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By
G. E. CONDRA



BULLETIN 34
OF THE
CONSERVATION AND SURVEY DIVISION
UNIVERSITY OF NEBRASKA

LINCOLN, NEBRASKA
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LINCOLN, NEBRASKA
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CONSERVATION AND SURVEY DIVISION

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AS DEFINED by law, the mission of the Conservation and Survey Division of the University is to survey and describe the geology, topography, natural resources, conservation problems and industries of Nebraska and serve as a factual Information Bureau relating to state development. Its departments are the Geological, Soil, Water, Biological, Resource and Industrial Surveys and an Information Bureau.

Origin and Scope of the Conservation Program

By

G. E. CONDRA

Mr. Chairman, ladies and gentlemen: You know that the storm made it impossible for Governor Peterson and Dean Burr to be present and speak at this meeting, and that I am a substitute for them. The Governor would have given you an appropriate address and Dean Burr's subject, "Some Observations in Pakistan," is timely for this occasion. So, you are disappointed, and I am puzzled, but have decided to make a hurried review of the Origin and Scope of the Conservation Program.

The conservation program has been evolved over a period of years of success and failure in the development of natural resources. It includes much more than soil and water conservation and involves the factual study of our resources and enviring conditions.

Widespread drouth taught Nebraska and adjacent states important lessons about the relations of low rainfall to plant life, crop adaptation, and agricultural practice, and the relations of crop failure to social and industrial security. And the wastage and maluse of natural resources in most states evidenced the need for the organization of national and state conservation activities.

The American Forestry Association, National Reclamation Association, Governors Conference and the National Conservation Congress were organized several years ago to prevent the wastage and maluse of resources and to develop conservation activity in the states and nation. They shaped the background of the current conservation program in Nebraska and other states.

The **Governors Conference**, called by President Theodore Roosevelt to meet at Washington in 1908, was the outstanding organization in bringing to the people of the United States a knowledge of the wastage and maluse of resources, and the need for the conservation of resources, mode of life and government. It was a large assembly of public spirited people, including the Chief Justices of the United States, U. S. Senators, Congress-

* Reprint of a speech made at the convention of the State Irrigation Association, held in Ogallala, December 6 and 7, 1951.

men, most Governors, many state, federal and municipal officials, prominent engineers and industrialists; and representatives of the press, church, labor, and farm organizations. It was a large representative group.

President Theodore Roosevelt was the dynamic coordinating force in this conference. The following excerpts are from his opening address.

"I welcome you to this conference at the White House. You have come hither . . . so that we may join together to consider the question of the conservation and use of the great fundamental sources of wealth of this Nation.

"This conference is in effect a meeting of the representatives of all the people of the United States called to consider the weightiest problem now before the Nation; and the occasion for the meeting lies in the fact that the natural resources of our country are in danger of exhaustion if we permit the old wasteful methods of exploiting them to continue.

"It is safe to say that the prosperity of our people depends directly on the intelligence with which our natural resources are used. It is equally clear that these resources are the final basis of national power and perpetuity. Finally, it is ominously evident that these resources are in the course of rapid exhaustion.

"We have become great in a material sense because of the lavish use of our resources and have just reason to be proud of our growth. But the time has come to inquire seriously what will happen when our forests are gone, when the coal, the iron, the oil, and the gas are exhausted, when the soils shall have been further impoverished and washed into the streams, polluting the rivers, denuding the fields, and obstructing navigation.

"We should exercise foresight now, as the ordinary prudent man exercises in conserving and wisely using the property which contains the assurance of well-being for himself and his children. We want to see a man own his farm rather than rent it, because we want to see it an object to him to transfer in better order to his children. We want to see him exercise forethought for the next generation.

"We can add large tracts of agricultural lands by irrigation in the arid and semi-arid regions, and by drainage of great tracts of swamp land in the humid regions.

"I wish to take this opportunity to acknowledge the credit due to the initiative, the energy, the devotion to duty, and the farsightedness of Gifford Pinchot, to whom we owe so much for

the progress already made in handling the coordination and conservation of natural resources. (Applause.)

"We are coming to recognize as never before the right of the Nation to guard its own future in the essential matter of natural resources. In the past we have admitted the right of the individual to injure the future of the Republic for his own profit. But the time has come for a change. And the people now have the duty of obeying the moral law, to protect themselves and their children against the wasteful development of our natural resources.

