

117TH CONGRESS  
1ST SESSION

# S. 2836

To improve revegetation and carbon sequestration activities in the United States, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

SEPTEMBER 23, 2021

Mr. MANCHIN (for himself, Mr. BARRASSO, Mr. KING, and Mr. MARSHALL) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

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## A BILL

To improve revegetation and carbon sequestration activities in the United States, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) **SHORT TITLE.**—This Act may be cited as the  
5 “America’s Revegetation and Carbon Sequestration Act of  
6 2021”.

7 (b) **TITLE OF CONTENTS.**—The table of contents for  
8 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. Definitions.

## TITLE I—REVEGETATION

- Sec. 101. Climate adaptation and resilient forests and rangeland measures.
- Sec. 102. National revegetation effort.
- Sec. 103. Experimental forests.
- Sec. 104. Long-term contracts for tree and seed planting.
- Sec. 105. Tree planting for communities.
- Sec. 106. Revegetation on abandoned mine land.
- Sec. 107. International reforestation.

TITLE II—CARBON SEQUESTRATION THROUGH FOREST  
MANAGEMENT AND INNOVATION

- Sec. 201. Forest management from carbon credits.
- Sec. 202. Recovery and restoration treatments following stand-replacing disturbances.
- Sec. 203. Biochar and wood waste.
- Sec. 204. Eradication of invasive grasses.

## TITLE III—MASS TIMBER

- Sec. 301. Definitions.
- Sec. 302. Joint mass timber science and education program.
- Sec. 303. Storing carbon in Federal buildings.

## TITLE IV—RESEARCH

- Sec. 401. Longevity of forest products.
- Sec. 402. Forest inventory and analysis.
- Sec. 403. Bioeconomy research.
- Sec. 404. Insurance product to replace buffers.
- Sec. 405. Forest health threat centers.

1 **SEC. 2. FINDINGS.**

2 Congress finds that—

3 (1) revegetation efforts can meet multiple goals,  
4 including guarding against climate change, improv-  
5 ing conservation and habitats, securing public water  
6 supplies, and providing for economic and cultural  
7 benefits;

8 (2) a range of practical constraints, including  
9 cost, available infrastructure, and whether land has  
10 been converted to other uses that are unlikely to be  
11 abandoned, significantly limit the areas that are via-

1 ble for revegetation projects, and hence revegetation  
2 projects must be targeted;

3 (3) reforestation projects should occur in areas  
4 that were historically forested but have become de-  
5 graded or impacted from wildfire events, wind-  
6 storms, or other events, rather than other natural  
7 habitats, such as grasslands;

8 (4) forests and rangelands are important for  
9 storing carbon;

10 (5) established forests and native rangelands,  
11 including actively managed forests and rangelands,  
12 are preferable to new forests and rangelands that  
13 are a result of revegetation efforts, because intact  
14 forests and vegetation communities are more effec-  
15 tive at sequestration and are more resilient to fire,  
16 storm, and drought;

17 (6) natural regrowth of forests and rangelands  
18 is cheaper and more efficient than revegetation  
19 projects, as long as nonnative invasive species are  
20 not adversely impacting the landscape;

21 (7) native plant development and restoration  
22 generates sustainable private sector jobs in a wide  
23 variety of sectors;

24 (8) selecting the appropriate species of trees  
25 and of other vegetation and promoting biodiversity

1 using a mixture of species naturally found in the  
2 local area, rare species, and species of economic im-  
3 portance are crucial to the success of revegetation  
4 efforts;

5 (9) species selected for revegetation efforts and  
6 the specified planting density and structure should  
7 be suitable for the local climate, taking into account  
8 future climate resilience and other considerations;

9 (10) scientific knowledge should be combined  
10 with local knowledge, and site conditions should be  
11 taken into account, in developing revegetation  
12 projects, and ideally small-scale planting trials  
13 should take place before planting large numbers of  
14 trees;

15 (11) partnerships with local communities are  
16 key to the success of tree and vegetation planting  
17 projects because local people often have the most to  
18 gain from those projects;

19 (12) a successful planting project must include  
20 a plan on how to source seeds or seedlings that  
21 match desired species and genetics, and that plan  
22 should involve working with local stakeholders;

23 (13) the sustainability of revegetation projects  
24 is dependent on the economic impacts for all stake-  
25 holders; and

1           (14) invasive grasses are a catalyst for wildfires  
2           in forests and rangelands.

3 **SEC. 3. DEFINITIONS.**

4           In this Act:

5           (1) CARBON SEQUESTRATION.—The term “car-  
6           bon sequestration” means the capture and long-term  
7           storage of atmospheric carbon dioxide.

8           (2) NATIONAL FOREST SYSTEM.—The term  
9           “National Forest System” has the meaning given  
10          the term in section 11(a) of the Forest and Range-  
11          land Renewable Resources Planning Act of 1974 (16  
12          U.S.C. 1609(a)).

13          (3) SECRETARIES.—The term “Secretaries”  
14          means the Secretary of the Interior and the Sec-  
15          retary of Agriculture, acting through the Chief of  
16          the Forest Service.

17          (4) SECRETARY.—Except in sections 103,  
18          105(b), 201, 202, and 302, the term “Secretary”  
19          means the Secretary of the Interior.

20          (5) SECRETARY CONCERNED.—The term “Sec-  
21          retary concerned” means the Secretary of the Inte-  
22          rior or the Secretary of Agriculture, acting through  
23          the Chief of the Forest Service.

# **TITLE I—REVEGETATION**

## **SEC. 101. CLIMATE ADAPTATION AND RESILIENT FORESTS AND RANGELAND MEASURES.**

(a) IN GENERAL.—Not later than 2 years after the date of enactment of this Act, the Secretaries shall each revise applicable regulations of the Secretary concerned to require the consideration and assessment of resiliency and adaptation factors in developing strategies and efforts for revegetation, including reforestation and rangeland planting, carried out by the Secretary concerned, including in selecting species for planting.

(b) EFFECT.—Nothing in this section affects—

(1) the reforestation requirements under section 3 of the Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1601); or

(2) the use of the forest plan revision process to make changes to reforestation approaches in an individual unit of the National Forest System.

## **SEC. 102. NATIONAL REVEGETATION EFFORT.**

(a) DEFINITIONS.—In this section:

(1) FEDERAL LAND.—The term “Federal land” means—

(A) National Forest System land, except—

(i) the national grasslands and land utilization projects administered under title

1 III of the Bankhead-Jones Farm Tenant  
2 Act (7 U.S.C. 1010 et seq.); and

3 (ii) National Forest System land east  
4 of the 100th meridian; and

5 (B) land under the jurisdiction of the Sec-  
6 retary.

7 (2) TASK FORCE.—The term “task force”  
8 means an interagency revegetation task force estab-  
9 lished under subsection (d).

10 (3) ZONE.—The term “zone” means a zone de-  
11 scribed in subsection (c).

12 (b) ASSESSMENT OF REVEGETATION NEEDS.—

13 (1) FEDERAL LAND ASSESSMENT.—

14 (A) IN GENERAL.—Not later than 1 year  
15 after the date of enactment of this Act, the Sec-  
16 retaries shall assess, using the revegetation as-  
17 sessment tool described in paragraph (2), the  
18 number of acres of Federal land in need of re-  
19 vegetation, including—

20 (i) acres that have experienced a  
21 stand-replacing disturbance by a wildfire,  
22 windstorm, or other natural event;

23 (ii) acres on which a regeneration har-  
24 vest has previously taken place; and

1 (iii) acres that could benefit from ap-  
2 propriate revegetation, as determined by  
3 the Secretaries.

4 (B) ECOLOGICAL FORESTRY.—In con-  
5 ducting the assessment under subparagraph  
6 (A), the Secretaries shall consider the role of  
7 recovery periods between disturbances for the  
8 development of stand complexity.

