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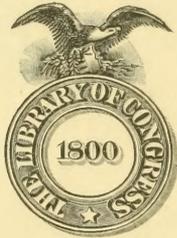
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U.S. Committee on agriculture.

Acquiring land for the protection of water-
sheds for the observation of navigable streams

1909



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ACQUIRING LAND FOR THE PROTECTION OF WATERSHEDS FOR THE
CONSERVATION OF NAVIGABLE STREAMS.

FEBRUARY 3, 1909.—Committed to the Committee of the Whole House on the state
of the Union and ordered to be printed.

Messrs. WEEKS and LEVER, from the Committee on Agriculture,
submitted the following

REPORT.

[To accompany S. 4825.]

The Committee on Agriculture, to which was referred various bills for the protection of the watersheds of navigable streams, submits the following report, to accompany Senate bill 4825.

After a thorough discussion of the purposes to be accomplished it was deemed advisable to report the accompanying bill, as meeting more fully than any other the needs of the situation.

Section 1 proposes to give the consent of Congress to each of the several States of the Union to enter into any agreement or compact not in conflict with any law of the United States, with any State or States for the purpose of conserving the forests and water supply of the States entering into such agreement or compact.

Section 2 appropriates the sum of \$100,000 to enable the Secretary of Agriculture to cooperate with any State or group of States, when requested to do so, in the protection from fire of the forested watersheds of navigable streams, and the Secretary is authorized to stipulate and agree with any State or group of States to cooperate in the organization and maintenance of a system of fire protection on any private or state lands within such State or States and situated upon the watershed of a navigable river.

The section further provides that no such stipulation or agreement shall be made with any State which has not provided by law for a system of fire protection, and that in no case is the amount contributed to any State to exceed the amount appropriated by that State for the same purpose.

Section 3 provides that the Secretary of Agriculture may, for the protection of the watersheds of navigable streams, on such conditions as he deems wise, agree to administer and protect for a definite term of years any private forest lands situated upon any watershed whereon

lands may be permanently reserved, held, and administered as national forest lands, and that in such case the owner shall cut and remove the timber thereon only under such rules and regulations as will provide for the protection of the forest in the aid of navigation. The section provides that in no case is the United States to be liable for any damage resulting from fire or any other cause on such lands.

Section 4 provides that from receipts from the sale or disposal of any products or the use of lands or resources from the public lands now or hereafter to be set aside as national forests which may hereafter be turned into the Treasury of the United States and which are not otherwise appropriated, there shall be available \$1,000,000 for the fiscal year ending June 30, 1909, and not to exceed \$2,000,000 for each fiscal year thereafter, to be used in the examination, survey, and acquisition of lands located on the headwaters of navigable streams, or those which are being or which may be developed for navigable purposes, and further provides that the provisions of this section shall expire by limitation on June 30, 1919.

This section has two features not included in any of the other bills referred to the committee. The first is, that the proceeds from the present national forests, so far as they are at present unappropriated, are to be turned to the purchase of forest lands to the amounts above mentioned. The second feature is, that instead of limiting the acquisitions by purchase or otherwise for this purpose to any particular region or regions, such as the Southern Appalachian or White Mountain region, lands may be acquired on any watershed, so far as they fall within the purposes of the bill.

Section 5 provides for the establishment of a National Forest Reservation Commission, to be composed of the Secretary of War, the Secretary of the Interior, the Secretary of Agriculture, one member of the Senate, and one member of the House of Representatives, the object of the commission being to consider and pass upon such lands as may be recommended for purchase and to fix the price or prices to be paid for such lands. It further provides for limiting incumbency and for filling vacancies in the commission.

Section 6 provides for an annual report to Congress of the operations and expenditures of the commission.

Section 7 authorizes the Secretary of Agriculture to examine and locate lands to be recommended to the National Forest Reservation Commission for purchase. The section also provides that a report shall be made to the Secretary of Agriculture by the Geological Survey showing in what way the control of such lands will promote or protect the navigation of streams on whose watersheds they lie.

Sections 8 and 9 provide the method by which lands may be acquired by the Secretary of Agriculture after they have been approved by the National Forest Reservation Commission.

Section 10 provides that the owner of the land from whom title passes to the United States may, under certain conditions, reserve the minerals and merchantable timber within or upon such lands at the date of conveyance, and provides the method by which the removal of such minerals or timber may thereafter be accomplished.

Section 11 provides for the sale of small areas of agricultural lands which may of necessity or by inadvertence be included in tracts acquired under this act.



Sections 12 and 13 provide for the management as national forests of the lands so acquired and describe the limits of civil and criminal jurisdiction over them.

Section 14 provides that 25 per cent of all moneys received from any national forest acquired under this act shall be paid at the end of each year to the State in which such national forest is situated for the benefit of public schools and public roads.

Section 15 provides for the necessary expenses of the commission and prescribes the manner of auditing and paying of the same.

SCOPE OF THE BILL.

This bill is general in its scope, and permits the acquirement of lands in any part of the United States where such acquisition can be shown to be advisable to the National Forest Reservation Commission, after the Geological Survey has determined that such acquisition will promote or protect the navigability of streams on whose watersheds the lands lie.

INCOME FROM THE NATIONAL FORESTS TO BE USED.

The funds to be used under the provisions of this bill are a prescribed amount of those which come into the Treasury from the sale of the products or the use of the resources of the national forests so far as they are not now appropriated. The law at present provides that 25 per cent of the money so received shall be paid to the States or Territories in which such forests are located, for school and road purposes. It is to be particularly noted that this bill does not change that plan, but rather extends it to the States or Territories in which national forests may be acquired. The net amount received from the uses of the national forests for the fiscal year ending June 30, 1908, was \$1,341,691.39, and for the present fiscal year is estimated to be \$1,500,000.

RELATION OF FORESTS TO THE USE OF INLAND WATERWAYS

The relation of forests to the use of the inland waterways is shown by the following quotations:

Our river systems are better adapted to the needs of the people than those of any other country. In extent, distribution, navigability, and ease of use they stand first. Yet the rivers of no other civilized country are so poorly developed, so little used, or play so small a part in the industrial life of the nation.^a

The first requisite for waterway improvement is the control of the waters in such manner as to reduce floods and regulate the regimen of the navigable streams.^b

Every stream should be used to the utmost; every river system, from its headwaters in the forest to its mouth on the coast, is a single unit and should be treated as such.^c

A mountain watershed denuded of its forest, with its surface hardened and baked by exposure, will discharge its fallen rain into the streams so quickly that overwhelming floods will descend in wet seasons. In discharging in this torrential way the water carries along great portions of the land itself. Deep gullies are washed in

^a Preliminary Report of the Inland Waterways Commission. Senate Document 325, Sixtieth Congress, first session.

^b Report of the National Conservation Commission. Senate Document 676, Sixtieth Congress, second session.

