than it was here.

A lively interest in erosion control was found throughout the institution [the UW]. There is a growing realization that the chemist, the physicist, the botanist, the bacteriologist, the geologist,

the geographer, the soils specialist, the engineer, the animal husbandman, the agronomist, the horticulturist, the forester, the economist, and the lawyer must work together, and that the contribution of each will be infinitely more effective if it is amalgamated with the others into a single coordinated program. p.18

We cannot determine Wehrwein's exact role in drafting this document, but his dedication to the task is made clear by his announcement of the bulletin and its contents in The Journal of Land & Public Utility Economics.

The University of Wisconsin has just published a bulletin of the Science Inquiry Committee entitled "The University and the Erosion Problem." It sets forth the responsibility of the University in teaching and research toward solution of erosion and soil conservation problems. It calls attention to the courses offered, irrespective of departments or colleges, which deal with erosion and directs the students attention to the opportunities for training and possible lines of research and investigation in this field. **11**(1935):414.

This dimension of Wehrwein's work is well represented by the extended excerpt from the soil erosion bulletin quoted below. Wehrwein had a solid record of serving with dedication any committee on which he served, so he certainly had a hand in drafting this statement. Moreover, it expresses his outlook on agricultural economics so well. Raleigh Barlowe, in a recent personal communication, defined Wehrwein's brand of agricultural economics as follows:

Wehrwein insisted that the success or failure of public policies and of most of the things we do in life are dependent on the operation of a three-fold framework. What we want to accomplish must be physically and biologically possible, feasible from an economic and technological standpoint, and institutionally acceptable.... Acceptance of this framework calls for a wholistic interdisciplinary approach to problem solving.

Excerpt from **The University & the Erosion Problem**

Scientists can and should aid in finding the facts that must underlie this new policy. Workers in the natural sciences can continue to give assistance in determining the agronomic, biological, geological, engineering, and forestry procedures that will help to control erosion, but such assistance is not enough. There must, in addition, be an active cooperation with social scientists and economists in articulating a new public policy for getting them applied. Obviously, this new policy should be built upon and around the existing system of private ownership of farm land.

***

Erosion research must deal not only with control of soil and water, but also with the modification of law, custom, and the economic framework of land use. Erosion control is on its face a community enterprise. The waters which destroy one farm usually have their origin on another, and dump their load onto a third. Unless its is stopped, an active gully on a farm in the valley will in time advance to the farms higher up the slope. Stopping such a gully is as vital to the upper farms as to the farm on which the gully head now happens to be. The crux of the problem is to devise some positive inducement, to be offered by the public, which will encourage landowners to safeguard the public interest in their lands, as well as their own interest. Our present law offers no such inducement. It assumes land to be indestructible, whereas the very opposite is the case. How to modify the legal structure is obviously a problem for the jurist and the economist, as well as for the biologist and engineer. pp. 16 - 17

WEHRWEIN'S MENTORING ALDO LEOPOLD IN ECONOMICS

In 1933 Aldo Leopold became the first faculty member in the country as a Professor of Game Management. He was placed in the Department of Agricultural Economics and thus his career and Wehrwein's came to intersect. Not only were they in the same department, they also were brought together as members of two Science Inquiry sub-committees, the one assigned the problem of erosion and that of forestry. (The sixth bulletin, **The University and Wisconsin Forestry**, was published in 1938.) Their work together led to Wehrwein and Leopold giving a joint Sigma Xi Lecture at the University Club on April 15, 1935, "Pathologic Forces in Land Use and Land Conservation in Wisconsin." Unfortunately, no account of their talk is extant.