9 (2) REVEGETATION ASSESSMENT TOOL.—Not  
10 later than 180 days after the date of enactment of  
11 this Act, the Secretaries shall jointly develop, or use  
12 or expand an existing, objective revegetation assess-  
13 ment tool for each zone that uses a point system or  
14 rating scale—

15 (A) to consistently assess in various geo-  
16 graphic areas, site classes, and forest and  
17 rangeland types whether an acre of Federal  
18 land is adequately occupied by well-distributed,  
19 countable, ecologically appropriate trees or  
20 other desirable vegetation;

21 (B) to assist rapidly assessing revegetation  
22 needs on Federal land; and

23 (C) to establish baseline conditions for  
24 Federal land.



1           (3) FOREST AND RANGELAND COVER RESTORA-  
2           TION ON NON-FEDERAL LAND.—

3           (A) PARTNERSHIP FOR FOREST AND  
4           RANGELAND COVER RESTORATION.—The Secre-  
5           taries may enter into a partnership with a non-  
6           Federal entity, including Indian Tribes, with  
7           data or expertise in Federal reforestation—

8                   (i) to assess the opportunity to restore  
9                   forest or rangeland cover across non-Fed-  
10                  eral land in the United States; or

11                  (ii) to share existing data gathered by  
12                  the non-Federal entity.

13           (B) SAVINGS CLAUSE.—Nothing in this  
14           paragraph grants the Secretary concerned any  
15           additional authority over or additional access to  
16           non-Federal land.

17           (4) REPORT.—Not later than 18 months after  
18           the date of enactment of this Act, the Secretaries  
19           shall publish a report describing—

20                  (A) the number of acres of—

21                   (i) Federal land in need of revegeta-  
22                   tion; and

23                   (ii) non-Federal land in the United  
24                   States on which forest or rangeland cover  
25                   can be restored and the owner of which

1           has requested to be included in a com-  
2           prehensive revegetation strategy and imple-  
3           mentation plan developed under subsection  
4           (e)(2)(A); and  
5           (B) the approximate location of the land  
6           described under subparagraph (A).

7           (c) REGIONAL ZONES FOR REVEGETATION EF-  
8 FORTS.—The Secretaries shall use the regions of the Na-  
9 tional Forest System as the zones for revegetation efforts  
10 conducted by the task forces under this section.

11          (d) INTERAGENCY TASK FORCES.—Not later than 18  
12 months after the date of enactment of this Act, the Secre-  
13 taries shall establish an interagency revegetation task  
14 force of Federal and non-Federal members, including In-  
15 dian Tribes, for each zone—

16           (1) to coordinate and carry out the activities  
17           described in subsections (e), (f), and (g); and

18           (2) to maximize collaboration and shared  
19           science and mapping resources among Federal and  
20           non-Federal entities, including Indian Tribes, in re-  
21           vegetating land in each zone, including through the  
22           use of—

23           (A) Department of Agriculture climate  
24           hubs;

1 (B) collaboratives formed pursuant to sec-  
2 tion 4003 of the Omnibus Public Land Manage-  
3 ment Act of 2009 (16 U.S.C. 7303); and

4 (C) partnerships with States developed  
5 under shared stewardship agreements.

6 (e) COMPREHENSIVE REVEGETATION STRATEGY AND  
7 IMPLEMENTATION PLANS.—

8 (1) DATA REVIEW.—Each task force—

9 (A) shall review the report published under  
10 subsection (b)(4); and

11 (B) may modify, for the applicable zone,  
12 the number of acres of land in need of revegeta-  
13 tion and the approximate location of the land  
14 identified in the report, as necessary.

15 (2) PLAN DEVELOPMENT.—

16 (A) IN GENERAL.—Not later than 180  
17 days after the date on which a task force is es-  
18 tablished, the task force shall develop a 10-year  
19 comprehensive revegetation strategy and imple-  
20 mentation plan—

21 (i) to revegetate not less than 25 per-  
22 cent of the land identified in the report  
23 published under subsection (b)(4), as  
24 modified under paragraph (1)(B) (if appli-  
25 cable), for the applicable zone; and

1 (ii) to achieve any additional goals or  
2 targets established by the task force.

3 (B) REQUIREMENTS.—A plan developed  
4 under subparagraph (A) shall—

5 (i) take into account the best available  
6 science, best practices, and available de-  
7 ployment tools, including climate science  
8 that can inform the design of revegetated  
9 areas to assure resilience;

10 (ii) be based on, to the maximum ex-  
11 tent practicable, the report published  
12 under subsection (b)(4);

13 (iii) identify resources and efforts  
14 needed to conduct appropriate revegetation  
15 treatments in the applicable zone, includ-  
16 ing identifying areas in which capacity ex-  
17 ists to plant vegetation or conduct seed  
18 dispersal;

19 (iv) identify the desired, locally or re-  
20 gionally adapted native species of vegeta-  
21 tion and the types planting stock required  
22 in the specific areas in the zone in need of  
23 revegetation, including ecosystems that do  
24 not include trees, such as sagebrush eco-  
25 systems, grasslands, or rangelands;

1 (v) identify under-represented species  
2 of trees and plants in each zone that can  
3 be acquired and should be planted under  
4 this section;

5 (vi) prioritize geographic areas in the  
6 applicable zone in need of revegetation, in-  
7 cluding giving priority to—

8 (I) burned areas and any other  
9 destabilized land that pose heightened  
10 risks to homes, roads, and public  
11 water supplies if not revegetated;

12 (II) areas at high risk of estab-  
13 lishing invasive species;

14 (III) mined land;

15 (IV) floodplains and riparian  
16 areas; and

17 (V) land with regionally signifi-  
18 cant carbon sequestration potential;

19 (vii) identify—

20 (I) targets or goals for the num-  
21 ber of acres planted annually; and

22 (II) other implementation actions  
23 and opportunities;

24 (viii) identify areas in which—

1 (I) vegetation restoration is need-  
2 ed; but

3 (II) natural regeneration is the  
4 most effective means of restoration;

5 (ix) identify areas in which revegeta-  
6 tion efforts—

7 (I) may cause an increased risk  
8 of a stand-replacing wildfire, disease,  
9 or insect infestation, if not properly  
10 managed; or

11 (II) would be adverse to livestock  
12 grazing or use by wildlife;

13 (x) consider treatments that increase  
14 the carbon sequestration capacity of for-  
15 ests, rangelands, and grasslands;

16 (xi) provide for—

17 (I) consideration of palatability  
18 to support grazing by wildlife and  
19 livestock; and

20 (II) coordination with State wild-  
21 life agencies, rangeland management  
22 professionals, and ranchers;

23 (xii) incorporate the data and strategy  
24 relating to nurseries and the availability of  
25 planting stock described in subsection (g);

1 (xiii) for activities recommended to be  
2 carried out on non-Federal land—

3 (I) identify ways to address re-  
4 vegetation needs voluntarily by work-  
5 ing with States, landowners, Indian  
6 Tribes, and other interested persons;  
7 and

8 (II) ensure that revegetation ef-  
9 forts will not adversely impact existing  
10 markets for timber and other forest  
11 materials produced from private work-  
12 ing forests;

13 (xiv) provide an explanation for any  
14 land not included in the implementation  
15 portion of the plan that was identified in  
16 the report published under subsection  
17 (b)(4), as modified under paragraph (1)(B)  
18 (if applicable);

19 (xv) utilize an experimental approach,  
20 where appropriate; and

21 (xvi) be consistent with any applicable  
22 agency land management plans.

23 (C) EXCEPTIONS.—Notwithstanding sub-  
24 paragraph (B)(iv), a task force may determine  
25 that the selection and use of certain desirable,

1 noninvasive, nonnative species is appropriate in  
2 certain limited circumstances, based on local-  
3 ized ecological conditions, as determined by the  
4 task force.

5 (3) PLAN MODIFICATIONS.—A task force may  
6 modify a plan developed under paragraph (2) to ad-  
7 dress new circumstances or changing conditions.

