

GAO Highlights

Highlights of [GAO-15-386T](#), a testimony before the Subcommittees on Environment and Oversight, House Committee on Science, Space, and Technology

Why GAO Did This Study

NOAA is procuring the next generation of polar and geostationary weather satellites to replace aging satellites that are approaching the end of their useful lives. Both new sets of satellites will provide critical weather forecasting data over the next two decades. GAO has reported that gaps in polar satellite coverage and in backup coverage for geostationary satellites are likely in the near future. Given the criticality of satellite data to weather forecasts, concerns that problems and delays on the new satellite acquisition programs will result in gaps in the continuity of critical satellite data, and the impact of such gaps on the health and safety of the U.S. population, GAO added mitigating weather satellite gaps to its High-Risk List in 2013 and it remains on the 2015 update to the High-Risk List.

GAO was asked to testify on two recently released reports on NOAA's satellite programs, specifically on (1) the JPSS program's status, the potential for a gap and mitigation alternatives, and contingency plans, and (2) the GOES-R program's status, potential for a gap, and contingency plans.

What GAO Recommends

In its recently issued reports, GAO recommended that NOAA update its polar data gap assessment, address shortfalls in both its polar and geostationary contingency plans, and prioritize mitigation projects most likely to address a gap in polar satellite coverage. NOAA concurred with GAO's recommendations and identified steps it is taking to implement them.

View [GAO-15-386T](#). For more information, contact Dave Powner at (202) 512-9286 or pownerd@gao.gov.

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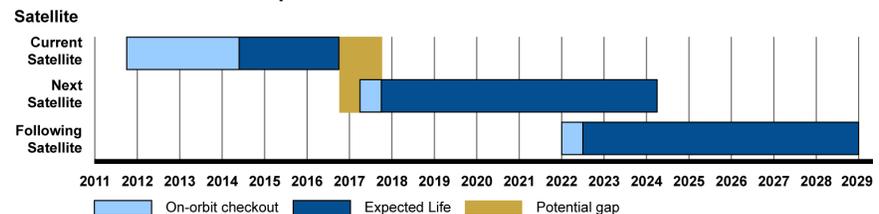
ENVIRONMENTAL SATELLITES

Improvements Needed in NOAA's Mitigation Strategies as It Prepares for Potential Satellite Coverage Gaps

What GAO Found

The National Oceanic and Atmospheric Administration's (NOAA) \$11.3 billion Joint Polar Satellite System (JPSS) program has recently completed significant development activities and remains within its cost and schedule baselines; however, recent cost growth on key components is likely unsustainable, and schedule delays could increase the potential for a near-term satellite data gap. In addition, while the program has reduced its estimate for a near-term gap in the afternoon orbit, its gap assessment was based on incomplete data. A gap in satellite data may occur earlier and last longer than NOAA anticipates. The figure below depicts a possible 11-month gap, in which the current satellite lasts its full expected 5-year life (until October 2016) and the next satellite is launched in March 2017 and undergoes on-orbit testing until September 2017.

Timeline for a Potential Gap in Polar Satellite Data in the Afternoon Orbit



Source: GAO analysis based on NOAA and NASA data. | GAO-15-386T

Multiple alternatives to prevent or reduce the impact of a gap exist. Key options for reducing the impact of a near-term gap include extending legacy satellites, obtaining additional observations such as data from aircraft, advancing data assimilation and a global forecast model, and increasing high performance computing capacity. While NOAA has improved its contingency plan by identifying mitigation strategies and specific activities, the agency's plan has shortfalls such as not assessing the cost and impact of available alternatives. In addition, NOAA has not yet prioritized mitigation projects most likely to address a gap, and key mitigation projects have been delayed. Until the agency addresses these shortfalls, the agency will have less assurance that it is prepared to deal with a near-term gap in polar satellite coverage.

NOAA's \$10.8 billion Geostationary Operational Environmental Satellite-R (GOES-R) program has also made major progress on its first satellite. However, the program has continued to experience delays in major milestones and has not efficiently closed defects on selected components, both of which could increase the risk of a launch delay. As the GOES-R program approaches its expected launch date of March 2016, it faces a potential gap of more than a year during which an on-orbit backup satellite would not be available. Specifically, there could be no backup from April 2015 (when an operational satellite is expected to reach its end-of-life) through September 2016 (after GOES-R completes its post-launch test period). Any delay to the GOES-R launch date would extend the length of time without a backup satellite and, if an operational satellite were to experience a problem during that time, there could be a gap in GOES coverage. NOAA has improved its plan to mitigate gaps in satellite coverage, but it does not yet include steps for mitigating a delayed launch.