

HCR

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FILE

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

Fiscal Note Number: 1
Bill Version: CSHCR 30(RES)
(H) Publish Date: 3/29/06

Revision Date/Time (Note if correction): _____ Dept. Affected: Natural Resources
Title: AK Climate Impact Assessment Commission RDU: Resource Development
Component: Geological Development
Sponsor: Reps. Joule, Berkowitz, Kertula, Samuels, Ramras
Requester: House Finance Component No.: 1031

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
TOTAL OPERATING	*** INDETERMINATE***					

CAPITAL EXPENDITURES						
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CHANGE IN REVENUES ()						
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
TOTAL	*** INDETERMINATE***					

Estimate of any current year (FY2006) cost: 00

Check this box (X) if funding for this bill is included in the Governor's FY 2007 budget proposal:

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

HCR30CS(RES) would create the Alaska Climate Impact Assessment Commission composed of 15 members including one member from the Department of Natural Resources. The Commission's tasks include: assessing the current and potential effects of climate warming trends on state citizens and natural resources including any adverse impacts to natural resource development; identifying specific circumstances of flooding and erosion that affect life, property, and economic and resource development in the state; examining the feasibility of alternatives to prevent and mitigate the effects of flooding and erosion; investigating and assessing issues involving permafrost and damage caused by permafrost; and recommending land use regulations, including area standards for designation of land prone to flooding and erosion.

(continued on next page)

Prepared by: Robert Swenson, Acting Director Phone: 551-5000
Division: Geological and Geophysical Surveys Date/Time: 3/28/2006
Approved by: Michael Menge, Commissioner Date: 3/29/2006
Agency: Natural Resources

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FISCAL NOTE #1

STATE OF ALASKA
2006 LEGISLATIVE SESSION

BILL NO. CSHCR 30(RES)

ANALYSIS CONTINUATION

*** The fiscal impact of this resolution is indeterminate at this time. Properly identifying specific circumstances of flooding, erosion, and changes to the permafrost due to climate changes could take some in-depth research on existing data and possibly field work and site visits. This work could also entail the purchase of remote sensing data and analysis of such data depending on the depth of the Commission's intended assessment and recommendations. Alternatively, the Commission could merely make recommendations to the Legislature for future research and assessment needs in which case the fiscal note could be -0-.

FISCAL NOTE

STATE OF ALASKA
2006 LEGISLATIVE SESSION

Fiscal Note Number: 2
Bill Version: CSHCR 30(RES)
(H) Publish Date: 3/29/06

Revision Date/Time (Note if correction): _____ Dept. Affected: Legislature
Title: Creating an Alaska Climate Impact BRU: Legislative Council
Assessment Commission Component: Council and Subcommittees
Sponsor: Representatives Joule, Berkowitz, Kerttula
Requestor: Representative Joule Component No.: 783

Expenditures/Revenues (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Personal Services	0.0	0.0	0.0	0.0	0.0	0.0
Travel	73.0	68.0	0.0	0.0	0.0	0.0
Contractual	6.0	6.0	0.0	0.0	0.0	0.0
Supplies	1.0	1.0	0.0	0.0	0.0	0.0
Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Land & Structures	0.0	0.0	0.0	0.0	0.0	0.0
Grants & Claims	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	80.0	75.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
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CHANGE IN REVENUES ()	0.0	0.0	0.0	0.0	0.0	0.0
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FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	80.0	75.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
TOTAL	80.0	75.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY2006) cost: 0.0

Check this box (X) if funding for this bill is included in the Governor's FY 2007 budget proposal:

POSITIONS

Full-time						
Part-time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

Workdraft 24-LS1605F establishes a fifteen member Alaska Climate Impact Assessment Commission made up of four Legislators and eleven public members appointed by the Presiding Officers. The House and Senate Resources Committees will assign committee staff to support the Commission. The Commission will conduct hearing around the state, four hearings in FY07, and four hearings in FY08. Costs for experts in the field to travel to address the Commission are included in this fiscal note. Travel costs for the Legislators and public members are included in this fiscal note. All other meetings will be by teleconference. The Commission will study the effects of climate change within Alaska and shall prepare a report offering recommendations and possible solutions and preventative measures that can be implemented by Alaska communities and the state and federal governments. The Commission will have contractual budget for phone, advertising and other expenses and a supply budget for the purchase of supplies and research materials. Teleconference costs and the costs for printing the reports will be absorbed within the Legislative Affairs Agency budget. The Commission will be terminated at the conclusion of the second session of the 25th Legislature.

Prepared by: Karla Schaefer, Deputy Director Phone: 465-6520
Division: Administrative Services Date/Time: 3/29/06 4:10 PM
Approved by: Pamela Varni, Executive Director Date: 3/29/2006
Agency: Legislative Affairs Agency

Adopted 24-LS1605L Kane 4/6/06

4/6/05

CS FOR HOUSE CONCURRENT RESOLUTION NO. 30()
IN THE LEGISLATURE OF THE STATE OF ALASKA
TWENTY-FOURTH LEGISLATURE - SECOND SESSION

BY

Offered:
Referred:

Sponsor(s): REPRESENTATIVES JOULE, Berkowitz, Kerttula, Samuels, Ramras

A RESOLUTION

1 Creating an Alaska Climate Impact Assessment Commission.

2 BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

3 WHEREAS recent weather patterns have created warming trends that have
4 jeopardized the health and well-being of residents of communities and the natural resources
5 on which they rely; and

6 WHEREAS flooding and erosion negatively affect coastal and river communities in
7 both rural and urban areas of the state; and

8 WHEREAS coastal communities are negatively affected by flooding and erosion
9 because of delayed formation of protective shore ice in the fall; and

10 WHEREAS communities along riverbanks or in river deltas are more susceptible to
11 flooding and erosion caused by ice jams, snow and glacial melts, rising sea levels, changing
12 river patterns, and heavier rainfall; and

13 WHEREAS permafrost is found beneath approximately 80 percent of the state; and

14 WHEREAS, in recent years, there has been widespread thawing of permafrost in
15 some areas, causing land to slump and erode, which in turn has caused serious damage to
16 roads, buildings, and other infrastructure; and

1 **WHEREAS** the thawing of the permafrost is likely to continue, which will have a
2 continuing negative effect on future structures and development; and

3 **WHEREAS** fish and wildlife habitats are changing, affecting the accessibility and
4 viability of certain species; and

5 **WHEREAS** resource development and the revenue it generates are potentially
6 negatively affected by the effects of climate change; and

7 **WHEREAS** the rapidly retreating sea ice affects polar route navigation and has raised
8 security concerns; and

9 **WHEREAS** the state has only one employee working on these issues; and

10 **WHEREAS**, although the Arctic Climate Impact Assessment provides the necessary
11 scientific foundation to assess current effects of climate change in the Arctic, it does not
12 address the economic effects of climate change on the State of Alaska; and

