

# TCC Climate Change Handbook

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*"Living in a changing environment requires a change in decision making"*

July  
2022



# Mission

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The Tanana Chiefs Conference (TCC) Climate Change Program Mission (1) mainstream climate considerations across TCC's departments and the services it provides to villages, and (2) assist villages in mainstreaming climate concerns into their work (3) adapting through creative economic development

# VISION

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Successful adaptation is the innovative adjustments to the interruption of the cycle of life.

Change → Adapt → Maintain → Change

# Climate Change Threats

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## *Critical Environmental Threats to Rural Alaskan Communities*

- As climate change continues, infrastructure may become more vulnerable to damage, increasing risks to residents and resulting in large economic impacts.
- Top concerns are the potential economic damages to Alaska public infrastructure resulting from climate-driven changes in flooding, precipitation, near-surface permafrost thaw, freeze-thaw cycles, and erosion losses for villages known to be at risk.



# Purpose

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Scientific reports over the last 15 years have documented and predicted increased flooding, erosion, wildfires, permafrost thaw, severe weather, and changes to subsistence availability and access in Interior Alaska. This will impact most TCC villages significantly, as houses may be lost. Combined with restrictive laws, increased competition from urban hunters, and the opening up of roads, residents will have a harder time meeting their subsistence needs. TCC will take a leadership role in getting the villages out of harm's way and making them more resilient to climate change and overlapping threats to their continued existence.



# Planning

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## Goal 1: Mainstream climate change planning and other community concerns and threats into village community planning

- Synergize with the ongoing TCC planning involving proposed land use, cultural resource, disaster recovery, and improving water/sewer and other infrastructure needs.
- Any time there is village training relevant to planning, add a climate change component to the training.
- Help villages use drones, satellite imagery, and other resources to gather local information needed for village planning.

# Awareness

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## Goal 2: Set up Climate Change Program to advise E-board, departments, and villages

- Synergize with the ongoing TCC planning involving proposed land use, cultural resource, disaster recovery, and improving water/sewer and other infrastructure needs.
- Any time there is village training relevant to planning, add a climate change component to the training.
- The Climate Change Program will assist the Facilities Department in developing guidelines for resilient buildings in the face of climate change.

## Goal 3: Integrate climate change considerations across TCC Region

- Hold Climate Change meetings each quarter so departments can share projects that include climate change concerns.
- Continue to build the Climate Change Program by establishing its own budget and updating the work plan, and identifying who will write grants.

# Hazard Mitigation Plan (HMP)

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## Goal 4: Get tribes large grants to mitigate hazard

- Make sure that all villages who want an updated tribal Hazard Mitigation Plan (HMP) have one in order to be eligible for Federal Emergency Management Agency (FEMA) funding outside of a major disaster declaration. Outside of a presidential disaster declaration, a tribe cannot get FEMA funding without its own plan (or one shared jointly with the city) that has been updated in the last 5 years.
- A plan done by just the city means that only the city is eligible. We aim to get the State of Alaska to provide contractors who will work with tribes at no cost to them to write these plans.
- Buildings and land may not be eligible for adaptation/housing/mitigation if there is no paperwork to support clear title; if the needed easements are not there; and if the plat does not match reality. Ensure the eligibility for grants by ensuring clear title with assistance from surveyors and those who can help obtain clear title. In some cases, this may involve quitclaim deeds from the tribe, city, and/or corporation. There may also be a need for surveyors to clarify the boundaries of new sites.

# Grants

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## Goal 4: Get tribes large grants to mitigate hazards

- Build grant-writing capacity at TCC as well as in villages to get more adaptation and hazard mitigation grants.
- Help villages consider whether it would make sense to join the National Flood Insurance Program and how to make participation cost-effective.
- Help villages with HMPs identify projects (i.e., erosion control, moving buildings, or buyouts) to carry out and fund, and work with grant writers to get FEMA, Housing and Urban Development (HUD), or Department of Agriculture (USDA) funding for these projects. Villages should write TCC into the grant as the grant administrator if they would like TCC to manage the grant.

