

**U.S. Climate Change Science Program Stakeholder Listening Session
Co-Hosted by the Alaska Department of Environmental Conservation
Monday, October 27, 2008
9:45 a.m. to 11:45 p.m. and 12:00 p.m. to 1:30 p.m.
Alaska Tribal Conference on Environmental Management
Anchorage, Alaska**

Introduction

U.S. Climate Change Science Program Stakeholder Listening Session

On October 27, 2008, the U.S. Climate Change Science Program (CCSP) convened a listening session targeting a variety of individuals in Alaska representing a wide variety of perspectives and backgrounds, including academia, local, state, and tribal governments; resource managers; non-government organization, and business and industry (a participant list is available in Appendix A). The purpose of the listening session was for CCSP to hear from a variety of stakeholders about their interests and activities, informational needs and expectations for and ideas about future directions for Federal climate science research, observations, decision support, and communications in Alaska and the United States.

During the discussion, the following main questions were used to guide the discussion:

1. What can an interagency Federal climate program offer to better meet your climate science and information needs?
2. What climate-related decisions are you involved in?
 - For what decisions is the needed climate information not yet available?
 - What is preventing you from obtaining or using the information?
3. How can CCSP research better inform decision making on both mitigation and adaptation?
4. Are scientific assessments related to climate change valuable to you?
5. What delivery mechanisms are important to you in getting science information incorporated into your climate decision making?
6. What are the biggest research gaps?
7. What types of research are needed to better inform decisions related to mitigation and adaptation?

8. What are your highest priority observational/measurement needs:
 - For your research?
 - To support decision making?
9. What are the greatest future research and modeling opportunities?

The points raised during the sessions were recorded and the following is a summary of the themes that arose throughout the conversation. The questions and issues covered here represent only a sample of those that Alaskan's might expect to face in the coming years – there are many additional issues that were not covered in depth because of both time limitations and the need for continuing and broader discussions with the various stakeholders.

Additional information about the various listening sessions being convened by the CCSP is available at <http://www.climatechange.alaska.gov/Library/stratoptions/listening-sessions.php>

Part I

U.S. Climate Change Science Program Stakeholder Listening Session Summary of Discussion – Morning Session (9:45 a.m. to 11:45 p.m)

This session was held in partnership with the Alaska Department of Environmental Conservation. Larry Hartig, Commissioner of the Alaska Department of Environmental Conservation provided opening remarks and briefly described the state of Alaska's Climate Change Strategy and working groups that have been established to help address climate change issues in Alaska. More information is available at <http://www.climatechange.alaska.gov/>

Tom Armstrong (USGS), representing the U.S. Climate Change Science Program (CCSP) then provided a brief overview of CCSP and it's role, how CCSP would like to engage stakeholders in Alaska to help inform the Federal governments strategic planning of climate change research activities and better understand their local issues and concerns related to climate change as well as their science and information needs. Joel Scheraga (EPA), representing CCSP also participated in the presentation and Q&A.

The following questions were posed to the group:

- What can an interagency Federal climate program offer to better meet your climate science and information needs?
- What climate-related decision are you involved in?

- For what decisions is the needed climate information not yet available?
- What is preventing you from obtaining or using the information?
- How can CCSP research better inform decision making on both mitigation and adaptation?
- Are scientific assessments related to climate change valuable to you?
- What delivery mechanisms are important to you in getting science information incorporated into your climate change decision making?
- What are the biggest research gaps?
- What types of research are needed to better inform decisions related to mitigation and adaptation?
- What are your highest priority observations/measurement needs:
 - For your research?
 - To support decision making?
- What are the greatest future research and monitoring opportunities?

Members of the Adaptation Technical Work Groups on Public Infrastructure, Other Economic Activities, Health and Culture, and Natural Systems were then introduced and provided a brief overview of their respective areas of focus. The meeting was then opened up for comment by participants. The following reflects the nature of those comments and responses and are not exact quotes from individual stakeholders.

Many comments focused around the issues and activities of the Alaska Climate Change Sub-Cabinet and the Technical Working Groups and the impacts of climate change being felt at the local level. They also felt that the areas raised during the discussion applied to the Federal perspective as well. Comments included:

- **Makeup of the Technical Working Groups**
 - Interested in having tribal representation on the Technical Work Groups. People from across the State are being sought to participate. Very interested in taking the information from the work groups and having presentation out in the villages and rural Alaska - - bringing the information to the people.
- **Grant opportunities**
 - How can communities get grants? How can villages develop plans for adaptation and mitigation? Who can they contact for help with developing plans?
- **Social and Economic Impact**

