



Preparing for Climate Change at the Local, Regional, and State Government Level

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*Climate Science in
the Public Interest*



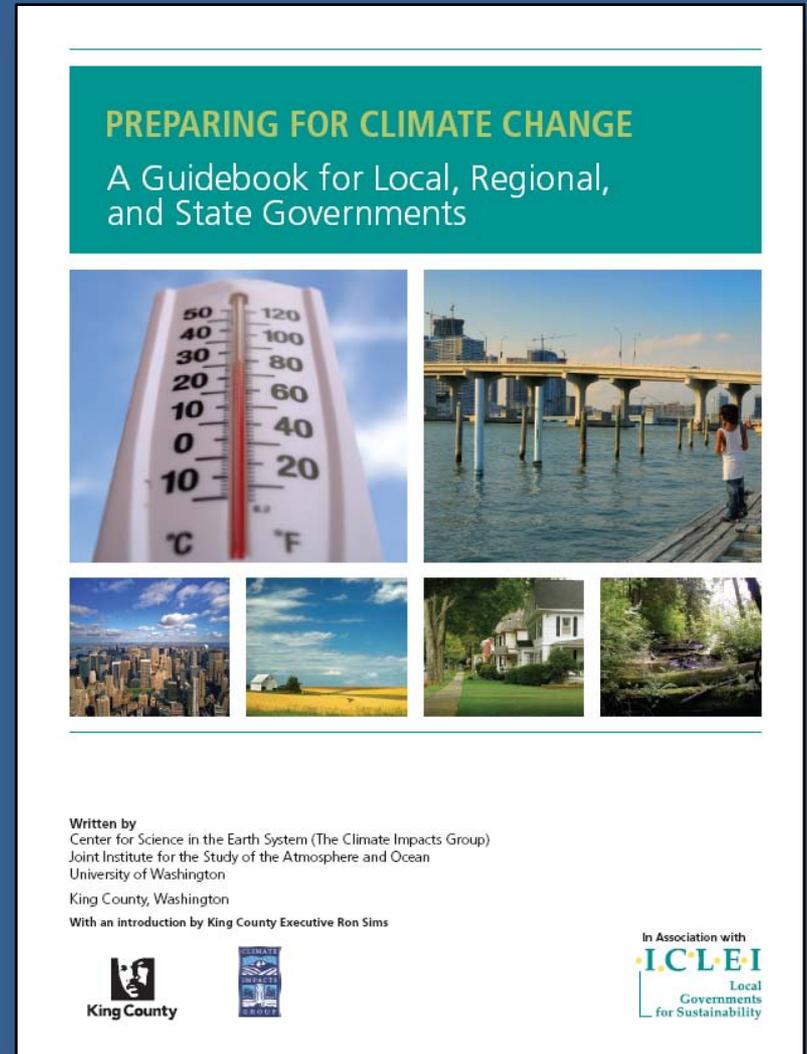
"Water is going to be more important than oil in the next 20 years"

-- Dipak Jain, dean of the Kellogg School of Management, Northwestern University

"Thirsty Las Vegas is a case study of the next global crisis", Seattle Times Business Section, Sunday, May 3, 2009

CIG/King County Adaptation Planning Guidebook

- Written by the CIG and King County, WA in association with ICLEI – Local Governments for Sustainability
- Written to compliment ICLEI’s “Climate Resilient Communities” Program
- Focused on the process (not a sector), and written for a national audience



<http://cses.washington.edu/cig/fpt/guidebook.shtml>

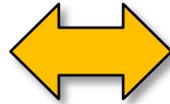
Dealing with Climate Change:

At first, the focus was only on mitigation



Point: Reducing greenhouse gases emissions

Dealing with Climate Change: Mitigation and Adaptation



Mitigation activities

Reducing emissions of greenhouse gases

Adaptation activities

Managing the change that occurs as mitigation strategies are implemented.

We no longer have a choice – both must occur

What is Adaptive Planning?



The Goal of Adaptive Planning

Developing more “climate resilient” organizations, communities, economies, and ecosystems

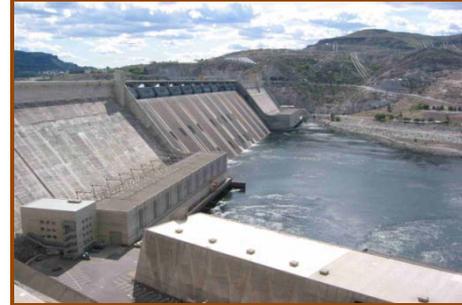
What does this mean?

