



# Preparing for a Changing Climate

## Washington State's Integrated Climate Response Strategy



## Executive Summary

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The full version of this report is available on the Department of Ecology's website at

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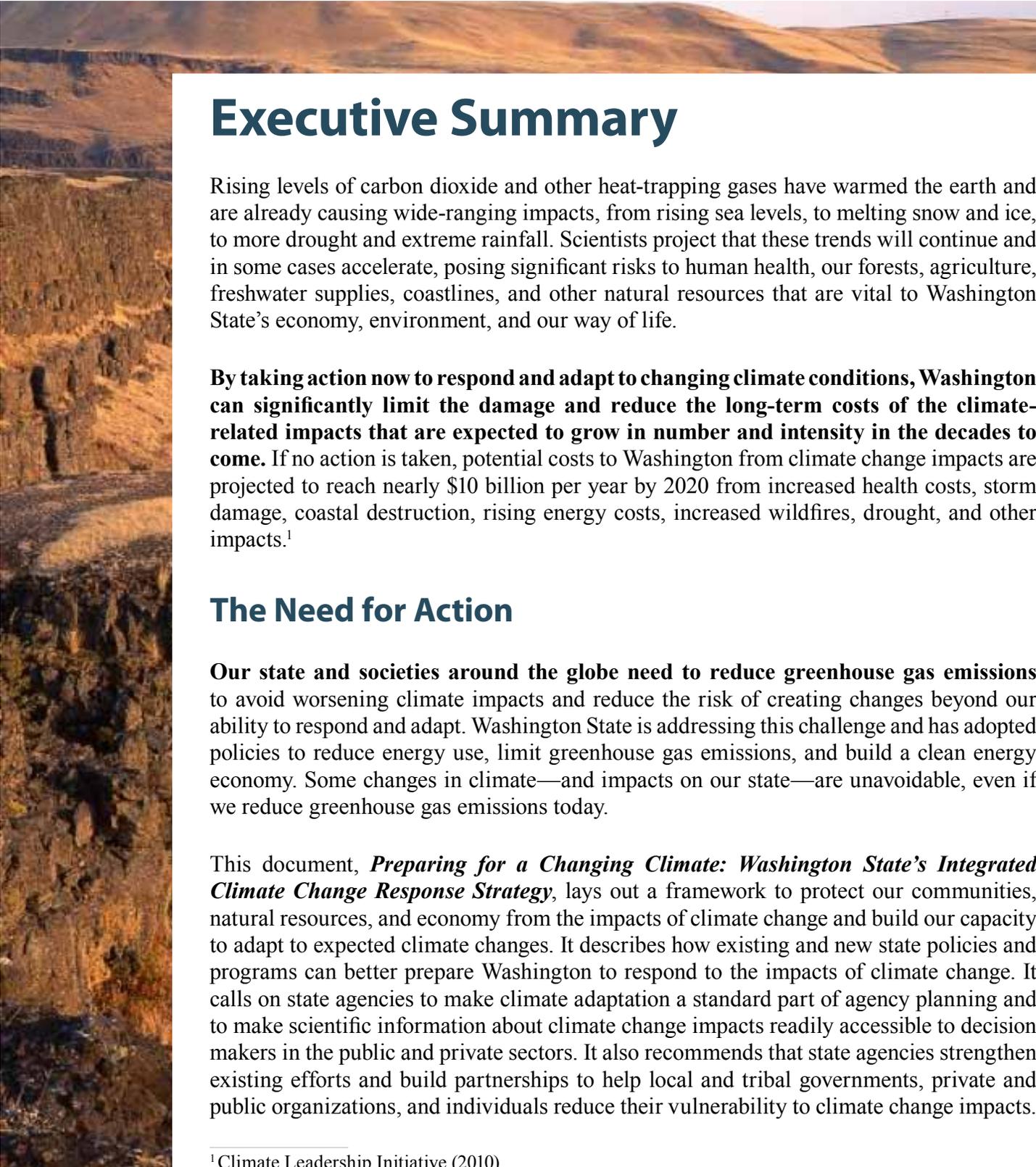
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## Executive Summary

Rising levels of carbon dioxide and other heat-trapping gases have warmed the earth and are already causing wide-ranging impacts, from rising sea levels, to melting snow and ice, to more drought and extreme rainfall. Scientists project that these trends will continue and in some cases accelerate, posing significant risks to human health, our forests, agriculture, freshwater supplies, coastlines, and other natural resources that are vital to Washington State's economy, environment, and our way of life.