13 **WHEREAS** a comprehensive plan to address these issues, prevent or mitigate
14 negative effects of climate change, and address economic effects on the state will help save
15 lives, protect public health, preserve economic and resource development, and protect
16 valuable infrastructure;

17 **BE IT RESOLVED** by the Alaska State Legislature that there is created an Alaska
18 Climate Impact Assessment Commission; and be it

19 **FURTHER RESOLVED** that the commission shall consist of 15 members as
20 follows:

21 (1) two senators appointed by the president of the senate;

22 (2) two representatives appointed by the speaker of the house of
23 representatives; and

24 (3) 11 public members appointed jointly by the president of the senate and the
25 speaker of the house of representatives consisting of

26 (A) one member who represents the Denali Commission;

27 (B) one member from the University of Alaska with expertise in
28 climate impact effects;

29 (C) one member who represents the Alaska Federation of Natives;

30 (D) one member from the Department of Natural Resources;

31 (E) one member knowledgeable in the engineering requirements for

1 public highway and facility construction and maintenance;

2 (F) two members who represent affected Alaska communities;

3 (G) two members who represent affected Alaska businesses;

4 (H) one member knowledgeable in the area of fish and game; and

5 (I) one member who represents Alaska youth, based on the
6 recommendation of the Board of Regents of the University of Alaska; and be it

7 **FURTHER RESOLVED** that the public members of the commission may receive
8 compensation for per diem or reimbursement for travel or other expenses incurred in serving
9 on the commission; and be it

10 **FURTHER RESOLVED** that the commission may meet during and between
11 legislative sessions; and be it

12 **FURTHER RESOLVED** that the House and Senate Resources Committees may
13 assign committee staff to provide support services for the commission; and be it

14 **FURTHER RESOLVED** that the duties of the commission include the following:

15 (1) assess the current and potential effects of climate warming trends on the
16 citizens, natural resources, public health, and economy of the state, in particular the adverse
17 effects on natural resource development, forest safety, fish and game utilization,
18 transportation, community, and resource development infrastructures;

19 (2) estimate costs to the state and its citizens of adverse effects associated with
20 climate change;

21 (3) identify specific circumstances of flooding and erosion that have affected
22 life, property, and economic and resource development in the state;

23 (4) examine alternative measures to prevent and mitigate the effects of
24 flooding and erosion;

25 (5) develop policies to guide infrastructure investments in Alaska villages,
26 cities, and boroughs that are most affected by flooding and erosion;

27 (6) recommend land use regulations, including area standards for designation
28 of land prone to flooding and erosion;

29 (7) investigate and assess issues involving permafrost and damage caused by
30 permafrost;

31 (8) recommend policies to decrease the negative effects of climate change;

1 and

2 (9) identify and coordinate efforts of mutual concern with federal, state, and
3 local agencies; and be it

4 **FURTHER RESOLVED** that the commission shall offer recommendations and
5 provide possible solutions and preventative measures that can be implemented by Alaska
6 communities and by the state and federal governments; and be it

7 **FURTHER RESOLVED** that the commission shall conduct eight hearings
8 throughout the state to fulfill its purpose; and be it

9 **FURTHER RESOLVED** that the commission shall deliver a preliminary report of its
10 findings to the legislature on March 1, 2007, and make a final report to the legislature on
11 January 10, 2008, together with legislative proposals for consideration; and be it

12 **FURTHER RESOLVED** that the commission shall be available for legislative
13 hearing on its final report and recommendations; and be it

14 **FURTHER RESOLVED** that the continuation or termination of the commission
15 shall be reevaluated at the Second Regular Session of the Twenty-Fifth Alaska State
16 Legislature.

adopted 4/6/06

Amendment to CS HCR 30 (RES)
Offered by Representative Kertula

Amend page page 2 line 30 subsection (D) to read:

(D) a member ^{who}~~that~~ is knowledgeable in the area of land management and restoration of
wildlife and natural resources.

During Session:
Alaska State Capitol
Juneau, Alaska 99801-1182
(907) 465-4833
Fax (907) 465-4586
1-800-782-4833

Representative_Reggie_Joule@legis.state.ak.us



During Interim:
P.O. Box 673
Kotzebue, Alaska 99752
(907) 442-3880
Fax (907) 442-3022

Alaska State Legislature
REPRESENTATIVE REGGIE JOULE

SPONSOR STATEMENT

"Creating an Alaska Climate Impact Assessment Commission."

House Concurrent Resolution 30 identifies and addresses many of the issues impacting Alaska that are the result of recent and ongoing changes in the climate. Climate change affects 184 coastal and river communities, or 86 percent of Alaska communities, in both rural and urban areas of the state. The impacts that confront Alaska include: erosion, flooding, ice jams, glacial melts, rising sea level, changing river patterns, heavy rainfall, and the thawing of vital permafrost. Recent weather patterns have created warning trends that have jeopardized the health and well-being of Alaskans. Fish and wildlife habitats, resources many depend on, have been impacted by these changes. There is also a serious impact to current and future infrastructure and natural resources development in affected areas, which may negatively impact the revenue that the area produces for the state. These are all issues that need further analysis and preventative action.

HCR 30 sets the groundwork to help Alaska cope with continuing climate change. HCR 30 provides the State of Alaska with a commission of qualified persons that will research, consult, and advise the legislature on ways to plan and react to climate change emergencies and prevent or at least minimize future impacts. Senator Ted Stevens is also introducing legislation to the U.S. Congress that addresses similar issues. The Alaska Climate Impact Assessment Commission will develop a comprehensive, preventative plan to address these issues that will help save lives, protect public health, preserve economic and resource development, and protect valuable infrastructure.

During Session:
Alaska State Capitol
Juneau, Alaska 99801-1182
(907) 465-4833
Fax (907) 465-0586
1-800-782-4833

Representative_Reggie_Joule@legis.state.ak.us



During Interim:
P.O. Box 673
Kotzebue, Alaska 99752
(907) 442-3880
Fax (907) 442-3022

Alaska State Legislature
REPRESENTATIVE REGGIE JOULE

MEMORANDUM

DATE: April 6, 2006

SUBJECT: Work Draft for Committee Substitute on HCR 30

TO: Representative Meyer and Chenualt
House Finance Committee Co-Chairs

FROM: Representative Reggie Joule

The following is an index to the portions of HCR 30 that are the language changes.

Page 2

Line 6 – Addition of the descriptive word “negatively,” deleted “184,” “or 86 percent of Alaska communities...”

Line 8 – Added the descriptive word “coastal,” to replace “on the coast,” added the descriptive word, “negatively,” deleted “from the sea,” and “the.”

Line 10 – Added the word “more” before the word “susceptible.”

Line 12 – Changed the word, “heavy” to “heavier”

Line 15 – Deleted the word “and causing,” replaced with “, which in turn has caused” includes the language, “roads, buildings, and other...”

Page 2

Line 1 – Deleted the language, “across the state and,” to be replaced with the word, “which” added the language, “a continuing negative...”

Line 5 – Added the descriptive word, “negatively”

Line 7 – Added the grammatical language, “has raised...”