"Any right thinking father earnestly desires and strives to leave his son both an untarnished name and a reasonable equipment for the struggle of life. So this Nation as a whole should earnestly desire and strive to leave to the next generation the national honor unstained and the national resources unexhausted.

"Finally, let us remember that the conservation of our natural resources is but part of another problem to which this nation is not yet awake, but must face in time if our nation is to survive. It is the problem of national efficiency and our patriotic duty of insuring the safety and continuance of the nation. (Applause.)

"When the people of the United States consciously undertake to raise themselves as citizens, and the Nation and the States in their several spheres, to the highest pitch of excellence in private, State, and National life, and to do this because it is the duty of true patriotism, then and not till then, will the future of this nation, in quality and in time, be assured." (Great applause.)

The Governors Conference was the greatest meeting of its kind ever held anywhere. There were speeches by several governors, members of the cabinet, leading industrialists, engineers and others, including William Jennings Bryan. By vote of Congress and Senate 50,000 copies of the proceedings were published for general distribution to citizens and libraries. It is a valuable 450 page reference on conservation.

The National Conservation Congress was organized in 1909 to discuss national conservation problems. It held annual sessions in Seattle, St. Paul, Kansas City, Indianapolis, and four in Washington, D. C. Its sessions with delegates from all states, were held in packed auditoriums with seating capacities of 2,000 to 6,000 people. Among the speakers were Theodore Roosevelt, President Woodrow Wilson, President William Howard Taft, William Jennings Bryan, Gifford Pinchot, J. B. White, Uncle Henry Wallace, U. S. Secretary of State, U. S. Secretary of Agriculture,

Governors of states, State Conservation Commissioners, state engineers and many others. These congresses formulated a comprehensive conservation policy and a report on each annual session was published and widely distributed. These reports contain valuable information relating to the history of conservation development. Some of you have them in your libraries.

State Conservation Commissions. The governors and other delegates of the Governors Conference and the National Conservation Congress returned home with the purpose to study and solve the conservation problems of their states.

Governor George Sheldon appointed a Commission for Nebraska in 1908 composed of ex-officio members of state and University departments. This commission organized the state Conservation Congress which met annually for several years. Its meetings were well attended and covered most phases of Nebraska conservation. They emphasized the need for the factual survey of our natural resources, and supported legislation for the establishment of the State Conservation and Soil Survey in 1911 and the enlargement of its service to that of the Conservation and Survey Division in 1921 to include the Geological, Soil, Water, Biological, Resource and Industry, and Conservation Surveys and an Information Bureau service based on survey information. And Nebraska, more than most states, has emphasized survey and research as a basis of conservation development. You know the progress that has been made in Nebraska.

The gaging of streams was placed in the State Bureau of Water Power, Irrigation and Drainage. It is done in cooperation with the U. S. Geological Survey and is an important factor in gravity irrigation and flood control.

In Nebraska, the departments engaged in survey, research and educational service are at the University and those with regulatory control are at the State Capitol, under state administration, and there is now close cooperation between all state and University departments engaged in conservation services.

The National Soil Survey Association, composed of members of Federal and State Soil Surveys, held several annual meetings to discuss the functions and improvement of soil survey, but did not emphasize the need for soil conservation. However, in the 1928 sessions, the President of the organization asked Hugh Bennett of the U. S. Soil Survey to discuss the soil conservation problem at their evening banquet held at the New Willard Hotel

at Washington. Among the invited guests at the banquet were U. S. Senators, Congressmen, Presidents of colleges and universities, Secretary of Agriculture, Secretary of Interior, and others. Mr. Bennett outlined the soil conservation problem in detail and stated that steps should be taken by the nation and states to conserve the soil resources. Bennett's speech was commended by the Chairman who said that the program was then successfully underway in his state. And the Secretary of the U. S. Department of Agriculture stated that something should be done about the matter nationally, and all present agreed with the Secretary, who in time, discussed the subject with members of the U. S. Department of Agriculture.

Soil Conservation Service. Soon after the 1927 session of the Soil Survey Association and at the suggestion of the Secretary of Agriculture a legislative bill on soil conservation was prepared. It was passed by Congress and Hugh Bennett was appointed Director of the Service. And legislation by the states followed. So the functions of the S.C.S. are defined by federal and state law. The main federal act was passed in 1935; the Nebraska law was passed in 1937, and the first Nebraska district was organized in 1938.

