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115TH CONGRESS }
2d Session

SENATE

{ REPORT
115-357

STRENGTHENING THE COOPERATIVE
OBSERVER PROGRAM ACT OF 2018

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 2941



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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

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STRENGTHENING THE COOPERATIVE OBSERVER PROGRAM ACT OF 2018

NOVEMBER 14, 2018.—Ordered to be printed

Mr. THUNE, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 2941]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 2941) to improve the Cooperative Observer Program of the National Weather Service, and for other purposes, having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of S. 2941 is to improve the Cooperative Observer Program (COOP) of the National Weather Service (NWS) in order to support State-coordinated programs that provide data for the Drought Monitoring Program and other weather-dependent services. It would direct the NWS to prioritize the recruitment of new volunteers, particularly in rural areas. The bill would direct the NWS to allow automated reporting where possible and maintain integrated reporting options for items that automated systems are unable to produce, like snow and drought observations.

BACKGROUND AND NEEDS

THE UNITED STATES DROUGHT MONITOR

The United States Drought Monitor (U.S. Drought Monitor), established in 1999, is a weekly map of drought conditions produced jointly by the National Oceanic Atmospheric Administration

(NOAA), the United States Department of Agriculture (USDA), and the National Drought Mitigation Center at the University of Nebraska—Lincoln.¹ The U.S. Drought Monitor compiles data from a wide range of sources and provides weekly maps showing the location and severity of drought (Figure 1).² The maps are based on measurements of climatic, hydrologic, and soil conditions, as well as reported impacts and observations from more than 350 contributors around the country. Climatologists from the partner organizations take turns serving as the lead author each week, examine all the data, and use their best judgment to reconcile any differences among sources.³

¹U.S. Drought Monitor, Background (<http://droughtmonitor.unl.edu/AboutUSDM/Background.aspx>) (accessed June 16, 2018).

²U.S. Drought Monitor, Current Map (<http://droughtmonitor.unl.edu/CurrentMap.aspx>) (accessed 6.18.18).

³Ibid.

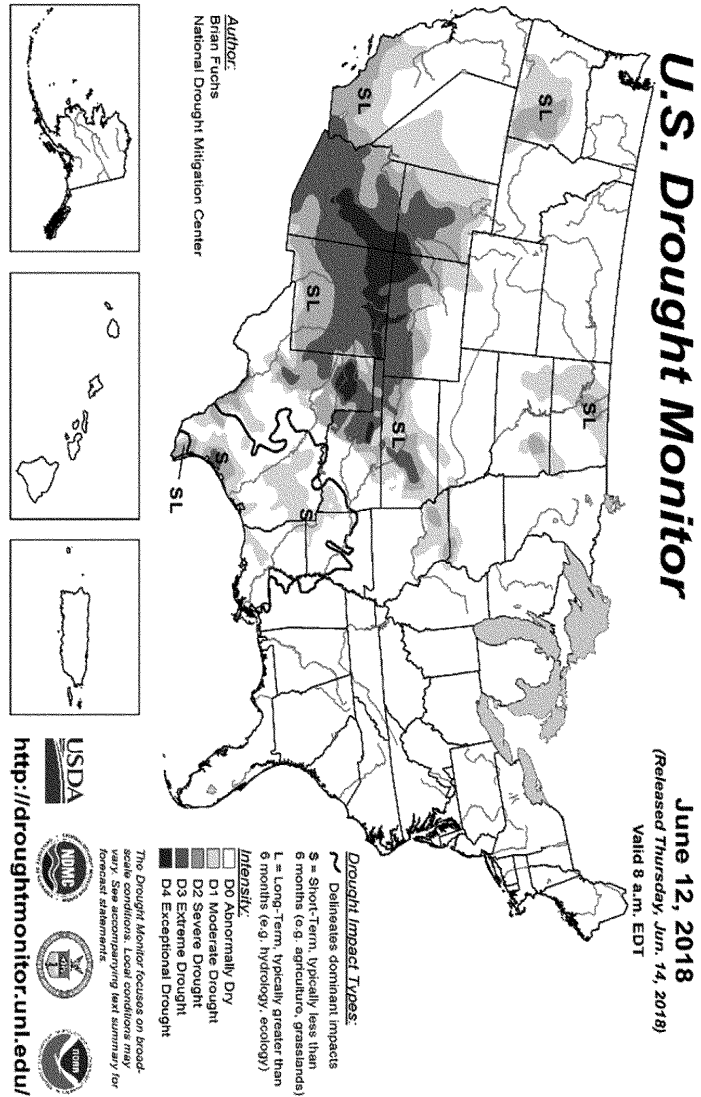


Figure 1. U.S. Drought Monitor for the week of June 12, 2018.