In fact, not much has been written about the extent and significance of their relationship. Curt Meine, in his definitive biography **Aldo Leopold: His life and Work**, takes note of its significance in his discussion of Leopold's acclaimed essay on conservation economics:

"Conservation Economics" reflected not only Leopold's experience inside the New Deal, but his deepening appreciation of the biological and economic complexities of successful land-use reform. Between the lines one reads the influence of George Wehrwein, a colleague in the university's Department of Agricultural Economics, whose original work on the economics of land reform, soil erosion, and rural taxation would have a steady impact on Leopold.p.322

The two men shared a continuing close friendship as well. Robert McCabe recalls the educational pull that drew them together into the same intellectual sphere, "a concern for the welfare of the land and its people... These two men enjoyed a close friendship, cemented in part by that mutual concern." Unfortunately, McCabe did not recall anything specific that derived from their common concerns. However, he did offer this appraisal: "In the winter of 1945 Wehrwein died, but his idea that the economic welfare of rural people depended on the soil (land) on which they lived and worked, was basic to conservation programs everywhere. A.L. shared that concept ..." **Aldo Leopold: The Professor**, p116.

Fortunately, Mel Cohee once reflected on their relationship in a personal communication to Gerald Vaughn on September 8, 1995, and an extensive excerpt from that communication will conclude this section. Mel Cohee was Wehrwein's graduate research assistant in 1933 and assigned to work at first on wind erosion and then water erosion. Cohee regularly reported to Wehrwein. Here is a sample.

I had a good day Saturday. I spent the morning with a young renter in section 32, Fred McGarry who lives on the old Wm. Moore farm. I got a very complete picture of the farm and all his ideas. He has on his place a very good example of the effects of sheet erosion--one small field with with small furrows 3 or 4 inches deep all over the field. They came in his seeded furrows and washed away all his alfalfa. (Historical Society Archives)

In the same letter Cohee reported on another farm, one located on a high ridge. He had singled it out because a previous report branded the farmer as indifferent. Cohee found no verification and, in fact, said "I found on his place one of the best examples of farming to combat erosion that I have found." and provided a sketch to show how grasses and timber were used to protect the soil.

Cohee's research under Wehrwein was short-lived because he moved on to greater things in the federal Coon Valley erosion project, a position for which Wehrwein had recommended him, Wehrwein's letter (January 22, 1934) to Charles Slichter, Dean of the Graduate School, which funded the research, shows his involvement in the Coon Valley erosion project and how Mel Cohee's brief soil conservation research with him qualified Mel Cohee for the job.

Mr. Melvin Cohee, our research man on the erosion control project, has accepted the opportunity to go with the Coon Valley erosion project under the Division of the Interior. This project has a number of men who are experts in their line called upon to assist with the rearrangement of farm layouts and farm practices made necessary by the erosion control program. For instance, the woodlands will have to be protected from burning and pasturage will have to be omitted; certain crop lands will have to be put in permanent pasture and strip farming substituted for the present practice.

Although Mr. Cohee had only a few months experience with research in the erosion area of Webster Town last summer, he proved to be the best trained man for this purpose. At first his youth was against him and the Washington office refused to accept him, but in spite of that he was asked to come on the job a week or so ago. We thought that he ought to accept, in spite of the fact, that it would mean leaving his research project partly unfinished. However, Mr. Cohee has his material in excellent shape. (Historical Society Archives)

Wehrwein concluded the letter: "It certainly is a new experience to have a man go from research to actually demonstrating his research in such a short time."

Curt Meine records that Leopold gained particular satisfaction in becoming involved with this federal project to control erosion in Coon Valley, and thus Mel Cohee had considerable contact with Leopold. We are fortunate indeed to have his account of the Wehrwein/Leopold relationship.

REFLECTIONS OF MEL COHEE ON LEOPOLD AND WEHRWEIN

The Wehrwein/Leopold Relationship

It was most congenial and bearing mutual admirations. I knew about it most intimately in the time frame 1932-39. I worked closely with Prof. Wehrwein in 1932 and 1933 as his Graduate Assistant; our offices were located across a hallway. However, I spent a lot of time with him, sitting at his office work table; and we made field trips together.

