

current data necessary to make timely and effective management decisions.

**(b) Relationship to other law**

This subchapter shall be deemed to complement the policies and direction set forth in the Forest and Rangeland Renewable Resources Planning Act of 1974 [16 U.S.C. 1600 et seq.].

**(c) Purpose**

It is the purpose of this subchapter to authorize the Secretary to expand research activities to encompass international forestry and natural resource issues on a global scale.

(Pub. L. 95-307, §2, June 30, 1978, 92 Stat. 353; Pub. L. 101-513, title VI, §611(a)(1), formerly §607(a)(1), Nov. 5, 1990, 104 Stat. 2072, renumbered §611(a)(1), Pub. L. 102-574, §2(a)(1), Oct. 29, 1992, 106 Stat. 4593; Pub. L. 105-185, title II, §253(a), June 23, 1998, 112 Stat. 558.)

**Editorial Notes**

REFERENCES IN TEXT

This subchapter, referred to in text, was in the original “this Act”, meaning Pub. L. 95-307, June 2, 1978, 92 Stat. 353, as amended, known as the Forest and Rangeland Renewable Resources Research Act of 1978, which enacted this subchapter, repealed sections 581 to 581i of this title, and enacted provisions set out as a note under section 1641 of this title. For complete classification of this Act to the Code, see Short Title note set out under section 1600 of this title and Tables.

The Forest and Rangeland Renewable Resources Planning Act of 1974, referred to in subsec. (b), is Pub. L. 93-378, Aug. 17, 1974, 88 Stat. 476, as amended, which is classified generally to subchapter I (§1600 et seq.) of this chapter. For complete classification of this Act to the Code, see Short Title note set out under section 1600 of this title and Tables.

AMENDMENTS

1998—Pub. L. 105-185 inserted section catchline, added subsec. (a), and struck out former subsec. (a) which read as follows:

“(1) Congress finds that scientific discoveries and technological advances must be made and applied to support the protection, management, and utilization of the Nation’s renewable resources. It is the purpose of this subchapter to authorize the Secretary of Agriculture (hereinafter in this subchapter referred to as the ‘Secretary’) to implement a comprehensive program of forest and rangeland renewable resources research and dissemination of the findings of such research.

“(2) Congress further finds that the forest and rangeland renewable resources of the world are threatened by deforestation due to conversion to agriculture of lands better suited to other uses, over-grazing, over-harvesting, and other causes that pose a direct adverse threat to people, the global environment, and the world economy.”

1990—Subsecs. (a), (c). Pub. L. 101-513 designated existing provisions of subsec. (a) as par. (1), added par. (2), and added subsec. (c).

**Statutory Notes and Related Subsidiaries**

EFFECTIVE DATE

Pub. L. 95-307, §9, June 30, 1978, 92 Stat. 357, which provided that Pub. L. 95-307 (enacting this subchapter, repealing sections 581 to 581i of this title, and enacting provisions set out as a note under section 1600 of this title) is effective Oct. 1, 1978, was amended generally by Pub. L. 101-624 and was classified to section 1648 of this title.

SHORT TITLE

For short title of Pub. L. 95-307, June 30, 1978, 92 Stat. 353, as the Forest and Rangeland Renewable Resources Research Act of 1978, see Short Title of 1978 Amendment note set out under section 1600 of this title.

**§ 1642. Investigations, experiments, tests, and other activities**

**(a) Authorization; scope and purposes of activities**

The Secretary is authorized to conduct, support, and cooperate in investigations, experiments, tests, and other activities the Secretary deems necessary to obtain, analyze, develop, demonstrate, and disseminate scientific information about protecting, managing, and utilizing forest and rangeland renewable resources in rural, suburban, and urban areas. The activities conducted, supported, or cooperated in by the Secretary under this subchapter shall include, but not be limited to, the five major areas of renewable resource research identified in paragraphs (1) through (5) of this subsection.