Taking steps to avoid or minimize the climate change impacts we can address while increasing the ability of human and natural systems to “bounce back” from the impacts that cannot be avoided (or anticipated)

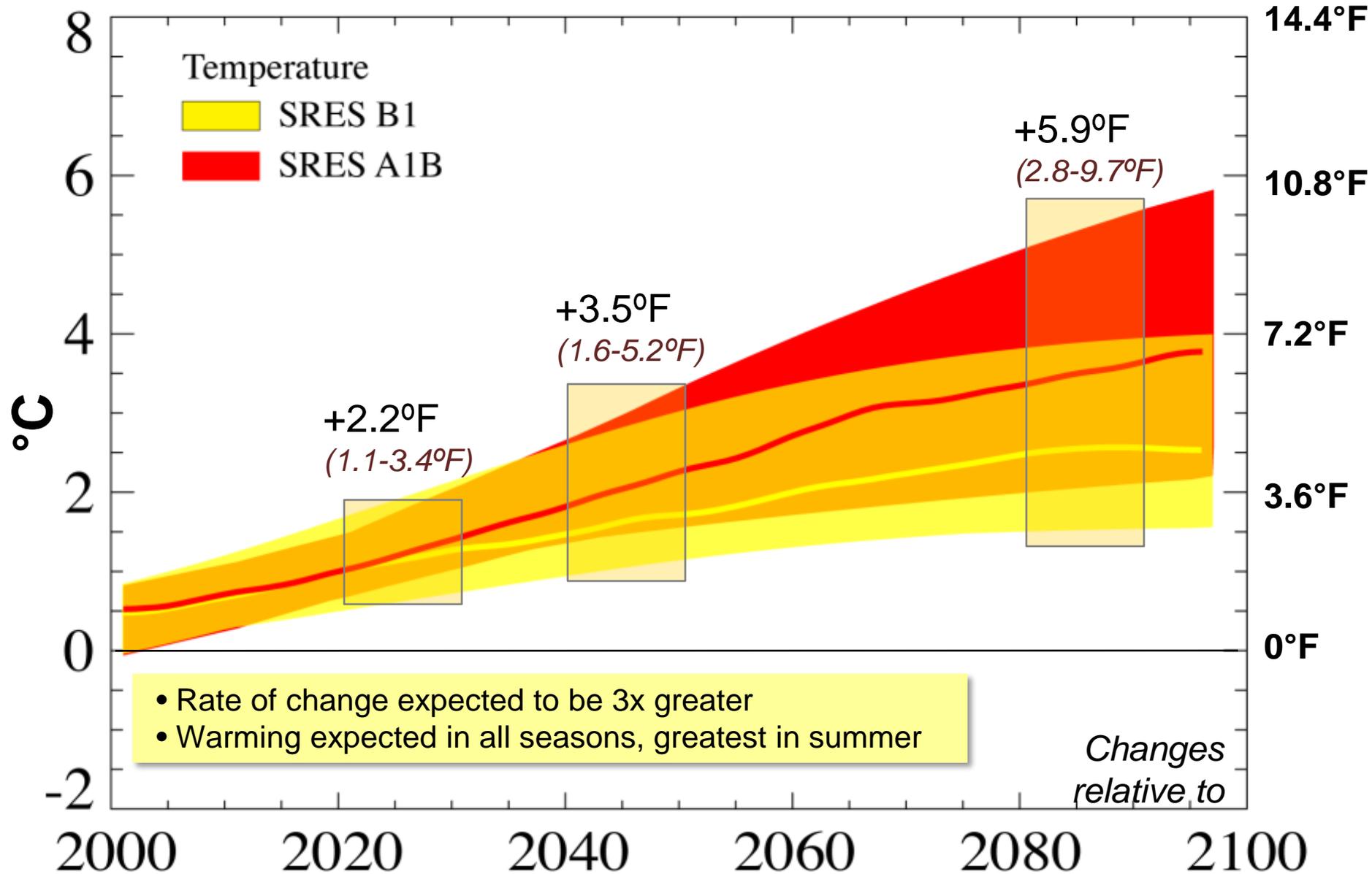


Why Adaptive Planning?