Line 11 – Grammatical changes to delete “in” replaced with “to” changed “assessing” to “assess”

Line 12 – Added the language, “of climate change...”

Line 13 – Deleted “preventing,” added the language of “prevent or mitigate negative effects of climate change, and address economic effects on the state...”

Page 3

Line 17 – Deleted the word, “and” added the language “and resource development...”

Line 19 – Replaced the word “warming” with “change”

Line 20 – Added the word “have” grammatical change of “affect” to “affected”

Line 22 – Deleted the language “the feasibility of,” added the word “measures...”

Line 24 – Deleted the word “a” changes the word “policy” to “policies”

Page 4

Line 1 – Additional language of “state, and local...”

Line 12 – Changed “recommendations” to “final report and...”

Line 13 – Added the language of “continuation or termination of the...” Deleted the language, “the conclusion of...”

MEMORANDUM

DATE: March 24, 2006

SUBJECT: Work Draft for Committee Substitute on HCR 30

TO: Representative Jay Ramras,
Co-Chair of House Resources Committee

CC: Jim Pound, Aide to Representative Jay Ramras

FROM: Representative Reggie Joule

The following is an index to the portions of HCR 30 that are the language incorporated from SB 278.

Page 2

Line 5 – Provides change in language from the narrow focus of the impacts of the “thawing permafrost” to the impacts of the broader impacts of “climate change.”

Line 7 – Recognizes another impact of climate change. This addresses the “retreating sea ice” and its impacts.

Line 10 – Recognizes the scientific study of the Arctic Climate Impact Assessment and differentiates the Alaska Climate Impact Assessment Commission’s duties from that which has already been done in the ACIA.

Line 18 – Provides an increase in membership for the commission, from 13 to 15 individuals.

Line 23 (3) – Adjusts the number of public members to fit the 15-membership change, from 9 to 11 individuals.

Line 26-27 (B) – Defines the qualifications for the member from the University of Alaska.

Line 29 (D) – Delegates one of the 15 membership seats to a member of the Alaska Conservation Alliance.

Line 30 (E) – Provides a change in the language and membership qualification. Opens the membership qualifications up to any person knowledgeable in the engineering field, instead of restricting membership to the Department of Transportation.

Page 3

Line 4 (I) – Specifies that one member of the 15 person commission be an Alaskan youth selected by the member's peers in the Alaska Youth Environmental Action group.

Line 14 (1) – Expounds upon the duties and goals of the Commission.

Line 18 (2) – The Commission is charged with the additional duty of collecting information that can be used to estimate the economical costs of the impacts of climate change in Alaska.

Line 30 (8) – Provides language change to broaden the scope of the commission from the focus of permafrost to climate impacts.

Page 4

Line 6-7 – Additional FURTHER RESOLVED to specify the number of meetings of the commission and to spread the meetings around the state.

Line 8-10 – Clarifies the time line for the Commission to make reports to the legislature.

Line 11-12 – Demonstrates the Commissions willingness to work and provide the legislature with as much information as possible.