- Loss of culture and impacts on tradition.
- Not just enough to understand the environment, we also need to better understand how it impacts people and their quality of life. We don't have enough capacity to start addressing socio-economic aspects.
- Climate change not just an environmental issue, but also social, economic and cultural issues. We need more money focusing on the human aspect - - so what does this mean for my family?, for fisheries management?, for regulating? What are the resources that are vulnerable? Science and research should also include the social and economic impact.
- There is mass migration of people moving out of the villages (rural to urban migration) and into urban areas because of the cost of fuel and the inability to harvest. How is the State going to deal with this issue? This also has an impact on infrastructure.
- Impacts to harvesting and change in migration patterns, particularly in caribou. Impacts to moose and fish populations are also affecting villages. How will the State and Federal governments help?
- Health and disease impacts as well as impacts to sanitation
- Biggest forest fires ever recorded in the area and it impacted their way of life.
- **Infrastructure and Sustainability**
 - Flooding and erosion are of serious concern to some villages - - entire villages having to be moved.
 - Need ability to put the right infrastructure in place and be able to sustain it.
 - Water resources – ensuring we have them and are able to access them.
 - Energy resources – looking at alternative sources
- **Science Needs**
 - To what extent are we aware of scenario exercises? The University of Alaska is doing it in at a small scale, but is anybody else doing these scenarios that could then be applied. USGS is working on developing scenarios, but most for the long-term. EPA has developed a climate assessment tool (free and available online) for water quality managers to help them better understand what climate change might mean to their water resources.

- Science and research should also include the social and economic impact.
- Need better understanding of the impacts melting glaciers are having on migration.
- Need mapping at the local level – there are no up-to-date aerial maps for Alaska.
- Need better satellites and weather monitors for the villages.
- Still need a better understanding of their science and information needs.
- **Information Management**
 - How do we manage the vast amounts of information we already have and make it available to local communities?
 - Where can people go for more information? The State? The Federal government?
 - Need to reach out to Federal and State resources and look at work plans and how to apply to their own community needs.

Part II

U.S. Climate Change Science Program Stakeholder Listening Session Summary of Discussion – Luncheon Session (12:00 p.m. to 1:30 p.m.)

Joel Scheraga (EPA), representing the U.S. Climate Change Science Program (CCSP) then provided a brief overview of CCSP and it's role, how CCSP would like to engage stakeholders in Alaska to help inform the Federal governments strategic planning of climate change research activities and better understand their local issues and concerns related to climate change as well as their science and information needs. Tom Armstrong (USGS), representing CCSP also participated in the presentation and Q&A.

The following questions were posed to the group:

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- What delivery mechanisms are important to you in getting science information incorporated into your climate change decision making?
- What are the biggest research gaps?
- What types of research are needed to better inform decisions related to mitigation and adaptation?
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- What are the greatest future research and monitoring opportunities?

The following areas emerged during the conversation following the Powerpoint presentation:

- **Data and Information**

- Synthesis and Assessment Products (SAP) – 21 SAP’s being done that are taking a look at the state of the science as it exists and making recommendations for further science needs.
 - The reports are too large and cumbersome.
 - SPA 4.6 on The Analyses of the Effects on Human Health and Welfare and Human Systems received much attention from Congress and the news media.
- Need to put the science in a friendly format you can use, not just throw it over the fence.
- Information needs to be understandable and actionable and not require a Ph.D.
- Need translation of the information and derivative products.
- Federal government is good at collecting data, but need to share observations at the time of collection. It takes too long to get the information out.
- Resources for data collection often cut.
- What datasets are important? How do we prioritize?
- Need to ensure quality assurance.
- Need to invest in huge archives to make information available.
- Need a synthesis product of all the SAP’s that highlights impacts to regional climate models and should be included in the IPCC impacts working group.
- Need additional observational data
- Need for stakeholder-driven decision making tools that are meaningful

- Use of traditional knowledge - A lot of information wouldn't be classified as climate change information such as taking aerial photos and combining it with traditional knowledge of historical floods to better understand potential impacts.
- **Social and Economic Issues**
 - Are we doing any research that would benefit the Energy Supply and Demand Technical Working Group in looking at what may benefit local communities from a national perspective and what might or not be working in the lower 48 states?
- **Transportation and Infrastructure**
 - Good recommendations came out of SAP 4.7 on "Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study" that could be used in other places.
 - Need to do a risk assessment on infrastructure in Alaska.
- **Science Needs**
 - Gas hydrates are a threat to our environment – still a lot of work that needs to be done
 - What is CCSP doing about science on ocean acidification? NOAA responded not very much, they would like to be able to do more but don't have resources.
 - Biomass energy- more science information is needed on wood as a carbon neutral fuel source and the air quality issue associate with it.
 - Need for additional research at national level is key to realizing valuable technologies at the state level.
- **Partnerships**
 - International partnerships are needed to better understand impacts from global sources such as Russia and Canada.
 - Need to partner with the local communities and deliver information to them. Needs to be a two-way dialogue to better understand their needs and issues.
 - Local communities want to have a more proactive role in research and adaptation. Need to find a way to get them more involved.
- **Climate Change Technology Program**
 - What is their role in climate change?
 - States don't have the resources to address those massive research and development technology.

