



Lessons from the Development of Alaska's Adaptation Strategy

Fran Sussman, Ph.D.

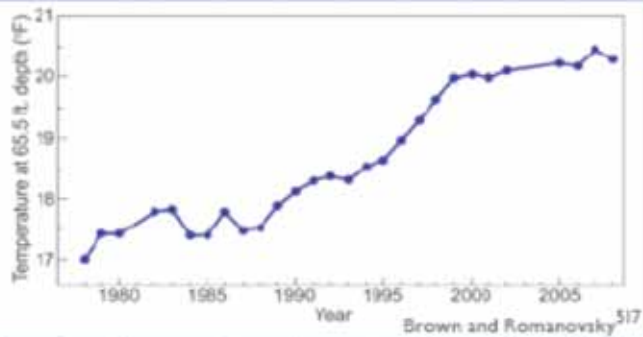
The Future Is Now: Climate Change Mitigation, Impacts, and Adaptation Research
6th Annual Climate Change Symposium
Sacramento Convention Center, September 8-10, 2009



Overview

- Climate projections and critical Impacts in Alaska
- Developing Alaska's adaptation strategy
- Observations & lessons learned from the strategy process
- Next steps: implementation and a research agenda

Permafrost Temperature, 1978 to 2008 Deadhorse, northern Alaska



Permafrost temperatures have risen throughout Alaska, with the largest increases in the northern part of the state.



Shishmaref, where the coastline has eroded 100-300 feet in the past 30 years. Source: The Nome Nugget



Climate Change and Alaska

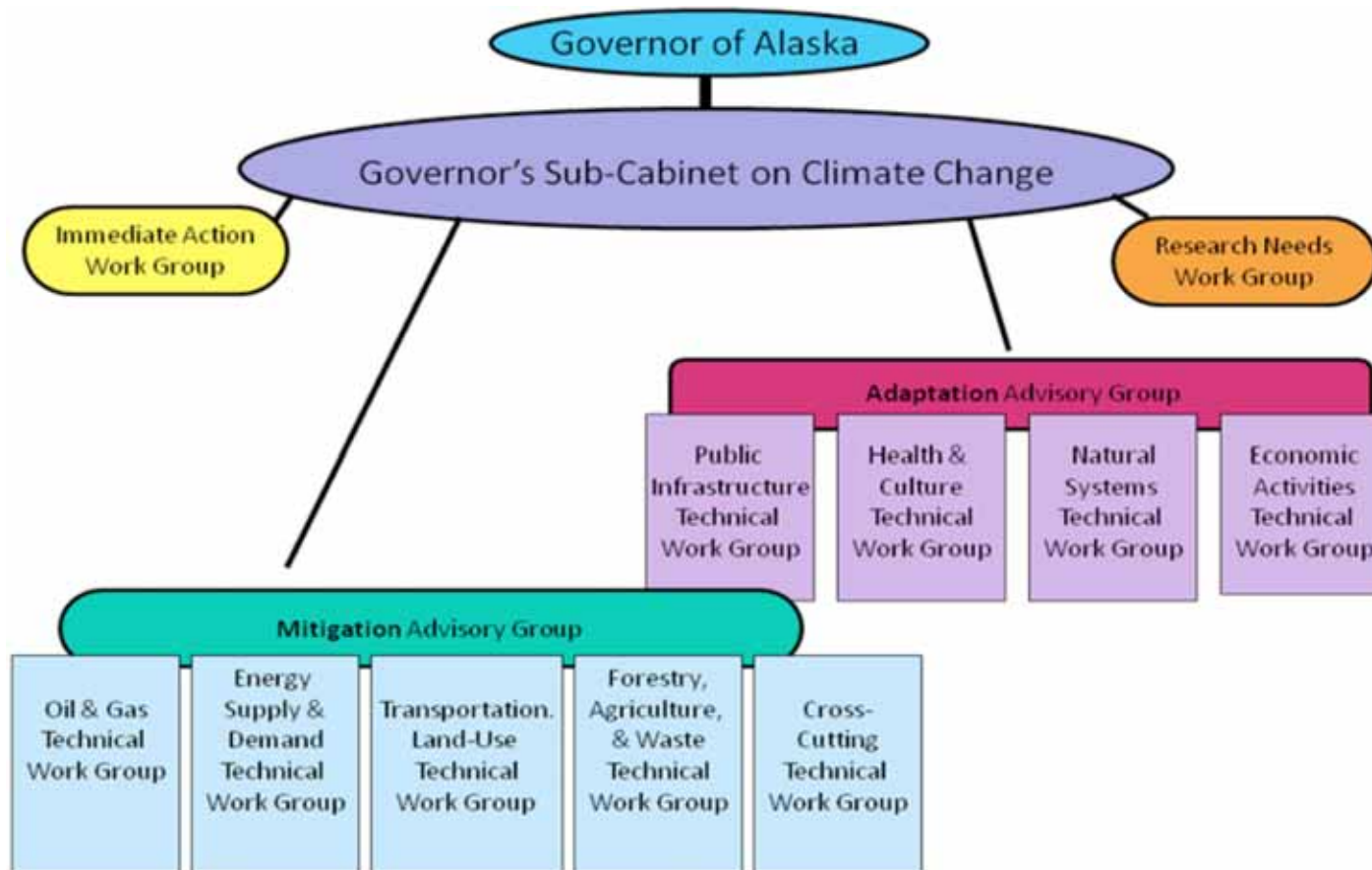
The Arctic faces unique issues, due to the importance of sea ice, permafrost, and natural resources to industry and the economy, as well as to remote communities that depend on the environment for subsistence.