8 (f) IMPLEMENTATION OF PLANS.—

9 (1) IN GENERAL.—During the 10-year period  
10 beginning on the date on which a plan for a zone is  
11 completed under subsection (e)(2), the task force, in  
12 coordination with applicable Federal agencies, shall  
13 implement the plan.

14 (2) OUTSIDE FUNDING.—To implement a plan  
15 developed under subsection (e)(2), the Secretary  
16 concerned may—

17 (A) accept non-Federal funds, including  
18 leveraging funding opportunities relating to vol-  
19 untary carbon mitigation; and

20 (B) issue a certificate of donation, as ap-  
21 propriate.

22 (3) VOLUNTARY PARTICIPATION.—In imple-  
23 menting a plan under this subsection, any activities  
24 carried out on non-Federal land shall be carried  
25 out—



1 (A) in cooperation with the owner of the  
2 non-Federal land; and

3 (B) only on a voluntary basis.

4 (4) ENTERPRISE TEAM.—The Secretary con-  
5 cerned may employ a Forest Service enterprise team  
6 to facilitate the implementation of a plan developed  
7 under subsection (e)(2).

8 (g) CHALLENGES TO THE REFORESTATION PIPELINE  
9 IN THE UNITED STATES.—

10 (1) IN GENERAL.—A task force shall—

11 (A) not later than 60 days after the date  
12 on which the task force is established, conduct  
13 an inventory of nurseries, an assessment of  
14 nursery capacity, and a tally of available plant-  
15 ing stock in the applicable zone; and

16 (B) based on the report published under  
17 subsection (b)(4), as modified under subsection  
18 (e)(1)(B) (if applicable)—

19 (i) estimate the capacity of nurseries  
20 that would be necessary to fulfill revegeta-  
21 tion needs, including identifying the species  
22 and types of planting stock needed for re-  
23 vegetation; and

24 (ii) develop a plan for increasing the  
25 number and capacity of nurseries, in ac-

1 cordance with the estimates under clause  
2 (i).

3 (2) SEED COLLECTING.—A task force shall—

4 (A) assess the current capacity to locally  
5 collect and store seed; and

6 (B) develop a plan for increasing capacity  
7 described in subparagraph (A), if necessary.

8 (3) PARTNERSHIPS.—The Secretaries may  
9 enter into a partnership with a non-Federal entity to  
10 assist a task force in meeting the requirements of  
11 this subsection.

12 (h) REPORT TO CONGRESS.—Not later than 1 year  
13 after the date of enactment of this Act, and annually  
14 thereafter until the date on which each plan developed  
15 under subsection (e)(2) is fully implemented, the Secre-  
16 taries shall submit to the Committee on Energy and Nat-  
17 ural Resources of the Senate and the Committee on Nat-  
18 ural Resources of the House of Representatives, and pub-  
19 lish on the website of the Department of the Interior, a  
20 report that describes, with respect to the preceding year—

21 (1) whether the Secretaries have achieved com-  
22 pliance with the requirements of this section;

23 (2) the total number of acres of land, reported  
24 by surface ownership in each zone, in need of revege-  
25 tation treatments;

1           (3) the total number of acres of land, reported  
2           by surface ownership in each zone, in which revege-  
3           tation treatments have been carried out;

4           (4) any other accomplishments and improve-  
5           ments to carbon sequestration capacity or other co-  
6           benefits as a result of implementing a plan under  
7           subsection (e)(2); and

8           (5) any barriers to implementation of a plan de-  
9           veloped under subsection (e)(2), including as a result  
10          of legal issues, logistical issues, seed or sapling  
11          shortages, or lack of funding.

12          (i) PARTNERSHIPS.—The Secretaries may enter into  
13          a memorandum of agreement with any member of a task  
14          force to carry out any activity described in subsection (e),  
15          (f), (g), or (h).

16          (j) EFFECT.—Nothing in this section establishes new,  
17          extends existing, or otherwise affects post-fire rehabilita-  
18          tion no-grazing requirements.

19          (k) AVOIDANCE OF DUPLICATION.—In carrying out  
20          this section, the Secretaries shall—

21                 (1) avoid duplicative efforts and, to the max-  
22                 imum extent practicable, utilize existing efforts and  
23                 personnel to develop and implement an activity de-  
24                 scribed in subsection (e), (f), (g), or (h);

25                 (2) maximize non-Federal involvement; and

1           (3) avoid using personnel who would otherwise  
2           be engaged in forest management or wildfire mitiga-  
3           tion efforts.

4 **SEC. 103. EXPERIMENTAL FORESTS.**

5           (a) **PURPOSES OF THIS SECTION.**—The purposes of  
6 this section are—

7           (1) to formally authorize the experimental for-  
8           ests and rangelands on National Forest System land  
9           existing on the date of enactment of this Act; and

10           (2) to require that—

11                   (A) the network of those experimental for-  
12                   ests and rangelands be maintained in per-  
13                   petuity; and

14                   (B) climate resiliency research is continu-  
15                   ously conducted within the network.

16           (b) **ESTABLISHMENT OF NETWORK.**—The Secretary  
17 of Agriculture, acting through the Chief of the Forest  
18 Service (referred to in this section as the “Secretary”),  
19 shall establish and manage a network of experimental for-  
20 ests and ranges on National Forest System land (referred  
21 to in this section as the “network”).

22           (c) **MANAGEMENT PURPOSES.**—The Secretary shall  
23 manage the network for the purposes of—

24           (1) research;

25           (2) technology transfer; and

1           (3) education.

2           (d) CRITERIA.—The network shall include—

3           (1) each of the forest cover types that occur in  
4           the United States, as defined by the Forest Cover  
5           Types of the United States and Canada published by  
6           the Society of American Forests;

7           (2) an experimental forest that contains forest  
8           cover types found in the State of Hawaii; and

9           (3) an experimental forest that contains forest  
10          cover types found in the territories of the United  
11          States.

12          (e) CLIMATE RESILIENCY RESEARCH.—Within the  
13          network, the Secretary shall conduct research, including  
14          research on—

15          (1) seedling establishment, site suitability, and  
16          tree planting designs to inform and assist efforts un-  
17          dertaken in the United States to establish stands of  
18          trees that are resilient in future climate conditions;  
19          and

20          (2) the sources and fates of carbon to construct  
21          and improve models of carbon responses to land  
22          management practices.

23          (f) PUBLIC ACCESS.—All data collected and research  
24          findings developed from projects undertaken on the net-  
25          work shall be made readily accessible to the public.

1 (g) PARTNERS.—The Secretary may enter into an  
2 agreement with a State (including a State forestry agen-  
3 cy), an educational institution, or a third party to fund  
4 or conduct research on the network.

5 (h) REPORT.—Not later than 18 months after the  
6 date of enactment of this Act, the Secretary shall submit  
7 to the Committee on Energy and Natural Resources of  
8 the Senate and the Committee on Natural Resources of  
9 the House of Representatives a report describing, with re-  
10 spect to the network—

11 (1) the location of the network on National  
12 Forest System land;

13 (2) the forest cover types included in the net-  
14 work; and

15 (3) any additional resources needed—

16 (A) to establish or maintain infrastructure  
17 in an established experimental forest; or

18 (B) to conduct the research described in  
19 subsection (d).

20 (i) SAVINGS CLAUSE.—Nothing in this section—

21 (1) modifies, limits, or repeals the applicability  
22 of any provision of law (including regulations) to  
23 National Forest System land; or

24 (2) precludes the Secretary from authorizing  
25 multiple-use activities, including livestock grazing

1 and other authorized uses on land included within  
2 the network.

3 **SEC. 104. LONG-TERM CONTRACTS FOR TREE AND SEED**  
4 **PLANTING.**

5 (a) IN GENERAL.—Notwithstanding the Federal Ac-  
6 quisition Regulation, the Secretary concerned may enter  
7 into a contract or cooperative agreement for re-estab-  
8 lishing vegetation on Federal land described in subsection  
9 (b).

