

# **North Cascadia Adaptation Partnership:** Preparing for Climate Change Through Science- Management Partnerships

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# North Cascadia Adaptation Partnership

A Forest Service – National Park Service collaboration to increase climate change awareness and facilitate adaptation planning

## Core Team



- Forest Service PNW Station



- National Park Service



- Climate Impacts Group

# Science-management partnership

- A team of scientists and managers with multiple areas of expertise.
- Focus on a consensus range of issues and resource sectors.
- Work together towards final products and outcomes.

# Olympic Case Study



*Halofsky et al. 2011. Adapting to Climate Change at Olympic National Forest and Olympic National Park. PNW-GTR-844. Portland, OR. USDA Forest Service PNW Station.*

# NCAP Project Area



North Cascades and Mount Rainier National Parks  
Mount Baker-Snoqualmie and Okanogan Wenatchee NFs

# NCAP Process Overview

## 1. Education

Increase climate change awareness with park and forest staff.

## 2. Vulnerability Assessment

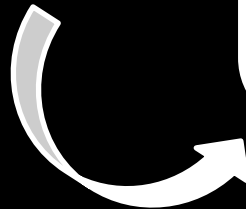
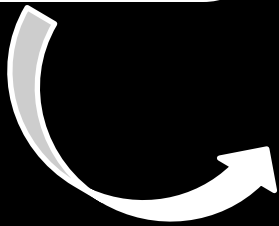
Review climate projections and identify resource sensitivities.

## 3. Adaptation Planning

Develop science-based adaptation options.

## 4. Implementation

Incorporate adaptation strategies into existing management plans.



# Forest Service Scorecard

**Organizational  
Capacity** ✓



**Mitigation and  
Sustainable  
Consumption**



**USFS  
Climate Change  
Response**

**Engagement** ✓

\* To be completed  
annually by each  
National Forest and  
Grassland.



**Adaptation** ✓

# Forest Service Climate Change Scorecard, 2011




Scorecard Element	Unit Name	Yes/No
<b>Organizational Capacity</b>		
<b>1. Employee Education</b>	<ul style="list-style-type: none"> <li>• Climate change education for employees</li> <li>• Identify contribution of resource specialists to response</li> </ul>	
<b>2. Designated Climate Change Coordinator</b>	<ul style="list-style-type: none"> <li>• Assign employee to coordinate climate change activities</li> <li>• Provide employee with training time and resources</li> </ul>	
<b>3. Program Guidance</b>	<ul style="list-style-type: none"> <li>• Written guidance for integrating climate change into operations</li> </ul>	



# The Forest Service Climate Change Scorecard, 2011

Scorecard Element	Unit Name	Yes/No
<b>Engagement</b>		
<b>1. Science and Management Partnerships</b>	<ul style="list-style-type: none"><li>• Actively engage with scientists to improve climate change response</li></ul>	
<b>2. Other Partnerships</b>	<ul style="list-style-type: none"><li>• Incorporate climate change into existing or new partnerships (other than science partnerships)</li></ul>	

# The Forest Service Climate Change Scorecard, 2011

Scorecard Element	Unit Name	Yes/No
<b>Adaptation</b>		
<b>1. Assessing Vulnerability</b>	<ul style="list-style-type: none"><li>• Develop information about the vulnerability of resources to climate change.</li></ul>	
<b>2. Adaptation Actions</b>	<ul style="list-style-type: none"><li>• Conduct management actions that reduce these vulnerabilities.</li></ul>	
<b>3. Monitoring</b>	<ul style="list-style-type: none"><li>• Monitor to track climate change impacts and effectiveness of adaptation activities.</li></ul>	

# NPS Climate Change Response Program



- Science: develop and apply the best available climate change science. ✓
- Adaptation: incorporate climate change responses in all levels of planning. ✓
- Communication: distribute climate change knowledge internally and externally. ✓
- Mitigation: limit GHG emissions and incorporate mitigation practices.