**By taking action now to respond and adapt to changing climate conditions, Washington can significantly limit the damage and reduce the long-term costs of the climate-related impacts that are expected to grow in number and intensity in the decades to come.** If no action is taken, potential costs to Washington from climate change impacts are projected to reach nearly \$10 billion per year by 2020 from increased health costs, storm damage, coastal destruction, rising energy costs, increased wildfires, drought, and other impacts.<sup>1</sup>

## The Need for Action

**Our state and societies around the globe need to reduce greenhouse gas emissions** to avoid worsening climate impacts and reduce the risk of creating changes beyond our ability to respond and adapt. Washington State is addressing this challenge and has adopted policies to reduce energy use, limit greenhouse gas emissions, and build a clean energy economy. Some changes in climate—and impacts on our state—are unavoidable, even if we reduce greenhouse gas emissions today.

This document, *Preparing for a Changing Climate: Washington State's Integrated Climate Change Response Strategy*, lays out a framework to protect our communities, natural resources, and economy from the impacts of climate change and build our capacity to adapt to expected climate changes. It describes how existing and new state policies and programs can better prepare Washington to respond to the impacts of climate change. It calls on state agencies to make climate adaptation a standard part of agency planning and to make scientific information about climate change impacts readily accessible to decision makers in the public and private sectors. It also recommends that state agencies strengthen existing efforts and build partnerships to help local and tribal governments, private and public organizations, and individuals reduce their vulnerability to climate change impacts.

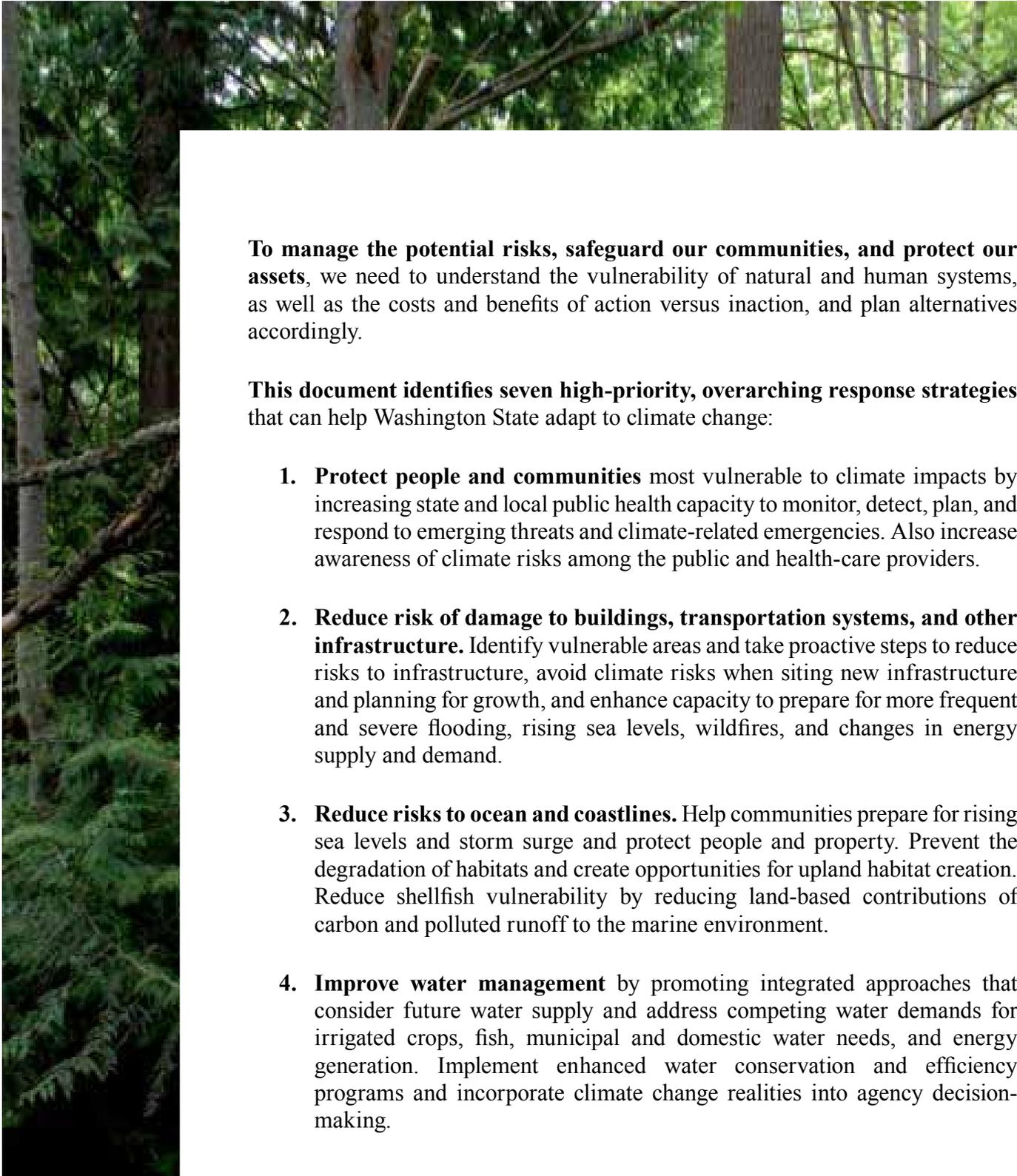
<sup>1</sup>Climate Leadership Initiative (2010).