# Preparatory Steps

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## Goal 4: Steps before applying for grants or construction

- Buildings and land may not be eligible for adaptation/housing/mitigation if there is no paperwork to support clear title; if the needed easements are not there; and if the plat does not match reality. Ensure the eligibility for grants by ensuring clear title with assistance from surveyors and those who can help obtain clear title. In some cases, this may involve quitclaim deeds from the tribe, city, and/or corporation. There may also be a need for surveyors to clarify the boundaries of new sites.
- Ensure that TCC has sufficient capacity to maximize its ability to build houses.
- Figure out ways to get heavy equipment into villages (this will be needed for any village construction).
- Plan for water/sewer infrastructure and roads associated with new housing.

# Climate Resilient Housing

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## Goal 5: Ensure adequate, climate resilient housing for villages.

- Support villages that want to build their own homes.
- Help homeowners understand how to maintain homes for resiliency
- Increase village capacity to build by providing for sawmills. Some villages have already been able to use these to provide their own lumber
- Consider forming an Interior Energy Cooperative to increase the efficiency of operating village power plants.
- Work with Task Force to create building standards for construction funded by TCC
- These guidelines will avoid construction in the floodplain or hazard zones.
- It will also avoid a construction that is not suitable for the particular conditions of villages. The guidelines are not mandatory but can save money and extend the life of buildings.

# Co-Production Knowledge

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Goal 6: Involve villages in large, landscape-level planning efforts in corporations with Native Corporations and federal/state agencies.

- Work with Native Corporations on larger scale land use (beyond village limits).
- Work with USFW to develop co-stewardship agreements
- Work with BLM to develop co-management agreements
- Work with villages to ensure their local land use plans to influence state and federal landscape-wide planning efforts.

# Food Security

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Goal 7: Coordinate with Tribal Resource Stewardship and other organizations on food security.

1. Work with the Tribal Resource Stewardship to coordinate aspects of climate change into their work.
2. Explore implications of wood bison reintroduction (currently led by the Alaska Department of Fish and Game), and work to ensure priority use by village residents.

Connect and provide technical support to those interested in farming and gardening

# Preparing for Change

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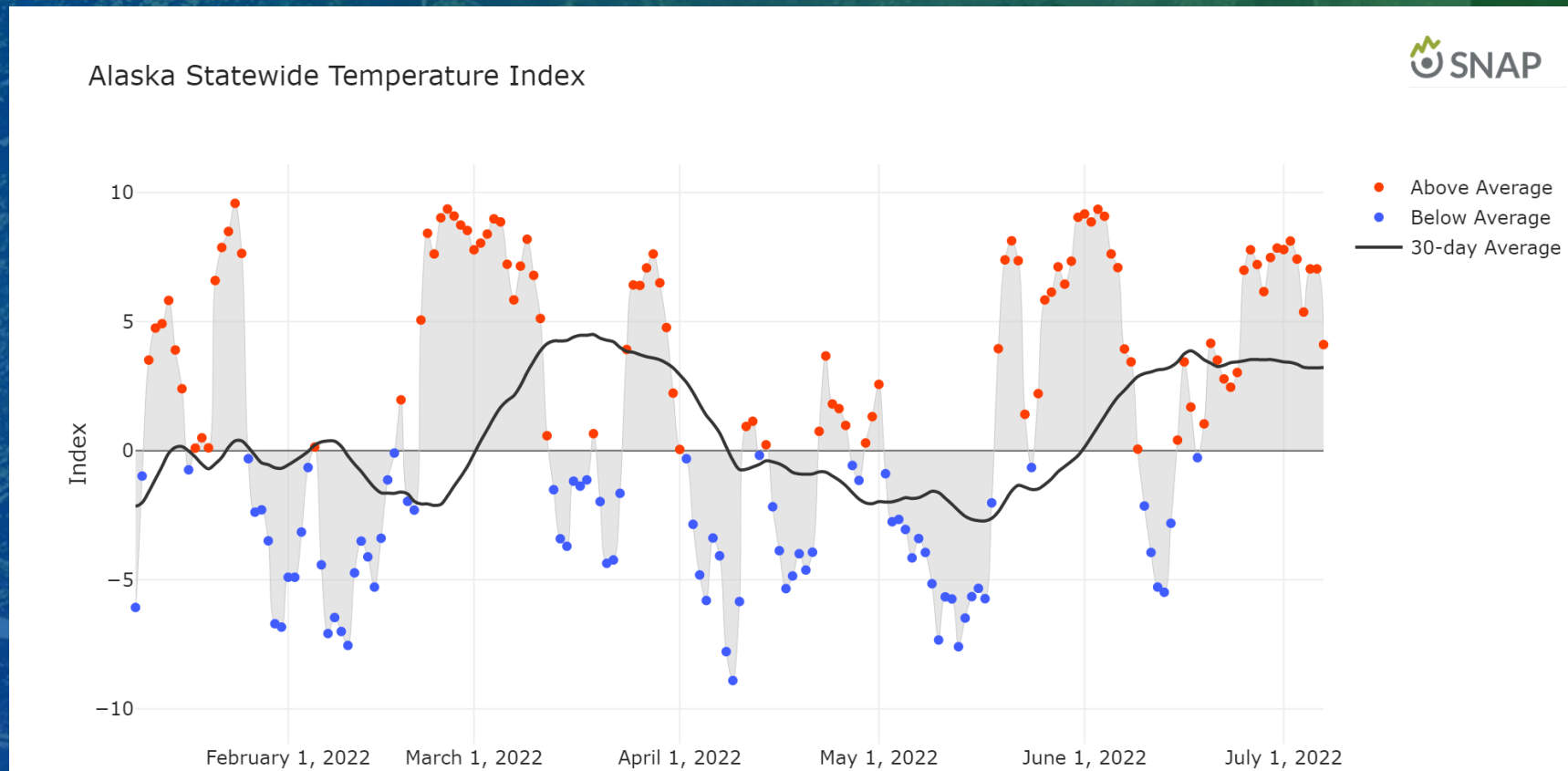
## Goal 8: Help villages deal with and prepare for disaster.

