

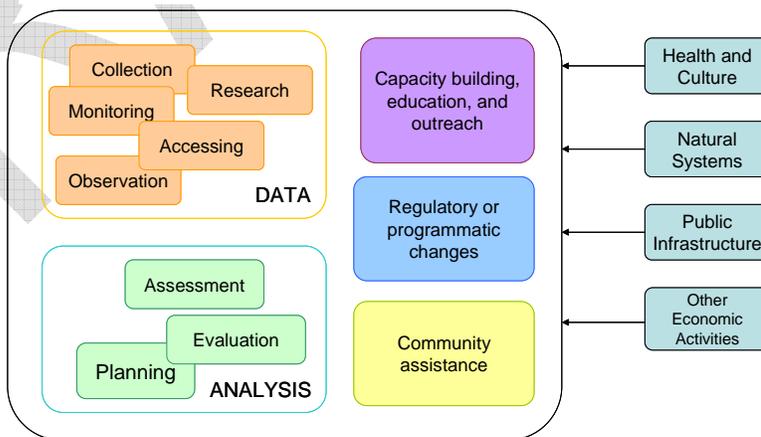
CHAPTER 3. OVERVIEW OF ALASKA'S ADAPTATION STRATEGY

Climate change presents both potential impacts and opportunities for Alaskan and the Alaska economy. Developing a viable set of policy and other recommended actions for addressing these impacts and opportunities faces a number of challenges: These challenges include:

- Actions to address impacts cross-cut jurisdiction of different agencies at all levels of government
- Decision makers need access to science that is accurate, relevant and understandable
- Current regulations and legislation may limit Alaska's ability to take some adaptive actions
- Decision making powers and authority are decentralized within state government
- Information is decentralized and housed in the government, at universities, and within the traditional knowledge of rural communities
- Implementation of the strategy will happen in a resource-constrained financial environment
- Different adaptation options can conflict with each other or with broader state goals, and objectives
- Immediate, near term, and long term actions are all needed.

The recommendations presented in this report are designed to address these challenges in a number of ways. First, as illustrated in Figure 3-1, recommendations focus on developing and making data accessible, evaluating and assessing baseline and changing conditions in both natural and human systems, building capacity, and examining and where necessary making regulatory or programmatic challenges. The recommendations developed by the Research Needs Work Group (RNWG), which include and were informed by the recommendations developed by the Adaptation Advisory Group (AAG), also help to ensure that data and analysis needs are met. Box 3-1 summarizes some of the recommendations of RNWG, which have broad applicability, beyond those of specific sectors. Identified research needs are also discussed in the individual sector chapters.

Figure 3-1. Improving Alaska's Adaptive Capacity



Second, in addition to sector-specific recommendations, the AAG developed a number of recommendations that represented broader considerations, referred to as "Common Themes." These recommended actions address coordination across and between state government and other governmental and non-governmental entities, provide for the delivery of services and information to communities, promote the coordination of state efforts to evaluate and address climate changes in ways that cut across agencies jurisdictions.

Box 3-1. Broad Recommended Research Needs

The Research Needs Work Group has emphasized several needs both to assist implementing the recommendations and to help the State of Alaska better understand the impact of climate change its economy and livelihoods. As with the research needs identified in 8-4 in Chapter 8, a number of these research needs have broad applicability, across the sectors:

- Develop regional economic models to quantify climate change impacts on communities and provide input to the National Environmental Policy Act (NEPA) process.
- Revise Flood Risk Maps.
- Develop sea level rise projection maps for coastal areas throughout Alaska, accounting for local isostatic rebound in conjunction with global sea level rise predictions.
- Downscale climate modeling projections to the local or regional level to aid communities in planning.
- Conduct a comprehensive inventory of the wide range of data collection, monitoring efforts, and research projects underway or planned in relation to the impacts of climate change on the environment.
- Use the SPOT satellite data system or others to track changes in permafrost extent and work to develop projection maps for changes in extent over the next 100 years, based on climate change projections.
- Refine general circulation models for better understanding of regional variations within Alaska.
- Assess the degree and rate of thawing submarine permafrost deposits in coastal areas due to warming sea temperatures.

For additional information on each recommendation, and for a broader set of identified needs, see Research Needs Work Group (2009). See also the broad research needs identified in Chapter 8, Common Themes.

- 1 Third, the recommendations developed by the AAG represent a combination of near term and longer term
- 2 actions, including the development of baseline information and studies to promote action in the longer term. In
- 3 combination with the actions undertaken, and policy options recommended, by the Immediate Action Work
- 4 Group (IAWG), the AAG recommendations strive to meet the immediate needs of rural communities, as well
- 5 as the near- and longer-term needs of all Alaskans.
- 6 Last, the recommendations emphasize the broad principles of coordination and cooperation, integrating
- 7 climate change into existing practices and decisions, and building on existing programs and activities. The
- 8 recommendations were also selected to meet a number of important evaluation criteria, such as effectiveness
- 9 in reducing the potential impacts of climate change and costs of the actions (see Box 3-2).

Box 3-2. Criteria Used to Identify High Priority Recommendations

Significance: Magnitude/extent of economic / sectoral impacts, irreversibility of impacts.

Benefits and Effectiveness: Effectiveness of recommended option in adapting to climate change by reducing adverse impacts or taking advantage of opportunities, as well as producing other, ancillary benefits

Costs: Magnitude of public and private sector costs relative to benefits (initial costs and costs over time).

Feasibility: Realistic to implement (within state authority; legal, administrative, financial, technical and other resources exist)?

Timing: How urgent is adaptive action, given timing of impacts, planning and implementation periods for action, and other factors

Adaptive Capacity: How well can natural and human systems adapt to climate change in the absence of the recommended action

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