



Impact Framework

The State of Alaska has experienced, and will continue to experience, a significant number of impacts associated with a changing climate. To assist the Governor’s Executive Sub-Cabinet on Climate Change and the Adaptation Advisory Work Group, we systematically compiled these impacts after reviewing the following sources:

1. Letters from state agencies to Representative Ralph Samuel, Chair of the Climate Impact Assessment Commission
2. The Arctic Climate Impact Assessment (ACIA)
3. Scientific studies, reports, newspaper articles, and other documents published since the ACIA
4. Conversations with state and other officials
5. Testimony presented before the Alaska Climate Impact Assessment Commission and other proceedings.

To provide structure to the diverse impacts, we organized the impacts into functionally useful sectors and sub-sectors. We clustered impacts into four primary sectors that (1) could guide the formation and focus of the four Adaptation Advisory technical subgroups tasked to look at impacts to a particular sector in greater detail, and (2) would cluster impacts by relevance to state agencies. We further organized impacts according to sub-sectors that represent significant functional or organizational clusters. The four sectors with brief descriptions and subsectors are listed in the table below.

Sector 1: Public Infrastructure	
▶	This sector addresses the physical impacts of climate change on Alaska’s built environment and transportation options.
	Highways, roads, and bridges
	Airports, landing strips, and air transportation
	Buildings
	Sea walls and river shoreline protection

Utility and fuel infrastructure

Landfills

Sewage and septic systems

Sector 1: Public Infrastructure, cont.

Water systems

Ocean transportation

Rural non-road ground transportation

River transportation

National defense infrastructure

Sector 2: Health and Culture

- ▶ This sector focuses on the human health, cultural, recreational, and quality of life impacts of climate change on Alaskans.
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Diseases

Air quality

Water quality

Culture and subsistence lifestyle

Heat stress

Cold stress

Injuries

Toxic exposure

Mental health

Health care and emergency response systems

Winter sports and recreation

Summer sports and recreation

Gardening

Energy demand

Sector 3: Natural Systems and Associated Economies

- ▶ This sector examines the impacts of climate change on biodiversity, ecosystem health, and associated human economic activity.
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Agriculture

Boreal and temperate forests and dependent species

Forestry

Tundra and alpine ecosystems and dependent species

Freshwater ecosystems and dependent species

Marine, sea ice, coastal environment, and dependent species

Other warm temperature impacts on animals

Fishing: commercial and sport

Sector 3: Natural Systems and Associated Economies, cont.

Subsistence fishing, hunting, trapping and gathering

Sport hunting

Tourism and watchable wildlife

Sector 4: Other Economic Activities

- ▶ This sector focuses on Alaskan economies affected by a changing climate that are not directly dependent on living ecosystems.

Oil and gas

Mining

Ocean transportation

Rural non-road ground transportation

Other business impacts and opportunities

Tourism/eco-tourism/recreation

Boundaries and ownership

Energy demand