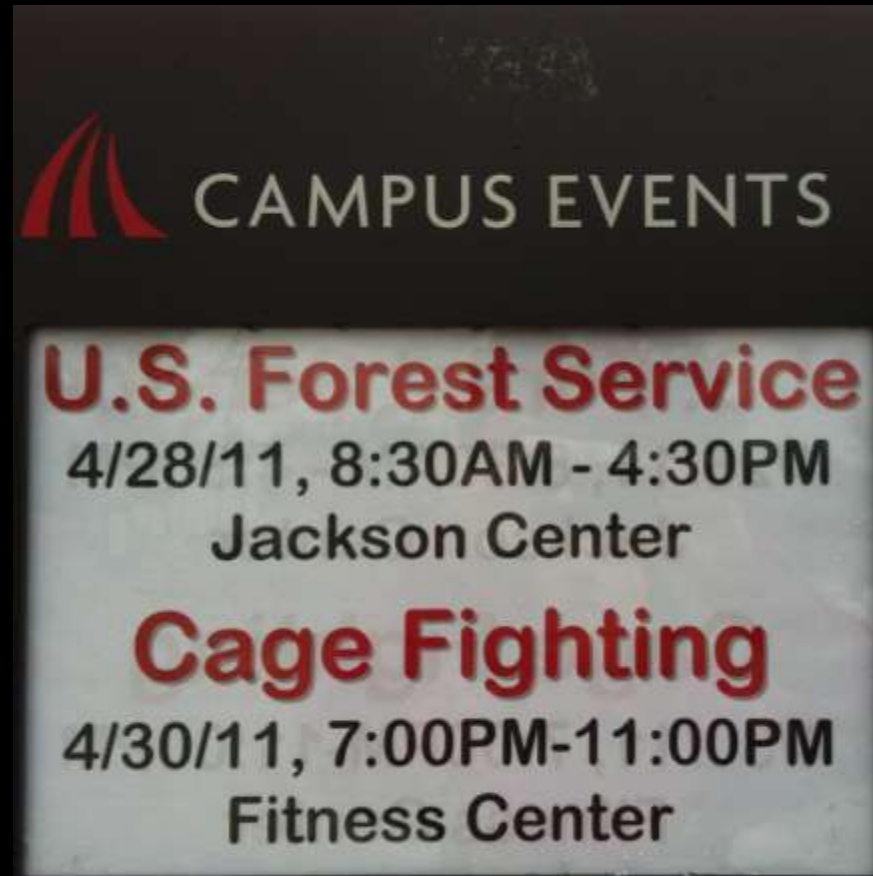
# NCAP: Climate Change Education

- Four workshops
- Participation: 60 – 115 people per workshop
- Primarily park and forest staff
- Climate science basics and projected effects on natural resources



# Climate Change Education

- Climate change skepticism is *not a major barrier*.
- Greater barriers:
  - staff time and resources
  - the right information and scale for projections of climate change effects



*Photo courtesy of Amy Snover*

# Vulnerability Assessment and Adaptation

## Four Resource Sector Focus Areas

- fish and fish habitat
- vegetation and ecological disturbances
- hydrology and human access
- wildlife



# Vulnerability Assessment and Adaptation

- Two-day workshops for each of the four resource sectors
- Presentations on climate change projections, effects, and management objectives
- Working sessions with scientists and managers:
  - identify climate sensitivities
  - brainstorm adaptation options
  - identify barriers to and opportunities for implementation

Synthesize scientific literature on climate projections and effects and workshop results into a final report.

# Fisheries Workshop (July 2011)

## Key sensitivities for fish and fish habitat

- Warmer stream temperatures
- Higher peak flows
- Lower low flows
- Increased sedimentation from fires and glacial melt