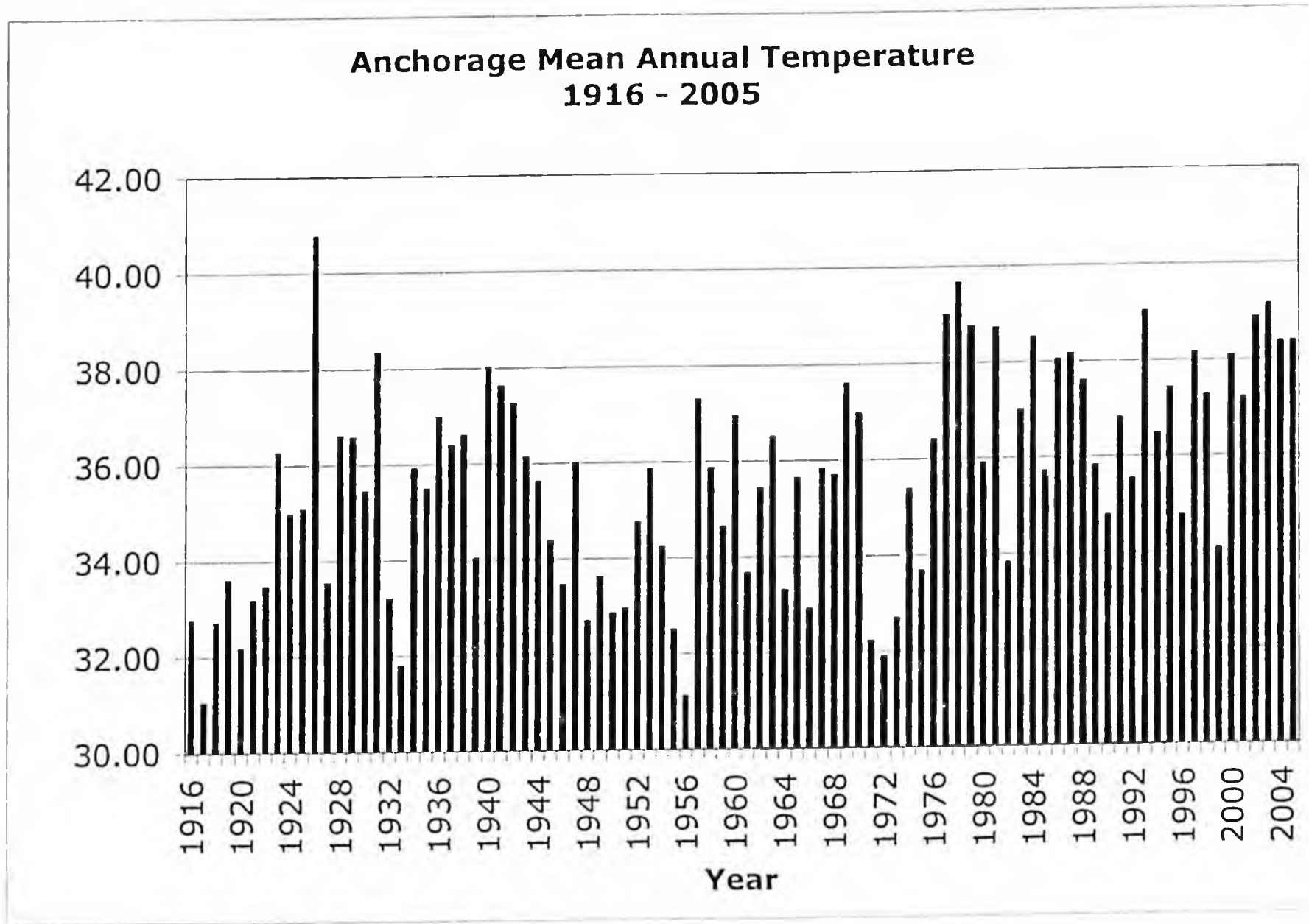
Evidence of Climate Warming in Alaska

**Testimony on HCR 30 to Alaska Legislature
27 March, 2006**

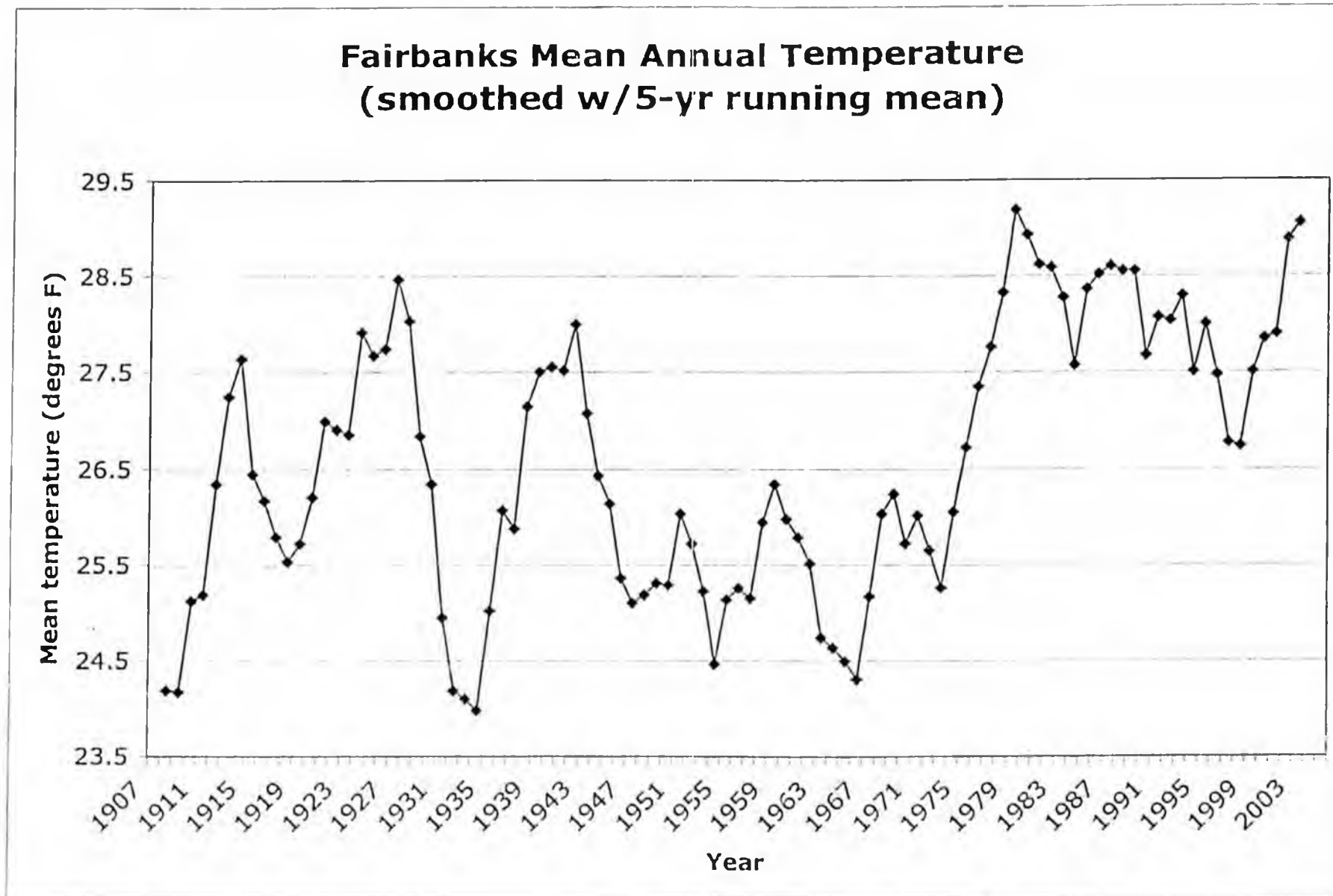
**Dr. Glenn Patrick Juday
4837 Palo Verde Ave.
Fairbanks, Alaska 99709**

**g.juday@uaf.edu
907 474-6717 (W)
907 479-3765 (H)**

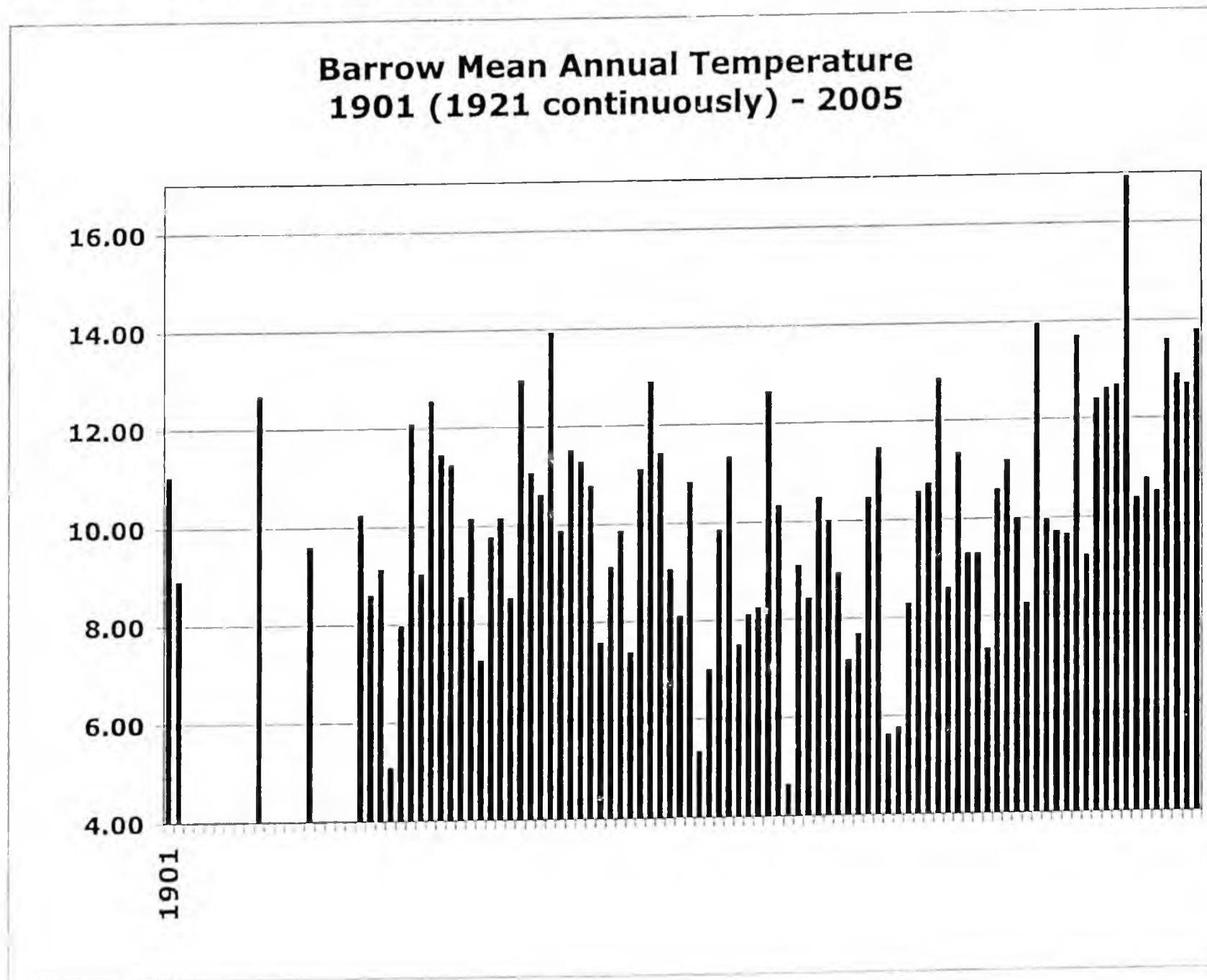
1. Temperatures in southern Alaska have increased



