

118TH CONGRESS
2D SESSION

H. R. 4866

IN THE SENATE OF THE UNITED STATES

APRIL 30, 2024

Received; read twice and referred to the Committee on Commerce, Science,
and Transportation

AN ACT

To direct the Administrator of the National Oceanic and Atmospheric Administrator to improve fire weather and fire environment forecasting, detection, and local collaboration, 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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Fire Weather Develop-
3 ment Act of 2024”.

4 **SEC. 2. FIRE WEATHER FORECASTING AND DETECTION.**

5 (a) ESTABLISHMENT.—The Administrator of the Na-
6 tional Oceanic and Atmospheric Administration, shall es-
7 tablish a program (in this Act referred to as the “Pro-
8 gram”) to improve fire weather and fire environment fore-
9 casting, detection, and delivery of products or services
10 through collaboration with Federal and State agencies or
11 departments, local emergency managers, and relevant enti-
12 ties.

13 (b) GOALS.—The goals of the Program shall be to
14 develop and improve accurate fire weather and fire envi-
15 ronment forecasts and warnings in order to reduce loss
16 of life, reduce injuries, protect property, and reduce dam-
17 age to the economy from wildfires. The Program shall seek
18 to improve the assessment of fire weather and fire environ-
19 ments, the understanding and prediction of wildfires, and
20 the communications regarding such assessments with
21 State and local emergency officials in a timely and stream-
22 lined fashion, with a focus on improving the following:

23 (1) The prediction of ignition, intensification
24 and spread of wildfires.

25 (2) The observation and monitoring of fire
26 weather and fire environments.

(3) The forecast and communication of smoke dispersion from wildfires.

(4) Information dissemination and risk communication to develop more effective watch and warning products relating to wildfires.

(5) The early detection of wildfires, including pre-ignition analysis and ground condition characterizations.

9 (6) The development, testing, and deployment
10 of novel tools and techniques related to under-
11 standing, monitoring, and predicting fire weather
12 and fire environments.

(7) The understanding and association of climate change and its impacts on fire weather and fire environments.

(8) The unique characteristics, including observation or modeling requirements, related to fires at the wildland-urban interface.

23 (c) COLLABORATION WITH STAKEHOLDERS.—In de-
24 veloping the Program required under this section, the Ad-
25 ministrator of the National Oceanic and Atmospheric Ad-

1 ministration shall solicit and take into consideration input
2 from the weather industry, such academic entities as the
3 Administrator considers appropriate, and other relevant
4 stakeholders.

5 (d) ACTIVITIES.—To achieve the goals specified in
6 subsection (b), the Administrator of the National Oceanic
7 and Atmospheric Administration may conduct research,
8 development, testing, demonstration, and operational
9 transition activities related to fire weather and fire envi-
10 ronments, including regarding the following:

11 (1) Tools and services to inform, support, and
12 complement active land management, local emer-
13 gency personnel, the United States Forest Service,
14 and State, local, and Tribal entities during their re-
15 sponse and mitigation efforts.

16 (2) Sensing technologies, such as infrared,
17 microwave, and active sensors suitable for potential
18 deployment on spacecraft, aircraft, and unmanned
19 aircraft systems, to improve the monitoring and
20 forecasting of fire fuel and active wildfires, wildfire
21 behavior models and forecasts, mapping efforts, and
22 the prediction of wildfires and the impacts of such.

23 (3) Grid-based assessments and outlooks of fuel
24 moisture and danger levels.

1 (4) Social and behavior sciences related to fire
2 weather and fire environment warning products.

3 (5) Advanced satellite detection products cou-
4 pled with atmosphere and fire weather modeling sys-
5 tems.

6 (6) Education and training to expand the num-
7 ber of students and researchers in areas of study
8 and research related to wildfires, fire weather, and
9 fire environments.

10 (7) Modeling systems to link long-term climate
11 predictions to localized or general land management
12 decisions.

13 (8) Communication and outreach to commu-
14 nities, energy utilities, owners and operators of crit-
15 ical infrastructure, and other relevant stakeholders
16 regarding fire weather and fire environment risk.