The members of the Nebraska Irrigation Association know that all of Nebraska is now in Soil Conservation Districts and that the Soil Survey and Conservation Service are supporting agencies in irrigation development. They know too that the duties of the State Soil Conservation Committee and the functions of the District Supervisors are defined by law.

The soil and water conservation problems differ much in the various parts of the state. This means, for example, that the problems in a sandhill county are not like those in an irrigated area, a subhumid upland, or in the Loess Hills Region, and the factual relationships must be taken into account in planning a sound district conservation program.

I will not outline the soil conservation practices of Nebraska because they are quite well known to most of you. But will say that the initiative for soil conservation comes from the land owners and District Supervisors, the planning is done by well trained technicians and the program is well organized, well managed and efficient.

Although soil conservation, as defined by law, covers a number of activities, there is much conservation in university, state and federal departments that has been in operation for several years as will be shown in the following review.

Agricultural Conservation. Marked progress has been made in various phases of agricultural conservation as in plant breeding, animal breeding, seed selection, land use, methods of cultivation, control of insects and plant and animal diseases, and in clean harvest, grain storage, animal husbandry and farm and ranch management. The College of Agriculture, Agricultural Experiment Stations, U. S. Department of Agriculture and the Agricultural Extension serve well in these necessary phases of conservation. And the noxious weed control, and plant and animal disease controls are well administered by the State Department of Agriculture and Inspection in cooperation with the College of Agriculture and the U. S. Department of Agriculture.

Industrial Conservation. Like in agriculture, the industrial activities of Nebraska have been greatly improved and enlarged the past few years. They have developed new processes and new products. The canning plants, beet sugar factories, wheat milling plants, bakeries, meat packing establishments, grain elevators, cement plants, and other activities are improving in production and service. Their electrified, mechanized operations are directed by skilled mechanics and there is a lot of conservation in present-day industry.

Engineering Conservation. It is not generally understood that irrigation, power, drainage, flood control, transportation, industrial, institutional, urban, and some agricultural activities require technical engineering planning, construction, and operation. And some of you may not realize that the College of Engineering of the University trains many men in civil, mechanical, chemical and electrical engineering and that their service is a necessary phase of conservation.

Fireproof construction and the lighting, heating, cooling, ventilating and water systems installed in homes, schools, hotels, industrial plants and public buildings are among the engineering features that contribute to the comfort, health and efficiency of people.

Forest Conservation. The forest has ever been a main factor in the development of our country. It is a source of fuel, food, timber, pulp, shade, shelter, wild life, live streams, scenic beauty, and recreation. But the trees and shrubs are a vital resource and have enemies, and like farm crops, must have husbandry and protection by man.

The large areas of natural forests in the United States and small areas in Nebraska must be protected against the fire hazard,

insect enemies, disease and wastage by man. Federal and state foresters are actively engaged in forest propagation, and the American Forestry Association is one of the oldest and most active conservation agencies in the United States.

At the insistence of conservationists, Congress created and named several scenic forest areas of the public domain as National Parks and many large areas with natural forest cover as National Forests. The parks are enjoyed by thousands of excursionists and the well managed reserves are good wild life habitat and a dependable source of lumber and other products.

Most national forests are productive but large areas of cut-over lands in some states are in neglected condition. Also some private and publicly owned areas are dependable sources of lumber, pulp and other products. Nebraska has six state parks and two national forest reserves. They are visited by many people. Do you know their names and locations? Information regarding them can be had by writing the State Fish, Game and Parks Commission.

The forest resources of Nebraska have been studied quite closely and described. About 3% of the area of the state is occupied by native and planted forest. The largest areas of yellow pine forest are in the Pine Ridge and Wild Cat Region and along the middle course of the Niobrara Valley. Broad leaf trees occur on bluff lands of the Missouri and other valleys and on flood plains. Some trees are cut for posts, poles and lumber, but the main uses of trees and shrubs in the state are in shelterbelts, windbreaks, road-side planting, parks and on residential streets. Planting for shade, windbreaks, shelterbelts, and landscape beautification is increasing because a home, church, school, farm, ranch or town without trees and shrubs is an unattractive desolation. On the contrary, however, trees, shrubs and flowers at farm homes, on school grounds, church grounds and in towns add much to the beauty, comfort and livability of the place.