Appendix A
Participant List
U.S. Climate Change Science Program Stakeholder Listening Session

Karen Abraham, Chefnak Traditional Council
Jim Adams, National Wildlife Federation
Clint Adler, DOT & PF (State of Alaska)
Tom Armstrong, USGS/CCSP
David Atkinson, University of Alaska International Arctic Research Center, Department of Atmospheric Sciences
Bob Batch, BP Exploration
Ivan Billy, Native Village of Tununak
Michael Black, Alaska Department of Commerce
Mike Bradley, ANTHC Health
John Brower, Chilkat Indian Village
Caroline Brown, Alaska Department of Fish and Game
Katherine Brown, US EPA Region 10
Michael Brubaker, Alaska Native Tribal Health Consortium
Meg Burgett, University of Alaska Fairbanks
Peter Captain Sr., Native Advocacy
Amber Carl, Paimiut Traditional Council
Nick Carter, EEK Traditional Council
Jan Caulfield, Jan Caulfield Consulting
Michael Cerne, U.S. Coast Guard
Terry Chapin, University of Alaska Fairbanks
Daniel Chythlook, Aleknagiiic Traditional Council
Mike Coffey, Alaska Department of Transportation/PF
Steve Colt, University of Alaska Anchorage
Marcia Combes, U.S. EPA, Alaska
Billy Connor, University of Alaska Fairbanks
Paula Cullenberg, University of Alaska Fairbanks
Peter Crimp, AK Energy Authority
Paul Daniel, Kipnuk Traditional Council
Steve deAlbuquerque, Conoco Phillips Alaska
Larry Dietrick, ADEC
Karla Dutton, Defenders of Wildlife
Patricia Eckert, Office of International Trade - SOA
John Farrell, US Arctic Res. Commission
Rich Ferrero, USGS
Craig Fleener, Alaska Department of Fish and Game
Jamilla George, Denali Commission
Bill Hall, University of Alaska Coop Extension Service
Jennifer Hanlon, Yakutat Tlingit Tribe
Mike Hawley, Maniilaq Association
Leslie Holland-Bartells, USGS
Amy Holman, National Oceanic and Atmospheric Administration

Luke Hopkins, AK Muni League
Paul Hugo, Anaktuvuk
Steve Ivanoff, Kawerak Inc.
Tara Jollie, State of Alaska
Andy Jones, Alaska Homeland Security and Emergency Management
John Joseph, Newtock Traditional Council
Mark Kahklen, ESP BIA/DECRM
Frank Kelly, National Weather Service, Alaska Region
Paul Kendall, Activist Energy
Meera Kholer, AVEC
Bryce Klug, RIM Architects
Toby Krasney
Dick LaFever, CLI
Peter Larsen, The Nature Conservancy
Marilyn Leland, Alaska Power Association
John Madden, Alaska Homeland Security and Emergency Management
Greg Magee, ADEC/VSW
Billy Maines, Curyung Tribal Council
Chris Maisch, Alaska Department of Natural Resources Forestry Division
Naomi Malony, NEC/Nome
Bobby McMullen
Mark McNeley, Native Village of Nelson Lagoon
Molly McCammon, Alaska Ocean Observing System
Agatha Napoleon, Paimiut Traditional Council
Cavline Nicholai, Kasigluk Traditional Council
Karla Ohls, North Star Group
Patricia Opheen, USACE
Harold Okitkun, Native Village of Bill Moore's Slough
Walter Parker, Arctic Council EPPR
Bob Pawlowski, Denali Commission
Cindy Pilot, Koyukuk Tribal Council
Karen Pletnikoff, Aleutian Pribilor Islands Association
Jackie Poston, Alaska Department of Environmental Conservation/U.S. EPA
Christine Rifredi, GGTG
Rick Rogers, Chugach Alaska Corporation
Vladimir Romanovski, University of Alaska Fairbanks
Joe Sarcone, EPA
Joel Scheraga, U.S. EPA
Mark Shasby, USGS
Barbara Sheinberg, Sheinberg Associates
Jeff Short, National Oceanic and Atmospheric Administration
Shirley Shugak, Ivanof Bay Tribe
Martha Shulski, GI/University of Alaska Fairbanks
Sean Skaling, Green Star
Jessica Standifer, Native Village of Tyonek
Curt Stoner, TOTE

Peter Stortz, University of Alaska Fairbanks
Nancy Tosta, Ross and Associates
Mead Treadwell, U.S. Arctic Research Commission
Chip Treinen, United Fishermen of Alaska
Fran Ulmer, University of Alaska Anchorage
Sue Unger, APIA
Doug Vincent-Lang, ADF&G
Jason Vogel, Stratus Consulting
Eric Volk, Alaska Department of Fish and Game
John Warren, ANTHC/DEHE
Angela Wasle, Natural Systems
Steven Weaver, Alaska Native Tribal Health Consortium
Wenona Wilson, U.S. EPA - Alaska
Karen Wood, USGS
Darcy Yagre, Native Village of Perryville
Violet Yeaton, TEK