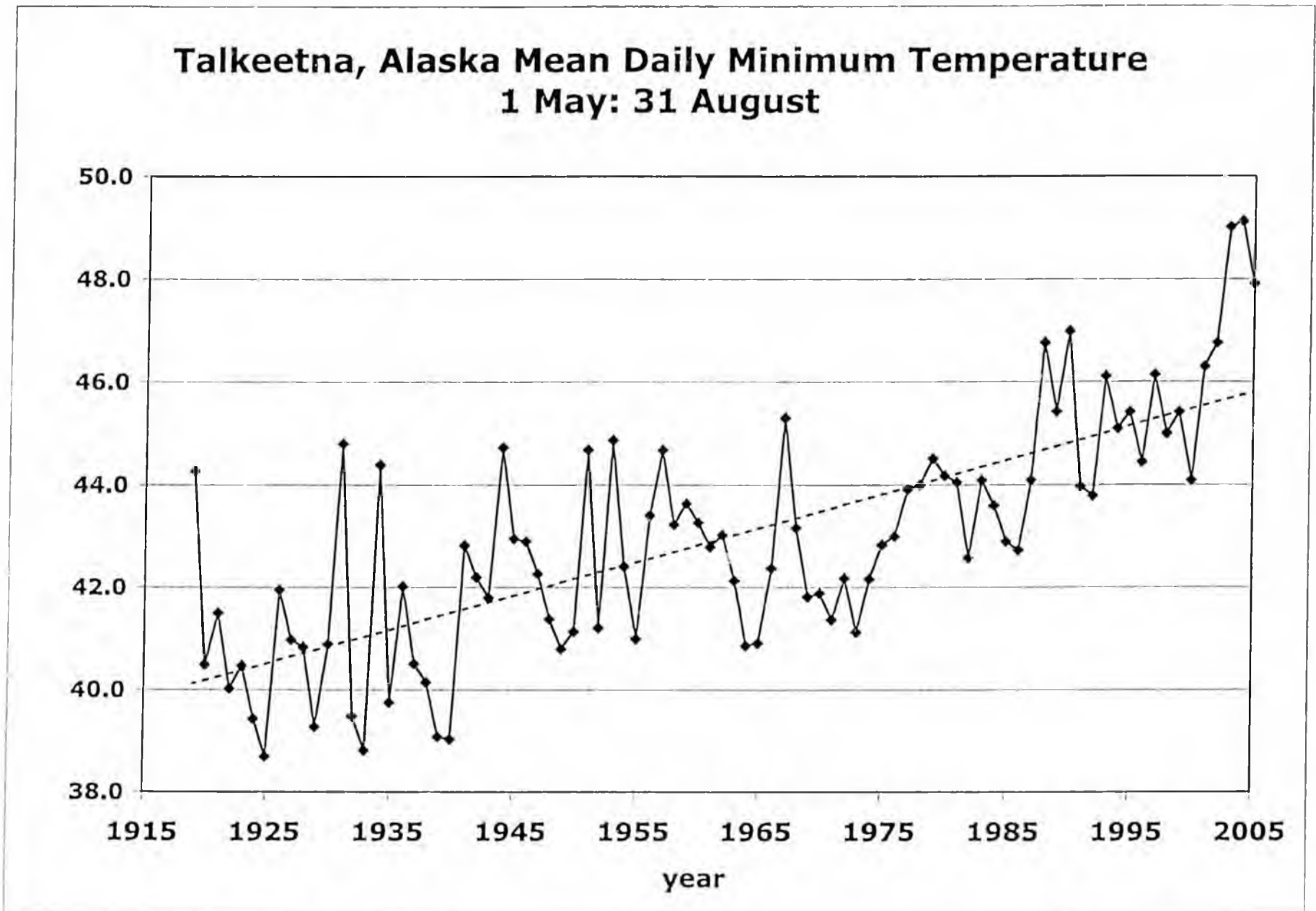
2. Temperatures in central Alaska have increased



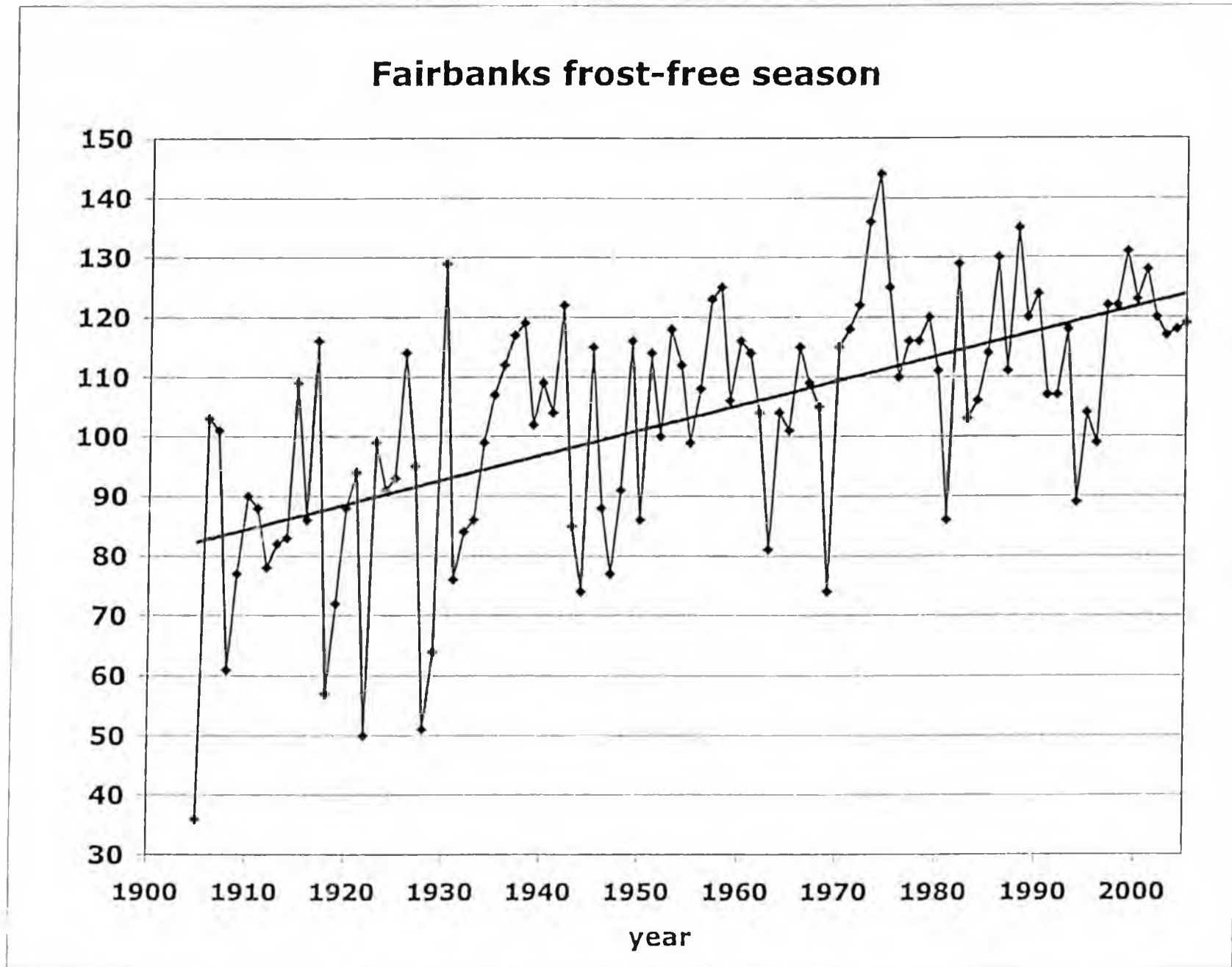
3. Temperatures in northern Alaska have increased



