

GAO Highlights

Highlights of [GAO-15-47](#), a report to the Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

NOAA established the JPSS program in 2010 to replace aging polar satellites and provide critical environmental data used in forecasting weather and measuring variations in climate. However, GAO and NOAA have previously reported that a gap in satellite data between the current satellite and the next one is likely. Given the criticality of satellite data to weather forecasting, the likelihood of a significant satellite data gap, and the potential impact of a gap on the health and safety of the U.S. population and economy, GAO added this issue to its High Risk List in 2013.

GAO was asked to review the JPSS program. GAO's objectives were to (1) evaluate NOAA's progress on the JPSS satellite program with respect to cost, schedule, and mitigation of key risks; (2) identify the benefits and challenges of alternatives for polar satellite gap mitigation; and (3) assess NOAA's efforts to establish and implement a comprehensive contingency plan for potential gaps in polar satellite data. To do so, GAO analyzed program management status reports, milestone reviews, and risk data; examined polar gap contingency plans; and interviewed experts as well as agency and contractor officials.

What GAO Recommends

GAO is recommending NOAA track completion dates for risk mitigation activities, update its data gap assessment, address shortfalls in its contingency plan, prioritize mitigation projects most likely to address a gap, and report progress on all mitigation projects. NOAA concurred with GAO's recommendations and identified steps it is taking to implement them.

View [GAO-15-47](#). For more information, contact Dave Powner at (202) 512-9286 or pownerd@gao.gov

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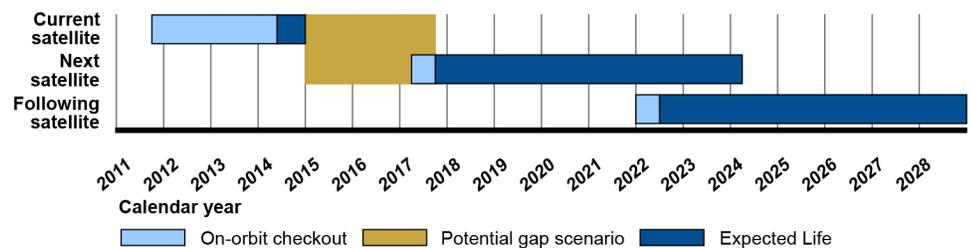
POLAR WEATHER SATELLITES

NOAA Needs To Prepare for Near-term Data Gaps

What GAO Found

The 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 risks remain that could increase the potential for near-term satellite data gaps. For example, technical issues experienced while developing a key instrument have led to a very tight schedule. The National Oceanic and Atmospheric Administration (NOAA) is working to mitigate such risks, but is not tracking actual completion dates for its risk mitigation activities. In addition, while the program has reduced its estimate for a near-term satellite data gap in the afternoon orbit to only 3 months, its gap assessment was based on incomplete data (such as the increasing threat from space debris) and the agency has not updated its assessment to address these limitations. As shown below, a gap in satellite data may occur earlier and last longer than NOAA anticipates.

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



Source: GAO analysis based on NOAA and NASA data. | GAO-15-47

Experts within and outside of NOAA identified almost 40 alternatives for mitigating potential gaps in polar satellite data, which offer a variety of benefits and challenges. These alternatives include actions to prevent or limit a potential gap by providing JPSS-like capabilities, and actions that could reduce the impact of a potential gap by (a) extending and expanding the use of current data sources, (b) enhancing modeling and data assimilation, (c) developing new data sources, or (d) exploring opportunities with foreign and domestic partners. However, obstacles to the alternatives, such as the time required to develop new instruments, may restrict them from being available to address a near-term gap.

While multiple alternatives for mitigating a gap exist, NOAA's contingency plan focuses on a subset of these alternatives. NOAA has improved its contingency plan by identifying mitigation strategies and specific activities. However, the agency's plan has shortfalls such as not providing an assessment of available alternatives based on their cost and potential impacts. In addition, key projects affecting improvements to forecast models and assimilation of additional data sources have been delayed, but NOAA has not yet prioritized mitigation projects most likely to address a gap. Moreover, NOAA is not providing consistent or comprehensive reporting of its progress on all mitigation projects. Until NOAA addresses shortfalls in contingency planning, implements its most critical contingency activities before data gaps can occur in the near-term, and improves its progress monitoring, the agency will have less assurance that it is adequately prepared to deal with a gap in polar satellite coverage.