- **Significant climate change impacts are projected, and impacts over the next few decades are virtually certain.**
- Washington's residents, businesses, and local and state governments are on the "front line" for dealing with climate change.
- Decisions with long-term impacts are being made every day. Today's choices will shape tomorrow's vulnerabilities.
- Significant time is required to motivate and develop adaptive capacity, and to implement changes.
- Proactive planning is often more effective and less costly than reactive planning, and can provide benefits today.

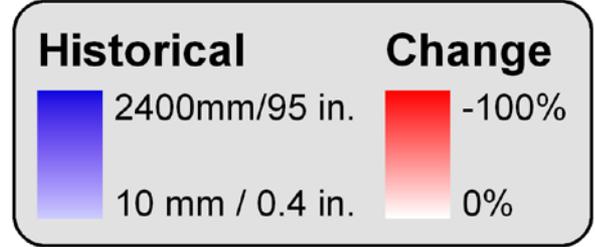
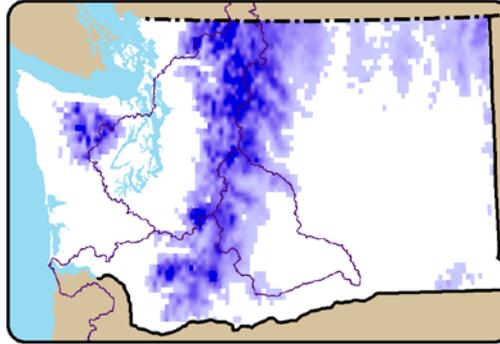


Projected Increases in PNW Temp



Key Impact: Loss of April 1 Snow Cover

Historical



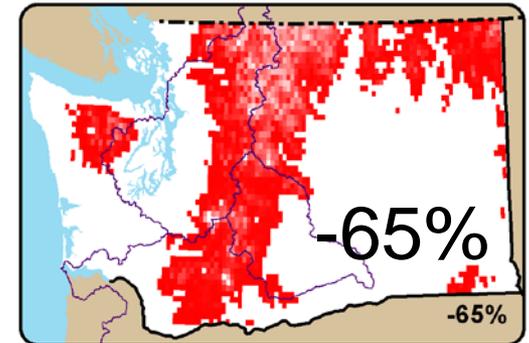
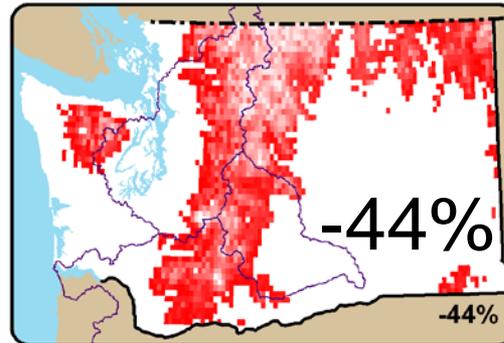
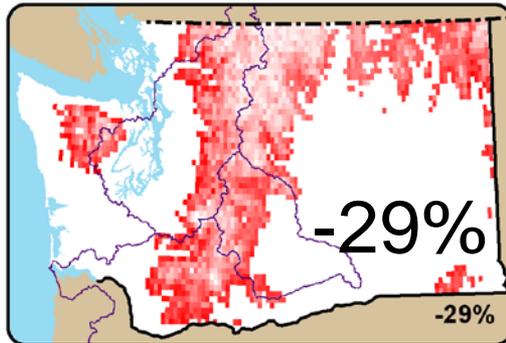
2020S