10 (b) FEDERAL LAND.—Federal land referred to in  
11 subsection (a) is—

12 (1) National Forest System land, other than—

13 (A) the national grasslands and land utili-  
14 zation projects administered under title III of  
15 the Bankhead-Jones Farm Tenant Act (7  
16 U.S.C. 1010 et seq.); and

17 (B) National Forest System land east of  
18 the 100th meridian;

19 (2) public lands (as defined in section 103 of  
20 the Federal Land Policy and Management Act of  
21 1976 (43 U.S.C. 1702));

22 (3) land that the Secretary holds in trust for an  
23 Indian Tribe;

24 (4) a unit of the National Wildlife Refuge Sys-  
25 tem;

1 (5) land administered by the Bureau of Rec-  
2 lamation; and

3 (6) a unit of the National Park System.

4 (c) TERM.—A contract or cooperative agreement de-  
5 scribed in subsection (a) shall be for a term of not more  
6 than 10 years.

7 **SEC. 105. TREE PLANTING FOR COMMUNITIES.**

8 (a) JOB CORPS PROGRAM.—The Secretary of Labor  
9 shall—

10 (1) develop a career and technical education  
11 and training program focused on tree planting or  
12 tree maintenance; and

13 (2) offer the program as part of the Job Corps  
14 program.

15 (b) RETAIL POWER PROVIDER TREE PLANTING  
16 GRANT PROGRAM.—

17 (1) ESTABLISHMENT.—The Secretary of En-  
18 ergy (referred to in this subsection as the “Sec-  
19 retary”), in consultation with the Secretaries, shall  
20 establish a program under which the Secretary shall  
21 award grants to States, Indian Tribes, local govern-  
22 ments, nonprofit organizations, and retail power pro-  
23 viders to conduct tree planting projects in accord-  
24 ance with this subsection (referred to in this sub-  
25 section as the “program”).



1           (2) APPLICATIONS.—An entity seeking to re-  
2           ceive a grant under the program shall submit to the  
3           Secretary an application at such time, in such form,  
4           and containing such information as the Secretary  
5           may require, including a description of how the  
6           project to be carried out using the grant funds will  
7           reduce residential energy consumption.

8           (3) PRIORITY.—In awarding grants under the  
9           program, the Secretary shall—

10                   (A) give priority to tree planting projects  
11                   that would provide the largest potential reduc-  
12                   tion in residential energy consumption for  
13                   households; and

14                   (B) for projects to be carried out in an ur-  
15                   banized area of the United States, analyze tree  
16                   equity scores to prioritize socioeconomically dis-  
17                   advantaged neighborhoods with the greatest  
18                   need.

19           (4) VARIETY OF GEOGRAPHIC LOCATIONS.—In  
20           awarding grants under the program, the Secretary  
21           shall ensure diverse and equitable geographic rep-  
22           resentation among the grant recipients.

23           (5) COST-SHARE.—

24                   (A) FEDERAL SHARE.—Subject to sub-  
25                   paragraph (C), the Federal share of the cost of

1 a tree planting project carried out using a grant  
2 under the program shall be not more than 50  
3 percent.

4 (B) NON-FEDERAL SHARE.—The non-Fed-  
5 eral share of the cost of a tree planting project  
6 carried out using a grant under the program  
7 may be in the form of—

8 (i) cash or donations received directly  
9 from non-Federal sources; or

10 (ii) in-kind contributions.

11 (C) WAIVER.—The Secretary may, on a  
12 case-by-case basis, increase the Federal share  
13 described in subparagraph (A) if a tree planting  
14 project carried out using a grant under the pro-  
15 gram is located wholly in an economically dis-  
16 tressed community.

17 **SEC. 106. REVEGETATION ON ABANDONED MINE LAND.**

18 (a) PILOT PROGRAM.—

19 (1) ESTABLISHMENT.—Using funding available  
20 to the Secretary, the Secretary shall establish a pilot  
21 program to establish native trees, shrubs, or grasses  
22 (referred to in this section as “vegetation”) on eligi-  
23 ble mined land described in paragraph (6).

1           (2) FINANCIAL ASSISTANCE.—In carrying out  
2 the pilot program established under paragraph (1),  
3 the Secretary shall—

4           (A) in coordination with the Secretary of  
5 Agriculture, establish vegetation on eligible  
6 mined land located on Federal land;

7           (B) offer financial assistance to States to  
8 establish native vegetation on eligible mined  
9 land located on State land;

10          (C) offer financial assistance to Indian  
11 Tribes to establish native vegetation on eligible  
12 mined land located on Tribal land or land held  
13 in Trust for an Indian Tribe; and

14          (D) establish vegetation or offer financial  
15 assistance to States or other entities to estab-  
16 lish native vegetation on eligible mined land lo-  
17 cated on private land.

18          (3) COMPATIBILITY WITH EXISTING OPER-  
19 ATIONS.—

20          (A) CONSULTATION.—Prior to selecting a  
21 project for funding under the pilot program es-  
22 tablished under paragraph (1), the Secretary  
23 shall consult with, as applicable, the relevant  
24 Office of Surface Mining Reclamation and En-  
25 forcement abandoned mine land program office

1 to confirm that the proposed project is compat-  
2 ible with any current mining, exploration, or  
3 reclamation activities.

4 (B) RESTRICTION.—The Secretary shall  
5 not provide financial assistance under para-  
6 graph (2) to a person or entity with an ongoing  
7 legal obligation to revegetate the land in a  
8 project area.

9 (4) ACTIVITIES.—The following activities asso-  
10 ciated with a project to establish vegetation on eligi-  
11 ble mined land shall be eligible for financial assist-  
12 ance under paragraph (2):

13 (A) Site preparation, including ripping  
14 compacted soils and incorporating soil amend-  
15 ments.

16 (B) Vegetation planting.

17 (C) Maintenance, including watering, to  
18 the extent necessary to establish vegetation  
19 under this section.

20 (D) Managing competing vegetation.

21 (5) PREFERENCE.—Under the pilot program  
22 established under paragraph (1), the Secretary shall,  
23 to the maximum extent practicable, seek to establish  
24 vegetation that—

25 (A) is ecologically appropriate; and

1 (B)(i) has a high capacity to sequester and  
2 store carbon;

3 (ii) serves to reconnect established land-  
4 scapes or enhance habitat connectivity; or

5 (iii) would establish wildlife habitat that is  
6 underrepresented in the State in which the  
7 project is located.

8 (6) ELIGIBLE MINED LAND.—To be eligible for  
9 financial assistance under paragraph (2), a tree  
10 planting project shall be located on—

11 (A) land that was mined prior to the date  
12 of enactment of this Act;

13 (B) in the case of State land or private  
14 land, land that is accessible to the public for  
15 not less than 1 day per year; and

16 (C) in the case of private land, land owned  
17 by a person, or a nongovernmental organiza-  
18 tion, that has submitted to the Secretary or the  
19 State in which the land is located a request  
20 seeking to participate in the pilot program  
21 under this section.

22 (7) TERMINATION.—The pilot program estab-  
23 lished under paragraph (1) shall be in effect for the  
24 8-year period beginning on the date of enactment of  
25 this Act.

1 (b) REPORT.—Not later than 18 months after the  
2 date of enactment of this Act, the Secretary shall submit  
3 to the Committee on Energy and Natural Resources of  
4 the Senate and the Committee on Natural Resources of  
5 the House of Representatives a report describing the ac-  
6 complishments of the pilot program established under sub-  
7 section (a)(1), including—

8 (1) jobs created or supported in rural areas;

9 (2) increases in the abundance of wildlife spe-  
10 cies, including game species and song birds;

11 (3) opportunities for hunting and other compat-  
12 ible outdoor recreation; and

13 (4) an estimate of—

14 (A) carbon sequestered during the 5-year  
15 period beginning on the date on which the pilot  
16 program is established; and

17 (B) projected additional carbon sequestra-  
18 tion and storage during the 15-year period be-  
19 ginning on the last day of the period described  
20 in subparagraph (A).

