



Highlights of [GAO-10-113](#), a report to the Chairman, Select Committee on Energy Independence and Global Warming, House of Representatives

## Why GAO Did This Study

Changes in the climate attributable to increased concentrations of greenhouse gases may have significant impacts in the United States and the world. For example, climate change could threaten coastal areas with rising sea levels. Greenhouse gases already in the atmosphere will continue altering the climate system into the future, regardless of emissions control efforts. Therefore, adaptation—defined as adjustments to natural or human systems in response to actual or expected climate change—is an important part of the response to climate change.

GAO was asked to examine (1) what actions federal, state, local, and international authorities are taking to adapt to a changing climate; (2) the challenges that federal, state, and local officials face in their efforts to adapt; and (3) actions that Congress and federal agencies could take to help address these challenges. We also discuss our prior work on similarly complex, interdisciplinary issues. This report is based on analysis of studies, site visits to areas pursuing adaptation efforts, and responses to a Web-based questionnaire sent to federal, state, and local officials.

## What GAO Recommends

GAO recommends that within the Executive Office of the President the appropriate entities, such as the Council on Environmental Quality (CEQ), develop a national adaptation plan that includes setting priorities for federal, state, and local agencies. CEQ generally agreed with our recommendations.

View [GAO-10-113](#) or [key components](#). To view the e-supplement online, click on [GAO-10-114SP](#). For more information, contact John B. Stephenson at (202) 512-3841 or [stephensonj@gao.gov](mailto:stephensonj@gao.gov).

# CLIMATE CHANGE ADAPTATION

## Strategic Federal Planning Could Help Government Officials Make More Informed Decisions

### What GAO Found

While available information indicates that many governments have not yet begun to adapt to climate change, some federal, state, local, and international authorities have started to act. For example, the U.S. National Oceanic and Atmospheric Administration's Regional Integrated Sciences and Assessments program supports research to meet the adaptation-related information needs of local decision makers. In another example, the state of Maryland's strategy for reducing vulnerability to climate change focuses on protecting habitat and infrastructure from future risks associated with sea level rise and coastal storms. Other GAO discussions with officials from New York City; King County, Washington; and the United Kingdom show how some governments have started to adapt to current and projected impacts in their jurisdictions.

The challenges faced by federal, state, and local officials in their efforts to adapt fell into three categories, based on GAO's analysis of questionnaire results, site visits, and available studies. First, competing priorities make it difficult to pursue adaptation efforts when there may be more immediate needs for attention and resources. For example, about 71 percent (128 of 180) of the officials who responded to our questionnaire rated "non-adaptation activities are higher priorities" as very or extremely challenging. Second, a lack of site-specific data, such as local projections of expected changes, can reduce the ability of officials to manage the effects of climate change. For example, King County officials noted that they are not sure how to translate climate data into effects on salmon recovery. Third, adaptation efforts are constrained by a lack of clear roles and responsibilities among federal, state, and local agencies. Of particular note, about 70 percent (124 of 178) of the respondents rated the "lack of clear roles and responsibilities for addressing adaptation across all levels of government" as very or extremely challenging.

GAO's analysis also found that potential federal actions for addressing challenges to adaptation efforts fell into three areas. First, training and education efforts could increase awareness among government officials and the public about the impacts of climate change and available adaptation strategies. Second, actions to provide and interpret site-specific information would help officials understand the impacts of climate change at a scale that would enable them to respond. For instance, about 80 percent (147 of 183) of the respondents rated the "development of state and local climate change impact and vulnerability assessments" as very or extremely useful. Third, Congress and federal agencies could encourage adaptation by clarifying roles and responsibilities. About 71 percent (129 of 181) of the respondents rated the development of a national adaptation strategy as very or extremely useful.

Climate change is a complex, interdisciplinary issue with the potential to affect every sector and level of government operations. Our past work on crosscutting issues suggests that governmentwide strategic planning—with the commitment of top leaders—can integrate activities that span a wide array of federal, state, and local entities.