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2080S

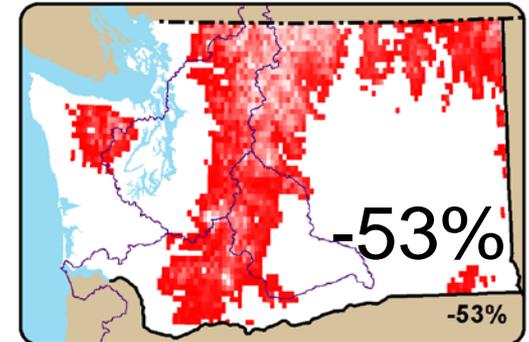
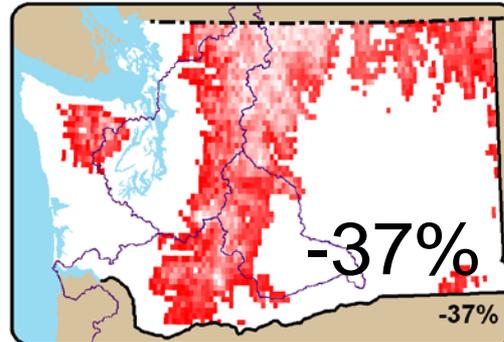
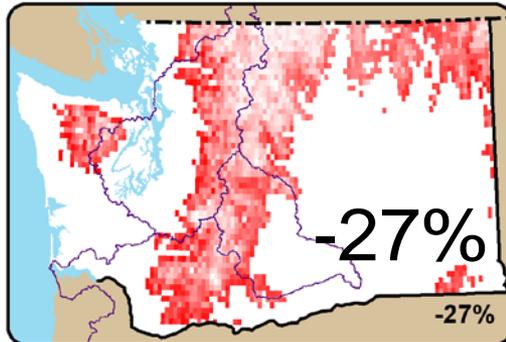
Medium

A1B



Low

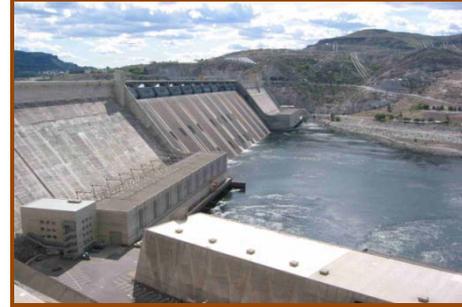
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Why? Spring snowpack is projected to decline as more winter precipitation falls as rain rather than snow, especially in warmer mid-elevation basins. Also, snowpack will melt earlier with warmer spring temperatures

Why adaptive planning cont'd?

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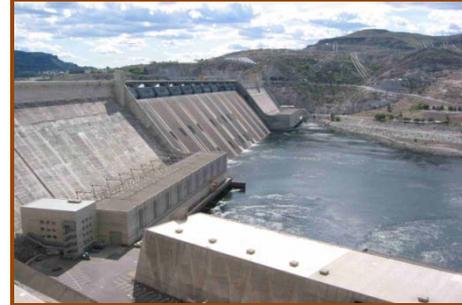




1997 landslide damage – Washington Dept. of Ecology

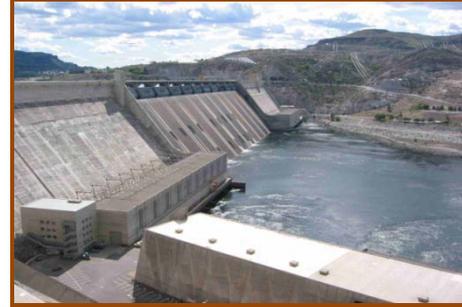
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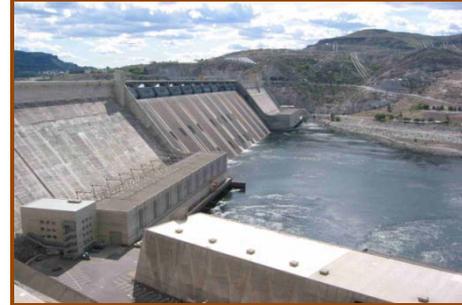
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So What's the Problem?



So What's the Problem?

Common Barriers

1. **Denial/Disbelief.** Climate change is not occurring.
2. **The “so what?” problem of scale.** Mis-interpretation of the magnitude of the change (it's only a couple of degrees...)
3. **The “perfect information” problem.** There is too much uncertainty to take action; I'll wait for better information or I'll take action when you can you tell exactly me how climate change will affect my specific watershed, coastline, forest (the **“In my back yard” syndrome**).
4. **Issue fatigue.** I have to deal with X,Y, and Z *yesterday*, and you want me to do this too?

Common Barriers (cont'd)

5. **“My hands are tied” problem:**
 - Lack of internal and/or external support for acting on climate change.
 - Regulatory restrictions prohibiting the use of new information on climate change
 - Lack of staff/fiscal/technical resources for planning
6. **Difficulties dealing with probabilistic information.** How do you start basing multi-million dollar decisions on probabilities with relatively large uncertainties?
7. **The risk taking problem.** You don't get punished for following existing guidelines.
8. **The “no one's asking” problem.** I am not hearing anyone asking about climate change impacts in meetings, discussions, etc.
9. **The “after I've retired” problem.** The long-term nature of the problem is beyond the time horizon for many decision makers.