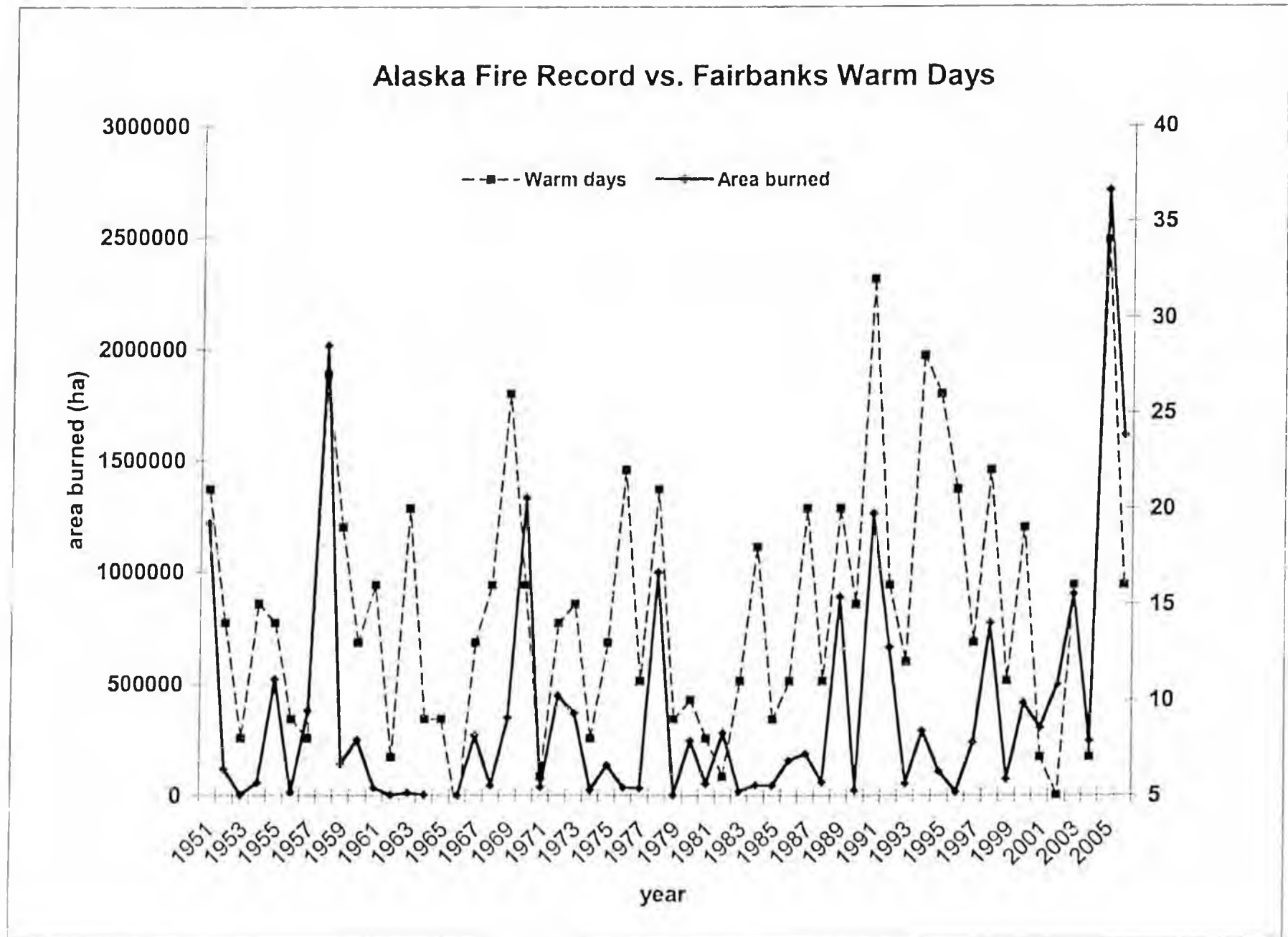
4. Overnight low temperatures have increased the most



