Incorporating climate science into public agency management strategies

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The Climate Impacts Group is Washington State’s resource for climate impacts science, tools and decision-support.

- *State of Knowledge* reports on WA climate impacts, adaptation progress and data
- Online data & tools delivery
- Cutting-edge science on climate risks and adaptation responses
- Technical guidance and support for climate risk assessment and management
The Department of Interior Northwest Climate Science Center advances climate resilience through research, training and regional partnerships.
Address the root cause
Reduce atmospheric greenhouse gases

Prepare for the consequences
Reduce vulnerabilities and build resilience
Climate change affects...
Building Climate Resilience Through Adaptation: Ask the Climate Questions

Can we **achieve our goals** in a changing climate?

How do we **protect our investments** as the climate changes?

What is necessary to **reduce risks** associated with a changing climate?

How do we **avoid creating new risks**?

What **opportunities** should we prepare for?

What is **necessary for success** in a world of ongoing change and certain uncertainty?
Preparing for climate change

- Define Problem
- Identify & Assess Options
- Implement
- Monitor
- Evaluate

Vulnerability Assessment
Adaptation Plan
Operations (integration)
Vulnerability assessments
Look for embedded assumptions

- Assumptions of stationarity
- Actions pegged to specific thresholds or (past) time periods
- Qualitative terms that could take on new meanings

“The Future Ain’t What it Used to Be”
Example
Lower Columbia Estuary Partnership

Habitat Restoration

**ACTION 2**: Protect, conserve, and enhance priority habitats, particularly wetlands, on the mainstem of the lower Columbia River and in the estuary.

- How will climate change affect habitats & wetlands of concern?
- Would the definition of “priority habitats” change if climate impacts are considered?
- Do standards for defining what it means to “protect”, “conserve”, and “enhance” need to change?
Preparing for climate change: A two-pronged approach

1. Deliver Adaptive Actions

Implement actions to address specific climate vulnerabilities

Choice and timing of actions may depend on specific climate projections
Adaptation Actions (examples)

- Increase water conservation measures
- Strengthen dikes and levees where appropriate
- Restore critical habitat for climate-sensitive species
- Plant tree species known to have a broad range of tolerances
- Adjust zoning, siting & design choices

“GMA goal: Protect and enhance agricultural land for agricultural uses. Agricultural lands are those lands that are used for or suitable for agricultural use.”
Preparing for climate change: A two-pronged approach

1. Deliver Adaptive Actions
   Implement actions to address specific climate vulnerabilities
   Choice and timing of actions may depend on specific climate projections

2. Build Adaptive Capacity
   Address institutional, legal, cultural, technical, fiscal and other barriers to change
   Activities can be independent of specific climate projections
Building Adaptive Capacity (examples)

• Increase outreach and education to stakeholders about climate change and adaptation

• Increase staff training opportunities

• Increase partnerships with organizations that can support adaptation needs

• Identify and address regulatory, institutional, and other barriers to adaptation planning

• Identify and address key information gaps

“GMA goal: Protect and enhance agricultural land for agricultural uses. Agricultural lands are those lands that are used for or suitable for agricultural use.”
Assets for Building Climate Resilience
Knowledge, assessments & data
Plans & decision-relevant guidance
Climate change preparation in WA state
Example: WA Ecology Toxics Clean-Up

Goal: Ensure cleanup of state toxic sites that is protective of human and environmental health over the long term

Guidance:

Provides geo-specific information about magnitude of hazard associated with key climate impacts (sea level rise, coastal and riverine flooding, landslides, wildfire, drought)

Provides resilience recommendations based on: location & type of site, type of remedy, cleanup stage.

https://fortress.wa.gov/ecy/publications/SummaryPages/1709052.html
Example: Climate-gradient corridors

Connecting warm areas in good condition to cooler ones, using corridors that span gentle climatic gradients and avoid areas of human land use

Applied by WDFW in land acquisition decisions

The Washington Connected Landscapes Project
Example: Adaptation Funding

$12m to help wildlife & ecosystems adapt to climate impacts (2011-2016)

“Proactively considering climate change makes it more likely that the investments we make today will produce successful results in the decades ahead.”
Summary

Climate change will have widespread impacts on Washington’s communities, businesses & natural systems.

Today’s decisions determine:

- **How much** climate change we’ll experience
- **How severe** the impacts will be
- **How well** today’s investments perform into the future

“Proactively considering climate change makes it more likely that the investments we make today will produce successful results in the decades ahead.”

Wilderness Conservation Society
Prepare for a changing climate

• Reduce identified risks
• Adjust existing efforts and expectations to align with changing conditions
• Build capacity for change