Nebraska is known as the Tree Planter State and was the home of J. Sterling Morton, the founder of Arbor Day which is now observed in every state and several foreign countries. And we should increase the traditional planting of trees on Arbor Day which was named in 1872.

Wild Life Conservation relates principally to the propagation and protection of fish, song birds, game birds, and fur-bearing mammals, and is carried on by the State Fish, Game and Parks Commission in cooperation with the U. S. Biological Survey. The fish, birds, mammals and reptiles of the states have been studied

and described by the Biological Survey of the Conservation and Survey Division and are known to most of you. But do you know the locations and functions of the fish hatcheries, game preserves, and game refuge areas, and about open and closed season for fishing, hunting and trapping? The wardens who administer the law relating to wild life are called conservationists.

The crow, magpie, rattle snake, mouse, rat, ground mole, pocket gopher, prairie dog and coyote are the most objectionable animals. Wrens, cardinals, mocking birds, robins and the meadow lark (state bird) are friendly and interesting and the leading game birds are the pheasants, ducks and geese. The sage hen is nearing extinction and the prairie chicken is decreasing in numbers; bob-white quail and the sharp tailed grouse are recovering in number and the beavers and deer are increasing. The northern pike, Missouri River cat and carp are the large fish; quite large bass and trout are caught in McConaughy Lake and other reservoirs. Good conservation practice results in good fishing and hunting and gives the people of the state a lot of pleasure in the observation and study of certain kinds of wild life. Young people in the schools are deeply interested in squirrels and the song birds for which they provide feed and water and build homes.

Reclamation and Irrigation Conservation. The members of the State Irrigation Association are well acquainted with reclamation and irrigation. Your knowledge of these activities is based on practical experience and discussion in preceding sessions of the Association of water storage, diversion, allocation and the integration of surface water and ground water for irrigation, power development, and domestic, industrial, and municipal use, and the survey and preparation of land and soil for efficient irrigation and good agricultural practice. These phases need not be reviewed here.

Flood Control is now a live subject because many people are interested in the cause and prevention of floods. Fortunately, however, the floodable areas of the state are quite well known and described; the streams have been gaged systematically for several years; the record of rainfall has been kept for more than 80 years; the topography of most basins has been mapped, and the flood record is fairly well known. Also, a geologic study of the alluvial and aeolian deposits and topography of the valleys shows that there were even larger floods in the late geologic time than those of recent years. Evidently there is a flood hazard of considerable magnitude in several valleys of the state, and

effective methods of flood control are known to hydrologists, engineers, geologists and conservationists.

The people talk much about floods when they destroy property and life, but move back onto the flood hazard zones when the water subsides and land is exposed. This has happened several times in the Kaw Valley in Kansas and along the Missouri River in Missouri, Iowa and Nebraska. And some people even refuse to move off a floodable area when told that a big flood is coming, as happened at Cambridge, Nebraska a few years ago. So we must learn the cause of floods and how to control them and prevent damage to property and loss of human life.

Conservation in Business. Most business of the state is carried on equitably, but a few years ago there was some crooked dealing by agents selling defective foreign lands and unsound oil and mineral stocks and leases in Nebraska and other states. The problem of conservation in business was discussed in the sessions of the National Conservation Congress held in St. Paul and Indianapolis and in the Nebraska Conservation Congress, and laws were passed in Kansas, Nebraska and other states to eliminate the fraudulent "blue sky" operators. The Nebraska legislature assigned to the Conservation and Survey Division the duty of investigating the questionable projects to determine whether they were sound and to notify the fraudulent operators to keep out of Nebraska or they would be reported to the Attorney General for prosecution. Sandy cut-over lands of Florida, defective irrigation projects in Texas, certain oil projects in Texas and Oklahoma, mineral deals in Colorado, and mineral and land deals in Mexico were found to be unsound and misrepresented, and were refused the right to sell in Nebraska. But after this, some of them used the U. S. Mail Service in making sales. However, a federal law was soon enacted making such use of the mail a national offense, and this timely law has been effective and there is less need for investigation by the Conservation and Survey Division. The people of the state learned that it is not safe to engage in "blue sky" or "get rich quick" schemes, and they should know that now all companies selling foreign leases, stocks and lands in the state must register and comply with a law administered by the State Division of Securities of the State Department of Banking.