Frequently, Wehrwein would come into his office, where I was sitting, and take half to one hour and a half telling me about and discussing the contents of an in-staff meeting in which he'd just participated. Always, so it seemed, he'd been most impressed with Leopold's contributions and, often times, he and Leopold had continued discussions after the meetings had adjourned....

Wehrwein was gaining from Leopold revelations about ecosystems, relations of wildlife and land use, broad land use patterns beneficial to beauty with their non-monetary measurable values, and needs for man's appreciation of natural resources. Wehrwein would try to fit these considerations into his land economics within its practicability, or if necessary, to expand his earlier rationale. Leopold was gaining basic land economic principles from Wehrwein and how to apply them within his framework of natural resources in conservation principles.

I left the UW Ag. Econ. Dept. in late fall of 1933, at first only part time, to help develop the program for the Coon Creek Watershed Erosion Control Demonstration Project area, just over the hill from the area where I was studying water erosion and land use, and to help on the first complete farm conservation plans with farmers: I was on loan from UW, but only part time since I was winding down that erosion project ... under the design and guidance of Prof.Wehrwein... I went onto the SES, USDI payrolls, the first week in January 1934, as an Ag. Economist.

***

Leopold was prominent, over many days and nights, on the Project in practically directing how the wildlife aspects should be incorporated into all complete farm conservation plans, and to inventory wildlife habitat and species types and numbers. I had overall charge of the farm planning, so I spent lots of time with him on these considerations. Equally important, however, were Leopold's many and long "rump sessions" we young conservationists had with Leopold--

almost like open seminars. Often times, when he would bring some economics into discussions of his ecological or conservation ideas (philosophies), he would pseudo-quote Professor Wehrwein, and by name. No doubt about it, Leopold greatly admired George S. Wehrwein.

A point should be made here, that never once were Wehrwein and Leopold together on the Coon Creek Project. I do know, though, that they kept in touch, back on campus, about what each was doing to help. I also know that they shared thoughts on one item (I'll cover it later via Wehrwein), namely, costs distribution ... for bringing resources conservation onto privately owned lands--who should pay, and what proportion.

2. Changes in their (Wehrwein/Leopold) Conservation Economics after Coon Valley

I'm not sure about any changes in "conservation economics" from before to after Coon Valley, since I'm not certain just when respectively they first acknowledged their own concepts about "conservation economics." Both believed this demonstration project was a good step forward to bring about widespread resources conservation on private ownerships. Neither believed the federal government should or could offer such large amounts of free commodities and labor beyond those given to farms and ranches in demonstration projects, despite such necessities, in order to have those farmers (in demonstration project areas) show how soil conservation was done.

Leopold openly said he believed farmers generally would recognize needs and advantages of conservation farming, as demonstrated in the Coon Valley Project and similar projects around the nation. In so doing, he believed farmers would willingly shoulder much of the costs, even for those practices built into their farm conservation plan that did not give profits ... but only community benefits. Obviously he felt farmers would soon get some "conservation ethic." Wehrwein was not sure farmers in general would do this, and probed for some reasonable basis (formula) for distribution of costs between private land owners and society via different units of government. I am certain that Wehrwein had more knowledge and experience about what farmers would and would not do than did Leopold who had little experience with private land owners but mainly with public ownerships (through his US Forest Service employment).

Wehrwein was completely supportive when I got the idea for a Wis. Woodland Tax law, that would reduce real estate taxes to almost little or nothing (30¢ to 50¢/acre) if fenced to prevent grazing and have a general woodland improvement commitment. It was enacted in 1935 and not only applied in the Coon Valley project area but statewide. It was the pattern for such legislation for the next 50 years. The state reimbursed tax revenues foregone by counties in allowing the large deduction in woodland taxes. I have no information on how Leopold felt specifically about these matters except for his recognition of Wehrwein's beliefs. Wehrwein was a strong believer that through enabling zoning ordinances and taxation directives, land use could be steered into better patterns.