17 (9) Stewardship and dissemination, to the ex-
18 tent practicable, of National Oceanic and Atmos-
19 pheric Administration scientific data and related
20 products and services in formats meeting shared
21 standards to enhance the interoperability, usability,
22 and accessibility of such data in order to better meet
23 the needs of the National Oceanic and Atmospheric
24 Administration, other Federal agencies, and relevant
25 stakeholders.

(10) Improvement of spatial and temporal resolution observations.

5 (e) NOVEL TOOLS FOR MONITORING AND PRE-
6 DICTION.—The Administrator of the National Oceanic
7 and Atmospheric Administration, in consultation with the
8 heads of the agencies specified in section 3, or other ap-
9 propriate stakeholders, including commercial partners,
10 shall develop novel tools and technologies to support the
11 activities of the Program and which may be applied to
12 broader wildland fire research, monitoring, and mitigation
13 activities, as practicable and appropriate.

14 (f) EXTRAMURAL RESEARCH.—The Administrator of
15 the National Oceanic and Atmospheric Administration
16 shall collaborate with and support the non-Federal
17 wildland fire research community, which includes institu-
18 tions of higher education, private sector entities, non-
19 governmental organizations, and other relevant stake-
20 holders, by making funds available through competitive
21 grants, contracts, and cooperative agreements.

22 (g) COMMERCIAL DATA.—

23 (1) IN GENERAL.—Not later than one year
24 after the date of the enactment of this Act, the Ad-
25 ministrator of the National Oceanic and Atmos-

1 pheric Administration, in consultation with the
2 heads of other Federal agencies and relevant stake-
3 holders, may enter into contracts with one or more
4 private sector entities to obtain additional airborne
5 and space-based data and observations that may en-
6 hance or supplement the understanding, monitoring,
7 and prediction, of fire weather and fire environ-
8 ments, and the relevant Program activities under
9 this section.

10 (2) CONSULTATION.—In carrying out activities
11 under paragraph (1), the Administrator of the Na-
12 tional Oceanic and Atmospheric Administration shall
13 consult with private sector entities through the Na-
14 tional Advisory Committee on Wildfires under sec-
15 tion 4 to identify needed tools and data that can be
16 best provided by National Oceanic and Atmospheric
17 Administration satellites and are most beneficial to
18 wildfire and smoke detection and monitoring.

19 (h) NONDUPLICATION.—To the maximum extent
20 practicable, the Administrator of the National Oceanic
21 and Atmospheric Administration shall consult with the
22 National Interagency Fire Center, including the Joint Fire
23 Science Program, to avoid duplication of activities under
24 this section and ensure the Administration’s focus on

1 unique research activities best suited for transition to op-
2 erations.

3 (i) UNMANNED AIRCRAFT SYSTEMS.—

4 (1) IN GENERAL.—The Administrator of the
5 National Oceanic and Atmospheric Administration
6 shall—

7 (A) assess the role and potential benefits
8 of unmanned aircraft systems to improve data
9 collection in support of fire weather and fire en-
10 vironment modeling, meteorological observa-
11 tions, predictions, and forecasts;

12 (B) identify objectives for testing such sys-
13 tems' use for obtaining fire weather and fire en-
14 vironment observations, and other relevant ac-
15 tivities; and

16 (C) transition unmanned aircraft systems
17 technologies from research to operations as the
18 Administrator considers appropriate.

19 (2) BRIEFING.—Not later than 270 days after
20 the date of enactment of the Act, the Administrator
21 of the National Oceanic and Atmospheric Adminis-
22 tration shall brief the appropriate committees of
23 Congress on the activities under paragraph (1).

24 (3) PILOT PROGRAMS.—Not later than 18
25 months after the date of the enactment of this Act,

1 the Administrator of the National Oceanic and At-
2 mospheric Administration may conduct pilot pro-
3 grams of unmanned aircraft systems for fire weather
4 and fire environment observations, including relating
5 to the following:

6 (A) Testing of unmanned aircraft systems
7 in approximations of real-world scenarios.