21 **SEC. 107. INTERNATIONAL REFORESTATION.**

22 The Secretary of Agriculture, acting through the  
23 Chief of the Forest Service, may—

24 (1) evaluate a request from another country for  
25 technical assistance for tree planting activities;

1           (2) subject to the evaluation under paragraph  
 2           (1) and the availability of Forest Service personnel  
 3           and funding, provide to another country technical  
 4           assistance for tree planting activities, including shar-  
 5           ing—

6                     (A) personnel; and

7                     (B) knowledge through communications  
 8                     and technical on-site instruction; and

9           (3) enter into a partnership with a nongovern-  
 10           mental entity that is located outside the United  
 11           States or that is located in the United States and  
 12           operates internationally—

13                    (A) to engage in activities that restore  
 14                    vegetation; and

15                    (B) to promote and improve global carbon  
 16                    sequestration through revegetation activities.

17 **TITLE II—CARBON SEQUESTRA-**  
 18 **TION THROUGH FOREST MAN-**  
 19 **AGEMENT AND INNOVATION**

20 **SEC. 201. FOREST MANAGEMENT FROM CARBON CREDITS.**

21           (a) DEFINITIONS.—In this section:

22                     (1) CARBON CREDIT.—The term “carbon cred-  
 23                     it” means a carbon or greenhouse gas credit, offset,  
 24                     or other defined unit—

1 (A) approved by a credible, third-party en-  
2 tity; and

3 (B) as determined by the Secretary.

4 (2) CARBON CREDIT PROGRAM.—The term  
5 “carbon credit program” means a voluntary program  
6 or market that issues, assigns, trades, or sells car-  
7 bon credits.

8 (3) COVERED ACTIVITY.—The term “covered  
9 activity” means an improved forest management ac-  
10 tivity, including a hazardous fuel treatment, mechan-  
11 ical thinning, or timber harvesting project, that is—

12 (A) ecologically appropriate;

13 (B) carried out on National Forest System  
14 land;

15 (C) designed—

16 (i) to increase rates of carbon seques-  
17 tration;

18 (ii) to increase long-term carbon stor-  
19 age in durable wood products; or

20 (iii) to mitigate or avoid carbon emis-  
21 sions;

22 (D) carried out by—

23 (i) the Secretary; or



1 (ii) a non-Federal entity under any  
2 existing authority available to the Sec-  
3 retary; and

4 (E) not in competition with or adverse to  
5 the issuance, assignment, trading, or selling of  
6 forest carbon in the private sector.

7 (4) NATIONAL FOREST SYSTEM.—The term  
8 “National Forest System” does not include—

9 (A) the national grasslands and land utili-  
10 zation projects administered under title III of  
11 the Bankhead-Jones Farm Tenant Act (7  
12 U.S.C. 1010 et seq.); or

13 (B) National Forest System land east of  
14 the 100th meridian.

15 (5) SECRETARY.—The term “Secretary” means  
16 the Secretary of Agriculture, acting through the  
17 Chief of the Forest Service.

18 (b) FUNDS ASSOCIATED WITH CARBON CREDITS  
19 FOR FOREST MANAGEMENT.—

20 (1) IN GENERAL.—The Secretary may use to  
21 support the implementation of covered activities,  
22 without further appropriation or fiscal year limita-  
23 tion, funds received from a non-Federal entity—

24 (A) through a carbon credit program; or

1 (B) for a carbon credit generated from Na-  
2 tional Forest System land.

3 (2) SUPPLEMENT, NOT SUPPLANT.—Amounts  
4 made available under paragraph (1) shall supple-  
5 ment, and not supplant, any other amounts made  
6 available for covered activities.

7 (c) MANAGEMENT OF CARBON CREDIT TRANS-  
8 ACTIONS BY NATIONAL FOREST FOUNDATION.—

9 (1) IN GENERAL.—The National Forest Foun-  
10 dation shall receive and distribute any funds received  
11 under subsection (b)(1).

12 (2) OTHER PARTNERS.—The National Forest  
13 Foundation may work with other entities that use  
14 funds received through a carbon credit program or  
15 for a carbon credit generated from National Forest  
16 System land to design, manage, account for, or im-  
17 plement a covered activity.

18 (3) METHODOLOGY.—For the management of  
19 transactions described in this section, the National  
20 Forest Foundation, in collaboration with the Sec-  
21 retary, shall develop and use a methodology that cal-  
22 culates the predicted increase in carbon sequestra-  
23 tion or in the longevity of long-term carbon storage  
24 for a project or the avoided release of carbon due to

1 reduction of the risk of high-severity fire and other  
2 disturbances, by considering—

3 (A) retention of forest cover;

4 (B) carbon sequestration rates before and  
5 after the implementation of a covered activity;

6 (C) reduction in the risk of tree mortality;

7 (D) restoration of historic fire regimes;

8 and

9 (E) the long-term storage of carbon in  
10 long-lasting wood products.

11 (d) REPORTS TO CONGRESS.—The Secretary, in col-  
12 laboration with the National Forest Foundation, shall an-  
13 nually submit to Congress a report describing the status  
14 of the program under this section, including—

15 (1) the extent to which additional covered ac-  
16 tivities that were implemented with funding received  
17 under subsection (b)(1) have been carried out; and

18 (2) any recommendations to improve or expand  
19 the program, including expansion of the authorities  
20 under this section to land managed by the Secretary  
21 of the Interior.

22 (e) EFFECT.—Nothing in this section authorizes any  
23 activity that is inconsistent with—

24 (1) any applicable forest plan; or

1           (2) any other provision of law (including regula-  
2           tions).

3 **SEC. 202. RECOVERY AND RESTORATION TREATMENTS**  
4                   **FOLLOWING STAND-REPLACING DISTURB-**  
5                   **ANCES.**

6           (a) **DEFINITION OF STAND-REPLACING DISTURB-**  
7 **ANCE.**—In this section, the term “stand-replacing disturb-  
8 ance” means a natural disturbance event, including a  
9 wildland fire or other event, that kills all or most of the  
10 living overstory trees in a stand and initiates forest succes-  
11 sion or regrowth on a unit of the National Forest System.

12           (b) **PILOT NATIONAL FORESTS.**—Not later than 1  
13 year after the date of enactment of this Act, the Secretary  
14 of Agriculture, acting through the Chief of the Forest  
15 Service (referred to in this section as the “Secretary”),  
16 shall identify units of the National Forest System that the  
17 Secretary determines to be at high or very high risk of  
18 experiencing a stand-replacing disturbance during the 10-  
19 year period following the date of enactment of this Act.

20           (c) **INTERDISCIPLINARY TEAMS.**—

21           (1) **IN GENERAL.**—Not later than 2 years after  
22 the date of enactment of this Act, the Secretary  
23 shall establish an interdisciplinary post-disturbance  
24 planning team (referred to in this section as the

1 “team”) to assist in carrying out the requirements  
2 of this section.

3 (2) TEAMS ENTERPRISE.—The Secretary may  
4 employ a Forest Service enterprise team or a re-  
5 gional planning center to meet the requirement of  
6 this subsection.

7 (d) MODEL LAND AND RESOURCE MANAGEMENT  
8 PLAN AMENDMENT.—

9 (1) IN GENERAL.—Not later than 2 years after  
10 the date of enactment of this Act, the Secretary, in  
11 cooperation with the team, shall develop a model  
12 land and resource management plan amendment es-  
13 tablishing plan content for future site-specific  
14 project-level decisions if a stand-replacing disturb-  
15 ance occurs on units of the National Forest System  
16 identified under subsection (b).

17 (2) CONTENT.—The model amendment required  
18 under paragraph (1) shall include direction regard-  
19 ing post-disturbance management, including salvage  
20 logging and reforestation activities, to achieve de-  
21 sired conditions, objectives, standards, guidelines,  
22 suitability of lands, and other plan content, includ-  
23 ing goals and monitoring provisions, of the existing  
24 land and resource management plan on the applica-

1 ble unit of the National Forest System, if a stand-  
2 replacing disturbance occurs.

