The Progressive Era Documents

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The first four documents consider dam water. The first is an extract from John Wesley Powell's 1878 Report on the Lands of the Arid Region. In it, Powell defines the arid West, lauds cooperative agrarian settlement and the power of irrigation, and proposes a radical new system for classifying and distributing the land, water, and resources of the public domain. The second document is by irrigation booster William E. Smythe who takes Powell's vision and spins it into the grand story of agrarian conquest and nationalism. Aridity and irrigation become virtues, the foundations for true democracy and social progress. The third document is an outgrowth of Powell's proposals and Smythe's boosterism. In 1902, Congress passed the National Reclamation or Newlands Act, establishing a reclamation fund for dam and irrigation works in the West and laying the basis for the Bureau of Reclamation. The fourth document excerpts oral histories about the construction of Hoover Dam between 1929 and 1935. In these histories, men and women describe the reasons for the dam, their personal experiences working on and living near the dam site, and assess the dangers involved. The document ends with excerpts from President Franklin D. Roosevelt's dedication of the dam, uniting the democratic agrarian vision of irrigation in the arid West with the positive role of government.

In the final three documents we turn to damn dust, the ecological nightmare of the "dirty thirties." The fifth document is a letter written in 1935 by Caroline A. Henderson of Eva, Oklahoma, to a friend living in Maryland. Having lived on the farm with her husband for five years, Henderson describes the drought, dust storms, and activities of the federal government in trying to combat the loss of topsoil. She also speaks about the spirit of the local people who faced overwhelming ecological and economic odds. The sixth document is the narrative script for Pare Lorentz's 1936 documentary, The Plow That Broke the Plains. This 21-minute New Deal propaganda film, funded by the Resettlement Administration, explained the reasons for the dust storms and reassured citizens that technology, harnessed by enlightened government planning and public conservation efforts, could save the day. The final document was written by the father of soil conservation, Hugh Hammond Bennett who headed the U.S. Soil Conservation Service at its inception in 1935. His is a more telling critique of the frontier and agrarian myths, of the lack of an American land ethic, and the need for government programs to protect our soil.

John Wesley Powell Demands
Reclamation of the Arid Lands, 1878

The eastern portion of the United States is supplied with abundant rainfall for agricultural purposes, receiving the necessary amount from the evaporation of the Atlantic Ocean and the Gulf of Mexico; but westward the amount of aqueous precipitation diminishes in a general way until at last a region is reached where the climate is so arid that agriculture is not successful without irrigation. This Arid Region begins about midway in the Great Plains and extends across the Rocky Mountains to the Pacific Ocean. ... [It] embraces something more than four-tenths of the whole country, excluding Alaska. In all this region the mean annual rainfall is insufficient for agriculture, but in certain seasons some localities, now here, now there, receive more than their average supply. ...

Irrigable Lands

Within the Arid Region only a small portion of the country is irrigable. These irrigable tracts are lowlands lying along the streams. On the mountains and high plateaus forests are found at elevations so great that frequent summer frosts forbid the cultivation of the soil. Here are the natural timber lands of the Arid Region—an upper region set apart by nature for the growth of timber necessary to the mining, manufacturing, and agricultural industries of the country. Between the low irrigable lands and the elevated forest lands there are valleys, mesas, hills, and mountain slopes bearing grasses of greater or less value for pasturage purposes.

Then, in discussing the lands of the Arid Region, three great classes are recognized—the irrigable lands below, the forest lands above, and the pasture lands between. ...

Advantages of Irrigation. There are two considerations that make irrigation attractive to the agriculturist. Crops thus cultivated are not subject to the vicissitudes of rainfall; the farmer fears no droughts; his labors are seldom interrupted and his crops rarely injured by storms. This immunity from drought and storm renders agricultural operations much more certain than in regions of greater humidity. Again, the water comes down from the mountains and plateaus freighted with fertilizing materials derived from the decaying vegetation and soils of the upper regions, which are spread by the flowing water over the cultivated lands. It is probable that the benefits derived from this source alone will be full compensation for the cost of the process. ...

Cooperative Labor or Capital Necessary for the Development of Irrigation. Small streams can be taken out and distributed by individual enterprise, but cooperative labor or aggregated capital must be employed in taking out the larger streams.