## Washington's Changing Climate and Risks

While Washingtonians have experience dealing with natural weather variability, climate change is moving us beyond a range where past experience can provide a reliable guide for what we might expect in the future.

- **Climate change could have severe consequences to human health** and will likely increase the number of people exposed to illness and injuries due to declining air quality and more frequent and severe heat waves, drought, wildfires, and flooding.
- **Our communities and transportation, energy, and other infrastructure could face increased damage costs and disruptions** from more frequent and severe flooding, wildfires, changes in energy supply and demand, and other climate impacts.
- **Coastal communities and ecosystems could face increased risks from sea level rise and storm surge.** Increasing ocean acidity poses risks to our shellfish industry and could alter the marine food web.
- **The quantity and quality of water available** for communities, irrigation, fish, hydropower generation, recreation, and other uses will be affected by declining snowpack, changes in seasonal streamflow, and increases in summer demand for water.
- **Fish, wildlife, and natural systems** will face increased stress. Climate change will more likely damage and destroy certain types of habitats, increase threats to certain species such as coldwater fish, alter natural patterns such as animal migrations or flower blooms, and alter the presence of pests and invasive species.
- **Washington's farms and forests will be threatened** by increased disease, pests, weeds, and fire, along with reduced summer water supplies. Climate change impacts could affect crop yields and benefit or damage different crops.





**To manage the potential risks, safeguard our communities, and protect our assets,** we need to understand the vulnerability of natural and human systems, as well as the costs and benefits of action versus inaction, and plan alternatives accordingly.

**This document identifies seven high-priority, overarching response strategies** that can help Washington State adapt to climate change:

- 1. Protect people and communities** most vulnerable to climate impacts by increasing state and local public health capacity to monitor, detect, plan, and respond to emerging threats and climate-related emergencies. Also increase awareness of climate risks among the public and health-care providers.
- 2. Reduce risk of damage to buildings, transportation systems, and other infrastructure.** Identify vulnerable areas and take proactive steps to reduce risks to infrastructure, avoid climate risks when siting new infrastructure and planning for growth, and enhance capacity to prepare for more frequent and severe flooding, rising sea levels, wildfires, and changes in energy supply and demand.
- 3. Reduce risks to ocean and coastlines.** Help communities prepare for rising sea levels and storm surge and protect people and property. Prevent the degradation of habitats and create opportunities for upland habitat creation. Reduce shellfish vulnerability by reducing land-based contributions of carbon and polluted runoff to the marine environment.
- 4. Improve water management** by promoting integrated approaches that consider future water supply and address competing water demands for irrigated crops, fish, municipal and domestic water needs, and energy generation. Implement enhanced water conservation and efficiency programs and incorporate climate change realities into agency decision-making.