Most kinds of Nebraska business are now on a sound basis, due primarily to better organization, trained personnel, regulatory legislation, protective legislation and police protection.

Conservation in Education. The conservation of soil, water, forest, wild life, agriculture and people is taught in the 7th and

8th grades of the public schools of Nebraska. The schools see and study contour farming, gully control, terraces, farm ponds, shelter belts and conservation practices generally under the guidance of District Supervisors, S. C. S. technicians and Extension Agents and consult the Conservation, Soil Survey and other bulletins in the District S. C. S. libraries. They gain valuable information on resource conservation, home environment and agricultural practice and develop a desire for further study. Some town and city schools make planned excursions to places where conservation structures and practices can be observed and explained.

The course of study outlines a 7th and 8th grade special study of Nebraska. It includes the Geography, Agriculture, Industry, Reclamation and Conservation, History and Government of the State, and more advanced study of science and conservation is made in some high schools and technical courses on conservation are taught in the University.

Conservation of Mode of Life and Government. The mode of life in Nebraska and much of the United States was developed from European people who came to the land of opportunity to improve their living conditions and develop security for themselves and their posterity. These people were of English, Scottish, French, Bohemian, Swedish, German, Danish, Swiss, Italian, and Norwegian stock. They learned how to live together in this country and by inter-marriage and other association developed the Democratic mode of life. However, a main factor in their Americanization was the public schools and the effect of student life on the older people.

The American mode of life is now outstanding compared with most other countries. Ours is a land of personal responsibility, achievement and security. It has the leading government in the world. In the language of Lincoln, it has a government "of the people, by the people, and for the people." But there are now two very different forms of government in the world—one Atheistic and Imperialistic, and the other Democratic and Christian, and they are in contest for supremacy, with Communism in the ascendancy. The well organized subversive program of the Communists has been underway in the United States and other countries for several years and we have been slow to oppose its aggression.

Well, I had the opportunity to learn about Russia and the relation of Communism to the United States and other countries. In 1938 the International Geological Congress was held

in Russia and I was chairman of its largest section. Sessions of the Congress were held in Moscow and Leningrad and we planned geological excursions to distant parts of the country. We went eastward into Siberia, northward to the tundra country, southward to the sub-tropical areas and westward to Poland. Our excursions were made on railroads and steamships supplemented by auto tours. We visited rock outcrops, agricultural communes, cities, industrial plants, shopping centers, quarries, salt mines, potash mines, and coal mines and were in the Kremlin and St. Petersburg Castle and many out-of-the-way places. The Russian people were courteous to us and we were not critical of them, but kept our eyes open and learned that with the overthrow of Czarism, Russia became a Socialistic Democracy which, after a short period of inside manipulation, gave way to the Marxian theory of ownership and control. So Russia is not now a Socialist Democracy but has a centralized Imperialistic government. We learned too that:

1. Both men and women engage in heavy work under policed supervision
2. Work ability is a controlled resource
3. There is little private ownership of property
4. The people are under service bondage and have little participation in government except to obey orders
5. Science, research, medicine, the press, religion, and education are under communist control
6. Catholic, Protestant and Jewish religions, and the Rotary, Kiwanis and labor organizations are not tolerated
7. Communism is atheistic
8. Most of the people live in fear
9. Communists feel that Democracy is soft and not aggressive
10. Communism trains its followers in methods of aggression and some misguided Americans are engaged in communistic subversive activities
11. Those in communist-controlled countries who do not conform to the edicts of communism are liquidated, or sent to slave camps in Siberia
12. Communism has planned to overthrow the government of the United States and other countries.

Since 1938 came World War No. 2 and since this war communists have taken over much of Europe and Asia and are now

a threat to the United States and other countries. And, if the communist program leads to World War No. 3, the communists will use the military forces of the countries that have come under their control and the aeronautical resources of Russia and probably atomic bombing in offense. But if invasion reaches the United States it will be met with organized force and repelled, and if atomic bombing is employed in the invasion certain strategic positions in Russia will be obliterated by counter-bombing. In the meantime, however, subversive communist organizers should be kicked out of the United States or imprisoned.

We are engaged in the worst crisis the world has ever known and dare not and shall not lose our mode of life and government and become enslaved by communism. The people of Nebraska and the United States have much to defend and conserve. (Applause.)