The diversion of a large stream from its channel into a system of canals demands a large outlay of labor and material. To repay this all the waters so taken out must be used, and large tracts of land thus become dependent upon a single canal. It is manifest that a farmer depending upon his own labor cannot undertake this task. To a great extent the small streams are already employed, and but a comparatively small portion of the irrigable lands can be thus redeemed; hence the chief future development of irrigation must come from the use of the larger streams. ... [But] when farming is dependent upon larger streams such [poor] men are barred from these
enterprises until co-operative labor can be organized or capital induced to assist. . . .

In Utah Territory co-operative labor, under ecclesiastical organization, has been very successful. Outside of Utah there are but few instances where it has been tried; but at Greeley, in the State of Colorado, this system has been eminently successful. . . .

Increase of Irrigable Area by the Storage of Water. There are two methods of storing the waste waters. Reservoirs may be constructed near the sources of the streams and the waters held in the upper valleys, or the water may be run from the canals into ponds within or adjacent to the district where irrigation is practiced. This latter method will be employed first. . . . The greater storage of water must come from the construction of great reservoirs in the highlands where lateral valleys may be dammed and the main streams conducted into them by canals. On most streams favorable sites for such water works can be found. . . .

The increase by storage will eventually be important, and it would be wise to anticipate the time when it will be needed by reserving sites for principal reservoirs and larger ponds.

Timber Lands

Throughout the Arid Region timber of value is found growing spontaneously on the higher plateaus and mountains. These timber regions are bounded above and below by lines which are very irregular, due to local conditions. Above the upper line no timber grows because of the rigor of the climate, and below no timber grows because of aridity. Both the upper and lower lines descend in passing from south to north; that is, the timber districts are found at a lower altitude in the northern portion of the Arid Region than in the southern. The forests are chiefly of pine, spruce, and fir, but the pines are of principal value. Below these timber regions, on the lower slopes of mountains, on the mesas and hills, low, scattered forests are often found, composed mainly of dwarfed piñon pines and cedars. . . .

In general it may be stated that the timber regions are fully adequate to the growth of all the forests which the industrial interests of the country will require if they can be protected from desolation by fire. No limitation to the use of the forests need be made. The amount which the citizens of the country will require will bear but a small proportion to the amount which the fires will destroy; and if the fires are prevented, the renewal by annual growth will more than replace that taken by man. . . .

In the main these fires are set by Indians. . . . On their hunting excursions they systematically set fire to forests for the purpose of driving the game. This is a fact well known to all mountaineers. Only the white hunters of the region properly understand why these fires are set, it being usually attributed to a wanton desire on the part of the Indians to destroy that which is of value to the white man. The fires can, then, be very greatly curtailed by the removal of the Indians.

[Landmen and woodmen will furnish to the people in the land below their supply of building and fencing material and fuel. In some cases it will be practicable for the farmers to own their timber lands, but in general the timber will be too remote, and from necessity such a division of labor will ensue. . . .

Pasture Lands

The irrigable lands and timber lands constitute but a small fraction of the Arid Region. Between the lowlands on the one hand and the highlands on the other is found a great body of valley, mesa, hill, and low mountain lands. To what extent, and under what conditions can they be utilized? Usually they bear a scanty growth of grasses. These grasses are nutritious and valuable both for summer and winter pasturage. . . .

Though living water is not abundant, the country is partially supplied by scattered springs, that often feed little brooks whose waters never join the great rivers on their way to the sea, being able to run but a short distance from their fountains, when they spread among the sands to be reèvaporated. These isolated springs and brooks will in many cases furnish the water necessary for the herds that feed on the grasses. When springs are not found wells may be sometimes dug, and where both springs and wells fail reservoirs may be constructed. . . .

The Farm Unit for Pasturage Lands. The grass is so scanty that the herdsman must have a large area for the support of his stock. In general a quarter section of land alone is of no value to him; the pasturage it affords is entirely inadequate to the wants of a herd that the poorest man needs for his support. Four square miles may be considered as the minimum amount necessary for a pasturage farm, and a still greater amount is necessary for the larger part of the lands; that is, pasturage farms, to be of any practicable value, must be of at least 2,560 acres, and in many districts they must be much larger. . . .

