

Section 1

Introduction and how to use this plan

Introduction

Diverse climates, extensive irrigation infrastructure, and nutrient-rich soil make Washington state one of the most fertile agricultural regions in the nation. Washington farmers and farmworkers produce over 300 commodities across 13.9 million acres of agricultural land ¹. In 2023, the state's agriculture industries supported over 89,000 direct jobs—not including secondary employment impacts related to agricultural production ² — and added nearly \$14 billion to the state's economy ³.



Long-term climatic changes and associated extreme weather events present myriad risks to Washington's agricultural operations, rural livelihoods, worker safety, and food production. For example, climate change increases the threat of both flooding and drought in the state, which in turn impacts the timing, quantity, and quality of water supply for crop production, livestock operations, and aquaculture. Changing weather patterns also increase the risk of wildfire and wildfire smoke, threatening crop yield and quality, livestock welfare, and the health of agricultural workers. Extreme heat and cold, especially during critical crop growth stages or during calving season, can result in high loss and mortality. Changing temperatures may also threaten pollinators while providing improved conditions for new pests, invasive species, and diseases. Collectively, these risks require adaptive management at the farm, regional, and state scales.

While these threats present significant challenges to the state's agricultural sector, changing climate conditions may also provide new opportunities. Washington state is in a beneficial location and may experience less disruption to agricultural production compared to other states across the country. As such, the state may be a suitable place to grow new crop types previously grown elsewhere and may become even more important to food security and the national agricultural economy. Furthermore, the state has dedicated funding programs to support climate change adaptation and mitigation.

Planning and preparation at multiple scales are key to ensuring that agricultural operations of all sizes, regions, crops, and socioeconomic demographics can respond to climate-related threats and take advantage of opportunities. The Climate Resilience Plan for Washington Agriculture marks a crucial first step in synthesizing challenges, identifying solutions, and fostering collaboration between the public sector and the agricultural community. This initiative aims to strengthen partnerships, align resources, and take action to ensure the strong vitality and viability of Washington agriculture in the face of climate challenges.

Sustaining our harvest: WSDA's plan for climate-resilient agriculture

The Climate Resilience Plan for Washington Agriculture is a critical first step in fostering collaboration across the public sector and with the agricultural community. The goal is to make all agricultural operations more resilient through climate change and ensure the strong vitality and economic viability of the sector.

The importance of agriculture to Washington state's economy

In 2022 Washington state had approximately 32,000 farms spanning nearly 13.9 million acres ¹. Over 80 percent of these farms are classified as small, each generating less than \$350,000 in annual revenues. More than 80 percent are under 180 acres and over 60 percent are under 50 acres. Notably, over 90 percent are family-owned.

Nationally, Washington state is the number one producer of apples, aquaculture, blueberries, hops, onions, pears, spearmint oil, and sweet cherries. Washington apples are particularly valuable, comprising over half of the nation's domestic apple crop and more than 90 percent of the organic apple crop. The state is the second-largest producer of apricots, grapes, potatoes, raspberries, and winter wheat, and the third-largest producer of dried peas, lentils, and peppermint oil. Washington is also a leader in the wine industry. According to the USDA, the top ten commodities in the state by production value are apples (\$2.1 billion), milk (\$1.7 billion), wheat (\$1.7 billion), cattle (\$1.0 billion), potatoes (\$943 million), hay (\$883 million), eggs (\$460 million), hops (\$434 million), cherries (\$408 million), and grapes (\$395 million).

Washington state plays an important role in the global agricultural market as well. In 2022, \$23.39 billion in food and agriculture products were exported via the state's ports. Top agricultural trading partners include Canada, Japan, China, Mexico, and South Korea. Top export products include fish and seafood, frozen french fries, apples, onions, beef, cherries, wheat, dairy, and hay.

Agriculture also provides substantial social and environmental benefits. It is a central contributor in many rural communities in the state, generating tax revenues for roads, schools, and other services. Farmers and farmworkers in these areas often play key leadership roles in community organizations, in addition to providing Washingtonians with food security. Furthermore, they are often guardians of the environmental benefits that agricultural lands provide, including soil and vegetative carbon sequestration, habitat that supports biodiversity, clean air and water, and open space. This stewardship provides many non-market social and environmental benefits to the state.

Purpose of the Climate Resilience Plan for Washington Agriculture

What is the purpose of this plan?

The purpose of the Climate Resilience Plan for Washington Agriculture is to support agricultural viability and vitality through ongoing and future climate change. Informed by extensive research and stakeholder engagement, the Resilience Plan proposes strategies to ensure that diverse agricultural stakeholders have the necessary resources for successful climate adaptation and enhanced resilience.

The Washington State Department of Agriculture (WSDA) supports the viability and vitality of agriculture while protecting consumers, public health, and the environment through service, regulation, and advocacy. WSDA's vision is that agriculture thrives across the state, contributing to the health of its people, economy, and environment. Top climate resilience priorities include:

1. Safeguarding operational resilience, the environment, and workers in the face of climate change impacts such as drought, extreme weather, and increased invasive species, with proactive and emergency response measures.
2. Supporting sector-wide agricultural innovation through research, education, partnerships, and workforce development.
3. Fostering the voluntary adoption of on-farm climate-smart practices.

Who is this plan for?

The Climate Resilience Plan for Washington Agriculture is for WSDA and the state's many agricultural stakeholders in the public, private, and nongovernmental sectors. Information is intended to guide the efficient, effective, and equitable distribution of resources to maximize the adaptive capacity of Washington agriculture.

Successful implementation includes a high level of coordination and collaboration. WSDA anticipates working with the following groups to implement elements of this plan:

- United States (US) federal agencies
- Tribal governments and organizations
- Washington State agencies
- Local agencies and jurisdictions
- Educational institutions
- Nongovernmental organizations
- Farmers and their organizations
- Farmworkers and their organizations
- The private sector

How was it created?