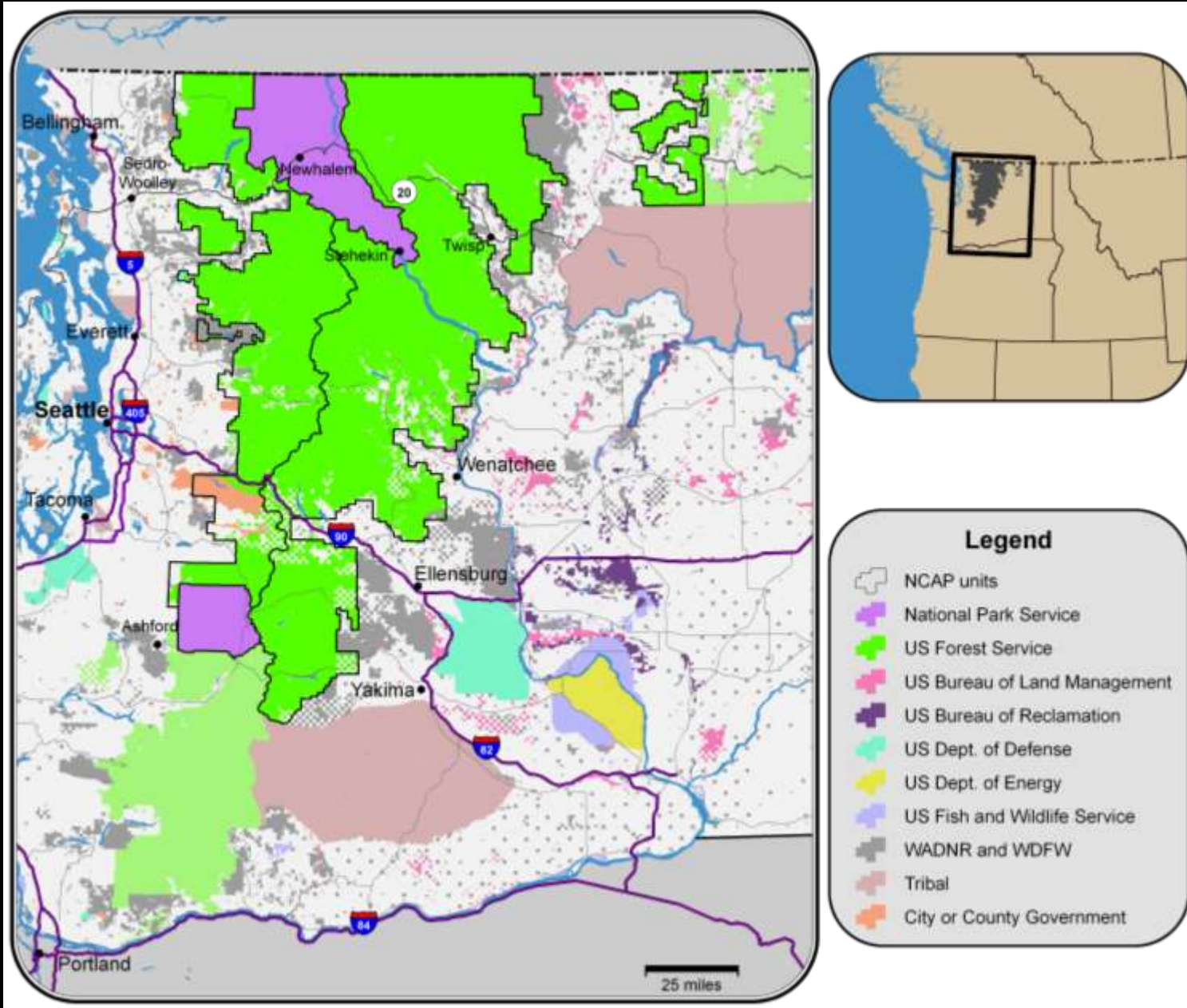


# Fisheries Workshop

**warmer stream temps** → **may favor nonnative species**

Adaptation Strategy	Adaptation Tactics	Opportunities	Barriers
restore natural habitats and disturbance regimes to promote natural processes	• dike removal	destroyed or damaged infrastructure may provide opportunities for restoration	funding
	• reconnect floodplain		private property encroachment and existing development in the floodplain
	• restore structures and heterogeneity of channels		Lack of understanding
	• “unstraighten” channels		

# All-Lands Approach



# Partnership Building

- US Fish and Wildlife Service
- WA Dept. of Fish and Wildlife
- WA Dept. of Natural Resources
- Seattle City Light
- Seattle Public Utilities
- NOAA
- USFS PNW Stations (Wenatchee, Olympia)
- North Pacific LCC
- EPA Region 10
- The Nature Conservancy
- Tribes (Yakama, Tulalip)

# Partner Roles

- Attend workshops
- Learn from the process
- Provide resource sector expertise
- Provide perspectives on stakeholder needs
- Share adaptation strategies
- Contribute to written documents

And many more possibilities...

# Products

- Climate change thinking and awareness
- Climate change partnerships
- USFS General Technical Reports by resource sector (non-binding reference documents)
- Peer-reviewed articles

Project completion expected summer 2012

For more information on the  
North Cascadia Adaptation Partnership (NCAP):  
<http://www.northcascadia.org>

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