^c Preliminary Report of the Inland Waterways Commission. Senate Document 325, Sixtieth Congress, first session, page 2.

the fields, and the soil, sand, gravel, and stone are carried down the streams to points where the current slackens. Since the extensive removal of the forest on the upper watersheds there has been a vast accumulation of silt, sand, and gravel in the upper-stream courses. Examples of reservoirs completely filled are already to be seen on almost every stream. In the degree that the forests are damaged on the high watersheds, then inevitable damage results to water power and navigation through increased extremes of high and low water and through vast deposits of gravel, sand, and silt in the stream channels and in any reservoir which may have been constructed.^a

The chief obstacles to navigation, then, are lack of water during portions of the year, and detritus which is washed into the streams and gradually fills the channels or forms obstructions at the mouth. Were the flow uniform, the amount of water carried by a river during the year would be sufficient to provide a good depth at all times. But the flow is uneven; there is too much water at one time and not enough at another. The floods of the spring waste the water which should be available to maintain a navigable depth during the summer and fall. To lessen this inequality of flow should therefore be the aim of all measures for the development of our waterways. If the rivers could be kept always in gentle flood, a relatively small expenditure for reservoirs, locks, and dams would be required. In the same way, if means could be found to prevent silt and sand from being washed into the streams the enormous cost of dredging would be largely done away with. The function of the forest and of the humus beneath as a storage reservoir is of high importance, yet in relation to navigation and the storage of storm waters the influence which the forest has in checking erosion is of equal, if not greater value.^b

In the Southern Appalachians the fullest use of water resources can be secured only by carefully guarding the natural conditions which control them. The valuable water resources of this region depend absolutely upon the maintenance of a protective forest cover. Without this forest cover the water power of the region can never be developed to the full, and in the same way the navigable streams can not be kept from silting up if the forest cover about their headwaters is removed. The protection of these areas is a large undertaking, but it is necessarily the first undertaking, since it is fundamental to the development and utilization of the water resources. If the forest is not first protected, damage to water resources will be far-reaching. If the forest is preserved, the benefits from the standpoint of water utilization will be widely diffused, even far beyond the borders of the Appalachian region.^c

The opinions here quoted represent the almost unanimous view of all who have investigated the relation between mountain forests and navigable rivers. The bill which the committee has reported is in line with the policy of conservation as recommended by the President and the National Conservation Commission. It provides for establishing an adequate programme of protection to the mountain forests by giving the Federal Government the right to cooperate with the States or with private individuals, and by the acquisition of lands where such is necessary. Further, it provides the most natural arrangement for defraying the cost of such acquisition—that of using the funds which come to the Treasury from the national forests already established, and the bill necessitates the appropriation of no additional sums of money in the carrying out of this project.

It has been the policy of the Government to improve its navigable streams by the expenditure of large sums of money, in some cases at their headwaters. For example, a series of reservoirs has been constructed at the headwaters of the Mississippi at a cost of approximately \$2,000,000. Locks and dams have been constructed on the Monongahela River at a cost of \$2,479,818.48; on the Allegheny River, \$1,658,423.18; and on the Ohio River in Pennsylvania, \$5,385,060.78. Expenditures have been made on the headwaters of the Sacramento

^a Report of the Secretary of Agriculture on the Southern Appalachian Watersheds. Senate Document 91, Sixtieth Congress, first session.

^b Report of the U. S. Geological Survey to the Department of Agriculture. Forest Service Circular No. 143.

^c Report of the U. S. Geological Survey to the Department of Agriculture. Forest Service Circular No. 144.

River amounting to \$100,000 for the construction of dams for the purpose of preventing the silting up of the lower channel of the river as a result of hydraulic mining in the mountains.

In France, the first efforts to repair the disastrous torrents were made by engineers along the lower water courses. Dredging and dams, however, proved at best but temporarily effective. Only when they began to push this work up to the headwaters of the streams did they find themselves on the right road.

RELATION OF THE FORESTS TO FLOODS.

Flood damage in the United States has increased from \$45,000,000 in 1900 to \$118,000,000 in 1907. All rivers on whose watersheds the forests have been heavily cut show flood increases. They are greatest in such streams as the Ohio, Cumberland, Wateree, and Santee, where the most timber has been removed, and least in those streams on whose watersheds forest conditions have been least changed. Except in the change of forest conditions there have been no factors that could have intensified flood conditions. In the Ohio River in seventy years the number of floods at Wheeling has increased 62 per cent and their aggregate duration 116 per cent.

In the Cumberland River at Burnside, Ky., the number of floods increased 330 per cent in the fifteen years between 1891 and 1905 and the duration in the same proportion. During the same period in the Wateree River at Camden, S. C., the number of floods increased 65 per cent and the duration 82 per cent. In the Congaree River the increase during the same time has been 94 per cent in number and 113 per cent in duration. In the Savannah River at Augusta, Ga., between the years 1876 and 1905 the increase in the number of floods has been 94 per cent and in duration 266 per cent. Between 1891 and 1905 the Alabama River at Salem, Ala., had an increase in number of floods of 83 per cent and in duration of 31 per cent.

The Geological Survey has made a careful study of floods in the Tennessee River during the past thirty-four years, and has found that on the basis of equal rainfall floods in the last half of the period have increased 18 $\frac{3}{4}$ per cent.

At the Tenth International Congress on Navigation, held in Milan in 1905, engineers from the various countries of Europe were unanimously of the opinion that mountain forests were beneficial in preventing floods, in regulating the low water in streams, and in retaining the soil upon the mountains.

RELATION OF FORESTS TO SOIL WASH.

The annual soil wash in the United States is estimated by the Inland Waterways Commission at about 1,000,000,000 tons, of which the greater part is the most valuable portion of the soil. It is carried into the rivers, where it pollutes the waters, necessitates frequent and costly dredging, and reduces the efficiency of work designed to facilitate navigation and prevent floods. Soil when once lost is replaced with great difficulty, if at all. Consequently the protection of the forests on the slopes which are too steep otherwise to be utilized means actually immense gain in soil conservation.

Not only is soil removed in great quantities from mountain surfaces, but the floods which gather on denuded mountain slopes inevitably result in the destruction of the alluvial soils along the river courses.

OTHER BENEFITS FROM FOREST PRESERVATION.

The protection to navigable streams is the chief purpose of the proposed legislation. Incidentally, there will be great benefits to the whole country in other directions. Water power, like navigation, depends on the regular flow of the streams. The amount of water power capable of development in the United States is sufficient to operate every mill, drive every spindle, propel every train and boat, and light every city, town, and village in the country. The continued successful development of many of our industries in the future depends in large part upon the present protection of our inland waterways. We are using three times as much timber every year as the forest produces, not because we have an insufficient area of forest land, but because our forests are not protected from fire nor properly used. The eastern forests are notable for their hard-wood production, half of the country's supply being obtained from this source. The proposed bill will give protection to the chief hard-wood forests of the country.

EXPERIENCE OF OTHER COUNTRIES PROVES THAT THE PROTECTION OF THE FORESTS AT THE HEADWATERS OF IMPORTANT STREAMS IS IMPERATIVE.

The relation of the mountain forests to the navigability of inland water is the same the world over. Every country that has maintained an even and sufficient flow of streams for the purposes of commerce has had to maintain and in some cases establish upon the headwaters of the streams forests to hold the soil in place and to prevent overwhelming floods.

Germany stands in the forefront of nations in inland waterway development, and she has all of her high mountains protected by forests. These forests have been under government management for a hundred years and they are the most productive and profitable in the world, yielding an average net return of \$2.40 per acre.

The stripping of the forests from the mountains of France was unchecked until 1860, by which time 800,000 acres of farm land had been ruined or seriously damaged and the waterways practically destroyed. The population of 18 departments had been reduced to poverty and forced to emigrate. A futile attempt was then made to check the torrents by sodding. It was only by the acquisition by the Government of the bare lands, the building of stone walls for the gathering of silt and the planting of trees on the soil held in check by those walls that satisfactory results were accomplished. The cost of this method has often been as much as \$50 per acre. By 1900 \$15,000,000 had been spent and the French Government has continued the work by acquiring each year 25,000 to 30,000 acres of land. The present programme calls for the expenditure of \$50,000,000 on this work. About one-fourth of the mountain streams have been brought under control and the balance are beginning to show indications of improvement.

Italy has suffered extremely from the ruin which follows the removal of protective forests. One-third of all the land is unproductive, and though some of this area may be made to support forest growth, one-fourth of it is beyond reclamation, mainly as the result of cleared hillsides and the pasturing of goats. The rivers are dry in summer; in spring they are wild torrents, and the floods, brown with the soil of the hillsides, bury the fertile lowland fields. The hills are scored where the rains have loosened the soil, and landslides have left exposed the sterile rocks, on which no vegetation finds a foothold. Such floods as that of 1897, near Bologna, which did over \$1,000,000 damage, destroy property and life.