After some years went by, after 1933-39, Leopold saw farmers as only following those conservation practices that seemed profitable to them.... He was right, but the cause did not basically come only from the inner evaluation of farmers' profit motivation. It came about largely by a beginning breakdown in federal government conservation policies... Not only that, but in those changing years farming techniques drastically altered from small field equipment, plus greatly enlarged farm acreages per unit, to large tractors and accompanying equipment. It all added up to a different attitude about "love of their lands," with more peer pressure for "bigness" and profits.... This was drastically different from prevailing circumstances in the early 30's. Wehrwein seemed to recognize these causes...

I don't think Wehrwein changed his "conservation economics" from before the Coon Valley Project to after it. Before Coon Valley he saw erosion as a menace to land use and farm economics.

My two research projects [with him] were to somewhat peg the relationship between land use and soil erosion...; he firmly believed that they had a positive relationship. After Coon Valley and the conclusion of my two research projects (the first one was about wind erosion), he knew as we all did that there was a definite relationship. I do not know of any voicing of a "conservation economics" position of Leopold before the Coon Valley Project; all he ever had he gave credit to Wehrwein for it. But obviously, after the Coon Valley Project, he did have a position expressed about farmers and profits. Like others in Wisconsin before my research projects and the Coon Valley Project, there were mostly only statements (positions taken) about the seriousness of soil erosion and degradation of natural resources without any specifics about "conservation economics." Wehrwein had some specifics in connection with his zoning work in northern Wisconsin, and cost savings for prevention of improper land uses; much of those lands should have been and were put into forestry coverage.

I continued to be in close touch with Prof. Wehrwein while working with SES and SCS in Wisconsin.... This meant my time on the Coon Valley Project and in the regional (two states, WI and MN) office ... covering from 1933-34 and most of 1935, when I transferred to SCS in Washington, D.C. I still kept in fairly close touch with Wehrwein. When he'd come to D.C. on his National Resources Planning Board work, he would always spend one evening, for dinner and long discussions, in my home.

***

I am enclosing a copy of my presentation to the Wis. Land Conservation Association 1987 Annual Conference, December 3rd. About 450 people attended. They were people from governing bodies of districts (county by county), state and county and federal people, with a scattering of business people. It is titled "Aldo Leopold's Conservation Legacy." Page 3 includes quotes to show the direct influence of Professor Wehrwein on Leopold's economic thinking. Many more examples could be cited, like the one where Leopold says [conservation lies] not [in] the physical impacts of government but in the mental processes of citizens (all came from Wehrwein).

***

Many people, including professional colleagues, farmers, educators, church clerics, lawyers and politicians had influences in the constructive thinking, teachings and writings of Aldo Leopold. Perhaps none more so, for one particular facet though, than Professor George S. Wehrwein, the well-known agricultural (land) economist and a strong proponent for county land use zoning; he brought realistic land economics into Leopold's vast comprehensions for socioeconomic considerations about conservation in land use. Leopold openly expressed appreciation for his close association with Wehrwein. As a graduate assistant to Professor Wehrwein, in the UW Ag. Econ. Dept., I remember so well the many remarks he made from frequent discussions he had just had with Leopold; this was before I joined SES at Coon Valley, Wisc.

When men have noticeable influences on each other, it often pays to look a little at the other man. Some of Wehrwein's thinking may be reflected in two of his statements in that early time frame: "If a philosophy of conservation develops it will be expressed in a willingness of the people to restrain themselves, as producers and consumers, and set up social controls to accomplish this purpose." And, "If a policy of cooperation (public and private landowners) is adopted, it would be better if aids were extended to farmers to prevent erosion and control it in its earlier stages rather than to wait until the top soil is practically gone and deep gullies have ruined the land. Eventually the public will step in to save whatever can be saved, but at enormous costs." Note the parallel when Leopold said: "Whenever a private landowner so uses his land as to injure the public interest, the public will eventually pay the bill, either by buying him out or by donating repairs or both--abuse is no longer a question of depleting a capital asset, but actually creating a cash liability against the taxpayer."