8 (B) Assessment of the utility of meteoro-
9 logical data collected from fire response and as-
10 essment aircraft.

11 (C) Input into appropriate models of col-
12 lected data to predict fire behavior, including
13 coupled atmosphere and fire models.

14 (D) Collection of best management prac-
15 tices for deployment of unmanned aircraft sys-
16 tems for fire weather and fire environment ob-
17 servations.

18 (4) PROHIBITION.—

19 (A) IN GENERAL.—Except as provided
20 under subparagraphs (B) and (C), the Adminis-
21 trator of the National Oceanic and Atmospheric
22 Administration may not procure any unmanned
23 aircraft system that is manufactured or assem-
24 bled by an entity in a foreign country of con-
25 cern.

(B) EXEMPTION.—The prohibition under subparagraph (A) shall not apply to the Administrator of the National Oceanic and Atmospheric Administration if the Administrator determines, in consultation with the Secretary of Homeland Security, that the procurement of an unmanned aircraft system is necessary for the sole purpose of marine or atmospheric science or management.

10 (C) WAIVER.—The Administrator of the
11 National Oceanic and Atmospheric Administra-
12 tion may waive the prohibition under subpara-
13 graph (A) on a case-by-case basis—

20 (5) AIRSPACE OPERATIONS SYSTEM.—The Ad-
21 ministrator of the National Oceanic and Atmos-
22 pheric Administration, in cooperation with the Ad-
23 ministrator of the National Aeronautics and Space
24 Administration, shall utilize the capabilities of un-
25 manned aircraft systems as appropriate for fire

1 weather and fire environment observations, and may
2 use a wildfire airspace operations system that ac-
3 counts for piloted aircraft, unmanned aircraft sys-
4 tems, and other new and emerging capabilities after
5 such airspace operations system is developed and de-
6 termined ready for operational use by the Adminis-
7 trator of the National Aeronautics and Space Ad-
8 ministration.

9 (6) AUTHORIZATION OF APPROPRIATIONS.—
10 There is authorized to be appropriated \$5,000,000
11 for fiscal year 2025 to carry out this subsection.

12 (j) DEFINITIONS.—In this section:

13 (1) APPROPRIATE COMMITTEES OF CON-
14 GRESS.—The term “appropriate committees of Con-
15 gress” means the Committee on Science, Space, and
16 Technology and the Committee on Homeland Secu-
17 rity of the House of Representatives and the Com-
18 mittee on Commerce, Science, and Transportation
19 and the Committee on Homeland Security and Gov-
20 ernmental Affairs of the Senate.

21 (2) CRITICAL INFRASTRUCTURE.—The term
22 “critical infrastructure” has the meaning given such
23 term in section 1016(e) of Public Law 107–56 (42
24 U.S.C. 5195c(e)).

1 (3) FOREIGN COUNTRY OF CONCERN.—The
2 term “foreign country of concern” has the meaning
3 given such term in section 9901 of the William M.
4 (Mac) Thornberry National Defense Authorization
5 Act for Fiscal Year 2021 (15 U.S.C. 4651).

6 (4) INSTITUTION OF HIGHER EDUCATION.—The
7 term “institution of higher education” has the
8 meaning given such term in section 101 of the High-
9 er Education Act of 1965 (20 U.S.C. 1001).

10 (5) UNMANNED AIRCRAFT SYSTEM.—The term
11 “unmanned aircraft system” has the meaning given
12 such term in section 44801 of title 49, United
13 States Code.

14 (6) WEATHER INDUSTRY.—The term “weather
15 industry” has the meaning given such term in sec-
16 tion 2 of the Weather Research and Forecasting In-
17 novation Act of 2017 (15 U.S.C. 8501).

18 **SEC. 3. INTERAGENCY COORDINATING COMMITTEE ON**
19 **WILDFIRES.**

20 (a) ESTABLISHMENT.—Not later than 90 days after
21 the date of the enactment of this Act, the Director of the
22 Office of Science and Technology Policy shall establish an
23 interagency coordinating committee to be known as the
24 “Interagency Coordinating Committee on Wildfires” (in
25 this section referred to as the “Committee”). The chair

1 of the Committee shall be the Administrator of the Na-
2 tional Oceanic and Atmospheric Administration.