The dearth of wood and especially the great need of protecting forests to control stream flow have brought some excellent forest laws. In spite of the first general forest law (1877), which regulated cutting and forbade clearing on mountain slopes, large areas have persistently been cleared, and though provision has been made for thorough reforestation work, very little of the needed planting has been done. The classification of the lands to which restriction shall and shall not apply is a constant matter of dispute. An effort has been made to show that the forest planting contemplated by law is largely unnecessary. The last point, however, has been safely settled by recommendations of a recent commission, which declare that at least 500,000 acres will have to be planted, at a cost of not less than \$12,000,000, before the destructive torrents, brought on by stripping and overgrazing the hillsides, can be controlled.

Spain has suffered greatly from destructive floods caused by insufficient forests on the mountains. She has enacted an elaborate system of laws to prevent overcutting, but the indebtedness of the country has prevented the efficient carrying out of these laws.

Other countries which are working out comprehensive schemes of protecting forests at the headwaters of mountain streams are England in India, Switzerland, Austria-Hungary, Norway, Sweden, Denmark, Russia, Roumania, and Japan.

China holds a unique position as the only great country which has persistently destroyed its forests. What has been done in other countries stands out in bold relief against the background of China, whose mountains and hills have been stripped nearly clean of trees, and whose soil is in many districts completely at the mercy of floods. Trees have been left only where they could not be reached. Streams which formerly were narrow and deep, with an even flow of water throughout the year, are now broad, shallow beds choked with gravel, sand, and rocks from the mountains. During most of the year many of them are entirely dry, but when it rains the muddy torrents come pouring down, bringing destruction to life and all forms of property. In a word, the Chinese, by forest waste, have brought upon themselves two costly calamities—floods and water famine. The forest school just opened at Mukden is the first step in the direction of repairing this waste so far as it now may be repaired.

The results of deforestation in China are particularly discussed and graphically illustrated in the President's annual message to the second session of the Sixtieth Congress.

CONCLUSIONS.

The great increase in floods in our rivers, together with the increasing property loss and annual loss of soils, shows that in some sections of the country we are rapidly approaching the situation in which China now finds herself. It is not now too late for nature to restore the forests on the mountains, but the time is rapidly coming when it will be. The question of protecting the forests at the headwaters of the streams is a national as well as a state problem. It is not right to expect the State to deal entirely with areas requiring protection when those areas affect chiefly other States. It is impossible for States which suffer from conditions outside their own territory to remedy them by their own action. The mountains of the West are already largely under government protection. So far as they are not protected this bill is applicable to them. It is applicable to all other sections of the United States in which the source streams of the navigable rivers lie in nonagricultural, mountainous regions, and it is believed that it will accomplish the necessary protection to the Southern Appalachians and White Mountains.

If the action which this bill proposes is taken by Congress, it will work out to the great benefit of both agriculture and the manufacturing industries, while to the permanent development of our inland waterways the benefits will be fundamental.

KITTREDGE HASKINS.
 WILLIAM W. COCKS.
 RALPH D. COLE.
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 JOHN W. WEEKS.
 JOHN LAMB.
 ASBURY F. LEVER.
 AUGUSTUS O. STANLEY.
 J. THOMAS HEFLIN.

Your committee therefore recommend that all after the enacting clause of Senate bill 4825 be stricken out and the following inserted in lieu thereof:

That the consent of the Congress of the United States is hereby given to each of the several States of the Union to enter into any agreement or compact, not in conflict with any law of the United States, with any other State or States, for the purpose of conserving the forests and the water supply of the States entering into such agreement or compact.

SEC. 2. That the sum of one hundred thousand dollars is hereby appropriated and made available until expended, out of any moneys in the National Treasury not otherwise appropriated, to enable the Secretary of Agriculture to cooperate with any State or group of States, when requested to do so, in the protection from fire of the forested watersheds of navigable streams, and the Secretary of Agriculture is hereby authorized, and on such conditions as he deems wise, to stipulate and agree with any State or group of States to cooperate in the organization and maintenance of a system of fire protection on any private or state forest lands within such State or States and situated upon the watershed of a navigable river: *Provided*, That no such stipulation or agreement shall be made with any State which has not provided by law for a system of forest-fire protection: *Provided further*, That in no case shall the amount expended in any State exceed in any fiscal year the amount appropriated by that State for the same purpose during the same fiscal year.

SEC. 3. That the Secretary of Agriculture, for the further protection of the watersheds of said navigable streams, may, in his discretion, and he is hereby authorized,

on such conditions as he deems wise, to stipulate and agree to administer and protect for a definite term of years any private forest lands situated upon any such watershed whereon lands may be permanently reserved, held, and administered as national forest lands; but such stipulation or agreement shall provide that the owner of such private lands shall cut and remove the timber thereon only under such rules and regulations, to be expressed in the stipulation or agreement, as will provide for the protection of the forest in the aid of navigation: *Provided*, That in no case shall the United States be liable for any damage resulting from fire or any other cause.

SEC. 4. That from the receipts accruing from the sale or disposal of any products or the use of lands or resources from public lands, now or hereafter to be set aside as national forests that have been or may hereafter be turned into the Treasury of the United States and which are not otherwise appropriated, there is hereby appropriated for the fiscal year ending June thirtieth, nineteen hundred and nine, the sum of one million dollars, and for each fiscal year thereafter a sum not to exceed two million dollars for use in the examination, survey, and acquirement of lands located on the headwaters of navigable streams or those which are being or which may be developed for navigable purposes: *Provided*, That the provisions of this section shall expire by limitation on the thirtieth day of June, nineteen hundred and nineteen.

SEC. 5. That a commission, to be known as the National Forest Reservation Commission, consisting of the Secretary of War, the Secretary of the Interior, the Secretary of Agriculture, and one member of the Senate, to be selected by the President of the Senate, and one member of the House of Representatives, to be selected by the Speaker, is hereby created and authorized to consider and pass upon such lands as may be recommended for purchase as provided in section six of this act, and to fix the price or prices at which such lands may be purchased, and no purchases shall be made of any lands until such lands have been duly approved for purchase by said commission: *Provided*, That the members of the commission herein created shall serve as such only during their incumbency in their respective official positions, and any vacancy on the commission shall be filled in the manner as the original appointment.

SEC. 6. That the commission hereby appointed shall, through its president, annually report to Congress, not later than the first Monday in December, the operations and expenditures of the commission, in detail, during the preceding fiscal year.

SEC. 7. That the Secretary of Agriculture is hereby authorized and directed to examine, locate, and recommend for purchase such lands as in his judgment may be necessary to the regulation of the flow of navigable streams, and to report to the National Forest Reservation Commission the results of such examinations: *Provided*, That before any lands are purchased by the National Forest Reservation Commission said lands shall be examined by the Geological Survey and a report made to the Secretary of Agriculture, showing that the control of such lands will promote or protect the navigation of streams on whose watersheds they lie.

SEC. 8. That the Secretary of Agriculture is hereby authorized to purchase, in the name of the United States, such lands as have been approved for purchase by the National Forest Reservation Commission at the price or prices fixed by said commission: *Provided*, That no deed or other instrument of conveyance shall be accepted or approved by the Secretary of Agriculture under this act until the legislature of the State in which the land lies shall have consented to the acquisition of such land by the United States for the purpose of preserving the navigability of navigable streams.

SEC. 9. That the Secretary of Agriculture may do all things necessary to secure the safe title in the United States to the lands to be acquired under this act; but no payment shall be made for any such lands until the title shall be satisfactory to the Attorney-General and shall be vested in the United States.