The U.S. Drought Monitor is currently used to determine allocations of drought relief, although it was initially developed to operationally assess the spatial extent and intensity of dryness across the United States.⁴ The USDA's Farm Service Agency uses the U.S. Drought Monitor to distribute relief through the Livestock Forage Disaster Program, the Livestock Assistance Grant Program, and the Non-Fat Dry Milk Program.⁵ The Internal Revenue Service also uses the U.S. Drought Monitor to determine the replacement period for livestock sold because of drought.⁶ As part of its response to the drought of 2012, the USDA streamlined the process for secretarial disaster declarations, making declarations nearly automatic for a county shown in severe drought on the U.S. Drought Monitor for 8 consecutive weeks.⁷

Accurate on-site data collection is crucial for accurate drought assessments, particularly for those communities dependent on drought declarations for financial assistance. In many areas, particularly rural locations, these data are collected by a dedicated network of volunteers in COOP. This bill is complementary to language in S. 2936, the Improved Soil Moisture and Precipitation Monitoring Act of 2018, which requires the National Integrated Drought Information System (NIDIS) to improve the U.S. Drought Monitor by increasing the number of soil moisture profile monitoring stations to one station per 1,250 square miles in any State that has experienced extreme or exceptional drought within any 6 months between January 1, 2016, and the date of enactment, and supports the integration of citizen science, including COOP. On June 18, 2018, S. 2936 was incorporated into the farm bill, Agriculture Improvement Act of 2018, as part of the manager's amendment at the markup of S. 2936 in the Committee on Agriculture, Nutrition, and Forestry of the Senate. The provisions of S. 2936 were included in the Senate-passed H.R. 2, the Agriculture Improvement Act of 2018, which, as of June 27, 2018, is currently in conference.

THE COOPERATIVE OBSERVER PROGRAM

The COOP system is the Nation's largest and oldest weather network and entirely run by volunteers, coordinated by the NWS within NOAA. COOP's mission is to monitor and maintain the Nation's local observational climate and weather data record, and to support weather and climate forecasts, warnings, and other public service programs of the NWS.⁸ COOP data usually consist of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation measurements.⁹ These data may include additional hydrological or meteorological data such as evaporation, soil tem-

⁴ USDA, Drought Products (<https://www.usda.gov/oce/weather/Drought/index.htm>) (accessed 6.19.18).

⁵ USDA, "The U.S. Drought Monitor: A Resource for Farmers, Ranchers and Foresters" (<https://www.usda.gov/media/blog/2018/04/19/us-drought-monitor-resource-farmers-ranchers-and-foresters>) (accessed 6.12.18).

⁶ Internal Revenue Service, Notice 2016-60, "Extension of Replacement Period for Livestock Sold on Account of Drought" (<https://www.irs.gov/pub/irs-drop/n-16-60.pdf>) (accessed 6.12.18).

⁷ U.S. Drought Monitor, Background (<http://droughtmonitor.unl.edu/AboutUSDM/Background.aspx>) (accessed 6.12.18).

⁸ NOAA National Centers for Environmental Information, Cooperative Observer Network (COOP) (<https://www.ncdc.noaa.gov/data-access/land-based-station-data/land-based-datasets/cooperative-observer-network-coop>) (accessed 6.12.18).

⁹ Ibid.

peratures, or soil moisture.¹⁰ There are a number of different types of COOP stations, including climatological (A Stations), hydrological (B Stations), and combined climatological and hydrological (C Stations).¹¹ The Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) is an example of hydrological stations, which contributes valuable, localized precipitation data widely used by a variety of organizations and individuals, including the U.S. Drought Monitor.¹²

Currently there are over 11,000 COOP stations (Figure 2), each run by volunteers who collect daily data. Volunteers send the data to the NWS and National Climatic Data Center by phone, computer, or mail. Many stations have been in use for decades, with some records predating the establishment of the NWS in 1890, stretching back over a century.¹³ These data have been used in recent years for water management, drought assessment, engineering and architectural design, models of energy consumption, environmental impact assessments, environmental monitoring and prediction, litigation, and many other purposes.¹⁴ The range of users also has expanded beyond farmers and government officials to encompass engineers, architects, attorneys, insurance companies, scientists, utility companies, manufacturers, and business planners. For example, more than one-fourth of all requests for COOP data (which are legally certifiable in a court of law) now come from attorneys.¹⁵

¹⁰ Ibid.

¹¹ National Academies Press, *Future of the National Weather Service Cooperative Observer Network* (<https://www.nap.edu/read/6197/chapter/3>) (accessed 6.12.18).

¹² CoCoRaHS, About Us (<https://www.cocorahs.org/Content.aspx?page=aboutus>) (accessed 6.18.18).