3 (b) PURPOSE.—The Committee shall coordinate the
4 development of accurate and timely wildfire forecasting,
5 detection, monitoring, and delivery of related products or
6 services that best assist State and local emergency officials
7 while avoiding duplication of activities.

8 (c) MEMBERSHIP.—In addition to the chair, the
9 Committee shall be composed of the heads or appropriate
10 designees of the following program agencies:

11 (1) The Federal Emergency Management Agen-
12 cy.

13 (2) The United States Fire Administration.

14 (3) The United States Forest Service.

15 (4) The National Aeronautics and Space Ad-
16 ministration.

17 (5) The Department of the Interior.

18 (6) The Department of Agriculture.

19 (7) The United States Geological Survey.

20 (8) The Office of Science and Technology Pol-
21 icy.

22 (9) Any other Federal department or agency
23 the Director of the Office of Science and Technology
24 Policy considers appropriate.

1 (d) STRATEGIC PLAN.—Not later than one year after
2 the date of the enactment of this Act, the Committee shall
3 submit to Congress a strategic plan for the Program that
4 includes the following:

5 (1) A description of short-term, mid-term, and
6 long-term objectives to achieve the purpose specified
7 in subsection (b).

8 (2) A description of how agencies specified in
9 subsection (c) will collaborate with stakeholders and
10 take into account stakeholder needs and rec-
11 ommendations in developing such objectives.

12 (3) A description of existing and new observa-
13 tional and data infrastructure needed to accomplish
14 such objectives.

15 (4) A description of the role of each such agen-
16 cy in achieving such objectives.

17 (5) Guidance regarding how the Committee's
18 recommendations are best used in climate adapta-
19 tion planning for Federal, State, local, Tribal, and
20 territorial entities.

21 (e) INTERAGENCY AGREEMENTS.—The heads of
22 agencies specified in subsection (c) may enter into one or
23 more interagency agreements providing for cooperation
24 and collaboration in the development of wildfire fore-
25 casting, detection, and monitoring tools, instruments,

1 technologies, and research to accomplish the purpose de-
2 scribed in subsection (b).

3 (f) COLLABORATION.—The head of each agency spec-
4 ified in subsection (c) shall, to the extent practicable, in-
5 crease engagement and cooperation with international,
6 academic, State, and local communities regarding the in-
7 frastructure, data, and scientific research necessary to
8 best advance the forecasting, detection, and monitoring of
9 and preparation for wildfires.

10 **SEC. 4. NATIONAL ADVISORY COMMITTEE ON WILDFIRES.**

11 (a) ESTABLISHMENT.—

12 (1) IN GENERAL.—Not later than 90 days after
13 the submission of the strategic plan required by sec-
14 tion 3(d), the Director of the Office of Science and
15 Technology Policy shall establish a national advisory
16 committee to be known as the “National Advisory
17 Committee on Wildfires” (in this section referred to
18 as the “Advisory Committee”). The Advisory Com-
19 mittee shall consist of not fewer than seven and not
20 more than 15 members who are qualified to provide
21 advice regarding wildfire forecasting, detection, mon-
22 itoring, and delivery of related products or services,
23 including from the following entities:

24 (A) Research and academic institutions.

(B) Public communication or broadcast entities.

3 (C) Emergency management agencies.

4 (D) State, local, or Tribal governments.

(E) The National Association of State For-
esters.

7 (F) Business communities.

(G) Other entities as designated by the Director of the Office of Science and Technology Policy.

11 (2) PROHIBITION.—Members of the Advisory
12 Committee may not be employees of the Federal
13 Government.

14 (b) ASSESSMENT.—The Advisory Committee shall
15 offer assessments and recommendations relating to the
16 following:

17 (1) Tailored forecasting, detection, and moni-
18 toring products and tools

1 (4) The management, coordination, implemen-
2 tation, and activities of the Interagency Coordi-
3 nating Committee on Wildfires under section 3.