SEC. 10. That such acquisition may in any case be conditioned upon the exception and reservation to the owner, from whom title passes to the United States, of the minerals and of the merchantable timber, or either or any part of them, within or upon such lands at the date of the conveyance; but in every case such exception and reservation, and the time within which such timber shall be removed, and the rules and regulations under which the cutting and removal of such timber and the mining and removal of such minerals shall be done shall be expressed in the written instrument of conveyance, and thereafter the mining, cutting, and removal of the minerals and timber so excepted and reserved shall be done only under and in obedience to the rules and regulations so expressed.

SEC. 11. That whereas small areas of land chiefly valuable for agriculture may of necessity or by inadvertence be included in tracts acquired under this act, the Secretary of Agriculture may, in his discretion, and he is hereby authorized, upon application or otherwise, to examine and ascertain the location and extent of such areas as in his opinion may be occupied for agricultural purposes without injury to the forests or to stream flow and which are not needed for public purposes, and may

list and describe the same by metes and bounds, or otherwise, and offer them for sale as homesteads at their true value, to be fixed by him, to actual settlers, in tracts not exceeding eighty acres in area, under such joint rules and regulations as the Secretary of Agriculture and the Secretary of the Interior may prescribe; and in case of such sale the jurisdiction over the lands sold shall, ipso facto, revert to the State in which the lands sold lie. And no right, title, interest, or claim in or to any lands acquired under this act, or the waters thereon, or the products, resources, or use thereof after such lands shall have been so acquired, shall be initiated or perfected, except as in this section provided.

SEC. 12. That, subject to the provisions of the last preceding section, the land acquired under this act shall be permanently reserved, held, and administered as national forest lands under the provisions of section twenty-four of the act approved March third, eighteen hundred and ninety-one (volume twenty-six, Statutes at Large, page eleven hundred and three), and acts supplemental to and amendatory thereof. And the Secretary of Agriculture may from time to time divide the land acquired under this act into such specific national forests and so designate the same as he may deem best for administrative purposes.

SEC. 13. That the jurisdiction, both civil and criminal, over persons upon the land acquired under this act shall not be affected or changed by their permanent reservation and administration as national forest lands, except so far as the punishment of offenses against the United States is concerned, the intent and meaning of this section being that the State wherein such land is situated shall not, by reason of such reservation and administration, lose its jurisdiction nor the inhabitants thereof their rights and privileges as citizens or be absolved from their duties as citizens of the State.

SEC. 14. That twenty-five per centum of all moneys received during any fiscal year from each national forest into which the lands acquired under this act may from time to time be divided shall be paid, at the end of such year, by the Secretary of the Treasury to the State in which such national forest is situated, to be expended as the state legislature may prescribe for the benefit of the public schools and public roads of the county or counties in which such national forest is situated: *Provided*, That when any national forest is in more than one State or county the distributive share to each from the proceeds of such forest shall be proportional to its area therein: *Provided further*, That there shall not be paid to any State for any county an amount equal to more than forty per centum of the total income of such county from all other sources.

SEC. 15. That a sum sufficient to pay the necessary expenses of the commission and its members, not to exceed an annual expenditure of twenty-five thousand dollars, is hereby appropriated out of any money in the Treasury not otherwise appropriated. Said appropriation shall be immediately available and shall be paid out on the audit and order of the president of the said commission; which audit and order shall be conclusive and binding upon all departments as to the correctness of the accounts of said commission.

Amend the title so as to read: "An act to enable any State to cooperate with any other State or States, or with the United States, for the protection of the watersheds of navigable streams, and to appoint a commission for the acquisition of lands for the purpose of conserving the navigability of navigable rivers."

VIEWS OF THE MINORITY.

In the first session of the Sixtieth Congress, reporting upon a resolution offered by Mr. Bartlett, of Georgia, the Committee on the Judiciary of the House of Representatives declared it to be their opinion that—

The Federal Government has no power to acquire lands within a State solely for forest reserves, but under its constitutional power over navigation the Federal Government may appropriate for the purchase of lands and forest reserves in a State, provided it is made clearly to appear that such lands and forest reserves have a direct and substantial connection with the conservation and improvement of the navigability of a river actually navigable in whole or in part.

Bearing that opinion in mind (and it has met with universal acquiescence), it becomes of the very first importance, in considering a bill for the purchase of forest reserves, to determine whether such reserves "have a direct and substantial connection with the conservation and improvement of the navigability of a river actually navigable in whole or in part." The statement that such connection does exist has been so confidently assumed and so often repeated that those who have given but a casual or superficial study to the subject have come to regard it as an established and admitted fact.

The truth is that it is neither established nor admitted. On the contrary, the proposition is very earnestly disputed by men whose opinions are entitled to great weight. It is perhaps not overstating it to say that a majority of the riparian engineers who have given the subject careful study are of the opinion that forests do not exercise any effective control in either extremes of high water or of low water. Lieut. Col. H. M. Chittenden, of the United States Army Engineer Corps, who has been studying the control of floods in rivers for many years, is perhaps the most conspicuous exponent of this view in our own country, having recently read a paper before the American Society of Engineers in which is presented a powerful and to many minds a convincing argument in support of his contention. In Europe the same opinion is entertained by M. Ernst Lauda, chief of the hydrographic bureau of the Austrian Government, who has recently made an exhaustive report upon the great floods of the Danube, in the course of which he says:

It is universally believed that forests have an influence in moderating and preventing floods, and deforestation upon their origin and more frequent occurrence, yet this belief is not better established from a hydrographic standpoint than the entirely unfounded belief that the floods of the past few years in Austria are due to deforestation. Against the popular belief in the favorable influence of forests upon floods resulting from excessive rains may be adduced the interesting fact that lands richest in forests are frequently visited by the severest floods.

In support of this opinion he traces the history of the Danube River for eight hundred years, drawing the conclusion that floods were formerly just as frequent and just as high in that river as they have been in recent times. He cites the records of the river Seine also showing

even greater flood height in the sixteenth century than any that occurred in the nineteenth. As deforestation in the watersheds in both the Danube and the Seine is vastly greater now than it was eight centuries or three centuries ago, the testimony of the actual records presented by M. Lauda can not be lightly set aside. Nor can it be said that M. Lauda stands alone in his opinion, for at the Tenth International Congress of Navigation, held at Milan in 1905, papers upon this subject were presented by representatives from France, Germany, Italy, Austria, and Russia, and while all the writers favored forest culture the opinion was practically unanimous that forests exert no appreciable influence upon the stream flow of rivers.

Indeed, Colonel Chittenden, who has perhaps studied foreign reports upon this subject more carefully than any other American, declares that he is unable to find among the river engineers of Europe any that advocate forests as a corrective for the extremes of flow in our rivers. He cites an exceedingly elaborate investigation instituted by Napoleon III, as a result of which the French engineers, after an exhaustive study of the subject, united in the opinion that whatever value forests might have locally in preventing the erosion of steep slopes they could not be relied upon in any degree to diminish the great floods from which France had been suffering, and that any measures which might be taken in the line of reforestation would have no appreciable effect. The report of these engineers quoted a very elaborate and exhaustive work upon the floods of French rivers, going back over six hundred years, in which it was conclusively shown that former floods were larger than those of the present time. As a result of this report it is declared that no French project of river improvement, either for flood prevention or as an insurance against low water in navigable rivers, has embraced reforestation as an essential part or even any part at all.

In our own country, where river records have been kept but a comparatively short time, the data are of course insufficient to warrant any very sweeping generalizations. We believe it is admitted, however, that the records of the Ohio River, which extend over a period of forty years, show greater extremes of both high water and low water during the first twenty years of that period than during the last twenty years, thus bearing out in a degree at least the conclusions reached through a study of the extended periods of observation of European rivers. While it can not be regarded, therefore, as fully established, we submit that the weight of expert testimony and the preponderance of evidence as deduced from actual observation is very largely in favor of the proposition that forests do not exercise an appreciable influence upon the navigability of navigable rivers.