Farm Residences Should Be Grouped. These lands will maintain but a scanty population. The homes must necessarily be widely scattered from the fact that the farm unit must be large. That the inhabitants of these districts may have the benefits of the local social organizations of civilization—as schools, churches, etc., and the benefits of cooperation in the construction of roads, bridges, and other local improvements, it is essential that the residences should be grouped to the greatest possible extent. This may be practically accomplished by making the pasturage farms conform to topographic features in such manner as to give the greatest possible number of water fronts.
The great areas over which stock must roam to obtain subsistence usually prevents the practicability of fencing the lands. It will not pay to fence the pasturage fields, hence in many cases the lands must be occupied by herds roaming in common; for poor men cooperative pasturage is necessary, or communal regulations for the occupancy of the ground and for the division of the increase of the herds. Such communal regulations have already been devised in many parts of the country.

William E. Smythe Envisions Conquest of Arid America, 1900

The ninety-seventh meridian divides the United States almost exactly into halves. East of that line dwell sixty-four million people. Here are overgrown cities and over-crowded industries. Here is surplus capital, as idle and burdensome as the surplus population. West of that line dwell four or five millions—less than the population of Pennsylvania, and scarcely more than that of Greater New York. And yet the vast territory to the West—so little known, so lightly esteemed, so sparsely peopled—is distinctly the better half of the United States.

The West and East are different sections, not merely in name and geographical location, but in physical endowments and fundamental elements of economic life... It was the destiny of the one to blossom and fruit in an epoch distinguished for the accumulation of wealth, with its vast possibilities of evil and of good. It was the destiny of the other to lie fallow until humanity should feel a nobler impulse; then to nurse, in the shadow of its everlasting mountains and the warmth of its unfailing sunshine, new dreams of liberty and equality for men.

The distinguishing characteristic of the vast region west of the ninety-seventh meridian is, then, its aridity—the lack of rainfall sufficient to insure the success of agriculture... It was not, however, until a few pioneer settlements had demonstrated undreamed-of results, nor until Major John W. Powell, by utterances as daring as his explorations, had furnished a scientific basis for a brood of new hopes, that the real character of Arid America began to glow, like the belated sun through a morning fog, upon the popular imagination...

The Blessing of Aridity. The anomaly that its foremost blessing should consist in the fact which gave it a wide-spread reputation for worthlessness is interesting, but unimportant. Nature frequently conceals her raw materials of greatness, alike in men and in countries, until time and opportunity are ripe. In the aridity of the West we shall find the true key to its future institutions. Climate may produce a healthy race, and mineral resources may enrich it, but the natural conditions which determine the character of social and industrial organization, and mould the habits and customs of men, are the potent influences which shape civilization...
green and gold stretching away to the mountains, it will be difficult for the beholder to say where the town ends and the country begins. This is the miracle of irrigation upon its social side.

Irrigation is the foundation of truly scientific agriculture. Tilling the soil by dependence upon rainfall is, by comparison, like a stage-coach to the railroad, like the tallow dip to the electric light. The perfect conditions for scientific agriculture would be presented by a place where it never rained, but where a system of irrigation furnished a never-failing water supply which could be adjusted to the varying needs of different plants. It is difficult for those who have been in the habit of thinking of irrigation as merely a substitute for rain to grasp the truth that precisely the contrary is the case. Rain is the poor dependence of those who cannot obtain the advantages of irrigation. . . .

This is the miracle of irrigation upon its scientific side.

An Excerpt from the Reclamation Act, 1902

An Act Appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all moneys received from the sale and disposal of public lands in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington, and Wyoming . . . shall be, and the same are hereby, reserved, set aside, and appropriated as a special fund in the Treasury to be known as the “reclamation fund,” to be used in the examination and survey for and the construction and maintenance of irrigation works for the storage, diversion, and development of waters for the reclamation of arid and semiarid lands in the said States and Territories, and for the payment of all other expenditures provided for in this Act: . . .

Sec. 3 . . . that public lands which it is proposed to irrigate by means of any contemplated works shall be subject to entry only under the provisions of the homestead laws in tracts of not less than forty nor more than one hundred and sixty acres, . . .