How Does Adaptive Planning Occur?

- **Anticipatory Adaptation**

- Taking **proactive** steps to reduce the risks associated with climate change for individuals, communities, and ecosystems



- **Reactive Adaptation**

- Dealing with climate impacts after-the-fact

Both are ways of adapting to climate change, however...



Why Not Reactive Adaptation *Only* ?

- Surprises will happen so reactive adaptation will occur. However, we cannot rely on reactive adaptation alone.
 - Reactive adaptation may be “too little too late” in some cases (e.g., loss of a species)
 - Reactive adaptation may cost more than anticipatory adaptation
 - Reactive adaptation runs the risk of being short-sighted by focusing on the crisis at hand

A Two-Pronged Approach to Adaptation Planning:

Building Capacity and Delivering Action

Building Adaptive Capacity

- Addressing institutional, legal, cultural, technical, fiscal and other barriers
- Activities can be taken independent of specific climate projections

Delivering Adaptive Actions

- Implementing actions to address specific climate vulnerabilities
- Choice and timing of some actions may depend on specifics of the climate projections

Examples of Building Adaptive Capacity

- Develop (and update) a strategy to guide adaptation activities in your organization/community
- Increase outreach and education to stakeholders
- Increase training opportunities and access to technologies that support adaptation needs
- Increase partnerships with organizations that can support adaptation needs
- Identify and address regulatory, institutional, and other barriers to adaptation planning

Examples of Delivering Adaptation Actions – Water

- Increase water conservation measures
- Adjust water pricing
- Modify building/plumbing codes for improved water efficiency
- Expand/diversify water supply: groundwater, system inter-ties, use of grey water, increase storage, purchase additional water rights (where available)
- Reduce/eliminate distribution leaks
- Modify reservoir operating guidelines

General Implementation Tools for Adaptive Planning

- Zoning rules and regulations
- Taxation (including tax incentives)
- Building codes/design standards
- Utility rates/fee setting
- Public safety rules and regulations
- Issuance of bonds
- Infrastructure development
- Permitting and enforcement
- Best management practices
- Outreach and education
- Emergency management powers
- Partnership building with other communities



Getting back to the barriers...

Adaptation “Myth Busters”



Myth #1:

You need “perfect information” before you start planning for climate change



Dealing with Uncertainty

- We rarely have perfect information. Uncertainty is everywhere.
 - Should I buy earthquake insurance?
 - Should I change jobs?
 - How long will this recession last?
- Somehow we manage...
 - Identify options,
 - Build theories,
 - Evaluate risk,
 - Learn from experience,
 - Rely on experts/peers



At its core, planning for climate change is about risk management

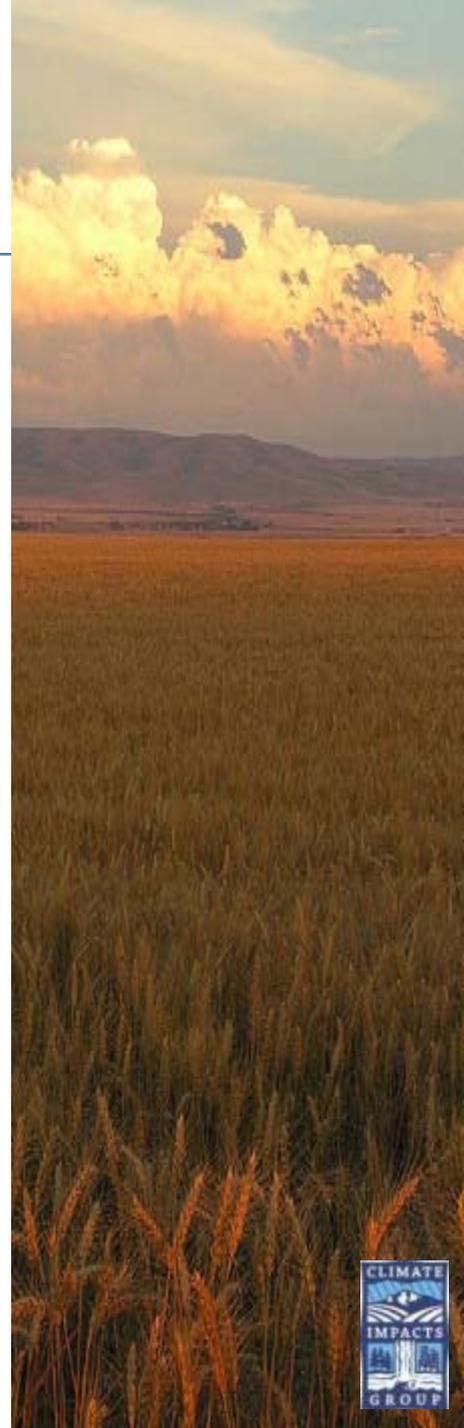
- How might (INSERT YOUR CONCERN HERE) affect my community?
- What are the consequences of those impacts?
- What steps can be taken to reduce the consequences?