3 (3) USE OF MODEL LAND AND RESOURCE MAN-  
4 AGEMENT PLAN AMENDMENT.—The Secretary shall  
5 utilize the Model Land and Resource Management  
6 Plan Amendment, as adapted to the unique ecologi-  
7 cal and socioeconomic setting for each unit of the  
8 National Forest System identified under subsection  
9 (b), in carrying out subsection (e).

10 (e) LAND AND RESOURCE MANAGEMENT PLAN  
11 AMENDMENTS.—

12 (1) IN GENERAL.—As soon as practicable, but  
13 not later than 10 years, after the date of enactment  
14 of this Act, the Secretary, assisted by the team, shall  
15 amend the applicable land and resource management  
16 plan of each unit of the National Forest System  
17 identified under subsection (b).

18 (2) PROCESS.—The Secretary shall comply with  
19 all relevant laws in carrying out this section.

20 (3) ELECTION.—The Secretary may comply  
21 with the provisions of this section by incorporating  
22 the requirements of this section into an ongoing land  
23 and resource management plan revision or amend-  
24 ment process.

1 **SEC. 203. BIOCHAR AND WOOD WASTE.**

2 (a) **FOOD AND DRUG ADMINISTRATION BIOCHAR**  
3 **PILOT PROGRAM.—**

4 (1) **IN GENERAL.—**The Commissioner of Food  
5 and Drugs (referred to in this subsection as the  
6 “Commissioner”), in consultation with the Secretary  
7 of Agriculture and in coordination with States, shall  
8 establish a pilot program to grant a nationwide food  
9 use authorization of biochar as a feed additive for  
10 cattle.

11 (2) **TERMS.—**The pilot program described in  
12 this subsection shall be—

13 (A) for a period of not more than 5 years;

14 and

15 (B) subject to any conditions that the  
16 Commissioner determines appropriate.

17 (3) **SAVINGS CLAUSE.—**The Commissioner shall  
18 ensure that participation in the pilot program under  
19 this subsection is voluntary.

20 (b) **USGS COMMERCIALIZATION PLAN.—**

21 (1) **IN GENERAL.—**Not later than 1 year after  
22 the date of enactment of this Act, the Secretary, act-  
23 ing through the Director of the United States Geo-  
24 logical Survey, in coordination with any relevant  
25 non-Federal entities, shall develop and publish a na-  
26 tional commercialization plan for the production,

1 sale, and use of biochar as a soil amendment for  
2 plant growth improvement, including for commercial,  
3 agricultural, and residential use.

4 (2) REQUIREMENT.—The commercialization  
5 plan required under paragraph (1) shall, at a min-  
6 imum—

7 (A) identify—

8 (i) impediments to producing large  
9 quantities of biochar for agricultural, for-  
10 estry, or other commercial uses; and

11 (ii) solutions for those impediments;

12 and

13 (B) propose a framework for demonstra-  
14 tion efforts to increase consumer demand for  
15 biochar.

16 **SEC. 204. ERADICATION OF INVASIVE GRASSES.**

17 (a) DEFINITIONS.—In this section:

18 (1) ACTION PLAN.—The term “action plan”  
19 means the action plan developed under subsection  
20 (b).

21 (2) FEDERAL LAND.—The term “Federal land”  
22 means—

23 (A) National Forest System land, except—

24 (i) the national grasslands and land  
25 utilization projects administered under title



1 III of the Bankhead-Jones Farm Tenant  
2 Act (7 U.S.C. 1010 et seq.); and

3 (ii) National Forest System land east  
4 of the 100th meridian; and

5 (B) land under the jurisdiction of the Sec-  
6 retary.

7 (3) INVASIVE GRASS.—The term “invasive  
8 grass” means—

9 (A) cheatgrass;

10 (B) ventenata;

11 (C) medusahead; and

12 (D) any additional invasive, nonnative an-  
13 nual grass species that the Secretaries deter-  
14 mine pose a risk by—

15 (i) increasing fire vulnerability and  
16 fire spread; and

17 (ii) altering fire regimes.

18 (4) TARGET TREATMENT AREA.—The term  
19 “target treatment area” means a target treatment  
20 area described in subsection (b)(2)(D).

21 (b) ACTION PLAN.—

22 (1) IN GENERAL.—The Secretaries shall jointly  
23 develop and implement an action plan to map, treat,  
24 and control invasive grass—

1 (A) to promote the resiliency, biodiversity,  
2 and carbon sequestration capacity of forests,  
3 rangelands, and grasslands;

4 (B) to minimize risks from wildfire; and

5 (C) to enhance the quality of forage for  
6 wildlife and livestock.

7 (2) REQUIREMENTS.—The action plan shall—

8 (A) consider or incorporate existing efforts;

9 (B) take into account—

10 (i) the latest science;

11 (ii) best practices; and

12 (iii) available deployment tools;

13 (C) be prepared in coordination with State  
14 and local governmental entities and the heads  
15 of other Federal agencies, including the Chief  
16 of the Natural Resources Conservation Service,  
17 that are engaged in activities to control invasive  
18 grass to leverage and maximize funding and re-  
19 sources;

20 (D) identify and depict on a map target  
21 treatment areas that focus on—

22 (i) areas with a large quantity of  
23 invasive grass where revegetation with na-  
24 tive species is most likely to succeed;

25 (ii) areas at high risk of wildfire;

- 1 (iii) areas in which invasive grass neg-  
2 atively impacts livestock grazing or other  
3 uses;
- 4 (iv) wildlife habitat and forage needs,  
5 particularly sagebrush habitat;
- 6 (v) areas prone to infestations; or  
7 (vi) areas deemed important by the  
8 Secretaries;
- 9 (E) establish—
- 10 (i) specific goals;
- 11 (ii) specific implementation actions  
12 that the Secretaries and partners of the  
13 Secretaries will conduct over a 5-year pe-  
14 riod; and
- 15 (iii) targets, including acres to be  
16 treated annually in the target treatment  
17 areas;
- 18 (F) provide for a combination of treatment  
19 methods for the most effective control of an  
20 invasive grass, including—
- 21 (i) mechanical treatment methods;
- 22 (ii) cultural treatment methods;
- 23 (iii) biological treatment methods,  
24 which may include livestock grazing;
- 25 (iv) prescribed fire; and

1 (v) chemical treatment methods;

2 (G) identify and implement, to the extent  
3 practicable, best practices, such as the use of  
4 spray washing stations, to reduce the spreading  
5 of invasive grass seed adjacent to infested areas  
6 or into noninfested areas;

7 (H) identify methods and tools for the  
8 post-treatment monitoring of target treatment  
9 areas to determine the effectiveness of a treat-  
10 ment and control efforts;

11 (I) initiate and expedite environmental re-  
12 views for treatments, as required by applicable  
13 law, including identifying—

14 (i) methods for achieving timely deci-  
15 sions and implementation for treatments,  
16 monitoring, and follow-up treatments  
17 based on monitoring; and

18 (ii) maximizing opportunities to co-  
19 operate with other Federal and State agen-  
20 cies in analysis, assessments, and studies;  
21 and

22 (J) establish guidelines that—

23 (i) if native, intact grasses are absent  
24 within a target treatment area and the tar-

1           get treatment area is prone to high-risk  
2           vectors or pathways—

3                   (I) identify geographically based  
4                   desirable, native seed mix and seed re-  
5                   serves;

6                   (II) prioritize reseeding the area  
7                   in the target treatment area; and

8                   (III) monitor for the presence of  
9                   new invasive grass and promptly treat  
10                  any invasive grass present; and

11                  (ii) if, after conducting a treatment,  
12                  desirable native grasses are established and  
13                  dominant in a target treatment area, pro-  
14                  vide for the natural restoration of native  
15                  grasses.

16           (3) DEADLINE TO FINALIZE ACTION PLAN.—  
17           Not later than 270 days after the date of enactment  
18           of this Act, the Secretaries shall finalize the action  
19           plan.

