

118TH CONGRESS  
1ST SESSION

# H. R. 4866

To direct the Administrator of the National Oceanic and Atmospheric Administration to establish a program to improve fire weather and fire environment forecasting, detection, and local collaboration, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JULY 25, 2023

Mr. MIKE GARCIA of California (for himself, Ms. CARAVEO, and Mrs. KIM of California) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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## A BILL

To direct the Administrator of the National Oceanic and Atmospheric Administration to establish a program 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,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Fire Weather Develop-  
5 ment Act of 2023”.

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

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

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

20 (1) The prediction of ignition, intensification  
21 and spread of wildfires.

22 (2) The observation and monitoring of fire  
23 weather and fire environments.

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

1           (4) Information dissemination and risk commu-  
2           nication to develop more effective watch and warning  
3           products relating to wildfires.

4           (5) The early detection of wildfires, including  
5           pre-ignition analysis and ground condition character-  
6           izations.

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

11          (7) The understanding and association of cli-  
12          mate change and its impacts on fire weather and  
13          fire environments.

14          (8) The unique characteristics, including obser-  
15          vation or modeling requirements, related to fires at  
16          the wildland-urban interface.

17          (9) The forecasting and understanding of the  
18          impacts of prescribed burns (as such term is defined  
19          in section 2 of the Prescribed Burn Approval Act of  
20          2016 (16 U.S.C. 551e–1 note)).

21          (c) COLLABORATION WITH STAKEHOLDERS.—In de-  
22          veloping the Program required under this section, the Ad-  
23          ministrators of the National Oceanic and Atmospheric Ad-  
24          ministration shall solicit and take into consideration input  
25          from the weather industry, such academic entities as the

1 Administrator considers appropriate, and other relevant  
2 stakeholders.

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

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

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

21 (3) Grid-based assessments and outlooks of fuel  
22 moisture and danger levels.

23 (4) Social and behavior sciences related to fire  
24 weather and fire environment warning products.

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

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

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

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

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

24          (10) Improvement of spatial and temporal reso-  
25          lution observations.

1           (11) Any other topic or activity the Adminis-  
2           trator determines relevant.

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

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

20          (g) COMMERCIAL DATA.—

21           (1) IN GENERAL.—Not later than one year  
22           after the date of the enactment of this Act, the Ad-  
23           ministrator of the National Oceanic and Atmos-  
24           pheric Administration, in consultation with the  
25           heads of other Federal agencies and relevant stake-

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

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

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

25 (i) UNMANNED AIRCRAFT SYSTEMS.—

1           (1) IN GENERAL.—The Administrator of the  
2 National Oceanic and Atmospheric Administration  
3 shall—

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

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

13           (C) transition unmanned aircraft systems  
14 technologies from research to operations as the  
15 Administrator considers appropriate.

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

21           (3) PILOT PROGRAMS.—Not later than 18  
22 months after the date of the enactment of this Act,  
23 the Administrator of the National Oceanic and At-  
24 mospheric Administration may conduct pilot pro-  
25 grams of unmanned aircraft systems for fire weather



1 and fire environment observations, including relating  
2 to the following:

3 (A) Testing of unmanned aircraft systems  
4 in approximations of real-world scenarios.

5 (B) Assessment of the utility of meteorolo-  
6 gical data collected from fire response and as-  
7 sessment aircraft.

8 (C) Input into appropriate models of col-  
9 lected data to predict fire behavior, including  
10 coupled atmosphere and fire models.

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

15 (4) PROHIBITION.—

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

23 (B) EXEMPTION.—The prohibition under  
24 subparagraph (A) shall not apply to the Admin-  
25 istrator of the National Oceanic and Atmos-

1           pheric Administration if the Administrator de-  
2           termines, in consultation with the Secretary of  
3           Homeland Security, that the procurement of an  
4           unmanned aircraft system is necessary for the  
5           sole purpose of marine or atmospheric science  
6           or management.

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

11                   (i) with the approval of the Secretary  
12                   of Homeland Security; and

13                   (ii) upon written or electronic notifica-  
14                   tion to appropriate committees of Congress  
15                   not later than 30 days after any such waiv-  
16                   er.

17          (5) AUTHORIZATION OF APPROPRIATIONS.—

18          From amounts made available for Procurement, Ac-  
19          quisition, and Construction of the National Oceanic  
20          and Atmospheric Administration, there is authorized  
21          to be appropriated \$5,000,000 for fiscal year 2024  
22          to carry out this section.