Sec. 5. That the entryman upon lands to be irrigated by such works shall, in addition to compliance with the homestead laws, reclaim at least one-half of the total irrigable area of his entry for agricultural purposes, and before receiving patent for the lands covered by his entry shall pay to the Government the charges apportioned against such tract, as provided in section four. No right to the use of water for land in private ownership shall be sold for a tract exceeding one hundred and sixty acres to any one landowner, and no such sale shall be made to any landowner unless he be an actual bona fide resident on such land, or occupant thereof residing in the neighborhood of said land, and no such right shall permanently attach until all payments therefor are made.

tion, a thousand national leaders, including the state governors, met from May 13 to 15 for a conference on conservation. Gifford Pinchot organized the dramatic gathering at the White House to publicize the new concept of resource management and, with the assistance of WJ McGee, wrote most of the proceedings. The speeches sparkled with enthusiasm and high ideals. Words, however, were the principal result of the conference. The National Conservation Commission, appointed by Roosevelt as a result of the conference, suffered from vagueness of purpose and foundered on the shoals of Congressional parsimony. The Inland Waterways Commission also perished from want of appropriations. And, after a North American Conservation Conference in February 1909, the international movement bogged down when President William Howard Taft scotched plans for a World Conference the following September. Still, Pinchot insisted, the 1908 conference was "a turning point in human history." Roosevelt opened it as follows.

Governors of the several States; and Gentlemen:

I welcome you to this Conference at the White House. You have come hither at my request, 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.

So vital is this question, that for the first time in our history the chief executive officers of the States separately, and of the States together forming the Nation, have met to consider it. It is the chief material question that confronts us, second only—and second always—to the great fundamental questions of morality. [Applause] *

With the governors come men from each State chosen for their special acquaintance with the terms of the problem that is before us. Among them are experts in natural resources and representatives of national organizations concerned in the development and use of these resources; the Senators and Representatives in Congress; the Supreme Court, the Cabinet, and the Inland Waterways Commission have likewise been invited to the Conference, which is therefore national in a peculiar sense.

This Conference on the conservation of natural resources 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

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* This and subsequent indications of audience reaction were inserted by WJ McGee, the recording secretary. [Ed.]
resources of our country are in danger of exhaustion if we permit the old wasteful methods of exploiting them longer to continue.

With the rise of peoples from savagery to civilization, and with the consequent growth in the extent and variety of the needs of the average man, there comes a steadily increasing growth of the amount demanded by this average man from the actual resources of the country. And yet, rather curiously, at the same time that there comes that increase in what the average man demands from the resources, he is apt to grow to lose the sense of his dependence upon nature. He lives in big cities. He deals in industries that do not bring him in close touch with nature. He does not realize the demands he is making upon nature. . . .

In [George] Washington's time anthracite coal was known only as a useless black stone; and the great fields of bituminous coal were undiscovered. As steam was unknown, the use of coal for power production was undreamed of. Water was practically the only source of power, save the labor of men and animals; and this power was used only in the most primitive fashion. But a few small iron deposits had been found in this country, and the use of iron by our countrymen was very small. Wood was practically the only fuel, and what lumber was sawed was consumed locally, while the forests were regarded chiefly as obstructions to settlement and cultivation. The man who cut down a tree was held to have conferred a service upon his fellows.

Such was the degree of progress to which civilized mankind had attained when this nation began its career. It is almost impossible for us in this day to realize how little our Revolutionary ancestors knew of the great store of natural resources whose discovery and use have been such vital factors in the growth and greatness of this Nation, and how little they required to take from this store in order to satisfy their needs.

Since then our knowledge and use of the resources of the present territory of the United States have increased a hundred-fold. Indeed, the growth of this Nation by leaps and bounds makes one of the most striking and important chapters in the history of the world. Its growth has been due to the rapid development, and alas that it should be said! to the rapid destruction, of our natural resources. Nature has supplied to us in the United States, and still supplies to us, more kinds of resources in a more lavish degree than has ever been the case at any other time or with any other people. Our position in the world has been attained by the extent and thoroughness of the control we have achieved over nature; but we are more, and not less, dependent upon what she furnishes than at any previous time of history since the days of primitive man. . . .