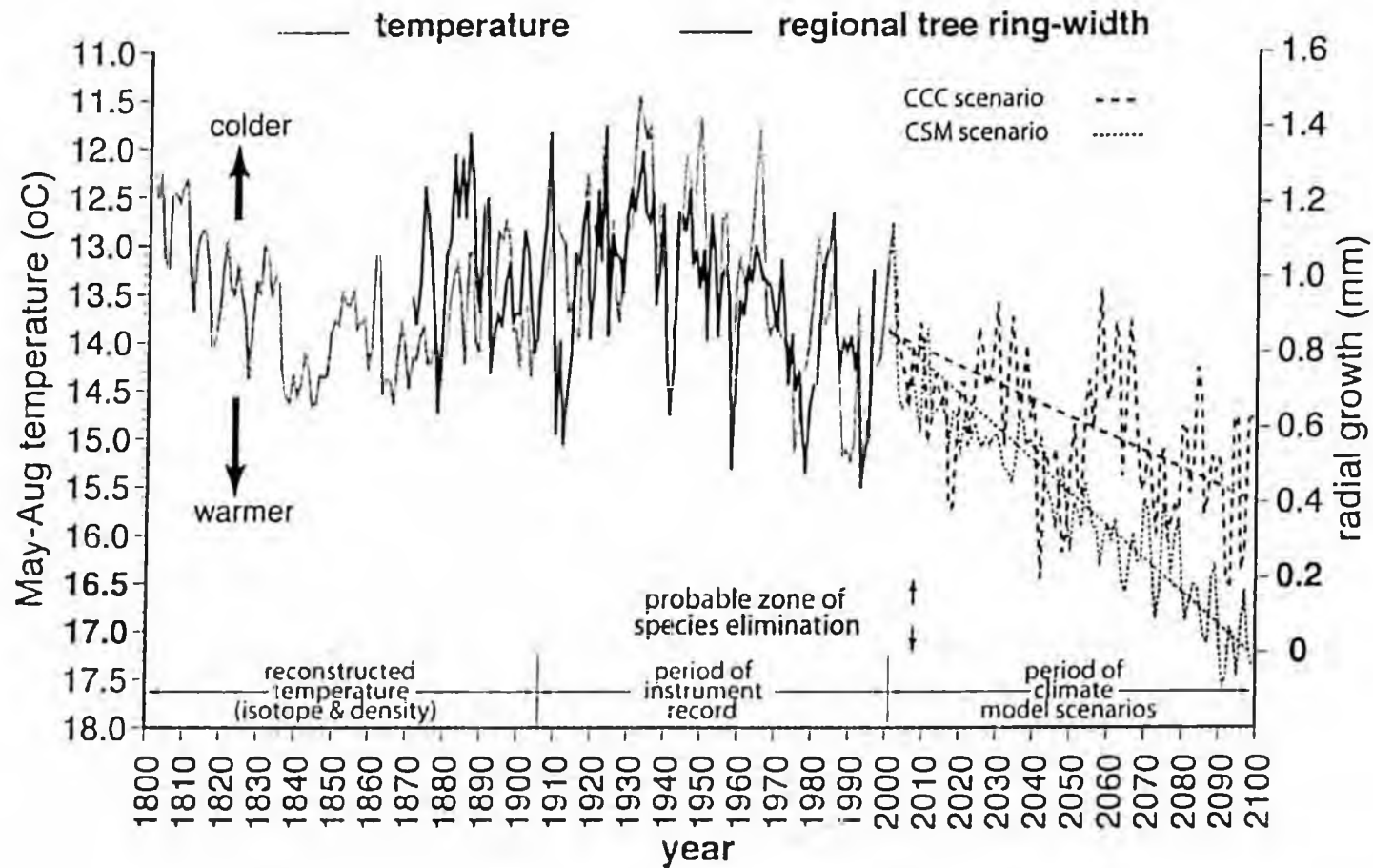
5. Growing/thawing season is now much longer



6. Hot summer days allow the spread wildfires



7. Commercial white spruce in central Alaska grow less in warm summers. With additional warming they won't grow at all.



HCR 30 Will Help Alaska Prepare for and Reduce the Impacts of Climate Change

Too many Alaskans are subject to the effects of the changing climate. Each year weather patterns are damaging Alaska's vital infrastructure, irreplaceable cultures, and essential revenue resources. Many states and communities across the country are beginning to develop adaptation strategies to minimize the economic costs and other impacts of climate change. HCR 30 will build upon existing information, such as the Arctic Climate Impacts Assessment, to assess the current and potential effects of climate change in Alaska and to recommend adaptation, mitigation, and monitoring techniques that can be adopted to minimize the potential serious detrimental impacts of climate change.

Following are a few facts about impacts of climate change:

- Climate change impacts are an issue of economics.
- The North Slope of Alaska's air temperature has increase 1.2 to 3.4 degrees Celsius above the global mean for the 20th century.
- Increase in season length and surface air temperatures could allow contaminants to migrate through active permafrost layers to surface water sources used by humans and wildlife.
- Climate change is likely to have significant impacts on existing arctic infrastructure and on all future development in the region.
- Interior Alaska's permafrost has warmed in some places to the highest level since the ice age ended 10,000 years ago, its temperature now within a degree or two of thawing.
- Climate change in the Arctic in the past has had major influences on the ebb and flow in availability of wildlife to indigenous peoples and thus have influenced their distribution and the development of their cultures.
- In Southcentral, several salmon streams are now exceeding ADF&G threshold temperatures, leading to increased susceptibility to disease and parasites.
- Scientists predict the summertime Arctic could be ice-free before the end of the century, opening up northern sea routes but threatening the existence of polar bears and disrupting the marine environment.
- Tree growth has decreased at Interior Alaska sites that were promising for commercial harvest. The warming lowers the water available to white spruce, black spruce and birch.
- Warming makes forests more susceptible to fire and insect outbreaks.
- Shrubs have thrived in the greater warmth and in turn accelerate warming.
- Between 1979 and 2001, sea ice cover retreated 6.5 percent per decade. By the summer of 2005, the rate had leapt to about 8 percent.

Now, Alaska has a chance to respond to these and other impacts in a manner that will better serve and protect people, property, and revenue in this state.

HCR 30 would allow for a commission of 13 qualified members to develop a comprehensive, preventative assessment and adaptation plan to address these issues that will help save lives, protect public health, preserve economic and resource development, and protect valuable infrastructure.

Infrastructure is defined as facilities with permanent foundations or the essential elements of a community. It includes schools; hospitals; various types of buildings and structures; and facilities such as roads, railways, airports, harbors, power stations, and power, water, and sewage lines. Infrastructure forms the basis for regional and national economic growth. An increase in environmental stresses caused by climate change expose structures to an increased risk of damage to infrastructure and threaten human lives.

How can the Alaska Impact Assessment Commission make a difference?

- The Alaska Impact Assessment Commission will make a difference by formulating methods to identify problem areas, estimating costs and opportunities, developing strategies to address emergency situations, and provide solid advice to the legislature as well as the communities in the state.

Areas in which climate change effects:

- Arctic Tundra and Polar Desert Ecosystems
- Freshwater Ecosystems, Fisheries, and Marine Systems
- Wildlife
- Hunting, Herding, Fishing, and Gathering
- Forestry, Land Management, and Agriculture
- Human Health
- Infrastructure: Buildings, Support Systems, and Industrial Facilities

Alaska HCR 30 Will Help Prevent And Prepare for the Impacts of Climate Change

Alaska is not the only state that feels the impacts of climate change. Delaying action until we have a greater certainty could be disastrous. The scientific understanding of climate change is now sufficiently clear to justify nations taking prompt action. The key is to integrate science and policy.