23          (j) DEFINITIONS.—In this section:

24                   (1) APPROPRIATE COMMITTEES OF CON-  
25          GRESS.—The term “appropriate committees of Con-

1       gress” means the Committee on Science, Space, and  
2       Technology and the Committee on Homeland Secu-  
3       rity of the House of Representatives and the Com-  
4       mittee on Commerce, Science, and Transportation  
5       and the Committee on Homeland Security and Gov-  
6       ernmental Affairs of the Senate.

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

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

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

20              (5) UNMANNED AIRCRAFT SYSTEM.—The term  
21       “unmanned aircraft system” has the meaning given  
22       such term in section 44801 of title 49, United  
23       States Code.

24              (6) WEATHER INDUSTRY.—The term “weather  
25       industry” has the meaning given such term in sec-

1           tion 2 of the Weather Research and Forecasting In-  
2           novation Act of 2017 (15 U.S.C. 8501).

3   **SEC. 3. INTERAGENCY COORDINATING COMMITTEE ON**  
4                                   **WILDFIRES.**

5           (a) ESTABLISHMENT.—Not later than 90 days after  
6 the date of the enactment of this Act, the Director of the  
7 Office of Science and Technology Policy shall establish an  
8 interagency coordinating committee to be known as the  
9 “Interagency Coordinating Committee on Wildfires” (in  
10 this section referred to as the “Committee”). The chair  
11 of the Committee shall be the Administrator of the Na-  
12 tional Oceanic and Atmospheric Administration.

13           (b) PURPOSE.—The Committee shall coordinate the  
14 development of accurate and timely wildfire forecasting,  
15 detection, monitoring, and delivery of related products or  
16 services that best assist State and local emergency officials  
17 while avoiding duplication of activities.

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

- 21                   (1) The Federal Emergency Management Agen-  
22           cy.  
23                   (2) The United States Fire Administration.  
24                   (3) The United States Forest Service.

1           (4) The National Aeronautics and Space Ad-  
2           ministration.

3           (5) The Department of the Interior.

4           (6) The Department of Agriculture.

5           (7) The United States Geological Survey.

6           (8) The Office of Science and Technology Pol-  
7           icy.

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

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

15               (1) A description of short-term, mid-term, and  
16               long-term objectives to achieve the purpose specified  
17               in subsection (b).

18               (2) A description of how agencies specified in  
19               subsection (c) will collaborate with stakeholders and  
20               take into account stakeholder needs and rec-  
21               ommendations in developing such objectives.

22               (3) A description of existing and new observa-  
23               tional and data infrastructure needed to accomplish  
24               such objectives.

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

3           (5) Guidance regarding how the Committee’s  
4           recommendations are best used in climate adapta-  
5           tion planning for Federal, State, local, Tribal, and  
6           territorial entities.

7           (e) INTERAGENCY AGREEMENTS.—The heads of  
8           agencies specified in subsection (c) may enter into one or  
9           more interagency agreements providing for cooperation  
10          and collaboration in the development of wildfire fore-  
11          casting, detection, and monitoring tools, instruments,  
12          technologies, and research to accomplish the purpose de-  
13          scribed in subsection (b).

14          (f) COLLABORATION.—The head of each agency spec-  
15          ified in subsection (c) shall, to the extent practicable, in-  
16          crease engagement and cooperation with international,  
17          academic, State, and local communities regarding the in-  
18          frastructure, data, and scientific research necessary to  
19          best advance the forecasting, detection, and monitoring of  
20          and preparation for wildfires.

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

22          (a) ESTABLISHMENT.—

23                (1) IN GENERAL.—Not later than 90 days after  
24                the submission of the strategic plan required by sec-  
25                tion 3(d), the Director of the Office of Science and

1 Technology Policy shall establish a national advisory  
2 committee to be known as the “National Advisory  
3 Committee on Wildfires” (in this section referred to  
4 as the “Advisory Committee”). The Advisory Com-  
5 mittee shall consist of not fewer than seven and not  
6 more than 15 members who are qualified to provide  
7 advice regarding wildfire forecasting, detection, mon-  
8 itoring, and delivery of related products or services,  
9 including from the following entities:

10 (A) Research and academic institutions.

11 (B) Public communication or broadcast en-  
12 tities.

13 (C) Emergency management agencies.

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

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

17 (F) Business communities.

18 (G) Other entities as designated by the Di-  
19 rector of the Office of Science and Technology  
20 Policy.

21 (2) PROHIBITION.—Members of the Advisory  
22 Committee may not be employees of the Federal  
23 Government.