20           (4) IMPLEMENTATION OF ACTION PLAN.—

21                   (A) IN GENERAL.—Not later than 60 days  
22                   after the date on which the action plan is final-  
23                   ized under paragraph (3), the Secretaries shall  
24                   begin implementing the action plan.

1                   (B) MEMORANDA OF UNDERSTANDING  
2                   AND AGREEMENTS.—In implementing the ac-  
3                   tion plan, the Secretary concerned may enter  
4                   into a memorandum of understanding or an  
5                   agreement with non-Federal entities, as appro-  
6                   priate, to carry out activities under the action  
7                   plan to control the spread of an invasive grass  
8                   on Federal land or land adjacent to Federal  
9                   land.

10                   (C) COOPERATING AGENCY COORDINA-  
11                   TION.—The Secretary concerned shall, to the  
12                   extent practicable, offer to assist in the prepa-  
13                   ration of environmental reviews that may be  
14                   necessary in implementing treatment and con-  
15                   trol activities on non-Federal land.

16                   (c) REPORTS TO CONGRESS.—Not later than 18  
17                   months after the date of enactment of this Act, and annu-  
18                   ally thereafter during the period in which the action plan  
19                   is being implemented, the Secretaries shall submit to Con-  
20                   gress a report assessing the effectiveness of the action  
21                   plan that includes a description of—

- 22                   (1) the location of the target treatment areas;  
23                   (2) the number of acres within target treatment  
24                   areas on which treatments were conducted;

1           (3) the agreements or partnerships entered into  
2           under subsection (b)(4)(B) to advance the imple-  
3           mentation of the action plan;

4           (4) monitoring information described in sub-  
5           section (b)(2)(H); and

6           (5) recommendations for studies to explore in-  
7           novative methods and practices to treat and control  
8           invasive grass.

9           (d) FUNDING.—

10           (1) OUTSIDE FUNDING.—The Secretary con-  
11           cerned may accept non-Federal funds to implement  
12           any provision of this section.

13           (2) OTHER FUNDING.—In addition to any fund-  
14           ing received under paragraph (1), the Secretaries  
15           may expend to carry out this section up to  
16           \$30,000,000 of any funding made available to the  
17           Secretary concerned for invasive species control.

18           (3) LIMITATIONS.—Of the amounts made avail-  
19           able to carry out this section, not more than 10 per-  
20           cent shall be used for development of the action  
21           plan.

## 22           **TITLE III—MASS TIMBER**

### 23           **SEC. 301. DEFINITIONS.**

24           In this title:

1           (1) LOCAL APPROVING AGENCY.—The term  
2 “local approving agency” means an agency or unit  
3 of a local government that is responsible for the  
4 issuance of permits for building construction.

5           (2) MASS TIMBER.—The term “mass timber”  
6 includes—

- 7                   (A) cross-laminated timber;
- 8                   (B) nail laminated timber;
- 9                   (C) glue laminated timber;
- 10                   (D) dowel laminated timber;
- 11                   (E) laminated strand lumber; and
- 12                   (F) laminated veneer lumber.

13           (3) PROCURING AGENCY.—The term “procuring  
14 agency” means the Department of the Interior, the  
15 Forest Service, or a person that is a party to a con-  
16 tract with the Department of the Interior or the  
17 Forest Service, with respect to work performed  
18 under such a contract.

19           (4) TALL WOOD BUILDING.—The term “tall  
20 wood building” means a building designed to be—

- 21                   (A) constructed with mass timber; and
- 22                   (B)(i) if a residential building, more than  
23                   4 stories in height; and
- 24                   (ii) if a commercial building, more than 5  
25                   stories in height.



1 **SEC. 302. JOINT MASS TIMBER SCIENCE AND EDUCATION**  
2 **PROGRAM.**

3 (a) MASS TIMBER SCIENCE AND EDUCATION PRO-  
4 GRAM WITH THE FOREST PRODUCTS LABORATORY.—The  
5 Secretary of Agriculture, acting through the Director of  
6 the Forest Products Laboratory of the Forest Service (re-  
7 ferred to in this section as the “Secretary”), shall estab-  
8 lish a mass timber science and education program to re-  
9 spond to the emerging research needs of architects, devel-  
10 opers, and the forest products industry.

11 (b) COORDINATION.—The Secretary shall work close-  
12 ly with research programs at colleges and universities in  
13 administering the mass timber science and education pro-  
14 gram established under subsection (a) to supplement the  
15 current research and educational efforts of colleges and  
16 universities.

17 (c) PURPOSES.—The mass timber science and edu-  
18 cation program established under subsection (a) shall have  
19 the following principal purposes:

20 (1) To provide practical research responsive to  
21 the needs of architects, developers, and the forest  
22 products industry, including assessments of carbon  
23 impacts in the originating forests and the end use of  
24 mass timber in the built environment.

25 (2) To engage and listen to clients and then de-  
26 velop focused, strategic lines of new research respon-

1 sive to those needs, which may include research re-  
2 lating to flammability and performance during a  
3 fire, structural characteristics, energy use and sav-  
4 ings, acoustics, and slab construction composed of  
5 hybrid materials.

6 (3) To solicit proposals from scientists who  
7 compete for funding through a rigorous peer-review  
8 process designed to ensure the best projects are  
9 funded.

10 (4) To disseminate research findings using a  
11 suite of communication tools to ensure that archi-  
12 tects, developers, and the forest products industry  
13 are aware of, understand, and can use the informa-  
14 tion to make sound decisions and implement  
15 projects.

16 (5) To develop and facilitate the adoption, on a  
17 voluntary basis, of a curriculum for building struc-  
18 tures using mass timber for use in schools of engi-  
19 neering and architecture that includes—

20 (A) structural design; and

21 (B) the possibilities, benefits, and limita-  
22 tions of using mass timber in construction.

23 (d) MASS TIMBER PLAN.—Not later than September  
24 30, 2022, the Secretary shall submit to the relevant com-  
25 mittees of Congress a mass timber plan that includes—

1           (1) an assessment of the current state of knowl-  
2           edge about mass timber and tall wood buildings;

3           (2) an integrated approach to improve knowl-  
4           edge sharing;

5           (3) an approach for project monitoring and  
6           evaluation; and

7           (4) an approach for setting research priorities.

8           (e) STAKEHOLDER ADVISORY GROUP.—

9           (1) MEMBERSHIP.—The Secretary shall appoint  
10          a stakeholder advisory group of technical experts  
11          that consists, at a minimum, of—

12                   (A) a Forest Service scientist;

13                   (B) a researcher from a college or univer-  
14                   sity;

15                   (C) a representative of a trade association;

16                   (D) an architect or developer;

17                   (E) a representative of a local approving  
18                   agency;

19                   (F) a representative of a forest products  
20                   company; and

21                   (G) a representative of a nongovernmental  
22                   organization with experience—

23                           (i) designing or constructing tall wood  
24                           buildings; or

1 (ii) complying with or revising related  
2 building codes.

3 (2) DUTIES.—The stakeholder advisory group  
4 shall meet at least annually—

5 (A) to consider immediate and long-term  
6 science needs;

7 (B) to suggest to the Secretary appropriate  
8 topic areas, specific issues within those topic  
9 areas, and information transfer needs for which  
10 the Secretary shall solicit proposals described in  
11 subsection (c)(3); and

12 (C) to assist the Secretary in drafting the  
13 mass timber plan required under subsection (d).

14 (f) ASSISTANCE.—The Secretary may provide to the  
15 Secretary of Transportation and to States technical assist-  
16 ance relating to the use of wood in bridges when under-  
17 going revisions to a State bridge design manual.

18 (g) AVAILABILITY OF APPROPRIATIONS.—From  
19 amounts appropriated for Forest Service research, exclud-  
20 ing funding made available for the Forest Inventory and  
21 Analysis program, the Secretary may use \$4,000,000 to  
22 carry out the activities described in this section.

