



NATIONAL *fish, wildlife & plants*  
CLIMATE ADAPTATION STRATEGY

*Shared solutions to  
protect shared values*



*Photos: Chase Fountain, James Jordan, George Andrejko*

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A Partnership of U.S. Federal, State and Tribal Fish and Wildlife Agencies  
with support from the  
Association of Fish & Wildlife Agencies

**[www.wildlifeadaptationstrategy.gov](http://www.wildlifeadaptationstrategy.gov)**



## What is the Strategy?

A BLUE-PRINT FOR COORDINATED ACTION BY  
MULTIPLE PARTNERS

to reduce risks and impacts of climate change  
on U.S. natural resources  
and the people that depend on them:

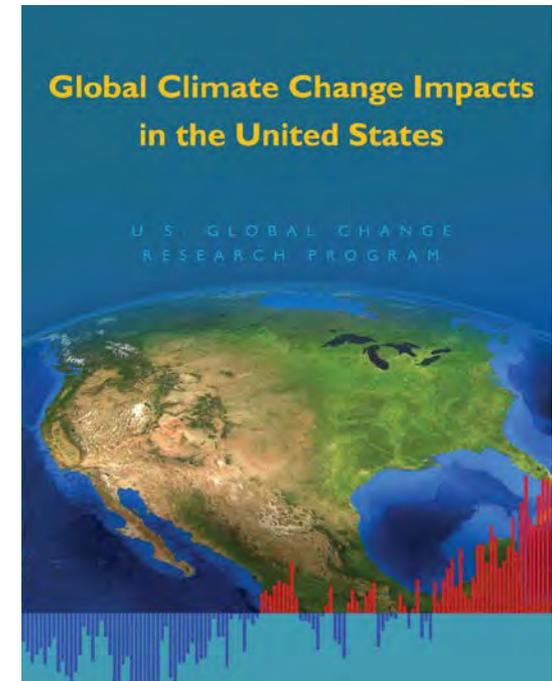
- *First nation-wide adaptation strategy by federal, state, tribal partners*
- *Unified approaches at multiple scales*
- *Engage and empower multiple sectors*
- *Inspire and enable decision makers*
- *Effective action over the next 5 years to conserve fish, wildlife, plants in a changing climate.*



# Why Develop A Climate Adaptation Strategy?

## 1. Our climate is changing

- ↑ Ave air temps up 2 degrees F over last 50 years
- ⚡ Extreme storm events more frequent and intense
- ↑ Ave sea levels rose 8" over last 100 years
- ↑ Oceans becoming more acidic
- ↓ Loss of Arctic sea ice





## Why Develop a Climate Adaptation Strategy?

### 2. Climate Change Is Impacting Natural Resources

- Changes in species ranges
- Changes in migration
- Changes in timing of life history events
- Changes in species abundance (+/-)
- Pace, scale and scope of change is expected to increase





## Why Develop a Climate Adaptation Strategy?

### 3. Impacts on fish, wildlife and plants affect people, communities and economies

- **We depend on natural resources** for vital services every day

- Jobs
- Food
- Clean water and air
- Recreation
- Protection from storms and flooding
- Health services
- Place, Culture and heritage.

- **Tribes especially vulnerable** to climate impacts on natural resources.





## Why Develop a Climate Adaptation Strategy?

### 4. We Need Coordinated Action To Reduce Impacts

- Changes happening over large scales.
- Impacts cross administrative boundaries.
- No single entity or level of government can safeguard wildlife and society against the effects of climate change.
- Effective responses require increased coordination and new approaches.
- U.S. currently lacks a strategy for coordinated adaptation efforts.



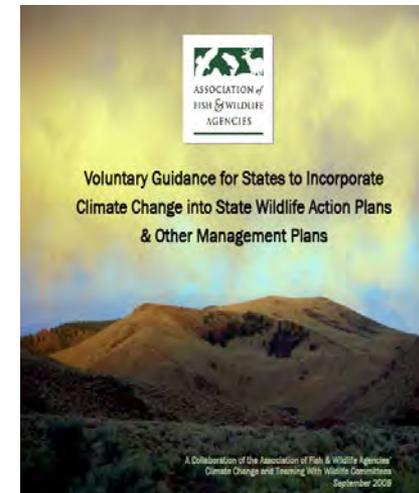
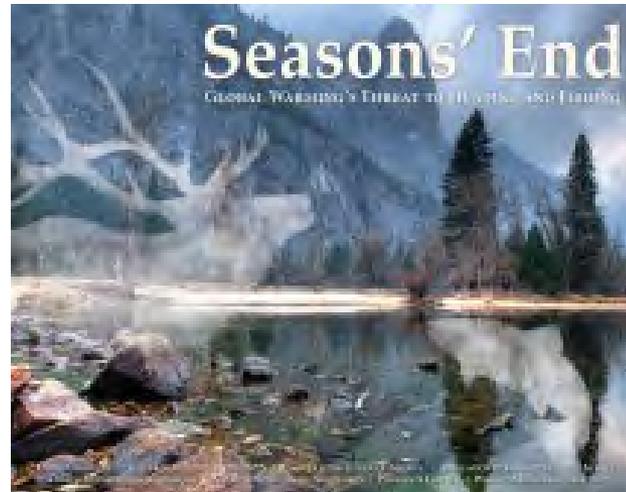
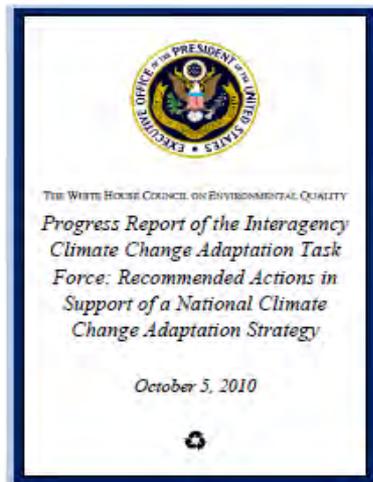
Photo: Tim Torrell



