

# Fish, wildlife, and plants

## Preparing Washington for a Changing Climate



### Washington's climate is changing in ways that could harm fish, wildlife, and plants.

#### Loss of habitat

Changing temperature, precipitation, and other climate patterns will alter, and in some cases, destroy habitat and the ecological conditions required for the survival of plants and animals.

- Higher summer stream temperatures will reduce the quality and quantity of freshwater habitat for salmon and other coldwater fish.
- Rising sea levels will flood coastal marshes, tidal flats, and other important habitats for many species of fish, wildlife and plants.
- Increased severity of wildfires, floods, drought, disease or insect outbreaks could destroy suitable habitat.
- Increasing ocean acidity is already affecting shellfish and is likely to have profound impacts to the marine food web.



#### Decline in species populations

The rate, severity, and scale of climatic changes are greater than what species have previously experienced. Scientists estimate that 20 to 30 percent of the earth's plant and animal species evaluated to date could risk extinction if average temperatures reach levels projected to occur by the end of this century.



#### Shifts in range and the timing of life history events

The range of several species in the U.S. has shifted northward and upward in elevation. Shifts have also occurred in the timing of the seasons, animal migrations, and other life history events for plants and animals. This creates the risk of uncoupling critical ecological relationships. For example, spring now arrives 10 days to two weeks earlier than it did 20 years ago in the U.S. Many migratory bird species are arriving at their breeding grounds earlier, in some cases in advance of the emergence of their food source.



#### Spread of invasive species and disease

Warmer temperatures allow pests, pathogens, and other species to expand their range and occupy new areas. Climate change may also increase the winter survival of invasive species that invade and crowd out native plants and animals.





## Protecting Fish, Wildlife and Plants in a Changing Climate

Washington's diverse array of fish, wildlife and plants has tremendous cultural, recreational, and commercial value. Washington State's Integrated Climate Response Strategy lays out a roadmap for state and local policymakers and planners to prepare for the unprecedented threats climate change poses to our fish, wildlife and plants, and includes strategies to:

- Conserve habitat needed to sustain healthy fish, wildlife and plant populations, and ecosystem functions.
- Protect areas that connect critical habitats to allow species to move to more suitable habitat as the climate changes.
- Reduce existing pressures that weaken already vulnerable populations, such as habitat degradation and fragmentation, invasive species, and excessive hunting and fishing.
- Manage species and habitats to protect ecosystem functions and to provide sustainable cultural, recreational, and commercial use.
- Support the adoption of climate response strategies by private and public land managers that help protect and restore ecosystem function and services at risk from climate change.

Taking action now can increase our resilience and help keep Washington's diverse ecosystems healthy under future climate conditions.

## Ecosystems provide valuable benefits and services

Washington's diversity of fish, wildlife, and plants greatly contributes to our quality of life and a vibrant economy from fishing and hunting, salmon, shellfish production, and tourism, adding nearly \$3.1 billion to Washington's economy in 2006. Ecosystems also provide other benefits such as food, fuel, clean water, flood and storm protection, and cultural heritage. Climate change is eroding the valuable benefits and services our diverse ecosystems provide, and the impacts could be costly.

### More information

Ecology's Climate Change website:

[www.ecy.wa.gov/climatechange/ipa\\_responsestrategy.htm](http://www.ecy.wa.gov/climatechange/ipa_responsestrategy.htm)

Fish and Wildlife's Climate Change website:

[http://wdfw.wa.gov/conservation/climate\\_change/](http://wdfw.wa.gov/conservation/climate_change/)

### Contacts

**Hedia Adelsman** | (360) 407-6222

[hade461@ecy.wa.gov](mailto:hade461@ecy.wa.gov)

**Joanna Ekrem** | (360) 407-7144

[jekr461@ecy.wa.gov](mailto:jekr461@ecy.wa.gov)

August 2012

Publication No. 12-01-007

Photo credits:

See page 200 of the Response Strategy report.