4 (5) The effectiveness of the Interagency Coordi-
5 nating Committee on Wildfires in meeting its pur-
6 poses.

7 (c) COMPENSATION.—Members of the Advisory Com-
8 mittee shall serve without compensation.

9 (d) REPORTS.—Not less frequently than biennially,
10 the Advisory Committee shall report to the Director of the
11 Office of Science and Technology Policy on the assess-
12 ments carried out under subsection (b) and its rec-
13 ommendations for ways to improve the coordination and
14 dissemination of wildfire forecasts, warnings, and detec-
15 tion and monitoring information.

16 (e) CHARTER.—Notwithstanding section 1013(b)(2)
17 of title 5, United States Code, the Advisory Committee
18 shall not be required to file a charter subsequent to its
19 initial charter, filed under section 1008(c) of such title,
20 before the termination date specified in subsection (f) of
21 this section.

22 (f) TERMINATION.—The Advisory Committee shall
23 terminate on September 30, 2028.

24 (g) CONFLICT OF INTEREST.—An Advisory Com-
25 mittee member shall recuse himself or herself from any

1 Advisory Committee activity in which he or she has an
2 actual pecuniary interest.

3 **SEC. 5. ESTABLISHMENT OF FIRE WEATHER TESTBED.**

4 (a) IN GENERAL.—The Administrator of the Na-
5 tional Oceanic and Atmospheric Administration shall es-
6 tablish a fire weather testbed to enable engagement across
7 the Federal Government, State and local governments,
8 academia, private and federally funded research labora-
9 tories, the private sector, and end-users in order to eval-
10 uate the accuracy and usability of technology, models, fire
11 weather products and services, and other research to accel-
12 erate the implementation, transition to operations, and use
13 of new capabilities by the National Oceanic and Atmos-
14 pheric Administration, Federal and land management
15 agencies, and other relevant stakeholders.

16 (b) RESOURCES.—In carrying out this section, the
17 Administrator of the National Oceanic and Atmospheric
18 Administration may not transfer or reprogram any funds,
19 detail any personnel, or make use of any infrastructure
20 from cooperative institutes of the National Oceanic and
21 Atmospheric Administration in existence as of the date of
22 the enactment of this Act for the fire weather testbed es-
23 tablished under subsection (a).

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There is
2 authorized to be appropriated \$4,000,000 for each of fis-
3 cal years 2025 through 2028 to carry out this section.

4 **SEC. 6. INCIDENT METEOROLOGIST WORKFORCE.**

5 (a) WORKFORCE AND TRAINING ASSESSMENT.—Not
6 later than six months after the date of the enactment of
7 this Act, the Administrator of the National Oceanic and
8 Atmospheric Administration shall submit to the Com-
9 mittee on Science, Space, and Technology of the House
10 of Representatives and the Committee on Commerce,
11 Science, and Transportation of the Senate the results of
12 an assessment of National Weather Service workforce and
13 training challenges for Incident Meteorologists, and a
14 roadmap for overcoming such challenges. Such assessment
15 shall take into consideration information technology sup-
16 port, logistical and administrative operations, anticipated
17 weather and climate conditions, and feedback from rel-
18 evant stakeholders, and shall include, to the maximum ex-
19 tent practicable, an identification by the National Weather
20 Service of the following:

21 (1) The expected number of Incident Meteorolo-
22 gists needed over the next five years.

23 (2) Potential hiring authorities necessary to
24 overcome any identified workforce and training chal-
25 lenges.

4 (b) OVERTIME PAY.—

5 (1) IN GENERAL.—Any premium pay for serv-
6 ices performed by Incident Meteorologists of the Na-
7 tional Weather Service that are determined by the
8 Secretary of Commerce to be primarily related to
9 emergency wildland fire suppression activities shall
10 be disregarded in calculating the aggregate of such
11 employee's basic pay and premium pay for purposes
12 of a limitation under section 5547 of title 5, United
13 States Code, or under any other provision of law.