- Provide training on how disaster declarations work
- Assist communities to prepare Small Community Emergency Response Plans.
- Help villages plan how they want to recover if disaster strikes (i.e., where and how to build back using the surge of money that will come from a disaster declaration, what and where not to build).
- Address the need for increased maintenance of roads that comes with permafrost thaw and severe weather.

## Goal 9: Assist tribal IGAP coordinator with climate change projects.

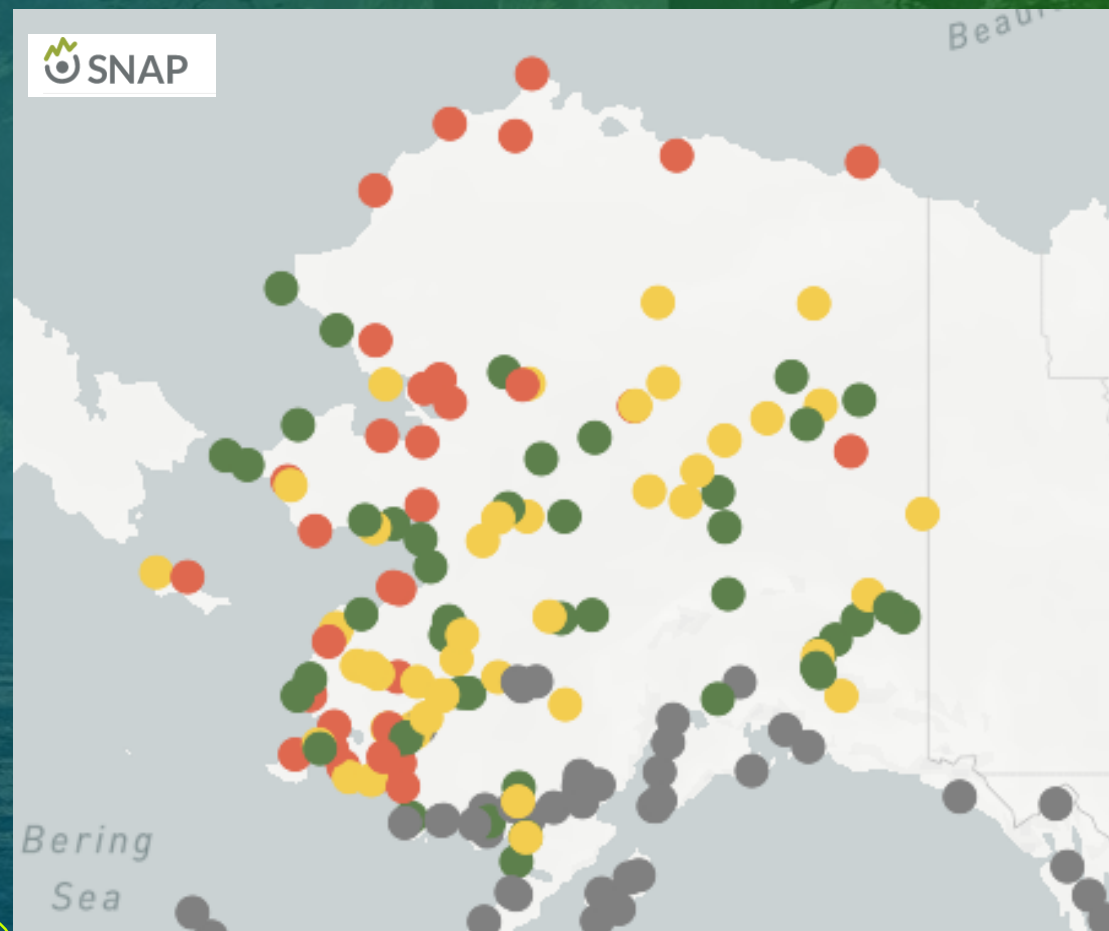
Assist with work plans and provide support as requested so IGAP coordinators can work on climate change projects in their communities. This includes providing sample language for IGAP workplans.