- Changing climate is already being observed in Alaska and the Arctic
 - Average annual temperatures in Alaska have risen by 3.1° F in the past 60 years
 - Extent of sea ice in Arctic has diminished by over 8% in recent decades with thickness diminishing by 10-15% or 40% in some places
 - Snow cover extent has declined by about 10% over the past 30 years
- Model simulations indicate that future warming in the Arctic will be substantially greater than the global average
- Climate impacts in the Arctic will contribute to the rate of change globally
- Climate change will impair Alaska's economy and the lifestyle of Alaskans, and have significant impacts on Alaska's fragile and unique ecosystems.
 - Changes in the species' diversity, ranges, and distribution
 - Severe coastal erosion because of increased exposure to storms
 - Thawing permafrost will disrupt transportation, buildings, and other infrastructure
 - Indigenous communities are already facing major economic, cultural, and health impacts

Strategy Development Process

- Administrative Order 238 (2007) from Governor Palin created Sub-Cabinet
- Four advisory groups – two for adaptation, emphasizing importance of immediate action
- For adaptation: four technical work groups charged with identifying options (Natural Systems, Economic Activities, Health and Culture, Public Infrastructure)
- Bottom-up, stakeholder driven process
- Current status: 4 group reports went to Sub-cabinet 9/8

The Strategy Development Process



31 Coastal villages imminently threatened



Newtok



Shishmaref



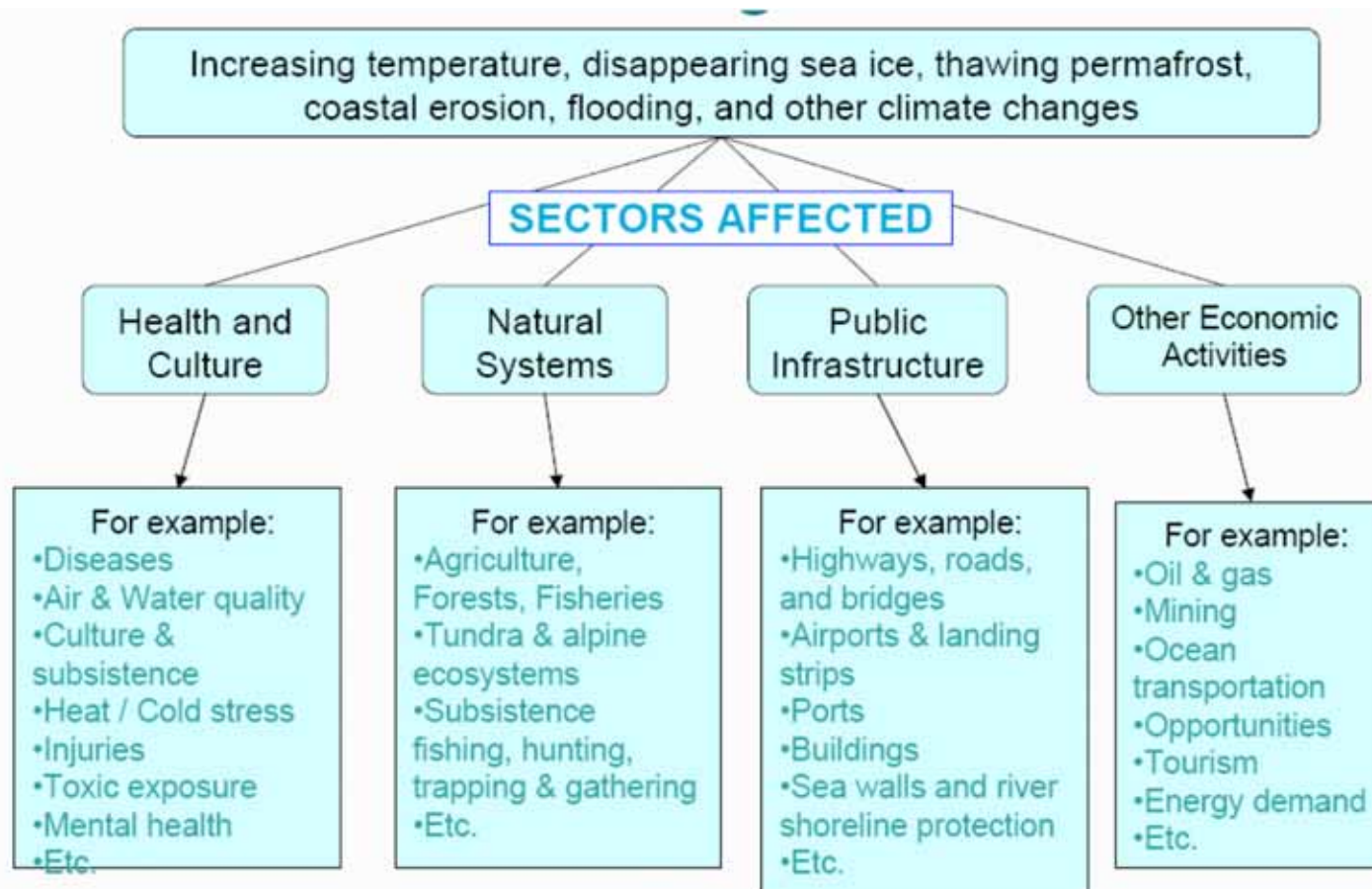
Kivalina



Challenges in developing an adaptation strategy

- Need to address critical observed impacts – in villages such as Newtok, Shimaref, Kivalina, and others
- Permafrost, natural resources, and other changes affect a wide range of economic sectors & stakeholders
- Little familiarity with climate change among stakeholders
- Lack of good (and accessible) data on baseline conditions and projected impacts, and on cost-effectiveness of adaptation options
- Government decision making is decentralized and ranges across all levels of government
- Adaptation must engage private business, communities and community leaders, and individual households
- Tribal communities not well-connected to decision making processes in state
- Concern about costs of adaptation and to government
- Almost no information on costs of inaction in Alaska

Climate impacts for Alaska



Key Features of Alaska's Strategy

- The AAG recommended actions that the state of Alaska, sometimes in partnership or cooperation with other agencies or organizations, can take to adapt to climate change.
- The options include actions such as increased coordination within and outside the state, data collection or assessment, regulatory or programmatic changes, capacity building and education, capital improvements, and financial assistance.
- In some cases the options may require new institutions or new legislative authority, but in many cases they have been designed to build on existing programs and staff.