¹³ GAO Report, "Climate Monitoring, NOAA Can Improve Management of the U.S. Historical Climatology Network" (<https://www.gao.gov/assets/70/68744.pdf>) (accessed 6.12.18).

¹⁴ National Academies Press, *Future of the National Weather Service Cooperative Observer Network* (<https://www.nap.edu/read/6197/chapter/3>) (accessed 6.12.18).

¹⁵ Ibid.

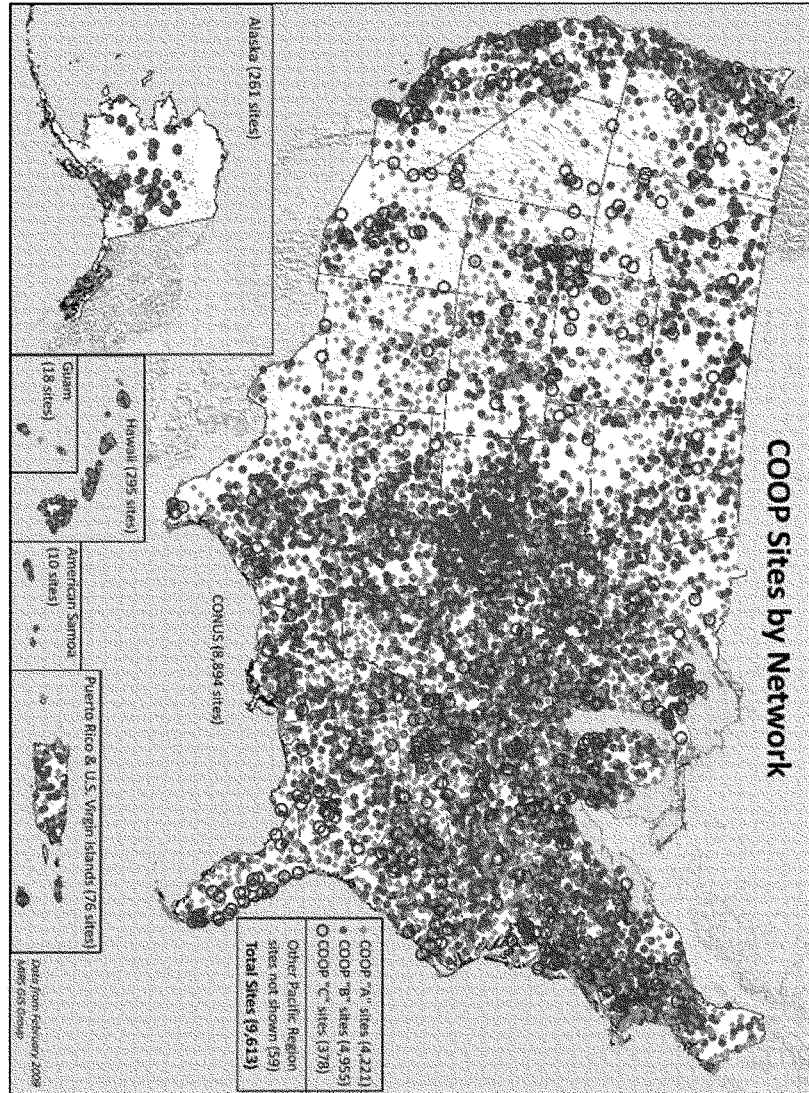


Figure 2. Cooperative Observers Program (COOP) stations in the lower 48 States as of 2009.¹⁶

NWS headquarters establishes the policies, standards, and requirements for managing COOP and weather forecast offices in six NWS regions (central, eastern, southern, western, Alaska, and Pacific) have responsibility for recruiting and training observers and installing and maintaining temperature-measuring equipment and rain gauges on observers' properties. NWS applies the same standards and requirements to all stations in its COOP and has established siting standards for measuring air temperature to ensure uniformity in meeting national and international requirements for climate observations.¹⁷

Although COOP is a successful program, there are many regions with limited observations, particularly in rural areas. Without additional in situ observations, programs like the U.S. Drought Monitor may not be able to sufficiently classify local areas that are experiencing drought. Another concern is the loss of long-running data stations, as volunteers move or pass away. There is a need for the NWS to provide support at the regional and local level to ensure that these stations are not abandoned and that new volunteers are recruited, particularly in data-poor areas. The COOP network is one of the most comprehensive and complete records of temperature and precipitation anywhere in the world, and it is important that it continue to provide meteorological and hydrological data to support drought preparedness and recovery.