(1) Renewable resource management research shall include, as appropriate, research activities related to managing, reproducing, planting, and growing vegetation on forests and rangelands for timber, forage, water, fish and wildlife, esthetics, recreation, wilderness, energy production, activities related to energy conservation, and other purposes, including activities for encouraging improved reforestation of forest lands from which timber has been harvested; determining the role of forest and rangeland management in the productive use of forests and rangelands, in diversified agriculture, and in mining, transportation, and other industries; and developing alternatives for the management of forests and rangelands that will make possible the most effective use of their multiple products and services.

(2) Renewable resource environmental research shall include, as appropriate, research activities related to understanding and managing surface and subsurface water flow, preventing and controlling erosion, and restoring damaged or disturbed soils on forest and rangeland watersheds; maintaining and improving wildlife and fish habitats; managing vegetation to reduce air and water pollution, provide amenities, and for other purposes; and understanding, predicting, and modifying weather, climatic, and other environmental conditions that affect the protection and management of forests and rangelands.

(3) Renewable resource protection research shall include, as appropriate, research activities related to protecting vegetation and other forest and rangeland resources, including threatened and endangered flora and fauna, as well as wood and wood products in storage or use, from fires, insects, diseases, noxious plants, animals, air pollutants, and other agents through biological, chemical, and mechanical control methods and systems; and protecting people, natural resources, and property from fires in rural areas.

(4) Renewable resource utilization research shall include, as appropriate, research activities related to harvesting, transporting, proc-

essing, marketing, distributing, and utilizing wood and other materials derived from forest and rangeland renewable resources; recycling and fully utilizing wood fiber; producing and conserving energy; and testing forest products, including necessary fieldwork associated therewith.

(5) Renewable resource assessment research shall include, as appropriate, research activities related to developing and applying scientific knowledge and technology in support of the survey and analysis of forest and rangeland renewable resources described in subsection (b) of this section.

**(b) Development of periodic Renewable Resource Assessment through survey and analysis of conditions; implementation; authorization of appropriations**

(1) To ensure the availability of adequate data and scientific information for development of the periodic Renewable Resource Assessment provided for in section 1601 of this title, the Secretary of Agriculture shall make and keep current a comprehensive survey and analysis of the present and prospective conditions of and requirements for renewable resources of the forests and rangelands of the United States and of the supplies of such renewable resources, including a determination of the present and potential productivity of the land, and of such other factors as may be necessary and useful in the determination of ways and means needed to balance the demand for and supply of these renewable resources, benefits, and uses in meeting the needs of the people of the United States. The Secretary shall conduct the survey and analysis under such plans as the Secretary may determine to be fair and equitable, and cooperate with appropriate officials of each State and, either through them or directly, with private or other entities.

(2) In implementing this subsection, the Secretary is authorized to develop and implement improved methods of survey and analysis of forest inventory information, for which purposes there are hereby authorized to be appropriated annually \$10,000,000.

**(c) Program of research and study relative to health and productivity of domestic forest ecosystems; advisory committee; reports**

(1) The Secretary, acting through the United States Forest Service, shall establish not later than 180 days after October 24, 1988, a 10-year program (hereinafter in this subsection referred to as the "Program") to—

(A) increase the frequency of forest inventories in matters that relate to atmospheric pollution and conduct such surveys as are necessary to monitor long-term trends in the health and productivity of domestic forest ecosystems;

(B) determine the scope of the decline in the health and productivity of domestic forest ecosystems;

(C) accelerate and expand existing research efforts (including basic forest ecosystem research) to evaluate the effects of atmospheric pollutants on forest ecosystems and their role in the decline in domestic forest health and productivity;

(D) study the relationship between atmospheric pollution and other climatological, chemical, physical, and biological factors that may affect the health and productivity of domestic forest ecosystems;

(E) develop recommendations for solving or mitigating problems related to the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems;

(F) foster cooperation among Federal, State, and private researchers and encourage the exchange of scientific information on the effects of atmospheric pollutants on forest ecosystems among the United States, Canada, European nations, and other nations;

(G) support the long-term funding of research programs and related efforts to determine the causes of declines in the health and productivity of domestic forest ecosystems and the effects of atmospheric pollutants on the health and productivity of domestic forest ecosystems; and

(H) enlarge the Eastern Hardwood Cooperative by devoting additional resources to field analysis of the response of hardwood species to atmospheric pollution, and other factors that may affect the health and productivity of these ecosystems.

