

Washington Department of Fish and Wildlife

Climate Change Adaptation

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Policy framework for adaptation

Governors Executive Orders

- EO 07-02 – Washington Climate Change Challenge.
- EO 09-05 – Washington Leadership on Climate Change.

Legislation

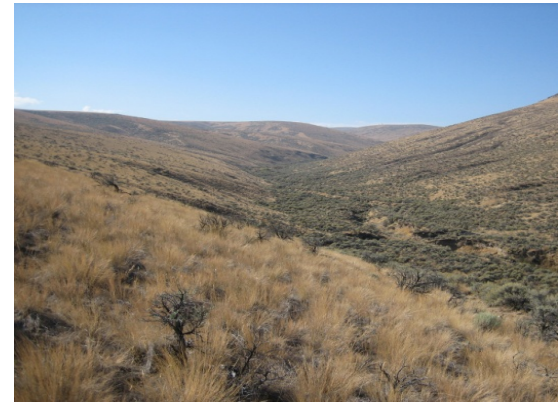
- 2009 Washington State Climate Leadership Act
Requires development of an integrated climate change response strategy
Seven state agencies began collaborating in early 2010 to develop the strategy: Ecology (lead), WDFW, Commerce, Health, WSDOT, WDNR, Agriculture.

Four Topic Advisory Groups (TAGs) provide
expertise and stakeholder input
February 2010-February 2011

- TAG1: Built environment, infrastructure, communities.
- TAG2: Human health and security
- TAG3: Species, habitats and ecosystems.
- TAG4: Natural Resources: working lands and waters

TAG 3 – Ecosystems, Species and Habitats

- 25 members; NGOs, federal and state agencies, local government.
- Four working groups: freshwater/riparian, aridlands, marine/coastal, forests and western prairies.
- WDFW/NWF science summaries inform impacts, risks, strategies.
- Produced a 90-page interim report.
 - Part 1: “making the case” and overarching strategies;
 - Part 2: system specific strategies and actions.



Summary of
Climate Change Effects
on Major Habitat Types
in Washington State
Marine And Coastal Habitats

Produced by the Washington Department of Fish and Wildlife
and the National Wildlife Federation
July, 2011

Summary of
Climate Change Effects
on Major Habitat Types
in Washington State
Shrub-Steppe and Grassland Habitats

Produced by the Washington Department of Fish and Wildlife,
and the National Wildlife Federation
July, 2011



WDFW scientists and NWF produced four climate science summaries; compilations of existing scientific literature on observed and projected climate impacts.

Summary of
Climate Change Effects
on Major Habitat Types
in Washington State
Freshwater Aquatic and Riparian Habitats

Produced by the Washington Department of Fish and Wildlife
and the National Wildlife Federation

Summary of
Climate Change Effects
on Major Habitat Types
in Washington State
Forest, Alpine, and Western Prairie Habitats

Produced by the Washington Department of Fish and Wildlife,
and the National Wildlife Federation
July, 2011



Chapter Four: ECOSYSTEM, SPECIES, and HABITATS

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|---|--|
| <p>1. Protect and restore habitat connectivity across a range of landscapes and environmental gradients</p> | <p>A. Identify and designate areas most suitable for core habitat and connectivity in light of a changing climate</p> <hr/> <p>B. Adopt policies and programs to protect and restore areas most suitable for current core habitat, likely future core habitat, and connections between them.</p> <hr/> <p>C. Protect and re-establish connectivity of rivers and their floodplains</p> <hr/> <p>D. Identify and prioritize opportunities for inland migration of coastal habitats at risk from sea level rise.</p> |
| <p>2. Protect and restore areas most likely to be resistant to climate change, aiming for a full representation of habitat types.</p> | <p>A. Identify and protect high quality habitats that are minimally affected by or resistant to climate change and most likely to act as climate refugia.</p> <hr/> <p>B. Inventory and map important thermal refugia and snowmelt systems in priority freshwater systems and prioritize for protection.</p> |

ECOSYSTEM, SPECIES, and HABITATS

- | | |
|--|---|
| <p>3. Increase ecosystem resilience to large scale disturbances, including disease, invasive species, catastrophic fire, flooding and drought.</p> | <p>A. Promote structural and landscape diversity to minimize the impacts from catastrophic disturbances.</p> <hr/> <p>B. Redefine priorities for fire management in areas important to biodiversity</p> <hr/> <p>C. Protect and restore habitat through the reintroduction of beaver, wetland creation and other off-channel water storage basins, and by protecting cold water springs.</p> <hr/> <p>D. Reduce non-climate stressors contributing to increased ecosystem vulnerability to climate change</p> |
| <p>4. Incorporate climate change assessments and adaptation into management plans for protecting vulnerable species</p> | <p>A. Identify, protect and restore likely future critical or important habitat for vulnerable and at risk species based on a range of climate projections.</p> <hr/> <p>B. Incorporate actual and anticipated climatic changes and impacts into species recovery and management plans</p> |
| <p>5. Conduct Outreach and education about the values of ecosystem services at risk from climate change.</p> | <p>A. Promote citizen engagement in monitoring and addressing climate risks.</p> <p>B. Demonstrate the value of ecosystem based approaches to adaptation.</p> |

What does this mean for WDFW?

**What about our climate adaptation
strategy?**

Our Mission

To preserve, protect and perpetuate fish, wildlife and ecosystems while providing sustainable fish and wildlife recreational and commercial opportunities.

Vision

Conservation of Washington's fish and wildlife resources and ecosystems.

Integrating Climate Change

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- A photograph of a coastal landscape. In the foreground, a concrete path curves from the bottom left towards the center. To the right of the path is a grassy area with some driftwood. In the middle ground, there is a large body of water, possibly a bay or a wide river, with a rocky shoreline. The background shows a vast ocean under a cloudy sky, with distant mountains or hills on the horizon.
- **Agency Policy and Leadership**
 - **Education/Training**
 - **Operations and Management**
 - **Science and Research**
 - **Partnership**

What agency activities are most vulnerable to climate change?

Operations and Management

1. Acquisition/land management.
2. Restoration
3. Managing at-risk species
4. Hatchery management
5. Fish passage



What science and research is needed to inform our efforts?

UNDERWAY

Washington Habitat Connectivity
Analysis

Climate gradient corridors

PNW Vulnerability Assessment

Species sensitivity database

Focal species/vegetation modeling

Habitat sensitivity database

NEEDED?

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