## Why Develop a Climate Adaptation Strategy?

### 5. Respond to calls for Action

- Congressional call for Strategy (2010).
- Administration call for Strategy (2010).
- Many stakeholder calls for action.....





## Strategy Purpose

The purpose of the *Strategy* is to inspire and enable natural resource professionals and other decision makers to take action to conserve the nation's fish, wildlife and plants, and ecosystem functions, as well as the human uses and values these natural systems provide, in a changing climate.





## Strategy Vision

Ecological systems will *sustain healthy, diverse and abundant populations* of fish, wildlife and plants.

Those systems *will continue to provide valuable cultural, economic and environmental benefits* in a world impacted by global climate change.





## Who is the Strategy for?

### TARGET AUDIENCES:

1. Federal, State, and Tribal natural resource decision-makers
2. Non-govt decision-makers (e.g., land owners, land trusts, private sector and others)
3. Decision-makers in other sectors (agriculture, transportation, urban development, water resources, energy).

### INTENDED USE:

*To guide development and implementation of specific actions over next 5 years that reduce risks and increase adaptation of fish, wildlife and plants.*



## How Was The Strategy Developed?

- Steering Committee
  - 15 Federal, 5 State, 2 Tribal Agencies
- Management Team
  - FWS, NOAA, AFWA, GLIFWIC, BIA
- Technical Teams
  - 90+ Researchers and Managers
  - 8 Teams (by ecosystem type)
  - Federal, State, Tribal members
- Continuous engagement with affected interests



## Strategy Guiding Principles

- Build a national framework for cooperative response
- Foster communication and collaboration
- Engage the Public
- Landscape/seascape-based approach that integrates science & adaptive management
- Integrate strategies for natural resources adaptation with other sectors



## Strategy Guiding Principles (cont.)

- Focus on natural resources of the United States and Territories
- Identify critical science and management needs
- Identify opportunities to integrate climate adaptation and mitigation efforts
- Act now



# What does the Strategy Include?

## Preface

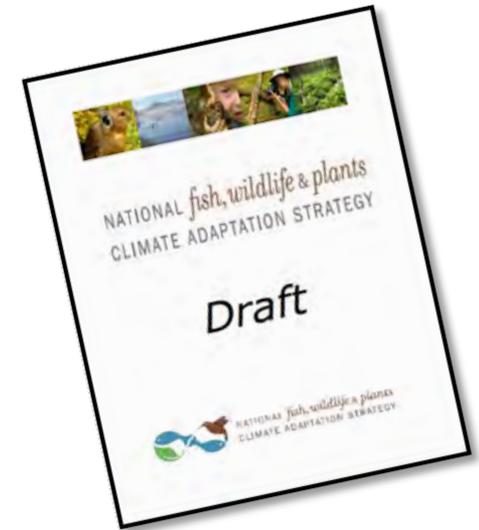
## Executive Summary

## Chapter 1. Introduction

1. Origins and Development of the Strategy
2. The Case for Action
3. Purpose, Vision and Guiding Principles

## Chapter 2. Impacts of Climate Change on Fish, Wildlife, and Plants

1. GHG-induced Changes to the Climate and Ocean
2. Existing Stressors on Fish, Wildlife, and Plants
3. Climate Change Impacts on Fish, Wildlife, and Plants by Ecosystem
4. Impacts to Ecosystem Services





# What does the Strategy Include?

## Chapter 3. Climate Adaptation Strategies and Actions

1. Strategies, Actions, and Progress Checklists
2. Opportunities for Multiple Sectors in Fish, Wildlife, and Plant Climate Adaptation