(2) The Secretary shall establish a committee to advise the Secretary in developing and carrying out the Program, which shall be composed of scientists with training and experience in various disciplines, including atmospheric, ecological, and biological sciences. Such scientists shall be selected from among individuals who are actively performing research for Federal or State agencies or for private industries, institutions, or organizations.

(3) The Secretary shall coordinate the Program with existing research efforts of Federal and State agencies and private industries, institutions, or organizations.

(4) The Secretary shall submit to the President and to Congress the following reports:

(A) Not less than 30 days before establishing the Program, the Secretary shall submit an initial program report—

(i) discussing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;

(ii) outlining the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems;

(iii) describing the Program; and

(iv) estimating the cost of implementing the Program for each fiscal year of its duration.

(B) Not later than January 15, 1990, and January 15 of each year thereafter, during which the Program is in operation following the year in which the initial program report is submitted, the Secretary shall submit an annual report—

(i) updating information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;

(ii) updating the findings and status of all current research and monitoring efforts in North America and Europe on the causes and effects of atmospheric pollution on the health and productivity of forest ecosystems, including efforts conducted under the Program;

(iii) recommending additional research and monitoring efforts to be undertaken under the Program to determine the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems; and

(iv) recommending methods for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.

(C) Not later than 10 years after the date on which the initial program report is submitted, the Secretary shall submit a final report—

(i) reviewing existing information about declining health and productivity of forest ecosystems on public and private lands in North America and Europe;

(ii) reviewing the nature and findings of all research and monitoring efforts conducted under the Program and any other relevant research and monitoring efforts related to the effects of atmospheric pollution on forest ecosystem; and

(iii) making final recommendations for solving or mitigating problems stemming from the effects of atmospheric pollution on the health and productivity of domestic forest ecosystems.

**(d) High priority forestry and rangeland research and education**

**(1) In general**

The Secretary may conduct, support, and cooperate in forestry and rangeland research and education that is of the highest priority to the United States and to users of public and private forest land and rangeland in the United States.

**(2) Priorities**

The research and education priorities include the following:

(A) The biology of forest organisms and rangeland organisms.

(B) Functional characteristics and cost-effective management of forest and rangeland ecosystems.

(C) Interactions between humans and forests and rangeland.

(D) Wood and forage as a raw material.

(E) International trade, competition, and cooperation.

**(3) Northeastern States research cooperative**

At the request of the Governor of the State of Maine, New Hampshire, New York, or Vermont, the Secretary may cooperate with the northeastern States of New Hampshire, New York, Maine, and Vermont, land-grant colleges and universities of those States, natural resources and forestry schools of those States, other Federal agencies, and other interested persons in those States to coordinate

and improve ecological and economic research relating to agricultural research, extension, and education, including—

(A) research on ecosystem health, forest management, product development, economics, and related fields;

(B) research to assist those States and landowners in those States to achieve sustainable forest management;

(C) technology transfer to the wood products industry of technologies that promote efficient processing, pollution prevention, and energy conservation;

(D) dissemination of existing and new information to landowners, public and private resource managers, State forest citizen advisory committees, and the general public through professional associations, publications, and other information clearinghouse activities; and

(E) analysis of strategies for the protection of areas of outstanding ecological significance or high biological diversity, and strategies for the provision of important recreational opportunities and traditional uses, including strategies for areas identified through State land conservation planning processes.

**(e) Forest inventory and analysis**

**(1) Program required**

In compliance with other applicable provisions of law, the Secretary shall establish a program to inventory and analyze, in a timely manner, public and private forests and their resources in the United States.

**(2) Annual State inventory**

**(A) In general**

Not later than the end of each full fiscal year beginning after June 23, 1998, the Secretary shall prepare for each State, in cooperation with the State forester for the State, an inventory of forests and their resources in the State.