SUMMARY OF PROVISIONS

If enacted, S. 2941, the Strengthening the Cooperative Observer Program Act of 2018 would do the following:

- Direct the Under Secretary of Commerce for Oceans and Atmosphere and the NWS to improve COOP by supporting State-coordinated programs, particularly where observations are scarce.
- Direct the NWS to work with State weather service headquarters to increase COOP participation and to add stations in regions with sparse data collection, and ensure that data streams from stations that have been contributing data for more than 50 years are maintained and continually staffed by volunteers.
- Direct the NWS to ensure that opportunities exist for automated and integrated reporting to lessen the burden on volunteers.
- Direct the NWS to coordinate with State and regional offices every 6 months, and coordinate with other Federal agencies to leverage opportunities to grow the COOP network.

LEGISLATIVE HISTORY

S. 2941, the Strengthening the Cooperative Observer Program Act of 2018, was introduced on May 23, 2018, by Senator Thune (for himself and Senator Gardner), and was referred to the Committee on Commerce, Science, and Transportation. On June 27, 2018, the Committee met in open Executive Session and by voice

¹⁶NOAA Climate.gov (<https://www.climate.gov/file/coop-stations-background.jpg>) (accessed 6.18.18).

¹⁷Ibid.

vote ordered S. 2941 reported favorably with an amendment (in the nature of a substitute). Senator Fischer offered an amendment to add “drought conditions” to the list of reportable phenomenon. That amendment was accepted by the Committee.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

S. 2941—Strengthening the Cooperative Observer Program Act of 2018

Summary: S. 2941 would direct the National Oceanic and Atmospheric Administration (NOAA) to improve the weather data collection efforts of its Cooperative Observer Program by broadening participation, expanding the availability of data-gathering equipment, and adding observation stations throughout the country.

CBO estimates that implementing the bill would cost \$9 million over the 2019–2023 period, assuming appropriation of the necessary amounts.

Enacting the bill would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

CBO estimates that enacting S. 2941 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2029.

S. 2941 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

Estimated cost to the Federal Government: The estimated budgetary effect of S. 2941 is shown in the following table. The costs of the legislation fall within budget function 300 (natural resources and environment).

	By fiscal year, in millions of dollars—						
	2018	2019	2020	2021	2022	2023	2023–2019
INCREASES IN SPENDING SUBJECT TO APPROPRIATION							
Estimated Authorization Level	0	2	2	2	2	2	10
Estimated Outlays	0	1	2	2	2	2	9

Basis of estimate: For this estimate, CBO assumes that S. 2941 will be enacted near the end of fiscal year 2018 and that the necessary amounts will be appropriated for each year beginning in 2019.

S. 2941 would direct NOAA to improve the Cooperative Observer Program, which installs and maintains weather-recording equipment on the private property of volunteers throughout the country; those volunteers collect weather data. Currently, there are about 8,200 observation sites. In 2018, NOAA allocated \$15 million to the program.

The bill would direct NOAA to add observation stations in states and regions where observation sites are scarce and provide more automated reporting equipment to current sites. Using information from NOAA, CBO estimates that implementing those requirements

would cost \$9 million over the 2019–2023 period. That amount would pay for 1,600 new observation sites and for new equipment at about 2,000 current sites.

Pay–As–You–Go considerations: None.

Increase in long–term direct spending and deficits: CBO estimates that enacting S. 2941 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2029.

Mandates: S. 2941 contains no intergovernmental or private-sector mandates as defined in UMRA.

Estimate prepared by: Federal costs: Robert Reese Mandates; Jon Sperl.

Estimate reviewed by: Kim P. Cawley, Chief, Natural and Physical Resources Cost Estimates Unit; H. Samuel Papenfuss Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

S. 2941, as reported, would not create any new programs or impose any new regulatory requirements, and therefore would not subject any individuals or businesses to new regulations.

ECONOMIC IMPACT

Enactment of this legislation is not expected to have a negative impact on the Nation’s economy.

PRIVACY

The reported bill is not expected to impact the personal privacy of individuals.

PAPERWORK

S. 2941 would not create increases in paperwork burdens if enacted.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title.

This section would provide that the bill may be cited as the “Strengthening the Cooperative Observer Program Act of 2018.”

Section 2. Improvements to Cooperative Observer Program of National Weather Service.

This section would direct the Under Secretary of Commerce for Oceans and Atmosphere to provide support to COOP by supporting State and regional observer programs, particularly in areas where observations are scarce, and to work with State weather service headquarters to increase participation in the program and to add stations. This section also would direct the Secretary to ensure that data streams from long-contributing data stations are maintained and continually staffed by volunteers, prioritize the recruitment of new volunteers for the program, and lessen the burden on volunteers by ensuring that opportunities for automated and integrated reporting exist. Additionally, this section would direct the NWS to coordinate with State and regional offices every 180 days on the status of COOP stations, and to coordinate with other Federal agencies in order to leverage opportunities to grow the COOP network.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the Committee states that the bill as reported would make no change to existing law.