But the argument against the proposition in the bill under consideration by no means rests alone upon the contention that there is no vital connection between the forests and the maintenance of navigability in navigable streams. It is a conceded fact that at the present time, in the southern Appalachians at least, the menace to the streams comes from the operations of the farmer and not from those of the lumberman. It is the tracts on the lower slopes of the mountains which have been cleared for farming from which the silt is washed into the streams and not from the upper slopes, which are covered with trees. Now, it is not denied that if these lower slopes are properly farmed the soil will not wash appreciably, and the streams therefore will receive no damage. It is not denied either that if the steeper

slopes, which never can be farmed, are protected from fire they will always be forested, or at least covered with a growth that will prevent erosion.

Remembering these two undenied facts, can it be argued that it is necessary for the Government to purchase either the upper or the lower slopes of the mountains in order to protect the streams? The lower slopes are more valuable for farming than for timber raising if they can be prevented from erosion. Since they can be so prevented by proper methods of tillage, would it not be better national economy for the Federal Government to help teach the farmers of that region how to till their soil in such a way as to prevent erosion and maintain its fertility than it would be to buy out those farmers and return the land to the wilderness? And since the upper slopes will always have a forest cover, if protected from fire, would it not be better national economy for the Federal Government to lend its aid to such protection at a comparatively trifling cost (it is estimated by the Forest Service that the cost of an effective fire patrol would not exceed 2 cents per acre per annum) than to buy the land at a very great initial expenditure, with the cost of fire protection to be added as a fixed and continuing charge? Would it not be better for the States concerned to have the lands remain in private ownership, supporting a larger population than could possibly be maintained if the policy of the pending bill is pursued, and retaining the value of the property on the tax rolls?

The very best that can be said in support of the proposition for the federal purchase of these lands is that as a result of such purchase the impairment of navigable streams may possibly be diminished or retarded. But will this vague general possibility, or probability, of a distant and shadowy good offset the immediate and certain evil of driving large numbers of people away from homes which in many instances have been occupied for generations, of reducing the productivity of large areas, and of taking large amounts of property from local tax rolls?

It is cited as a special merit in the pending bill that the money to carry it into effect is taken not from the General Treasury but from the receipts of the existing Forest Service, the agreeable inference therefrom being that the proposed new forests can be bought without any real draft upon the Treasury. We are unable to see the force of this argument. The receipts from the present national forests are not a new source of income conjured into existence by the pending bill. On the contrary, these receipts are a part of the national revenues which are paid into the Federal Treasury, just as are the revenues from customs dues or internal taxation. To regard the income from the forests as a special fund which can be diverted without any real effect upon the Treasury balances is a palpable fiction, which if adopted would expose the Congress to the charge of doing by indirection what it was not willing to do directly. If we are going to enter upon this policy, let us do it openly and boldly with a full understanding of what it will cost and where the money is to come from.

In its terms, the life of the measure being limited to ten years and the expenditures under it restricted in the aggregate to \$19,000,000, this bill is extremely conservative compared with others that have been introduced upon the same subject. It is to be noted, however, that it is applicable to every section of the country, and that the foremost ad-

vocates of the policy which it initiates maintain that the policy can only be carried to a successful issue through the purchase of many million acres of land. The last official report upon the subject recommended the purchase of 5,000,000 acres in the southern Appalachians and 600,000 acres in the White Mountains, the average estimated cost being \$3.50 an acre. But it states also (on page 32) that there are 75,000,000 acres in these mountains which "will have to be given protection before the hard-wood supply is on a safe footing and before the watersheds of the important streams are adequately safeguarded." While no one now advocates the purchase of this enormous area, yet with the policy once entered upon and backed by the tremendous political and industrial influences that can be brought to its support, who can give assurance that such purchases may not be made in the future and the cost of this policy be thereby extended from tens of millions to hundreds of millions?

Notwithstanding the enormous expenditure which will almost inevitably result from the entrance upon this policy, it might still be warranted if it were a demonstrated fact that the maintenance of the forested watersheds is the only way by which the filling up of navigable streams and the destructive erosion of large sections of our country can be prevented, and that the only means by which forested watersheds can be maintained is through federal ownership of such watersheds. Believing, however, that this destructive erosion and consequent silting of rivers can be prevented by the introduction of proper methods of farming and by adequate fire protection, both of which can be accomplished through the cooperation of state and federal agencies at comparatively little expense, we are unwilling to consent to a measure which commits the Government to a policy which we believe to be both unwise and unnecessary.

CHAS. F. SCOTT.
 WM. LORIMER.
 GEO. W. COOK.
 JACK BEALL.
 W. W. RUCKER.

VIEWS OF MR. HAWLEY.

In addition to joining in the dissent of the minority and commending its vigorous presentation of the matter, I desire to add the following observations:

This bill provides for the acquisition of lands anywhere in the United States for the establishment of new forest reserves or national forests. These lands are to be acquired from the present private owners upon the recommendation of a commission, as provided in the bill. It is stated that the purpose of such acquisitions is to preserve and improve the navigability of navigable rivers, apparently following the opinion of the Committee on the Judiciary of the House, as expressed in House Report No. 1514 of this Congress. It is inferred that if the policy proposed in the bill is carried out, under the terms and by the means therein set forth, that in due time extremes of high and low water in navigable rivers will be regulated, and the hindrance to navigation due to the deposit of silt will be controlled. The vital question at this point is, "Will this be the result?" If not, then the theory on which the bill is based fails, and its justification also fails, under report No. 1514, referred to above. Upon this relation between the proposed control and navigation or stream flow the authorities disagree, as set forth at length in the preceding opinion of the minority. And no agreement exists as to where the necessary lands lie or as to what is their nature.

The bill also provides that for the same purposes the Government may administer private forest lands adjacent to the lands in the proposed new reserves, for a term of years, upon agreement with the owners. There is little evidence to show whether few or many owners of forest lands will so agree, and in my judgment not many will accept the terms proposed. If they do not, the amount of land necessary to be acquired by the National Government in order to carry out the policy in the bill will be increased and add largely to the appropriations required.

It is proposed to appropriate from the revenues of existing forest reserves \$1,000,000 for the first year, and \$2,000,000 annually thereafter for a period of nine years, in all \$19,000,000. In view of the large areas it is proposed to control, this amount must be regarded rather as an experimental appropriation than as a sum adequate to accomplish the purposes of the bill. The report of the Secretary of Agriculture, made in compliance with the provision in the agricultural appropriation bill, approved March 4, 1907, which directed him to make an investigation of this question (see S. Doc. 91, 60th Cong., 1st sess.), on pages 30, 31, and 32, says:

AREA AND LOCATION OF LANDS NEEDING PROTECTION.

In order to determine the extent of the lands primarily available for forests in the Southern Appalachian and White Mountain regions, a reconnaissance survey has been made, as a result of which the accompanying maps have been prepared. Maps I and II show for the two regions the lands to be classed as distinctly mountainous and nonagricultural.

The main centers for such mountainous and nonagricultural lands in the Southern Appalachians are, first, the Blue Ridge and Great Smoky Mountains of North Carolina and Tennessee, South Carolina and Georgia; second, the Allegheny Mountains of eastern and southern West Virginia and western Virginia, and, third, the Cumberland Mountains of eastern Kentucky, Tennessee, and northern Alabama. These lands include the main mountain ranges, and the roughest, wildest land of the region. Naturally, they embrace a smaller proportion of agricultural lands than other parts of the region, and those which they do embrace have for the most part been eliminated, as will be seen from the irregular boundaries on the map. Regardless of these eliminations they still include some small bodies of agricultural lands.