**(B) Sample plots**

For purposes of preparing the inventory for a State, the Secretary shall measure annually 20 percent of all sample plots that are included in the inventory program for that State.

**(C) Compilation of inventory**

On completion of the inventory for a year, the Secretary shall make available to the public a compilation of all data collected for that year from measurements of sample plots as well as any analysis made of the samples.

**(3) 5-year reports**

Not more often than every 5 full fiscal years after June 23, 1998, the Secretary shall prepare, publish, and make available to the public a report, prepared in cooperation with State foresters, that—

(A) contains a description of each State inventory of forests and their resources, incorporating all sample plot measurements conducted during the 5 years covered by the report;

(B) displays and analyzes on a nationwide basis the results of the annual reports required by paragraph (2); and

(C) contains an analysis of forest health conditions and trends over the previous 2 decades, with an emphasis on such conditions and trends during the period subsequent to the immediately preceding report under this paragraph.

#### (4) National standards and definitions

To ensure uniform and consistent data collection for all forest land that is publicly or privately owned and for each State, the Secretary shall develop, in consultation with State foresters and Federal land management agencies not under the jurisdiction of the Secretary, and publish national standards and definitions to be applied in inventorying and analyzing forests and their resources under this subsection. The standards shall include a core set of variables to be measured on all sample plots under paragraph (2) and a standard set of tables to be included in the reports under paragraph (3).

#### (5) Protection for private property rights

The Secretary shall obtain authorization from property owners prior to collecting data from sample plots located on private property pursuant to paragraphs (2) and (3).

#### (6) Strategic plan

Not later than 180 days after June 23, 1998, the Secretary shall prepare and submit to Congress a strategic plan to implement and carry out this subsection, including the annual updates required by paragraph (2) and the reports required by paragraph (3), that shall describe in detail—

(A) the financial resources required to implement and carry out this subsection, including the identification of any resources required in excess of the amounts provided for forest inventorying and analysis in recent appropriations Acts;

(B) the personnel necessary to implement and carry out this subsection, including any personnel in addition to personnel currently performing inventorying and analysis functions;

(C) the organization and procedures necessary to implement and carry out this subsection, including proposed coordination with Federal land management agencies and State foresters;

(D) the schedules for annual sample plot measurements in each State inventory required by paragraph (2) within the first 5-year interval after June 23, 1998;

(E) the core set of variables to be measured in each sample plot under paragraph (2) and the standard set of tables to be used in each State and national report under paragraph (3); and

(F) the process for employing, in coordination with the Secretary of Energy and the Administrator of the National Aeronautics and Space Administration, remote sensing, global positioning systems, and other advanced technologies to carry out this subsection, and the subsequent use of the technologies.

(Pub. L. 95-307, § 3, June 30, 1978, 92 Stat. 353; Pub. L. 96-294, title II, § 254, June 30, 1980, 94 Stat. 707; Pub. L. 100-521, § 3, Oct. 24, 1988, 102 Stat. 2601; Pub. L. 101-624, title XII, § 1241(a), Nov. 28, 1990, 104 Stat. 3544; Pub. L. 105-185, title II, § 253(b), (c), June 23, 1998, 112 Stat. 559; Pub. L. 105-277, div. A, § 101(a) [title VII, § 753(a)], Oct. 21, 1998, 112 Stat. 2681, 2681-32.)

#### Editorial Notes

##### REFERENCES IN TEXT

The Federal revenue codes, referred to in subsec. (d)(2), are classified generally to Title 26, Internal Revenue Code.

##### AMENDMENTS

1998—Subsec. (d). Pub. L. 105-185, § 253(b), added subsec. (d) and struck out former subsec. (d) which read as follows: “The Secretary is authorized to conduct, support, and cooperate in studies and other activities the Secretary deems necessary to—

“(1) evaluate renewable resource management problems associated with urban-forest interface;

“(2) assess effects of changes in Federal revenue codes on private forest management and investment; and

“(3) develop improved delivery systems for information and technical assistance provided to private landowners.”