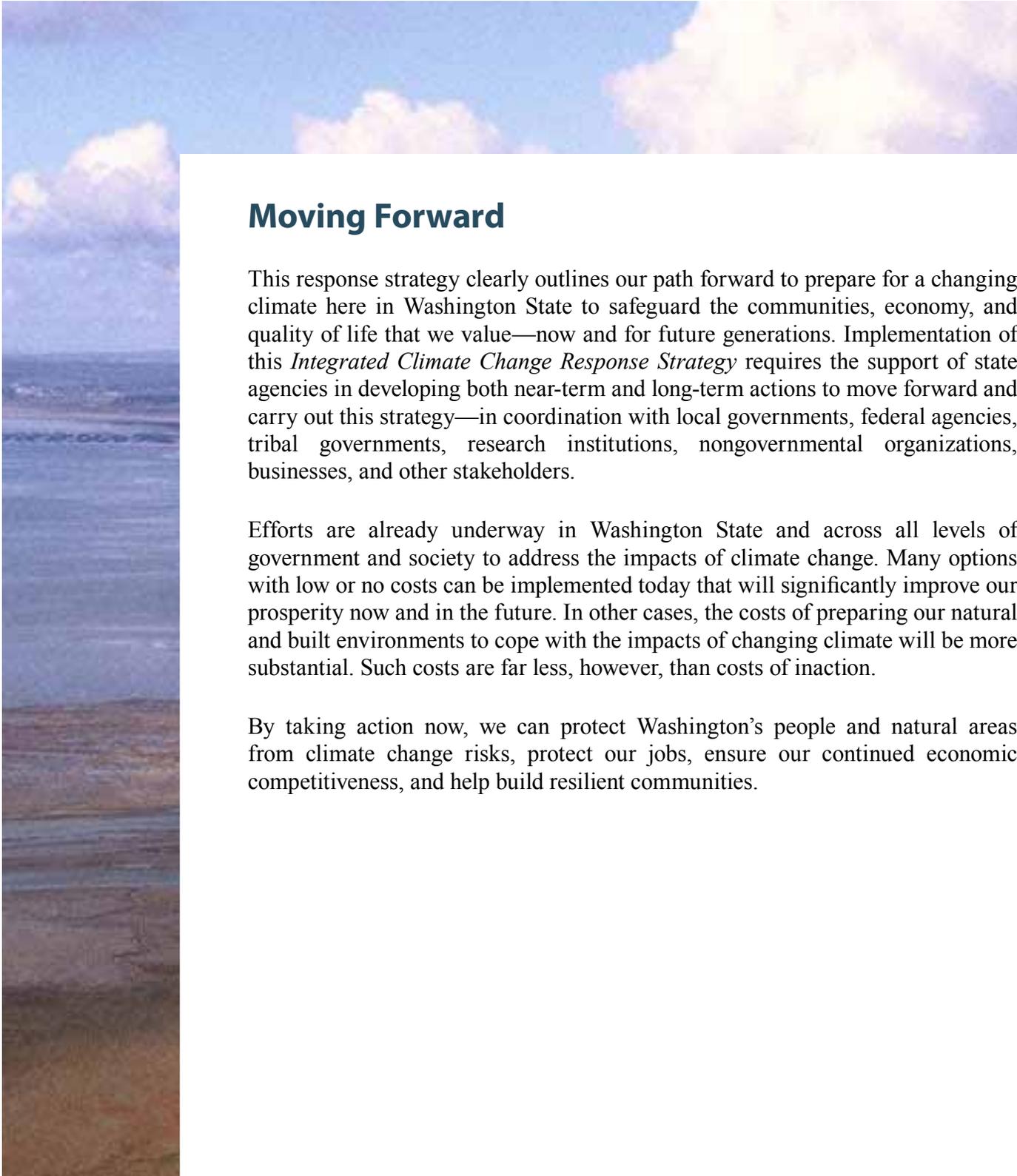


5. **Reduce forest and agriculture vulnerability** by enhancing surveillance of pests and disease. Promote and transition to species that are resilient to changing climate conditions, conserve productive and adaptive forest and farmland, and reduce forest and wildland fire risk in vulnerable areas.
6. **Safeguard fish, wildlife, habitat, and ecosystems** and improve the ability of wildlife to migrate to more suitable habitat as the climate shifts. Protect and restore habitat and sensitive and vulnerable species. Reduce existing stresses from development, pollution, unsustainable harvest, and other factors.
7. **Support the efforts of local communities and strengthen capacity to respond and engage the public.** Identify existing and new funding mechanisms to support adaptation work at the local level, and ensure a coordinated and integrated approach among levels of government and society. Support research and monitoring and ensure scientific information is accessible and responds to needs of decision-makers.

The response strategy describes these overarching strategies and presents additional strategies and actions in the following areas:

- Human health
- Ecosystems, species, and habitats
- Ocean and coastlines
- Water resources
- Agriculture
- Forests
- Infrastructure and the built environment
- Research and monitoring
- Climate communication, public awareness, and engagement





## Moving Forward

This response strategy clearly outlines our path forward to prepare for a changing climate here in Washington State to safeguard the communities, economy, and quality of life that we value—now and for future generations. Implementation of this *Integrated Climate Change Response Strategy* requires the support of state agencies in developing both near-term and long-term actions to move forward and carry out this strategy—in coordination with local governments, federal agencies, tribal governments, research institutions, nongovernmental organizations, businesses, and other stakeholders.

Efforts are already underway in Washington State and across all levels of government and society to address the impacts of climate change. Many options with low or no costs can be implemented today that will significantly improve our prosperity now and in the future. In other cases, the costs of preparing our natural and built environments to cope with the impacts of changing climate will be more substantial. Such costs are far less, however, than costs of inaction.

By taking action now, we can protect Washington’s people and natural areas from climate change risks, protect our jobs, ensure our continued economic competitiveness, and help build resilient communities.