These areas, though they contain only 40 per cent of the timbered land of the Southern Appalachians, include almost all of the virgin timber lands, because the virgin timber which remains is mostly situated on the high mountains. Even though these lands do produce an inferior grade of timber, their sole use must be for timber production. There is no other crop which will hold the gravelly, stony soil in place and keep it from clogging the channels of streams and covering the agricultural valleys which lie below. These nonagricultural and mountainous lands, approximating 23,000,000 acres, give rise to all the important streams which have their source in the Southern Appalachians. They are therefore the vital portions of these mountains. Whatever work is done to protect the Southern Appalachians must center in these areas. The proportion to which these lands fall into different States and watersheds is shown in the following tables:

TABLE 4.—*Area, by States, of nonagricultural and mountainous lands in the Southern Appalachians.*

State.	Area.	State.	Area.
	<i>Acres.</i>		<i>Acres.</i>
Tennessee	4,962,000	West Virginia.....	5,797,000
Virginia	3,882,000	South Carolina.....	590,000
Alabama	491,000	Maryland.....	277,000
Georgia	1,806,000		
Kentucky	1,623,000	Total.....	23,310,000
North Carolina.....	3,882,000		

TABLE 5.—*Area, by watersheds, of nonagricultural and mountainous lands in the Southern Appalachians.*

Watershed.	Area.	Watershed.	Area.
	<i>Acres.</i>		<i>Acres.</i>
Tennessee	2,489,000	Yadkin	428,000
Cumberland	2,759,000	Big Pigeon.....	20,000
Holston	582,000	Catawba	502,000
James	1,138,000	Broad	299,000
Roanoke (Staunton)	431,000	Potomac	2,095,000
New (Kanawha)	3,225,000	Chattahoochee	345,000
Big Sandy	1,347,000	Little Pigeon.....	19,000
Hiwassee	1,066,000	Twelve Pole	1,000
Little Tennessee.....	1,307,000	Savannah.....	860,000
Pigeon	623,000	Guyandotte.....	660,000
French Broad	255,000	Saluda	700,000
Little River	202,000	Kentucky.....	156,000
Monongahela	987,000	Coosa	767,000
Nolichucky	379,000		
Youghiogheny.....	117,000	Total.....	23,310,000
Rapidan	151,000		

While the lands shown on the map are all in need of protection, they are not all of equal importance when all economic points of view are considered.

The lands to be classed as of first importance include the mountain ridges mainly, but extend considerable distances down the slopes in those localities where the soil is particularly subject to erosion and on the watersheds of streams of greatest importance for water power or navigation. The area of such lands does not exceed 5,000,000 acres.

The same class of land for the White Mountain region is shown in Map II. It lies in both New Hampshire and Maine. Excluding the numerous bodies of water, their area in New Hampshire is 1,457,000 acres, and in Maine 700,000 acres, mak-

ing a total of 2,157,000 acres. The proportion in which this falls in the five water systems included is as follows:

	Acres.
Connecticut.....	429,000
Merrimac.....	264,000
Saco.....	332,000
Androscoggin.....	1,002,000
Kennebec.....	130,000
Total.....	2,157,000

There is also shown on this map an area embracing only the four main ranges of the White Mountains. A few thousand acres of this area lie in Maine. All the rest is in New Hampshire. This principal White Mountain area covers 668,000 acres, and, considering all economic points of view, is the most important part of the region.

TREATMENT OF THE REGION.

The areas indicated in the preceding section, 23,310,000 acres in the Southern Appalachians and 2,157,000 acres in the White Mountains, do not include all the mountainous timber lands of the Appalachians. As is discussed under the heading "Importance of Appalachian forests for hard-wood supply," there are probably 75,000,000 acres in this mountain system more important for timber production than for any other purpose. This area will have to be given protection before the hard-wood supply is on a safe footing and before the watersheds of the important streams are adequately safeguarded.

If it is a wise policy for the Government to control by purchase or agreement with owners such large areas of land, and in addition thereto extensive areas included in this bill, but not included in the report of the Secretary of Agriculture, then it should be undertaken on a scale commensurate with its proposed final extent, and for which appropriations many times the present amount will be required.

This bill if enacted into law will inaugurate a system of new forest reserves whose final limits will include the lands the administration of which by the National Government may be said to conserve and regulate stream flow and assist in maintaining the navigability of navigable rivers. In my opinion the proposed appropriation of \$19,000,000 is sufficient only to make a beginning and to commit the Government to the policy. It initiates one of the most extensive and momentous movements ever begun in this country by legislative action. It seems to me there of necessity should be required prior thereto an exceedingly thoroughgoing and exhaustive investigation by competent authority of all the problems involved, for the information of the country and of Congress, and if thereafter the proposed policy is considered wise and within the powers of Congress, a measure should be prepared that will present the matter in all its magnificence to the country and provide adequate appropriations for executing the policy, and granting all necessary authority therefor.

Does the present bill authorize the commission to use the power of eminent domain to obtain from unwilling owners the lands deemed necessary? If not, is not the omission of such authority an error?

I fear, also, that when the Government goes into the market to purchase from private parties the lands for the new forest reserves great difficulties will be encountered, arising out of speculations in these lands.

The committee have held many hearings on this subject, the net result of which discloses the lack of accurate and adequate data. For the purpose of securing carefully collected and scientifically presented

information on all phases of the subject. I introduced a bill at the last session, and the fact that the information called for by it is not available seems to justify the printing of it as an appendix.

Truly yours,

W. C. HAWLEY.

[H. R. 21877. Sixtieth Congress, first session.]

A BILL To provide for obtaining certain information relative to the White Mountain, Appalachian, and other watersheds and forests.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That a commission consisting of three men, whose duties are defined below, shall be appointed as follows: One by the President of the United States, one by the President of the Senate, and one by the Speaker of the House of Representatives.

Sec. 2. That the duties of this commission shall be as follows:

First. Personally to visit every watershed in the States named in section seven of this act supposed to have influence in regulating the flow of waters and conservation of water supply in the maintenance of the navigability of navigable rivers, and for other purposes.

Second. To establish by metes and bounds the limits of such watersheds and to actually ascertain the areas included.

Third. To ascertain how much of such areas are now forested and the kinds and sizes of the trees and other growths thereon.

Fourth. The general nature and character of the soil of these watersheds and the general topography of said watersheds.

Fifth. To ascertain how much of such areas are now deforested and the condition of the deforested lands.

Sixth. To ascertain what portions of the deforested areas can be reforested, how much can not be reforested, and the probable cost and period of time required for reforestation of such areas.

Seventh. To ascertain whether these watersheds have a definite and demonstrable physical connection, mediate or immediate, with the maintenance and improvement of the navigability of navigable rivers.

Eighth. To ascertain as accurately as possible the value of the lands of each watershed and the price at which they can be acquired.

Ninth. To ascertain whether any of these watershed areas will be transferred to the United States, either as a gift or to be placed under the control of the United States, and if so, for what length of time.

Tenth. If the question implied in paragraph seven is decided affirmatively, to ascertain whether the control of the watershed areas will be sufficient for the conservation and improvement of the navigability of navigable rivers, or whether the control of areas below and other than the watershed areas will be necessary for that purpose. If areas other than watershed areas are decided to be necessary, then such areas shall be definitely located and measured, and their values and the prices for which they can be bought shall be ascertained.

Eleventh. To ascertain the annual precipitation on each watershed area as nearly as possible and for as long a period of years preceding as possible.

Twelfth. To estimate the probable annual revenues, if any, from such watershed and other areas and the cost of administration yearly if acquired by the Government.

Thirteenth. To ascertain the miles on each river supposed to be directly or indirectly benefited that are now navigable, and the number of months each such river is navigable, the depth of water for each month, and the draft of vessels using same.