Subsec. (d)(3). Pub. L. 105-277 substituted “At the request of the Governor of the State of Maine, New Hampshire, New York, or Vermont, the Secretary” for “The Secretary”.

Subsec. (e). Pub. L. 105-185, § 253(c), added subsec. (e).

1990—Subsec. (a)(1). Pub. L. 101-624, § 1241(a)(1), inserted “, including activities for encouraging improved reforestation of forest lands from which timber has been harvested” after “purposes”.

Subsec. (b). Pub. L. 101-624, § 1241(a)(2), designated existing provisions as par. (1) and added par. (2).

Subsec. (d). Pub. L. 101-624, § 1241(a)(3), added subsec. (d).

1988—Subsec. (c). Pub. L. 100-521 added subsec. (c).

1980—Subsec. (a)(1). Pub. L. 96-294, § 254(1), inserted applicability to energy production and energy conservation activities.

Subsec. (a)(4). Pub. L. 96-294, § 254(2), inserted applicability to producing and conserving energy.

#### Statutory Notes and Related Subsidiaries

##### EFFECTIVE DATE OF 1998 AMENDMENT

Amendment by Pub. L. 105-277 effective June 23, 1998, see section 101(a) [title VII, § 753(f)] of Pub. L. 105-277, set out as a note under section 343 of Title 7, Agriculture.

##### REMOTE SENSING TECHNOLOGIES

Pub. L. 115-334, title VIII, § 8632, Dec. 20, 2018, 132 Stat. 4871, provided that: “The Chief of the Forest Service shall—

“(1) continue to find efficiencies in the operations of the forest inventory and analysis program under section 3(e) of the Forest and Rangeland Renewable Resources Research Act of 1978 (16 U.S.C. 1642(e)) through the improved use and integration of advanced remote sensing technologies to provide estimates for State- and national-level inventories, where appropriate; and

“(2) partner with States and other interested stakeholders to carry out the program described in paragraph (1).”

##### REVISION OF STRATEGIC PLAN FOR FOREST INVENTORY AND ANALYSIS

Pub. L. 113-79, title VIII, § 8301, Feb. 7, 2014, 128 Stat. 922, which required Secretary of Agriculture to revise

strategic plan for forest inventory and analysis to describe organization, procedures, and funding needed to achieve certain requirements, was repealed by Pub. L. 115-334, title VIII, § 8501, Dec. 20, 2018, 132 Stat. 4847.

#### SOUTHERN FOREST REGENERATION PROGRAM

Pub. L. 101-624, title XII, § 1242, Nov. 28, 1990, 104 Stat. 3545, provided that:

“(a) ESTABLISHMENT.—The Secretary of Agriculture shall make a grant to a State for the establishment, within such State, of a center, to be known as the ‘Southern Forest Regeneration Center’ (hereafter referred to in this section as the ‘Center’), to study forest regeneration problems and forest productivity in the southern region of the United States.

“(b) DUTIES OF CENTER.—The Center shall study forest regeneration problems and forest productivity in the southern region of the United States, including—

“(1) nursery management concerns that will lead to improved seedling quality;

“(2) forest management practices that account for environmental stresses; and

“(3) the development of low-cost forest regeneration methods that provide options for wood products, species diversity, wildlife habitat, and production of clean air and water.

“(c) ESTABLISHMENT OF OTHER PROGRAMS.—The Secretary of Agriculture may establish other programs in other regions of the United States, or a comprehensive National program, to carry out the purposes of this section as the Secretary determines appropriate.

“(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as may be necessary to carry out this section.”

#### SEMIARID AGROFORESTRY RESEARCH CENTER

Pub. L. 101-624, title XII, § 1243, Nov. 28, 1990, 104 Stat. 3546, as amended by Pub. L. 115-334, title VIII, § 8502, Dec. 20, 2018, 132 Stat. 4847, provided that:

“(a) SEMIARID AGROFORESTRY RESEARCH, DEVELOPMENT, AND DEMONSTRATION CENTER.—The Secretary of Agriculture shall establish at the Forestry Sciences Laboratory of the United States Forest Service, in Lincoln, Nebraska, a Semiarid Agroforestry Research, Development, and Demonstration Center (hereafter referred to in this section as the ‘Center’) and appoint a Director to manage and coordinate the program established at the Center under subsection (b).