Under the direction of WSDA, the following activities informed the development of this plan:

- **Review of climate plans and reports:** (Appendix A) Researchers from ECONorthwest reviewed regional climate action plans, state climate policies and reports, and national plans to inform the risks, opportunities, goals, strategies, and action items included in this plan.
- **Review of the science:** (Appendix B) Researchers from WSU synthesized the scientific literature on the effects of climate change on crops, livestock, and aquaculture in Washington state. They also identified key gaps and areas for future work.
- **Engagement with agricultural stakeholders:** (Appendix C) Researchers from Triangle Associates and ECONorthwest distributed a survey to agricultural stakeholders and conducted six listening sessions with the Washington Grain Commission, the Washington Wine Commission, the Washington Tree Fruit Research Commission, the Washington Dairy Federation, the Washington State Potato Commission, and the Washington State Cattlemen's Association. Nearly 300 agricultural stakeholders responded to the survey, and approximately 120 participated in the listening sessions.
(Appendix D) To better capture the experiences and expertise of farmworkers, researchers from Semillero de Ideas synthesized results from their ongoing engagement efforts, specific to the impacts of climate change on farmworkers. Over 200 farmworkers participated in Semillero de Ideas surveys and listening sessions.
- **Assessment of current WSDA programs and activities:** Researchers from ECONorthwest and WSDA analyzed current WSDA programs and activities via staff interviews, organizational reviews, and an in-person agency workshop in June 2024. These activities identified how WSDA already addresses climate risks and opportunities, and how these connections could be strengthened. WSDA staff were critical in the formation of goals, strategies, and actions in this plan.
- **Coordination with statewide climate resilience planning:** WSDA represents agricultural interests in statewide interagency climate resilience planning initiatives. These parallel efforts cultivate consistency, enable collaboration, and ensure that the Resilience Plan provides the most current information and resources.

How does it connect to other plans and state efforts?

The Climate Resilience Plan for Washington Agriculture is designed to coordinate with and support key state plans:

The Washington Legislature passed House Bill 1170 (2023) that directed Ecology (ECY) to update the 2012 Integrated Climate Response Plan in collaboration with 10 state agencies, including WSDA. WSDA staff were appointed to the development team and contributed agricultural strategies and actions to the resulting Washington State Climate Resilience Strategy (2024). The Climate Resilience Plan for Washington Agriculture was developed simultaneously, with some actions and strategies appearing in both documents (see Appendix A, Table 1 for a crosswalk of actions in each document). The Climate Resilience Plan for Washington Agriculture is designed to be consistent with the Washington State Climate Resilience Strategy; but with a sole focus on providing resilience information and support for farms and farm communities.

HB 1170 also requires agencies to “...consider current and future climate change impacts... and incorporate climate resilience and adaptation actions as priority activities when planning, designing, revising, or implementing relevant agency policies and programs.” The Climate Resilience Plan for Washington Agriculture is an important step in implementing HB 1170 for WSDA.

Many of the hazards identified in the Washington State Enhanced Hazard Mitigation Plan (2023), led by EMD, are also risks to agriculture and exacerbated by climate change. The Climate Resilience Plan for Washington Agriculture is consistent with the goals and mitigation actions identified in this document.

In addition, WSDA coordinates programs funded by the Climate Commitment Act (CCA) – RCW 70A.65 (2021) to reduce greenhouse gas (GHG) emissions and increase soil and vegetative carbon sequestration. The development of the Climate Resilience Plan for Washington Agriculture was funded by the CCA.

Finally, the Climate Resilience Plan for Washington Agriculture is an important implementation measure of the WSDA Strategic Plan (2022–2025) which states the agency will “...expand future economic opportunities for Washington agriculture by building climate resilience.” The Climate Resilience Plan for Washington Agriculture supports the implementation of relevant WSDA Strategic Plan priorities, including:

“Ensuring that Washington’s agricultural system is equitable, resilient, and prosperous... (by promoting) the voluntary adoption of climate-smart agricultural practices to increase sustainability, operational resilience, and mitigate environmental impacts,” and

“Ensuring the availability, safety, and integrity of Washington’s food supply for humans and animals [by increasing] farm viability associated with flood, fire, drought, and extreme weather disasters by promoting climate change mitigation and adaptation strategies.”

How to use the Climate Resilience Plan for Washington Agriculture and what’s inside

The Climate Resilience Plan for Washington Agriculture is intended to support WSDA and agricultural stakeholders in adaptation planning, including by prioritizing current and future focus and funding. The Resilience Plan includes necessary elements for strong adaptation planning ⁴, including clear and achievable goals; a wide variety of strategies; stakeholder engagement; coordination with external organizations and stakeholders; an implementation and evaluation process; and techniques to address uncertainty. These elements are organized into the following sections:

- **Section 2: Agricultural climate risks and adaptation opportunities.** This section describes the on- and off-farm risks, opportunities, and resilience strategies related to climate change.
- **Section 3: Goals, strategies, and actions.** This section describes goals, strategies, and actions to increase agricultural resilience.
- **Section 4: Implementation, maintenance, and evaluation.** This section discusses WSDA’s approach to the Climate Resilience Plan for Washington Agriculture implementation; a schedule for evaluation, maintenance, and updates; and considerations for conducting future evaluations.
- **Appendix A:** Policy synthesis – Select climate resilience plans and reports.
- **Appendix B:** Scientific synthesis – Anticipated climate impacts on agriculture in Washington state.
- **Appendix C:** Engagement summary – Producers and other agricultural stakeholders.
- **Appendix D:** Engagement summary – Farmworkers in Eastern Washington.