17 SEC. 7. RESEARCH ON WILDLAND FIRE COMMUNICATIONS
18 AND INFORMATION DISSEMINATION.

19 (a) IN GENERAL.—

1 vision and technology manufacturers, shall carry out
2 research on the following:

3 (A) Public safety communication coordina-
4 tion standards among Federal, State, Tribal,
5 and local wildland firefighters, fire management
6 response officials, and member agencies.

7 (B) Improving and integrating existing
8 communications systems to transmit secure
9 real-time data, alerts, and advisories to and
10 from fire management response officials and
11 wildland firefighters.

12 (2) FIELD TESTING AND MEASUREMENT OF IN-
13 FORMATION DISSEMINATION AND TECHNOLOGY.—
14 The Public Safety and Communications Research
15 Division, in consultation with the Fire Research Di-
16 vision and member agencies, shall conduct both live
17 and virtual field testing of equipment, software, and
18 other technologies to determine current times of in-
19 formation dissemination and develop standards for
20 the delivery of useful and secure real-time data
21 among member agencies, fire management response
22 officials, and wildland firefighters, based on findings
23 from research under paragraph (1).

24 (b) RECOMMENDATIONS.—

1 (1) IN GENERAL.—The Director shall develop
2 and publish recommendations to improve public safe-
3 ty communication coordination standards among
4 wildland first responders and fire management re-
5 sponse officials.

6 (2) TRANSMITTAL.—The Director shall trans-
7 mit the recommendations under paragraph (1) to
8 the Office of Management and Budget and the Of-
9 fice of Science and Technology Policy for member
10 agencies to implement.

11 (3) REPORTING REQUIREMENTS.—

12 (A) IN GENERAL.—The Director shall sub-
13 mit to the Committee on Science, Space, and
14 Technology of the House of Representatives
15 and the Committee on Commerce, Science, and
16 Transportation of the Senate a report con-
17 taining the recommendations published under
18 paragraph (1).

19 (B) IMPLEMENTATION.—Not later than 1
20 year after the date of the publication of the Di-
21 rector's recommendations under paragraph (1),
22 the Comptroller General of the United States
23 shall submit to the Committee on Science,
24 Space, and Technology of the House of Rep-
25 resentatives and the Committee on Commerce,

1 Science, and Transportation of the Senate a re-
2 port on the extent to which member agencies
3 have implemented such recommendations.

4 (c) DEFINITIONS.—In this section:

5 (1) DIRECTOR.—The term “Director” means
6 the Director of the National Institute of Standards
7 and Technology.

8 (2) MEMBER AGENCY.—The term “member
9 agency” means a member agency of the National
10 Interagency Fire Center, including the Bureau of Indian Affairs, Bureau of Land Management, National Park Service, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, Forest Service, United States Fire Administration, and the Department of Defense.

16 (3) WILDLAND FIREFIGHTER.—The term
17 “wildland firefighter” means any person who participates in wildland firefighting activities.

19 (4) FIRE MANAGEMENT RESPONSE OFFICIALS.—The term “fire management response officials” means regional fire directors, deputy regional fire directors, agency officials who directly oversee fire operations, fire management officers, and individuals serving on incident management teams.

6 SEC. 8. DEFINITIONS.

7 In this Act:

(1) FIRE ENVIRONMENT.—The term “fire environment” means—

10 (A) the environmental conditions, such as
11 soil moisture, vegetation, topography, snowpack,
12 atmospheric temperature, moisture, and wind,
13 that influence—

14 (i) fuel and fire behavior; and
15 (ii) smoke dispersion and transport;

(2) FIRE WEATHER.—The term “fire weather” means the weather conditions that influence the start, spread, character, or behavior of wildfires or fires at the wildland-urban interface and relevant meteorological and chemical phenomena, including air quality, smoke, and meteorological parameters such as relative humidity, air temperature, wind

1 speed and direction, and atmospheric composition
2 and chemistry, including emissions and mixing
3 heights.

Passed the House of Representatives April 29, 2024.

Attest: KEVIN F. MCCUMBER,

Clerk.