Fourteenth. To ascertain the increase or diminution of the miles of navigable water in each such river and the depths of water therein for the longest period of years possible.

Fifteenth. To ascertain the amount of commerce carried, by months, on each such river for the longest period of years possible.

Sixteenth. To ascertain the effects of erosion due to the denudation of watershed or other areas and the damage effected thereby.

Seventeenth. To ascertain what effect on high and low water in rivers the drainage and tiling of farm land has had.

Eighteenth. To ascertain who are the present owners of the areas referred to in this act and when they obtained such lands.

Nineteenth. To ascertain whether large tracts have been recently acquired and whether options have been taken on the lands, and if so, in what quantities.

Twentieth. To ascertain the amount of timber cut on the watersheds aforesaid yearly and the rate of such cutting for a period of years as long as possible.

Twenty-first. To ascertain the facts in the development of water power in such areas.

SEC. 3. That the said commission shall have authority to employ expert and unskilled labor necessary to enable them to perform the duties imposed upon them and to fix compensation therefor.

SEC. 4. That each of said three commissioners shall be paid at the rate of five hundred dollars per month and shall receive compensation for necessary personal expenses incurred in the discharge of their duties.

SEC. 5. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of thirty thousand dollars to provide payment for services and expenses authorized by this act.

SEC. 6. That said commission shall report completely, finally, and in full on or before February first, nineteen hundred and nine.

SEC. 7. That the watersheds and other areas described in this act, and which the commission herein provided shall investigate under the provisions of this act, are those located in the following States: Maine, New Hampshire, Vermont, New York, Pennsylvania, Ohio, Kentucky, Tennessee, West Virginia, Virginia, Maryland, North Carolina, South Carolina, Georgia, and Alabama.

VIEWS OF MR. HAUGEN.

Before entering upon such a gigantic scheme as is contemplated in the proposed bill, one which in the end in all probabilities will involve the expenditure of not millions but billions of dollars, Congress should have detailed and accurate information in order that the matter might be carefully, fully, and intelligently considered. It should at least have data, or reliable estimates, as to the probable cost, the number of acres that should be purchased for the preservation of the forests within the watersheds of the navigable rivers not only in the White Mountains and the Southern Appalachian Mountains, but over the whole country. The only official information available at the present time is that obtained under the act of Congress of March 4, 1907, which "requires the Secretary of Agriculture to investigate the watersheds of the Southern Appalachian and White Mountains and to report to Congress the area and natural conditions of said watersheds, the price at which the same can be purchased by the Government, and the advisability of the Government purchasing and setting apart the same as national forest reserves for the purpose of conserving and regulating the water supply and flow of said streams in the interest of agriculture, water power, and navigation."

In this report the Secretary recommends that the Government acquire an area of about 6,000,000 acres at once, and states that an area of about 75,000,000 acres will have to be given protection. The Secretary has this to say (p. 32):

It is an enormous undertaking to bring this immense area of 75,000,000 acres under proper conditions of protection and use. If the Government owned the land the problem would be a comparatively simple one under our present forest policy.

I conclude from this that it is necessary to purchase the 75,000,000 acres to begin with. As to the method of acquirement and cost of lands the Secretary has this to say:

WHITE MOUNTAINS.

The timber lands of the White Mountains are in the main held by a few large companies, nearly all of whom are cutting extensively on the spruce stands for pulp or lumber manufacture. The plants of some of these companies represent an investment of several hundred thousand dollars. Manifestly, in negotiating for these lands, in so far as they bear uncut timber, the value of the plant must enter into the consideration. In addition, the stumpage value of spruce ranges from \$4.50 to \$6 or \$7 per thousand. This would give the best stands a value of \$75 to \$125 or more per acre.

* * * * *

The hard woods of the White Mountains, of which there is a large area, have not the value of spruce, nor are they as yet being extensively cut. Their stumpage value is from \$2.50 to \$4 per thousand, depending upon location, stand, and quality.

The cut-over lands have a value ranging from \$1 to \$6 or \$8 per acre, depending upon the condition of the timber growth upon them.

The question of the acquirement of timber lands by the Government has been considered with the principal owners of the region. While unwilling to dispose of their

virgin timber lands, except at very high prices, they are willing to consider the sale of their cut-over lands, the lands lying too high for lumbering, and the mountain tops.

A careful study of the situation leads to the conclusion that most of the lands of these classes can be bought at an average price of \$6 per acre.

SOUTHERN APPALACHIAN MOUNTAINS.

In the Southern Appalachians the timber lands are owned by large companies to a less extent than in the White Mountains, but even here as much as 50 per cent of many localities is under such ownership.

Timber-land owners in the Southern Appalachians are generally inclined to sell their lands to the Government at a reasonable price, regardless of whether the lands contain virgin timber or are cut over. Furthermore many of them are favorable to the transfer of their lands, themselves retaining the right to cut and remove certain kinds of timber above specified sizes.

In considering the practicability of the Government's purchasing land for national forests in the Southern Appalachians conference has been freely had with timber-land owners, lumbermen, real estate dealers, and title examiners. Moreover, attention has been paid to the sales which have been made during the past two years and the prices which have been paid.

The price of virgin hard-wood land varies from \$5 to \$12 per acre, depending on accessibility and kind and quality of timber. Cut-over lands are worth from \$2 to \$5 per acre, their value likewise depending upon their location and the condition of the timber growth upon them.

From this report, or any other information available, who can figure out the probable outlay of money? No data is furnished as to the number of acres of the \$75 and \$125 per acre land. There is no data as to the number of plants. All that is known is that some of these lands are valued at from \$75 to \$125 per acre, and that there are plants there representing an investment of several hundred thousand dollars, and that the value of the plants must enter into the consideration. No data is given as to the number of acres of hard wood, except that there is a large area. No data is given as to the number of acres of cut-over land, valued at from \$1 to \$8 per acre, except that it is believed that most of the land of these classes can be bought at an average price of \$6 per acre.

Suppose the average price of all the 75,000,000 acres to be purchased in this region is \$20 per acre, it would mean an investment of one and one-half billion dollars, an amount more than six times the cost of the building of the Panama Canal, or nearly twice the amount of our present interest-bearing debt, or four times the value of the total annual products of the Iowa farms.

The Secretary reports that these timber lands are in the main held by a few large companies. This means large prices. Besides, the Government generally pays more for what it buys and will have to pay larger prices than would have to be paid by individuals in purchasing the same lands.

The Secretary reports that the principal owners of lands are unwilling to dispose of their virgin timber lands, except at a very high price; that the cut-over lands, lands lying too high for lumbering, and the mountain tops, or, in other words, that only such lands as are not needed or desired for this or any other purpose are offered for sale.

Considering the Secretary's report and the fact that the purchase of the 75,000,000 acres, involving an expenditure of probably over a billion dollars, is probably only a small part of the land necessary to be acquired, as undoubtedly enterprising and patriotic real estate owners in other parts of the country would be willing to unload their

lands onto the Government, especially when the price is to be very high, and will insist that there be an equitable distribution of these billions of dollars; and considering also the enormity of the whole proposition, is it not the part of wisdom, common sense, and sound business judgment first to obtain detailed, accurate, and reliable information in order that a comprehensive, well-devised, and practical policy may be worked out and followed?

Considering also that the proposed bill is an entering wedge to such a gigantic proposition, I feel constrained to dissent from the views of the majority, and believe that for the present that H. R. 21986, passed the first session of this Congress, is the proper legislation. Its provisions are clearly set forth in Report No. 1700, a copy of which is appended.

GILBERT N. HAUGEN.

[House Report No. 1700, Sixtieth Congress, first session.]