. . . The wise use of all of our natural resources, which are our national resources as well, is the great material question of today. I have asked you to come together now because the enormous consumption of these resources, and the threat of imminent exhaustion of some of them, due to reckless and wasteful use, . . . calls for common effort, common action.

We want to take action that will prevent the advent of a woodless age, and defer as long as possible the advent of an ironless age. [Applause] . . .

A great many of these things are truisms. Much of what I say is so familiar to us that it seems commonplace to repeat it; but familiar though it is, I do not think as a nation we understand what its real bearing is. It is so familiar that we disregard it. [Applause]

The steadily increasing drain on these natural resources has promoted to an extraordinary degree the complexity of our industrial and social life. Moreover, this unexampled development has had a determining effect upon the character and opinions of our people. The demand for efficiency in the great task has given us vigor, effectiveness, decision, and power, and a capacity for achievement which in its own lines has never yet been matched. [Applause] . . .

. . . [1] It is safe to say that the prosperity of our people depends directly on the energy and 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.

This Nation began with the belief that its landed possessions were illimitable and capable of supporting all the people who might care to make our country their home; but already the limit of unsettled land is in sight, and indeed but little land fitted for agriculture now remains unoccupied save what can be reclaimed by irrigation and drainage—a subject with which this Conference is partly to deal. We began with an unapproached heritage of forests; more than half of the timber is gone. We began with coal fields more extensive than those of any other nation and with iron ores regarded as inexhaustible, and many experts now declare that the end of both iron and coal is in sight. . . .

. . . [W]e began with soils of unexampled fertility, and we have so impoverished them by injudicious use and by failing to check erosion that their crop-producing power is diminishing instead of
increasing. In a word, we have thoughtlessly, and to a large degree unnecessarily, diminished the resources upon which not only our prosperity but the prosperity of our children and our children’s children must always depend.

We have become great in a material sense because of the lavish use of our resources, and we 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 still further impoverished and washed into the streams, polluting the rivers, denuding the fields, and obstructing navigation. These questions do not relate only to the next century or to the next generation. One distinguishing characteristic of really civilized men is foresight; we have to, as a nation, exercise foresight for this nation in the future; and if we do not exercise that foresight, dark will be the future! [Applause] We should exercise foresight now, as the ordinarily prudent man exercises foresight 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 it in better order to his children. We want to see him exercise forethought for the next generation. We need to exercise it in some fashion ourselves as a nation for the next generation.

The natural resources I have enumerated can be divided into two sharply distinguished classes accordingly as they are or are not capable of renewal. Mines if used must necessarily be exhausted. The minerals do not and can not renew themselves. Therefore in dealing with the coal, the oil, the gas, the iron, the metals generally, all that we can do is to try to see that they are wisely used. The exhaustion is certain to come in time. We can trust that it will be deferred long enough to enable the extraordinarily inventive genius of our people to devise means and methods for more or less adequately replacing what is lost; but the exhaustion is sure to come.

The second class of resources consists of those which can not only be used in such manner as to leave them undiminished for our children, but can actually be improved by wise use. The soil, the forests, the waterways come in this category. Every one knows that a really good farmer leaves his farm more valuable at the end of his life than it was when he first took hold of it. So with the waterways. So with the forests. In dealing with mineral resources, man is able to improve on nature only by putting the resources to a beneficial use which in the end exhausts them; but in dealing with the soil and its products man can improve on nature by compelling the resources to renew and even reconstruct themselves in such manner as to serve increasingly beneficial uses—while the living waters can be so controlled as to multiply their benefits.

Neither the primitive man nor the pioneer was aware of any duty to posterity in dealing with the renewable resources. When the American settler felled the forests, he felt that there was plenty of forest left for the sons who came after him. When he exhausted the soil of his farm, he felt that his son could go West and take up another. The Kentuckian or the Ohioan felled the forest and expected his son to move west and fell other forests on the banks of the Mississippi; the Georgian exhausted his farm and moved into Alabama or to the mouth of the Yazoo to take another. So it was with his immediate successors. When the soil-wash from the farmer’s field choked the neighboring river, the only thought was to use the railway rather than the boats to move produce and supplies. That was so up to the generation that preceded ours.

