Adaptation

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Key Message 31.1

Adaptation Is Occurring but Is Insufficient in Relation to the Pace of Climate Change

Diverse adaptation activities are occurring across the US (*very high confidence*). Adaptation activities are increasingly moving from awareness and assessment toward planning and implementation (*medium confidence*), with limited advancement toward monitoring and evaluation (*high confidence*). Numerous social, economic, physical, and psychological barriers are preventing more widespread adoption and implementation of adaptation (*high confidence*). Current adaptation efforts and investments are insufficient to reduce today's climate-related risks (*high confidence*) and are unlikely to keep pace with future changes in the climate (*medium confidence*).

Key Message 31.2

Effective Adaptation Requires Centering Equity

People and communities are affected by climate change in different ways (*very high confidence*). How people and institutions adapt depends on social factors, including individual and community preferences, capacity, and access to resources (*very high confidence*). Adaptation processes, decisions (about whether, where, and how adaptation occurs), and actions that do not explicitly address the uneven distribution of climate harms, and the social processes and injustices underlying these disparities, can exacerbate social inequities and increase exposure to climate harms (*high confidence*).

Key Message 31.3

Transformative Adaptation Will Be Needed to Adequately Address Climate-Related Risks

Climate adaptation actions undertaken in the United States to date have generally been small in scale and incremental in approach, involving minor changes to business as usual (*very high confidence*). Transformative adaptation, which involves more fundamental shifts in systems, values, and practices, will be necessary in many cases to adequately address the risks of current and future climate change (*high confidence*). New monitoring and evaluation methods will also be needed to assess the effectiveness and sufficiency of adaptation and to address equity (*high confidence*).

Key Message 31.4

Effective Adaptation Governance Empowers Multiple Voices to Navigate Competing Goals

Adaptation involves actors from government, private-sector, nongovernmental (e.g., nonprofit and for-profit institutions), and civil society organizations, which often have different priorities and approaches (*high confidence*). Adaptation decision-makers must balance competing goals while also addressing uncertainties regarding future climate change and the ways that political, social, and technological systems will be transformed (*high confidence*). To minimize the potential for adaptation actions to benefit some at the expense of others, adaptation processes must emphasize collaboration, center equity and justice, and incorporate a wide range of values and knowledge sources (*medium confidence*).

Key Message 31.5

Adaptation Requires More Than Scientific Information and Understanding

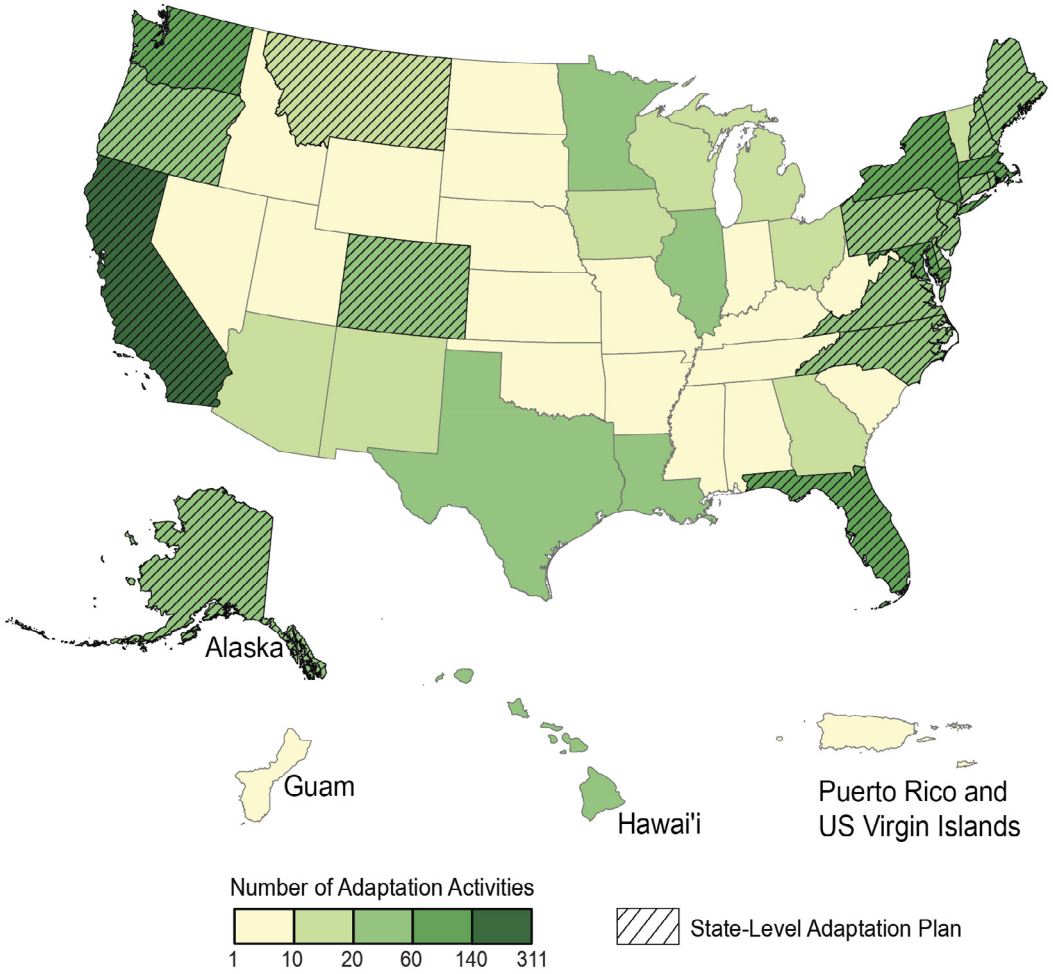
Effective adaptation to a changing climate requires both decision-relevant climate information and evidence-based decision-making approaches (*high confidence*). Adaptation requires that researchers intentionally collaborate with communities to identify goals, assess vulnerability, improve capacity, and address contextual factors, such as values, culture, risk perception, and historic injustices (*medium confidence*). Climate services can be improved by ensuring access for historically disinvested communities and by attention to procedural and recognitional equity when scientists work with communities and decision-makers (*medium confidence*).

Key Message 31.6

Adaptation Investments and Financing Are Difficult to Track and May Be Inadequate

Investments in adaptation are being made at the federal, state, territorial, Tribal, and local levels, as well as within the private sector, but they are not always evenly distributed, coordinated, tracked, or reported (*high confidence*) and may be inadequate (*medium confidence*). Future adaptation investment needs are expected to be significant, although projected amounts vary due to uncertainty in future emissions trajectories, associated impacts, and the timing of implementation (*high confidence*). Proactive adaptation can reduce some of the most severe costs of future climate change, particularly under very high emissions scenarios in the late 21st century (*medium confidence*), although adaptation is still needed in the present for communities and infrastructure that may not be well adapted to face current climate conditions (*high confidence*).

Number of Publicly Documented Adaptation Activities (2018–2022)



The level of documented public- and private-sector adaptation activity varies widely across US states and territories.

Figure 31.1. This figure illustrates the number of public- and private-sector adaptation activities—see examples offered in Table 31.1—publicly documented and/or updated since 2018. There are several states that have publicly documented numerous adaptation activities, while others have very few or have not documented the activities. Figure credit: WSP, University of Delaware, and University of California, Irvine. See figure metadata for additional contributors.

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