Following are a few facts and theories about impacts of climate change:

- The earth's temperature will keep rising, somewhere between 1.5 and nearly 6 degrees C by 2100.
- A global shift of 6 degrees C downward would make the difference between our current climate and an ice age. Impacts on sea level alone will impact half or more of the world's population who live in the coastal areas.
- More than a third of the U.S. coastal wetlands could be lost.
- The average global temperature has risen since the mid-19th century, by 0.6 degree C (roughly 1 degree F), and the amount of carbon dioxide in the atmosphere has increased about 30 percent from preindustrial times.
- Carbon dioxide and methane trap enough energy on earth to warm the surface up about 33 degrees C, higher than it would be in their absence.
- CO2 can retard plant growth instead of increasing it and reduce the diversity of plant species.
- Climate change prompts genetic change, making some animal species more vulnerable to extinction.
- Impacts include the sea level rising as much as 34 inches; increase in precipitation; threats to human health; and loss of life from floods and storms.
- Harmful effects may be occurring in the West: record dry spells, millions of acres of dead forests, warmer winters, dwindling water and catastrophic wildfires.
- Canada's Mackenzie Valley pipeline is being threatened by climate change and the impact on the permafrost.

States taking initiative:

Montana – a climate change advisory board to come up with recommendations by July 2007 to cut greenhouse gases.

Arizona – climate change panel will report by June 30.

Oregon - plans to adopt limits on power plant emissions.

Washington – plans to adopt limits on auto tailpipe emissions.

California – has a "climate action team" due to report in June on finding ways to cut emissions 2010, with further reductions by 2020.

New Mexico – has set targets for cutting greenhouse emissions and has asked a climate team to recommend by December how to make the cuts.

Why It is Important for the Alaska Legislature to
Create an Alaska Climate Change Commission or Task Force in 2006
In Support of SB 278 and HCR 30

Why Alaska Needs a Climate Change Commission Now:

1) **Climate change is significantly impacting Alaska.** Throughout Alaska, climate change is affecting every aspect of our state: infrastructure; communities; fish and wildlife; forests and other vegetation; fire hazard; winter activities; sea ice; permafrost; glaciers; lakes and rivers; oceans; transportation; health; hunting and fishing opportunities; storms; and coastal erosion; while causing significant economic and social impacts for Alaska citizens.

2) **These impacts need to be understood and quantified.** Setting aside *causes* of this warming trend, state government should draw, to the greatest extent possible, upon the many scientific reports on the potential *effects* so that Alaska can:

- Reduce and adapt to these impacts through proactive mitigation, where possible;
- Seek appropriate federal appropriations and grants to address the impacts; and
- Begin capitalizing strategically on opportunities associated with climate change.
- Partner with states and corporations that are developing mitigation strategies.

3) **The Commission should be established now.** It is important to create the Commission *now* so that it can assemble - by 2008 - needed economic, scientific, engineering and public information about climate change in Alaska because:

- Certain impacts need prompt attention in terms of federal appropriations and/or other proactive mitigation;
- Federal legislation may be passed in the near future to address climate change. This legislation likely will have provisions regarding adaptation and compensation, and Alaska will need to provide detailed analysis and documentation to obtain its fair share.
- There is an increasing need among Alaska community leaders, state officials, planners, managers, businesses, and others to understand future scenarios for climate change and how they can and should most effectively respond to it.

Why a Climate Change Commission/Task Force Will Help Alaskans:

1) Coastal Communities at Risk

Problem: Climate change is threatening many of Alaska's coastal communities because of increased storms, erosion, warming permafrost and sea-level rise. A 2004 Government Accountability Office report estimated that 86 percent of Alaska Native villages experience flooding and erosion, with many in imminent danger. The estimated cost of relocating just one of these villages ranges from \$100 million to \$400 million.

Why a Commission/Task Force is Needed: The Commission will gather the data necessary to assess the scope of the problem; develop strategies for addressing the problem (engineering solutions, social service needs, relocation as necessary, etc.); and determine the costs for implementing those strategies, which will be communicated to our Congressional delegation and others.

2) Fisheries Threats

Problem: Warming ocean and river temperatures, increased siltation from melting glaciers, and new parasites and diseases threaten Alaska fisheries and the billion dollar economy and 49,000 jobs it supports. Salmon in particular are threatened by many aspects of climate change, with river temperatures increasing throughout Alaska and the emergence of the disease *Ichthyonus* in Yukon River salmon.

Why a Commission/Task Force is Needed: The Commission will assess the threat to fisheries, analyze potential mitigation methodologies (including management, research, and enhancement), and make recommendations to the legislature based on the best information from ADF&G, the scientific community, fishermen, and others.

3) Permafrost Melting -- Impacts on Transportation and Other Infrastructure

Problem: Permafrost is found over approximately 80 percent of Alaska. The average temperature of permafrost in Alaska has increased 3°F since the early 1980s, leading to shrinking wetlands, lakes and ponds and damaging roads, buildings, airstrips, and utilities.

Why a Commission/Task Force is Needed: The Commission will assess the amount of damage that is likely to be caused by melting permafrost to existing structures and roads, quantify those costs for maintenance and mitigation relief, and help recommend the best available engineering and other solutions to minimize future infrastructure damage. This will benefit businesses throughout Alaska and Alaska's overall economy.

4) Forest Diseases, Fires and Other Concerns.

Problem: Climate change is having an impact on all of Alaska's forests. In Southeast, yellow cedar is dying off from root exposure in the winter; in Southcentral, nearly 4 million acres of mature white spruce forest was killed by spruce bark beetle infestation; in the Interior, forest fires have ravaged more than 10 million acres in the last three years.

Why a Commission/Task Force is Needed: Scientists, land managers, the legislature, and the public need to assess and then examine how adaptively manage our forests in a changing climate. Economic analysis is also needed to determine what impacts these threats will have on the forest products industry and the hundreds of jobs it supports.

5) Public Health and Safety

Problem: Increased flooding and infrastructure damage, unstable river and sea ice, expanded animal ranges, rising temperatures, and other climate impacts will affect health and safety throughout Alaska. New diseases such as West Nile Virus could arrive, as well as.

Why a Commission/Task Force is Needed: To identify wastewater collection, treatment and disposal systems threatened by increased storms and unstable permafrost; analyze health impacts of the loss of traditional foods and hunting/fishing opportunities; and, develop a plan for treating emerging health effects.

6) Winter Events and Tourism

Problem: Many Alaskan communities depend on winter events to generate off season income. These events, such as Fur Rondy races, are often faced with cancellation due to lack of snow. Community, private ski facilities and support businesses are opening later and later and are faced with declining revenues. Major tourist attractions such as Mendenhall Glacier and Portage Glacier are also at risk.

Why a Commission/Task Force is Needed: The Commission will assess which of these events, sites and facilities are most susceptible to climate change impacts and make appropriate recommendations.

7) Assessing Opportunities

Opportunities: Alaska has several potential opportunities associated with climate change, such as: opening the Arctic Ocean to summer vessel traffic and commercial fishing, increased agriculture, carbon sequestration, renewable energy, etc. Federal legislation is also being developed to address climate change that may include funding to help affected areas adapt to the impacts.

Why a Commission/Task Force is Needed: To capitalize quickly and fully on these opportunities, decision-makers need to understand what they are and what actions need to be taken to support them. The research and analysis will also help Alaska make the case to federal policymakers that assistance is needed to adapt to climate impacts.