## Chapter 4. Opportunities for Multiple Sectors

1. Integration with Agriculture, Energy, Water Resources, Transportation, and Urban Development

## Chapter 5: Implementation

**Appendices A – E:** Supporting Materials; Glossary; Acronyms; Scientific Names; Team Members and Acknowledgements



## Goals of the Strategy

1. Conserve and connect habitat
2. Manage species and habitats
3. Enhance management capacity
4. Support adaptive management
5. Increase knowledge and information
6. Increase awareness and motivate action
7. Reduce non-climate stressors

7 Goals  
22 strategies  
100+ actions  
Progress Lists  
Case studies



## Opportunities for Multiple Sectors in Fish, Wildlife, and Plant Climate Adaptation

- Agriculture, Energy, Transportation and other sectors have key roles in helping fish, wildlife and plants adapt to a changing climate.
- Natural habitats can also reduce impacts of climate change on these sectors (ecosystem-based adaptation)
- Identifies key opportunities for win-win solutions in responding to climate change



## Strategy Implementation

1. Five to ten-year time horizon
2. Agencies and partners incorporate appropriate elements of *Strategy* in their plans and actions
  - Key roles for regional collaboratives
  - Key roles for State Wildlife Action Plans
  - Key roles for Tribal resource management
  - Help shape Federal agency adaptation plans



## Strategy Implementation (cont.)

### 3. Federal, State, and Tribal Coordination Body to Advance Implementation

- Promote awareness, understanding, and use of *Strategy*
- Report on progress
- Guide revision of *Strategy* in sync with National Climate Assessment (every four years)
- Engage conservation partners, natural resource industries, and private landowners



## Linkages with other efforts

- Builds on existing efforts by federal, state, tribal and non-govt entities
- Topic addresses missions and responsibilities of multiple agencies
- Complements other natural resources strategies: Freshwater Action Plan and National Ocean Policy
- Informs federal agency specific climate adaptation plans



## Summary

- Natural resources are already being impacted by a changing climate.
- Impacts are expected to increase.
- There is much at risk (jobs, water, food, recreation, health, culture and heritage).
- Reducing risks and impacts will require increased coordination and new approaches.
- *This Strategy is a blueprint for collaborative action by govt and non-govt partners to reduce climate impacts on U.S. natural resources and the people that depend on them.*



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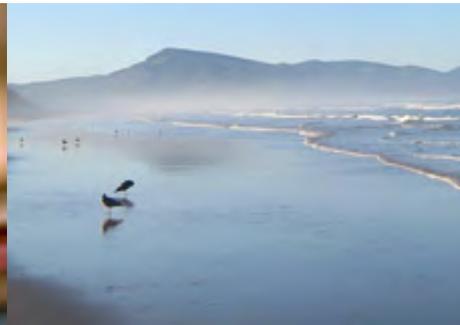
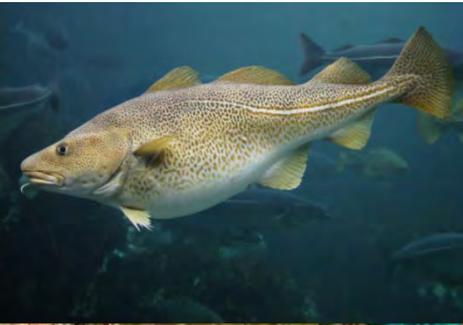
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**Partners:**

Washington Department of Fish & Wildlife, Bureau of Indian Affairs, Animal & Plant Health Inspection Service, U.S. Department of Defense, Bureau of Land Management, Bureau of Reclamation, Northwest Indian Fisheries Commission, National Park Service, California Department of Fish & Game, Council on Environmental Quality, U.S. Geological Survey, U.S. Environmental Protection Agency, North Carolina Wildlife Resources Commission, Natural Resources Conservation Service, New York, Division of Fish, Wildlife & Marine Resources, U.S. Army Corps of Engineers, Farm Service Agency, Tulalip Tribe, U.S. Forest Service, Great Lakes Indian Fish & Wildlife Commission, Georgia Department of Natural Resources, Florida Fish and Wildlife Conservation Commission, West Virginia Division of Natural Resources, Maryland Department of Natural Resources, Wildlife and Heritage Service, Massachusetts Division of Fisheries and Wildlife, Yakama Nation, Wisconsin Department of Natural Resources, California Department of Forestry and Fire Protection, Texas Parks and Wildlife Department, New Jersey Division of Fish and Wildlife, Nevada Department of Wildlife, Oregon Department of State Lands, Pennsylvania Fish and Boat Commission, Miccosukee Tribe, Columbia Intertribal Fish Commission, Connecticut Department of Environmental Protection Inland Fisheries Division, Passamaquoddy Tribe at Pleasant Point



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*Photos: Chuck Olsen, Tom Woodward, Jane Pellicciotto, Lynette Schimming*

Common solutions to protect  
common values

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