

Southern Great Plains

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Key Message 26.1

How We Live: Climate Change Is Degrading Lands, Waters, Culture, and Health

Climate change is beginning to alter how we live in the Southern Great Plains, putting us at risk from climate hazards that degrade our lands and waters, quality of life, health and well-being, and cultural interconnectedness (*high confidence*). Many climate hazards are expected to become more frequent, intense, or prolonged; to broaden in spatial extent; and to result in more people experiencing costly, deadly, or stressful climate-related conditions (*very likely, high confidence*). To address the growing risk, effective climate-resilient actions include implementing nature-based solutions; valuing Indigenous, traditional, and local knowledges; and infusing climate change solutions into community planning (*medium confidence*).

Key Message 26.2

How We Work: Climate Changes Are Creating Economic Challenges and Opportunities

As climate conditions change, businesses and industries across the Southern Great Plains are experiencing disruptions and losses in productivity and profits—but also new economic opportunities (*high confidence*). In coming decades, warmer temperatures, more erratic precipitation, and sea level rise are expected to force widespread and costly changes in how we work (*very likely, high confidence*). Businesses and industries have opportunities to harness their diverse knowledge, resources, and workers to develop products and services in climate mitigation technologies, adaptation strategies, and resilient design that will enhance the region's economy (*medium confidence*).

Key Message 26.3

How We Play: Climate Extremes Are Endangering Sports, Recreation, and Leisure

Extreme climate-related events are negatively influencing how we play and participate in outdoor sport, recreation, and physical activities in the Southern Great Plains (*very high confidence*). Climate change is expected to increase heat-related illness and death, reduce outdoor physical activity, and decrease athletic performance (*very likely, high confidence*). Individuals, communities, and sports organizations can adapt to these hazards through strategies such as modifying the timing, location, intensity, or monitoring of activities (*high confidence*).

Key Message 26.4

How We Heal: Climate Change Is Exacerbating Existing Social and Environmental Disparities