Planning for Uncertainty

Look to implement

- **“No regrets” strategies**
Provides benefits now with or without climate change
- **“Low regrets” strategies**
Provide climate change benefits for little additional cost or risk
- **“Win-win” or “Co-benefit” strategies**
Reduce climate change impacts while providing other environmental, social, or economic benefits



Recap - Myth #1:

You need “perfect information” before you start planning for climate change



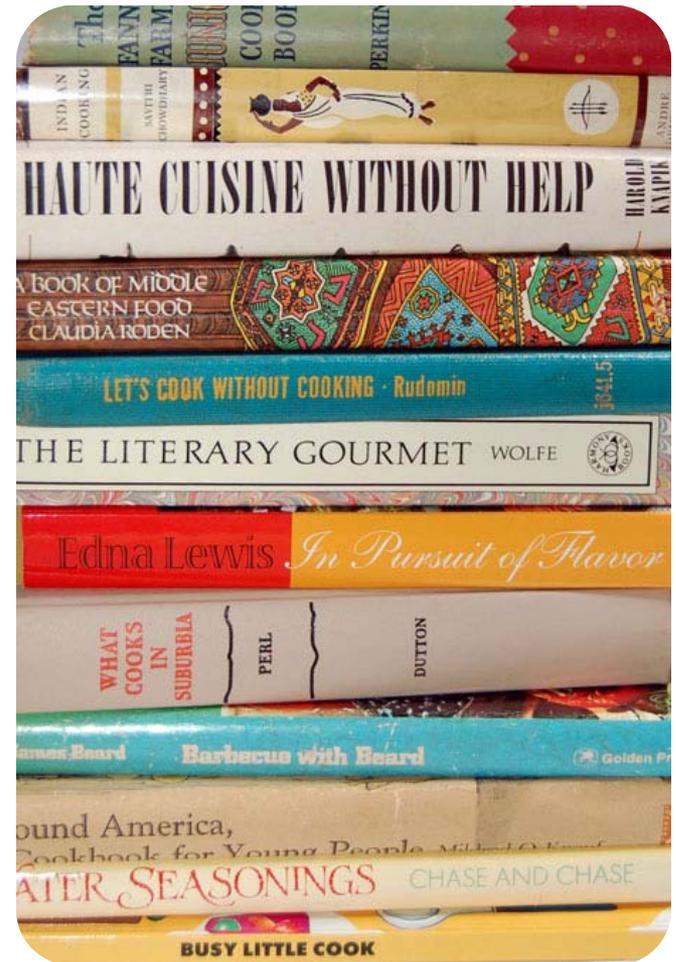
Myth #2:

There is only one way to do adaptive planning



The Adaptation Planning Process

- There are many ways to approach adaptation planning, although the major milestones will be similar
- Become familiar with the concepts but adjust the “recipe” to meet your specific needs.



The Basic Process

(Snover et al. 2007)

(a) Information gathering – how will climate change affect my community/region? *(an ongoing part of the process)*

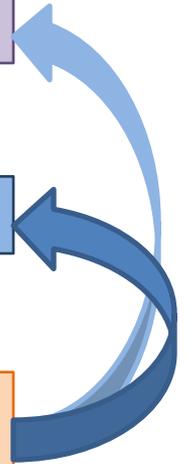
(b) Make the commitment to prepare for climate change

(c) Assemble your planning “team” and bring them up to speed

(d) Determine priorities for planning (*vulnerability assessment*)

(e) Develop and implement your adaptation “plan”

(f) Periodically revisit your adaptation plan for needed adjustments – how has the science, your community changed?