Key Features of Alaska's Strategy (cont.)

- Immediate impacts →
 - *IAWG and recommendations for going forward*
 - *Implicit screening: what needs to happen now, soon, or can wait (monitor and revisit)*
- Wide range of sectors & stakeholders →
 - *For every sector: incorporate climate change considerations into ongoing decision making*
- Little familiarity with climate change →
 - *Bottom-up, stakeholder driven process resulted in buy-in and stakeholder education*
 - *Recommendations for outreach and education*
- Lack of good (and accessible) data →
 - *Analyzing existing data, conduct assessments and monitor over time*
 - *Make information generally more accessible: knowledge network, education / outreach*
 - *Research Needs workgroup*
 - *Include tribal communities in information gathering and dissemination, and make use of indigenous knowledge in decision making*
- Decision making is decentralized →
 - *Multi-stakeholder working groups -- relationships built going forward*
 - *Several options involve coordination – IAWG, state coordination*
 - *Engage private business, communities and community leaders, and individual households*
- Tribal communities not well-connected to decision making processes in state →
 - *Involve in process, public comments and communications*
- Concern about costs →
 - *Build on, and integrate climate into, existing programs*
- Almost no information on costs of inaction in Alaska →
 - *Recommendation for the future*

Next steps

- Sub-Cabinet:
 - Setting priorities
 - Aligning options in context of existing programs and initiatives
 - Developing a strategy and gathering public comment
- Key problem will be implementation
 - Coordination
 - Funding
- Addressing continuing actions requiring immediate action
 - Requires nimble, coordinating body
- Maintaining momentum of political will

Role for Researchers Going Forward

- Support both strategy development and implementation
- Develop local data where needed
- Identify and communicate methods for dealing with uncertain, partial, or incomplete data
- Provide guidance on constructing appropriate climate scenarios
- Devise ways to communicate scientific data and make it accessible
- Develop damage functions or GIS or other tools to highlight vulnerable resources
- Coordinate with government other stakeholders, to bring a wide range of viewpoints, and interdisciplinary and indigenous knowledge to process

For more information about Alaska's Climate Strategy, contact:

Fran Sussman
Senior Economist
ICF International
guterman-sussman@starpower.net
fsussman@icfi.com
301♦585♦6903

<http://www.icfi.com>

Jackie Poston
Alaska Department of Environment
Conservation and the
Governor's Sub-Cabinet on Climate
Change
jackie.poston@alaska.gov

<http://climatechange.alaska.gov>

With thanks to Joel D. Scheraga, National Program Director, and Michael Loughran, Environmental Scientist, both of the US EPA Global Change Research Program, for financial support of the development of Alaska's adaptation strategy.

