

CHAPTER 3. OVERVIEW OF ALASKA’S ADAPTATION STRATEGY

Climate change presents both potential impacts and opportunities for Alaska 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:

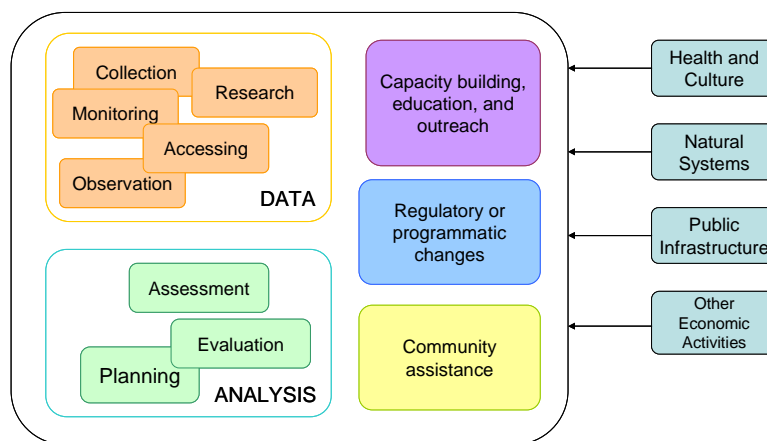
- Actions to address impacts cut across the jurisdictions of different agencies at all levels of government
- Decision-makers need access to science that is accurate, relevant, and understandable
- Current regulations and legislation may limit Alaska’s ability to take some adaptive actions
- Decision-making 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 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 the RNWG, which have applicability beyond those specific sectors. Identified research needs are also discussed in the individual sector chapters.

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, and promote the coordination of state efforts to evaluate and address climate changes in ways that cut across agencies’ jurisdictions.

Figure 3-1. Improving Alaska’s Adaptive Capacity



Box 3-1. Broad Recommended Research Needs

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

- 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 of 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.

Third, the recommendations developed by the AAG represent a combination of near-term and long-term actions, including the development of baseline information and studies to promote action in the long-term. In combination with the actions undertaken and policy options recommended by the Immediate Action Work Group (IAWG), the AAG recommendations strive to meet the immediate needs of rural communities as well as the near- and long-term needs of all Alaskans.

Last, the recommendations emphasize the broad principles of coordination and cooperation, integrating climate change into existing practices and decisions, and building on existing programs and activities. The recommendations were also selected to meet a number of important evaluation criteria, such as effectiveness 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?