Recap - Myth #2:

There is only one way to do adaptive planning



Myth #3:

Your adaptation plan must deal with all of the issues all at once



“The Whole Enchilada”

Managing the Scope

- Adjust the scope of your adaptation plan as needed based on staff/fiscal resources, information availability, etc.
- Prioritize planning areas based on risk:
 - Probability of impacts
 - Consequences of impacts
- Prioritize selection and implementation of planning activities based on variety of criteria (*see next slide*)
- Look to build momentum from early successes to get the community/organization used to planning for climate change, but keep the big issues “on the radar” (must keep chipping away at them)

Prioritizing preparedness strategies

Key questions...

- Will the actions meeting your preparedness goals?
- Do the benefits exceed the costs?
- Is the action robust under a range of climate change scenarios?
- Is the action flexible itself, and does it increase flexibility in how a planning area is managed?
- Can the action be implemented and in what time frame?

Additional factors...

- Are there unique “windows of opportunity” for implementing a particular action?
- Is the action equitable?
- Will the action decrease the risk of losing unique environmental or cultural resources?
- Will the action address a risk for which there is greater scientific confidence?

Re-cap Myth #3:

Your adaptation plan must deal with all of the issues all at once



Myth #4:

Once you've developed and implemented your adaptation actions, you've "adapted to climate change"



Adaptation is an Ongoing Process

- Climate change is not a temporary problem that is fixed through one-time planning efforts
- The assumptions made about how a community adapts will need to evolve over time as:
 - Climate continues to change
 - New information becomes available, re: climate and climate impacts
 - Communities and organizations change (e.g., local demographics, economy, resource use patterns and needs, laws, regulations, social and environmental priorities)
- Climate change is the new “norm”

Recap - Myth #4:

Once you've developed and implemented your adaptation actions, you've "adapted to climate change"



Getting Past The Barriers...



- **Invest in outreach, education, and training**
 - For internal and external audiences
- **Build internal capacity for accessing or producing climate change information at a variety of levels**
 - Improved connections to research communities
 - Improved access to climate information (data, publications, external technical expertise)
 - Modeling capabilities that integrate climate change
 - Data collection related to climate concerns

How do we get past, cont'd



- **Reframe the issue**

- Climate change will exacerbate many existing high-priority management concerns
- Uncertainty is an inherent part of decision making; climate change uncertainty is fundamentally no different than other uncertainties
- Planning for climate change is necessary for meeting a community's responsibilities at all levels

- **Build partnerships**

- Develop partnerships with neighboring communities, other stakeholders, etc. for the purpose of cost-sharing

How do we get past, cont'd



- **Leverage the experience of others**
 - Look for examples of where other communities are integrating climate information into planning as a means for demonstrating the “doability” of the task
- **Change the authorizing environment**
 - Change best practices, policies, rules, and regulations to incorporate climate change.
- **Where possible, additional resources**
 - E.g., for training current staff, new hires with expertise in the area of climate or related technical needs, needed research, development and monitoring of pilot projects

Closing Thoughts on Adapting to Climate Change

- Climate change is the new “norm”. Planning for climate change is a risk management activity, not being “green”.
- Adapting to climate change is not a one-time activity.
- You do not have to “get it right the first time”. Look for the small accomplishments early on for building momentum.
- There is no “one-size-fits-all” approach to managing climate change impacts

Closing Thoughts on Adapting to Climate Change – cont'd

- You will not have perfect information – we rarely do. Work on building more flexibility into decisions.
- Focus on building your community's institutional capacity to prepare for climate change over the long-term as well as its physical and economic capacity
- While the discussion is most often oriented to the problems of climate change, look for the opportunities as well

Closing Thoughts on Adapting to Climate Change – cont'd

- Much can be gained from addressing non-climate stresses that contribute to climate vulnerability
- Public education and engagement is critical
- You will not have perfect information – we rarely do. Work on building more flexibility into decisions.
- Build your community's institutional capacity as well as its physical and economic capacity
- Look to maximize the opportunities as well

More information on PNW climate impacts and planning for climate change is available from

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www.cses.washington.edu/cig

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