“(b) PROGRAM.—The Secretary shall establish a program at the Center and seek the participation of Federal or State governmental entities, land-grant colleges or universities, State agricultural experiment stations, State and private foresters, the National Arbor Day Foundation, and other nonprofit foundations in such program to conduct or assist research, investigations, studies, and surveys to—

“(1) develop sustainable agroforestry systems on semiarid lands that minimize topsoil loss and water contamination and stabilize or enhance crop productivity;

“(2) adapt, demonstrate, document, and model the effectiveness of agroforestry systems under different farming systems and soil or climate conditions;

“(3) develop dual use agroforestry systems compatible with paragraphs (1) and (2) which would provide high-value forestry products for commercial sale from semiarid land;

“(4) develop and improve the drought and pest resistance characteristics of trees for conservation forestry and agroforestry applications in semiarid regions, including the introduction and breeding of trees suited for the Great Plains region of the United States;

“(5) develop technology transfer programs that increase farmer and public acceptance of sustainable agroforestry systems;

“(6) develop improved windbreak and shelterbelt technologies for drought preparedness, soil and water conservation, environmental quality, and biological diversity on semiarid lands;

“(7) develop technical and economic concepts for sustainable agroforestry on semiarid lands, including the conduct of economic analyses of the costs and benefits of agroforestry systems and the development of models to predict the economic benefits under soil or climate conditions;

“(8) provide international leadership in the development and exchange of agroforestry practices on semiarid lands worldwide;

“(9) support research on the effects of agroforestry systems on semiarid lands in mitigating nonpoint source water pollution;

“(10) support research on the design, establishment, and maintenance of tree and shrub plantings to regulate the deposition of snow along roadways; and

“(11) conduct sociological, demographic, and economic studies as needed to develop strategies for increasing the use of forestry conservation and agroforestry practices.

“(c) INFORMATION COLLECTION AND DISSEMINATION.—The Secretary shall establish at the Center a program, to be known as the National Clearinghouse on Agroforestry Conservation and Promotion to—

“(1) collect, analyze, and disseminate information on agroforestry conservation technologies and practices; and

“(2) promote the use of such information by landowners and those organizations associated with forestry and tree promotion.

“(d) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated \$5,000,000 for each of fiscal years 2019 through 2023 to carry out this section.”

#### FOREST ECOSYSTEMS AND ATMOSPHERIC POLLUTION RESEARCH; CONGRESSIONAL FINDINGS

Pub. L. 100-521, § 2, Oct. 24, 1988, 102 Stat. 2601, provided that: “Congress finds that—

“(1) the health and productivity of forests in certain regions of the United States are declining;

“(2) there is a special concern about the decline of certain hardwood species, particularly sugar maples and oaks, in the eastern United States and the effects of atmospheric pollutants on the health and productivity of these forests;

“(3) declines in the productivity of certain commercially important Southern pine species have been measured;

“(4) existing research indicates that atmospheric pollution, including ozone, acidic deposition, and heavy metals, may contribute to this decline;

“(5) there is an urgent need to expand and better coordinate existing Federal, State, and private research, including research by private industry, to determine the cause of changes in the health and productivity of domestic forest ecosystems and to monitor and evaluate the effects of atmospheric pollutants on such ecosystems; and

“(6) such research and monitoring should not impede efforts to control atmospheric pollutants.”

### § 1643. Implementation of provisions

#### (a) Establishment and maintenance of research facilities; acquisition, expenditures, etc., for property

In implementing this subchapter, the Secretary is authorized to establish and maintain a system of experiment stations, research laboratories, experimental areas, and other forest and rangeland research facilities. The Secretary is authorized, with donated or appropriated funds, to acquire by lease, donation, purchase, exchange, or otherwise, land or interests in land within the United States needed to implement this subchapter, to make necessary expenditures to examine, appraise, and survey such property, and to do all things incident to perfecting title thereto in the United States.