# Alaska Statewide Temperature Index

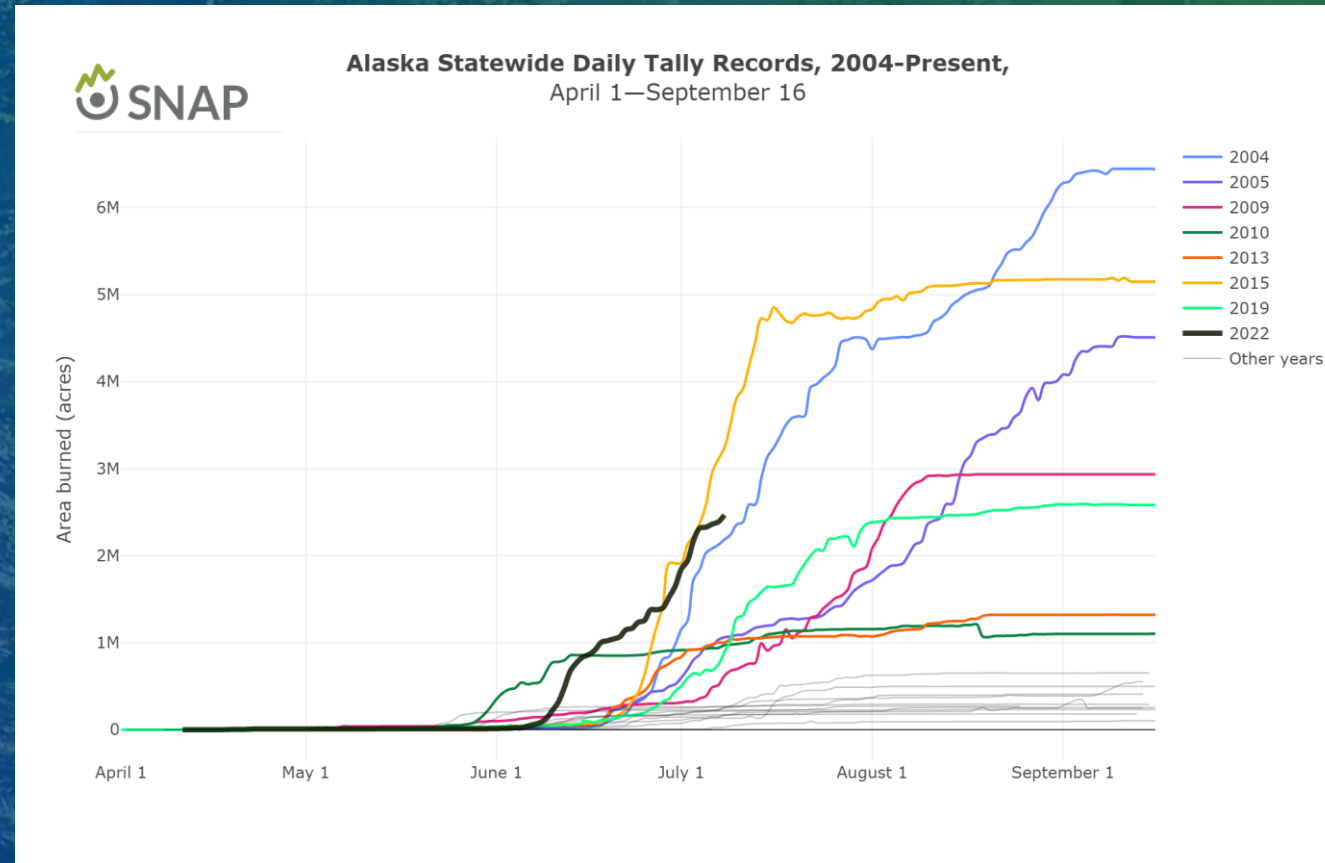


# Community Permafrost Data

Community	Thaw Susceptibility	Existing Problems	Permafrost Occurrence	Rating Score	Risk Level
Alatna	High: > 1 m (3)	Moderate (2)	Continuous (3)	14	High
Allakaket	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	11	Medium
Anvik	Low: < 0.1 m (1)	Minimal or minor (1)	Isolated (1)	7	Low
Beaver	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Bettles	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Continuous (3)	11	Medium
Birch Creek	Low: < 0.1 m (1)	Minimal or minor (1)	Discontinuous (2)	8	Low
Chalkyitsik	Low: < 0.1 m (1)	Minimal or minor (1)	Discontinuous (2)	8	Low
Circle	High: > 1 m (3)	Moderate (2)	Continuous (3)	13	High
Eagle	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Fort Yukon	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Grayling	Low: < 0.1 m (1)	Minimal or minor (1)	Isolated (1)	7	Low
Holy Cross	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Isolated (1)	9	Medium
Hughes	Low: < 0.1 m (1)	Moderate (2)	Isolated (1)	8	Low
Huslia	Low: < 0.1 m (1)	Moderate (2)	Isolated (1)	8	Low
Kaltag	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Koyukuk	Low: < 0.1 m (1)	Minimal or minor (1)	Isolated (1)	7	Low
Manley Hot Springs	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	11	Medium
McGrath	Low: < 0.1 m (1)	Minimal or minor (1)	Isolated (1)	7	Low
Nikolai	Low: < 0.1 m (1)	Minimal or minor (1)	Isolated (1)	7	Low
Northway Village	Low: < 0.1 m (1)	Minimal or minor (1)	Discontinuous (2)	8	Low
Nulato	Medium: 0.2 - 0.7 m (2)	Severe (3)	Discontinuous (2)	11	Medium
Rampart	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Continuous (3)	11	Medium
Ruby	Low: < 0.1 m (1)	Minimal or minor (1)	Isolated (1)	7	Low
Shageluk	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Stevens Village	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Takotna	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Tanacross	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Tanana	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Tetlin	Low: < 0.1 m (1)	Minimal or minor (1)	Discontinuous (2)	8	Low
Upper Kalskag	Medium: 0.2 - 0.7 m (2)	Moderate (2)	Discontinuous (2)	10	Medium
Venetie	Low: < 0.1 m (1)	Minimal or minor (1)	Discontinuous (2)	8	Low



# Alaska Wildfire Daily Tally Count, 2004-Present



# Tanana Chiefs Conference Climate Change

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