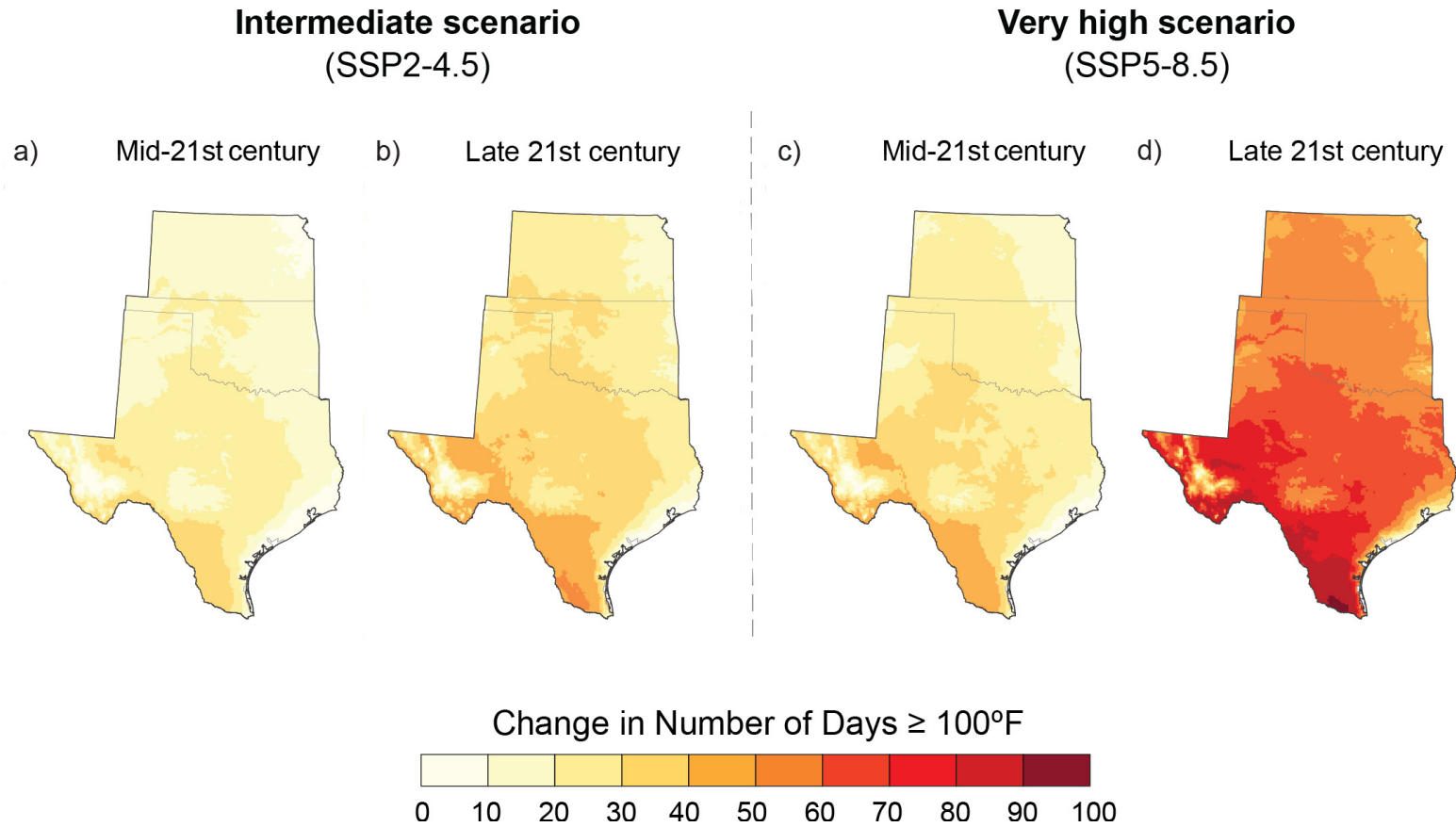
Some neighborhoods and communities in the Southern Great Plains are suffering disproportionately from climate-related hazards because of long-standing marginalization, discrimination, and governmental policies (*very high confidence*). As a result, climate change will compound existing social and environmental burdens on the people, neighborhoods, and communities with the fewest resources to prepare and adapt (*very high confidence*). Our institutions and governments can play a role in improving outcomes for these people and places by adopting climate adaptation and hazard-mitigation practices and policies that prioritize social equity and justice, aim to reduce community risks, build resilience, and repair past injustices (*medium confidence*).

Key Message 26.5

How We Serve: Climate Change Is Straining Public Infrastructure and Services

The institutions that serve our communities have been challenged to respond and adapt to more frequent and intense weather events (*medium confidence*). Without significant adaptation, climate change is expected to strain water supplies, transportation infrastructure, and emergency services across the Southern Great Plains (*high confidence*). Actions that can enhance our community resilience include substantially reducing greenhouse gas emissions, installing or retrofitting climate-resilient infrastructure, educating students and the public on climate change, and cultivating the capacity of faith- and volunteer-based aid organizations to assist hazard planning, response, and recovery (*medium confidence*).

Projected Change in Annual Number of Days of 100°F or Higher



The number of extreme-heat days is projected to increase.

Figure 26.13. Outdoor physical activity becomes more dangerous in extremely hot temperatures. By midcentury, the number of days per year with temperatures at or above 100°F across the Southern Great Plains is projected to increase (a) by 10–40 days under an intermediate scenario (SSP2-4.5) and (c) by 10–60 days under a very high scenario (SSP5-8.5) above the 1991–2020 average. By late century, projections indicate that the number of these extreme-heat days would increase (b) by 10–60 days (SSP2-4.5) or (d) by 30–90 days (SSP5-8.5), depending on scenario. The historical average ranges from fewer than 10 days per year in Kansas to fewer than 20 days across most of Oklahoma and Texas, with 40–60 days along the Mexican border. Figure credit: See figure metadata for contributors.

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