Now all this is changed. On the average the son of the farmer of today must make his living on his father’s farm. There is no difficulty in doing this if the father will exercise wisdom. No wise use of a farm exhausts its fertility. So with the forests. We are over the verge of a timber famine in this country, and it is unpardonable for the Nation or the States to permit any further cutting of our timber save in accordance with a system which will provide that the next generation shall see the timber increased instead of diminished. [Applause]

Just let me interject one word as to a particular type of folly of which it ought not to be necessary to speak. We stop wasteful cutting of timber; that of course makes a slight shortage at the moment. To avoid that slight shortage at the moment, there are certain people so foolish that they will incur absolute shortage in the future, and they are willing to stop all attempts to conserve the forests, because of course by wastefully using them at the moment we can for a year or two provide against any lack of wood. That is like providing for the farmer’s family to live sumptuously on the flesh of the milch cow. [Laughter] Any farmer can live pretty well for a year if he is content not to live at all the year after. [Laughter and 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 present profit. In fact there has been a good deal of a demand for unrestricted individualism, for the right of the individual to injure the future of all of us for his own temporary and immediate profit. The time has come for a change. As a people we have the right and the duty, second to none other but the right and duty of obeying the moral law, of requiring and doing justice, to protect ourselves and our children against the wasteful development of our natural resources, whether that waste is caused by the actual destruction of such resources or by making them impossible of development hereafter.

Finally, let us remember that the conservation of our natural resources, though the gravest problem of today, is yet but part of another and greater problem to which this Nation is not yet awake, but to which it will awake in time, and with which it must hereafter grapple if it is to live—the problem of national efficiency, the 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 first of all the duties of true patriotism, then and not till then the future of this Nation, in quality and in time, will be assured. [Great applause]

Reclamation Underway
FREDERICK H. NEWELL (1909)

Newell, another protegé of John Wesley Powell (6), did much to transform the reclamation ideal into national policy. In the 1890's, as a member of the United States Geological Survey, he collected the data necessary for the


beginning of effective dam construction and irrigation. Newell also worked in this decade with Representative (Senator after 1903) Francis G. Newlands of Nevada and with George H. Maxwell of the National Irrigation Association on behalf of federal sponsorship of reclamation. Success came in 1902 when the Reclamation Act created a mechanism for putting the proceeds from the sale of Western lands to use in federal irrigation projects. Newell became the director of the Reclamation Service (the Bureau of Reclamation after 1907), organized within the Geological Survey to administer the new program. Within five years he had twenty-five major projects underway, and was rapidly demonstrating the ability of government planners and engineers. But Newell's effort aroused the opposition of Western water users who construed federal involvement as a limitation of their economic opportunity and resented the costs of reclamation. In 1915 he received a curt dismissal from the Bureau of Reclamation, but his vision and enthusiasm helped make the control of water a primary showcase of Progressive conservation.

In the conservation of natural resources reclamation plays a very large part, both directly and indirectly. There is involved in the idea of reclamation not merely the better use of lands otherwise practically valueless, but in connection with this the creation of opportunities for homes; also, but secondary to this, is frequently brought in the storage or disposal of waters in such way as to render possible the use of these waters for power or other industrial purposes, including the manufacture of electricity for lighting, heating and transportation.

The word "reclamation" as now commonly employed involves the conception of regulating the water supply for a given area of land, which, under natural conditions, has an excess or deficiency of moisture so great that agricultural values are nearly or completely destroyed. We speak of reclaiming the swamp or overflowed lands by keeping the waters off them, or of reclaiming arid lands by bringing waters to them at the time and in the quantities best adapted for the development of plants useful to mankind.

The National Government has been and still is an owner of vast areas of reclaimable land. In the early history of the life of the nation, individuals initiated works for draining and reclaiming areas of low-lying but very fertile land. Later, to promote the reclamation of these, Congress passed laws which, in general terms, conveyed to the separate states the title of the swamp and overflowed lands within their borders in order that these lands might be reclaimed by the state through corporate as well as individual activities. The grants were not, however, sufficiently well guarded to secure the desired results, and