23 **SEC. 303. STORING CARBON IN FEDERAL BUILDINGS.**

24 (a) MASS TIMBER BUILDINGS DATABASE AND  
25 PLAN.—

1           (1) DATABASE.—The Secretaries, in coordina-  
2           tion with any other relevant agencies, shall develop  
3           and maintain a running database of mass timber  
4           buildings that are owned or leased by the Federal  
5           Government and are occupied primarily by employ-  
6           ees of the Secretaries (referred to in this subsection  
7           as the “database”).

8           (2) ASSESSMENT.—The Secretary of Agri-  
9           culture, acting through the Director of the Forest  
10          Products Laboratory of the Forest Service, shall  
11          conduct an assessment of each mass timber building  
12          included in the database, which shall include col-  
13          lecting data on the embodied carbon of the materials  
14          used in the construction of the mass timber build-  
15          ings included in the database.

16          (3) PLAN.—

17                (A) IN GENERAL.—The Secretaries shall  
18                prepare a plan to increase the quantity of car-  
19                bon stored in buildings that are owned or leased  
20                by the Federal Government and are occupied  
21                primarily by employees of Secretaries.

22                (B) PLAN SUBMISSION.—Not later than 1  
23                year after the date of enactment of this Act, the  
24                Secretaries shall submit the plan under sub-  
25                paragraph (A) to the Committee on Energy and

1 Natural Resources of the Senate and the Com-  
2 mittee on Natural Resources of the House of  
3 Representatives.

4 (C) MATERIAL NEUTRALITY.—The plan  
5 submitted by the Secretaries shall be, to the  
6 maximum extent practicable, material neutral,  
7 and may include using mass timber, carbon  
8 concrete, and any other materials.

9 (b) MINIMUM PURCHASES.—

10 (1) IN GENERAL.—Not later than September  
11 30, 2025, subject to the exceptions listed in para-  
12 graph (2), the Secretaries shall procure facilities,  
13 buildings, or structures, including not fewer than  
14 100 single-occupancy restrooms, using domestic  
15 mass timber.

16 (2) EXCEPTIONS.—The Secretaries may decide  
17 not to procure facilities, buildings, or structures  
18 using domestic mass timber if the Secretaries deter-  
19 mine that the items—

20 (A) are not reasonably available within a  
21 reasonable period of time;

22 (B) fail to meet the reasonable perform-  
23 ance standards of the procuring agencies;

24 (C) are not necessary to support the mis-  
25 sion of the applicable agency; or

1 (D) are available only at an unreasonable  
2 price.

3 (c) COORDINATION AND TECHNICAL ASSISTANCE.—

4 The Secretary of Agriculture, acting through the Director  
5 of the Forest Products Laboratory of the Forest Service,  
6 may coordinate with other Federal agencies and non-Fed-  
7 eral partners for the purpose of improving the manage-  
8 ment and efficiency of constructing mass timber buildings  
9 and infrastructure.

## 10 **TITLE IV—RESEARCH**

### 11 **SEC. 401. LONGEVITY OF FOREST PRODUCTS.**

12 The Secretary of Energy, in coordination with the  
13 Secretary of Agriculture, shall—

14 (1) develop more accurate and efficient methods  
15 and technologies to measure and monitor the  
16 amount and average lifespan of carbon stored in  
17 woody biomass energy feedstocks and building mate-  
18 rials;

19 (2) by not later than 2 years after the date of  
20 enactment of this Act, publish estimates of the  
21 amount and average lifespan of carbon stored in dif-  
22 ferent woody biomass energy feedstocks and building  
23 materials, including in short-lived forest products  
24 and long-lived wood products; and

1           (3) by not later than 3 years after the date of  
2           enactment of this Act, publish an estimate of the  
3           total amount of carbon stored in—

4                   (A) short-lived forest products;

5                   (B) building materials; and

6                   (C) other long-lived wood products.

7   **SEC. 402. FOREST INVENTORY AND ANALYSIS.**

8           (a) **IN GENERAL.**—To bring more innovation and ef-  
9           ficiency to climate-resilient forestry actions in the United  
10          States, the Secretary of Agriculture, acting through the  
11          Chief of the Forest Service—

12                   (1) shall publish a report, or expand on a re-  
13           port being published pursuant to another provision  
14           of law, that demonstrates the efforts of the Forest  
15           Service—

16                           (A) to measure a consistent historical se-  
17           ries of field plots while using advanced tech-  
18           nology, including remote sensing, to improve  
19           data and information; and

20                           (B) to use advanced geospatial tech-  
21           nologies to improve area and volume estimates,  
22           especially for sub-State regions and smaller  
23           area estimates;

24                   (2) may use remote sensing technologies and  
25           other technologies to develop more accurate and effi-



1       cient methods and to reduce costs to facilitate the  
2       measuring and monitoring of forest carbon in the  
3       United States, in a manner that can—

4               (A) assess landscape-scale or regional-scale  
5       carbon stocking;

6               (B) improve the quantity and quality of  
7       the information available to policy makers and  
8       forest managers, including with regard to forest  
9       inventories and verification activities;

10              (C) empower private forest owners to par-  
11       ticipate in voluntary carbon crediting opportuni-  
12       ties; and

13              (D) enable—

14                   (i) a policy maker to compare the con-  
15       sequences of policy options to increase cli-  
16       mate benefits from forests; and

17                   (ii) an assessment of the effectiveness  
18       of a policy implemented to increase the cli-  
19       mate benefits from forests; and

20              (3) may accelerate, or increase the frequency of,  
21       current inventories and data collection activities  
22       across all forest types to ensure consistent nation-  
23       wide estimates of forest carbon pools that can reflect  
24       short-term changes from disturbances, such as  
25       wildfires, and management activities.

1 (b) FUNDING.—The Secretary of Agriculture, acting  
2 through the Chief of the Forest Service, may annually use  
3 to carry out this section not more than \$10,000,000 of  
4 any amount made available to the Forest Service for re-  
5 search.

6 **SEC. 403. BIOECONOMY RESEARCH.**

7 The Secretary of Agriculture, acting through the Di-  
8 rector of the Forest Products Laboratory of the Forest  
9 Service, shall expand research relating to the use of  
10 wood—

11 (1) to facilitate the establishment of new mar-  
12 kets, including nontraditional markets, for material  
13 produced from forest management projects that typi-  
14 cally has little or no commercial value;

15 (2) to increase the economic viability of manu-  
16 facturing products using material described in para-  
17 graph (1); and

18 (3) including structural testing of hardwood  
19 species for use in mass timber.

20 **SEC. 404. INSURANCE PRODUCT TO REPLACE BUFFERS.**

21 The Secretary of Agriculture, acting through the  
22 Chief of the Forest Service, may—

23 (1) establish an intragovernmental revolving  
24 fund to maintain adequate buffer reserves for a  
25 project implementing a covered activity (as defined

1 in subsection (a) of section 201) under that section  
2 to cover unforeseen losses in carbon stocks to ad-  
3 dress nonpermanence; and

4 (2) transfer amounts into and out of the  
5 intragovernmental revolving fund established under  
6 paragraph (1) to serve as a buffer pool for covered  
7 activities referred to in paragraph (1).

8 **SEC. 405. FOREST HEALTH THREAT CENTERS.**

9 The Secretary of Agriculture, acting through the  
10 Chief of the Forest Service, shall—

11 (1) seek to expand the services provided by the  
12 Western Wildland Environmental Threat Assessment  
13 Center and the Eastern Forest Environmental  
14 Threat Assessment Center such that those Centers  
15 become centers of excellence to inform large-scale  
16 climate-resilient forest management; and

17 (2) share the syntheses, models, and application  
18 tools developed by the Western Wildland Environ-  
19 mental Threat Assessment Center and the Eastern  
20 Forest Environmental Threat Assessment Center  
21 with—

22 (A) the Department of Agriculture climate  
23 hubs; and

24 (B) the Climate Adaptation Science Cen-  
25 ters managed by the Secretary, acting through

1 the Director of the United States Geological  
2 Survey.

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