The Committee on Agriculture, to which was referred House bill 21986, has had the same under consideration and reports as follows:

At the beginning of the present session a number of bills were introduced and referred to the Committee on Agriculture having for their general purpose the purchase of certain tracts of land in the White Mountains and in the Southern Appalachian Mountains with a view to preserving the forests on said lands and conserving the flow in the rivers having their sources therein. The committee considered its most pressing duty to be, first, to prepare the appropriation bill for the Department of Agriculture. Before the consideration of this bill had been completed a resolution was introduced by Representative Bartlett, of Georgia, providing that the bills above mentioned, commonly known as the White Mountain and Appalachian Park forest-reserve bills, be referred to the Committee on the Judiciary with the request that that committee render an opinion as to the constitutionality of the proposed measures. This resolution was adopted by the House, and the bills were referred accordingly. Pending the report of the Committee on the Judiciary the Committee on Agriculture was of the opinion that it could not properly give consideration to these measures.

On April 20, 1908, the Committee on the Judiciary rendered an opinion to the effect that the United States would have no right to purchase lands for the purpose of creating a forest reserve, but that Congress might appropriate for the purchase of lands having a direct and substantial connection with the navigability of navigable rivers. As a result of this decision, Representatives who had introduced the bills which had been referred to the Committee on the Judiciary modified and reintroduced them, and they were again referred to the Committee on Agriculture, which took up the consideration of them at the earliest possible date. After hearing testimony and considering the bills for several days it became evident that the committee, with the information then before it, was unwilling to favorably recommend any measure committing the United States to the policy of purchasing forest lands. The whole matter was therefore referred to a subcommittee, with instructions to recommend to the full committee such action as it was deemed proper to take. As a result of the deliberations of this subcommittee, the bill, H. R. 21986, was reported to the full committee, and by its action is herewith reported to the House.

It is a matter of common knowledge that the forests in the White Mountains and in the southern Appalachian Mountains are being rapidly destroyed, and the desirability of preserving what remains of them, or at least of introducing methods of lumbering which will prevent the destruction of immature timber and will protect the forests from fire, is universally conceded, not only for the perpetuation of the timber supply, but also for the conservation of the flow of water in the streams having their source within these forests. The problem as to how this desired end should be reached has been widely discussed and has awakened profound interest throughout the entire country. As a result of this discussion four distinct methods have been suggested.

First. It has been held by many that the problem was one belonging exclusively to the States concerned. Those holding this view have argued that the Federal Government has no constitutional authority to purchase lands for the purpose of conserving the forests upon them, even though such preservation may conserve the

supply of water in navigable streams. They hold that the matter is one over which the States have exclusive jurisdiction, and that if the right exists it is the duty of the State to assume the responsibility of meeting it.

Second. Another view is that while it is neither the right nor the duty of the Federal Government to purchase the forests it may properly cooperate with the States or with private owners in their preservation by furnishing expert advice and assistance in their proper utilization and administration.

Third. Still another view is that when it is shown that the forests of a given watershed have a direct and substantial connection with the navigability of the navigable rivers flowing from that watershed the Federal Government has the right to exercise jurisdiction over the forests therein, although they remain in private ownership, and prescribe the method which shall be followed in utilizing the forests within such watershed.

Fourth. The last, and doubtless the most generally advocated plan, proposes that the Federal Government shall buy all the land that may be necessary to protect the watersheds of navigable rivers and exercise over the forests growing upon them all the rights and privileges of absolute ownership.

The bill now before the House was drawn with a view to meeting, in a measure at least, each of these four proposed plans. The first section proposes to give the consent of Congress to each of the several States of the Union which may wish to do so to enter into such agreement or compact, not in conflict with any law of the United States, as it may deem desirable or necessary, with any other State or States for the purpose of conserving the forests and the water supply of the States entering into such agreement or compact. It has been often urged, by those who insist that the Federal Government should purchase the forests under consideration, that the problem is interstate, and in view of the constitutional inhibition against a State entering into any agreement or compact with another the proper treatment of the problem is made impossible to the States alone. If section 1 of this bill becomes a law this obstacle to cooperation between and among the States will be removed.

Section 2 of the bill appropriates the sum of \$100,000 to enable the Secretary of Agriculture to cooperate with any State or group of States, when requested to do so, by supplying expert advice on forest preservation, utilization, and administration, and upon reforestation of denuded areas. It also authorizes the Secretary of Agriculture to enter into agreement with the owners of any private forest lands situated upon the watershed of a navigable river, to administer and protect such forest land upon such terms as the Secretary of Agriculture may prescribe. It is believed that under the authority given in this section many thousands of acres of forest lands will be brought as effectually within the jurisdiction of the United States for all the purposes of scientific forestry as if these lands were actually owned by the Government.

Section 3 of the bill provides for the appointment of a commission to be composed of five Members of the Senate, to be appointed by the presiding officer thereof, and five Members of the House of Representatives, to be appointed by the Speaker.

Section 4 makes it the duty of this commission to investigate all questions tending to show the direct and substantial connection, if any, between the preservation of the forests within the watersheds of the navigable rivers having their sources in the White Mountains and Southern Appalachian Mountains, and the navigability of said rivers. And in case the commission shall determine that such direct and substantial connection exists, it shall then be its duty to ascertain to what extent, if at all, it may be necessary for the Government of the United States to acquire land within the watersheds referred to, the number of acres of such land, and the probable cost, or whether it may be desirable, if within the power of the United States to exercise, without purchase, such supervision over such watersheds as may be necessary to conserve the navigability of the rivers proceeding therefrom.

Under the provisions of this section all the questions arising out of the proposal that the Federal Government purchase the forests or that it exercise jurisdiction over them without purchase, may be carefully studied and fully considered. It is true that by an act of the last Congress the Secretary of Agriculture was authorized to report and did report upon the watersheds of the Southern Appalachian and White mountains, the purpose of the report being to present to Congress "the area and natural conditions of said watersheds, the price at which the same can be purchased by the Federal Government, and the advisability of the Government purchasing and setting aside the same as national forest reserves for the purpose of conserving and regulating the water supply and the flow of said streams in the interest of agriculture, water power, and navigation."

Without intending any reflection upon those who prepared this report, it may be fairly said that it does not present such detailed and accurate information as any careful business man would insist upon having before entering upon a policy which

was to involve the expenditure of many millions of dollars. It does not indicate the extent of the navigable portions of the rivers whose navigability it is desired to protect nor the value of the forests upon them. It presents no data showing to what extent, if at all, the volume or the steadiness of stream flow has been influenced by the destruction of the forests. It shows in only the most general way the location, area, and probable cost of the lands it is proposed to purchase.

While it recommends (p. 37) that the Government acquire an area of 600,000 acres in the White Mountains and 5,000,000 acres in the southern Appalachian Mountains, it states also (p. 32) that an area of 75,000,000 acres will have to be given protection "before the watersheds and important streams are adequately safeguarded," suggesting the thought that while less than 7,000,000 acres are to be purchased at once, 75,000,000 acres must ultimately be acquired if the watersheds of the important streams are to be "adequately safeguarded." Your committee is of the opinion that if a commission of ten members of the legislative body, responsible to their constituents and to the country for whatever report they may make, is directed to investigate the subject, the information presented in its report will be sufficiently comprehensive and exact to enable Congress to intelligently legislate upon the subject. The commission is given authority to employ experts and such clerical assistants as may be needed, and is required to report to the President not later than January 1, 1909.

Believing that this bill, by opening the way for the States to cooperate with one another, puts it within their power to contribute much to the solution of this important problem; that the provision it makes for cooperation between the United States, the States, and private owners of forest lands must contribute greatly to the rapid extension of scientific forestry; and that by means of the commission for which it provides the most careful study of the whole problem with a view to future legislation is made possible, and that for these reasons the proposed legislation will be of great public advantage, your committee respectfully reports the bill back to the House with the recommendation that it do pass.

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