1 (b) ASSESSMENT.—The Advisory Committee shall  
2 offer assessments and recommendations relating to the  
3 following:

4 (1) Tailored forecasting, detection, and moni-  
5 toring products and tools.

6 (2) Communication and delivery methods of  
7 wildfire forecasting, detection, and monitoring infor-  
8 mation.

9 (3) Opportunities to streamline Federal fore-  
10 casting, monitoring, and detection information to  
11 local emergency personnel and communities.

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

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

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

20 (d) REPORTS.—Not less frequently than biennially,  
21 the Advisory Committee shall report to the Director of the  
22 Office of Science and Technology Policy on the assess-  
23 ments carried out under subsection (b) and its rec-  
24 ommendations for ways to improve the coordination and



1 dissemination of wildfire forecasts, warnings, and detec-  
2 tion and monitoring information.

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

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

11 (g) CONFLICT OF INTEREST.—An Advisory Com-  
12 mittee member shall recuse himself or herself from any  
13 Advisory Committee activity in which he or she has an  
14 actual pecuniary interest.

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

16 (a) IN GENERAL.—The Administrator of the Na-  
17 tional Oceanic and Atmospheric Administration shall es-  
18 tablish a fire weather testbed to enable engagement across  
19 the Federal Government, State and local governments,  
20 academia, private and federally funded research labora-  
21 tories, the private sector, and end-users in order to evalu-  
22 ate the accuracy and usability of technology, models, fire  
23 weather products and services, and other research to accel-  
24 erate the implementation, transition to operations, and use  
25 of new capabilities by the National Oceanic and Atmos-

1 pheric Administration, Federal and land management  
2 agencies, and other relevant stakeholders.

3 (b) RESOURCES.—In carrying out this section, the  
4 Administrator of the National Oceanic and Atmospheric  
5 Administration may not transfer or reprogram any funds,  
6 detail any personnel, or make use of any infrastructure  
7 from cooperative institutes of the National Oceanic and  
8 Atmospheric Administration in existence as of the date of  
9 the enactment of this Act for the fire weather testbed es-  
10 tablished under subsection (a).

11 (c) AUTHORIZATION OF APPROPRIATIONS.—From  
12 amounts made available for Procurement, Acquisition, and  
13 Construction of the National Oceanic and Atmospheric  
14 Administration, there is authorized to be appropriated  
15 \$15,000,000 for fiscal year 2024 to carry out this section.

16 **SEC. 6. INCIDENT METEOROLOGIST WORKFORCE.**

17 Not later than six months after the date of the enact-  
18 ment of this Act, the Administrator of the National Oee-  
19 nic and Atmospheric Administration shall submit to the  
20 Committee on Science, Space, and Technology of the  
21 House of Representatives and the Committee on Com-  
22 merce, Science, and Transportation of the Senate the re-  
23 sults of an assessment of National Weather Service work-  
24 force and training challenges for Incident Meteorologists,  
25 and a roadmap for overcoming such challenges. Such as-

1 assessment shall take into consideration information tech-  
2 nology support, logistical and administrative operations,  
3 anticipated weather and climate conditions, and feedback  
4 from relevant stakeholders, and shall include, to the max-  
5 imum extent practicable, an identification by the National  
6 Weather Service of the following:

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

9           (2) Potential hiring authorities necessary to  
10 overcome any identified workforce and training chal-  
11 lenges.

12           (3) Alternative services or assistance options  
13 the National Weather Service could provide to meet  
14 operational needs.

15 **SEC. 7. DEFINITIONS.**

16 In this Act:

17           (1) FIRE ENVIRONMENT.—The term “fire envi-  
18 ronment” means—

19                   (A) the environmental conditions, such as  
20 soil moisture, vegetation, topography, snowpack,  
21 atmospheric temperature, moisture, and wind,  
22 that influence—

23                                   (i) fuel and fire behavior; and

24                                   (ii) smoke dispersion and transport;

25                                   and

1 (B) the associated environmental impacts  
2 occurring during and after fire events.

3 (2) FIRE WEATHER.—The term “fire weather”  
4 means the weather conditions that influence the  
5 start, spread, character, or behavior of wildfires or  
6 fires at the wildland-urban interface and relevant  
7 meteorological and chemical phenomena, including  
8 air quality, smoke, and meteorological parameters  
9 such as relative humidity, air temperature, wind  
10 speed and direction, and atmospheric composition  
11 and chemistry, including emissions and mixing  
12 heights.

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