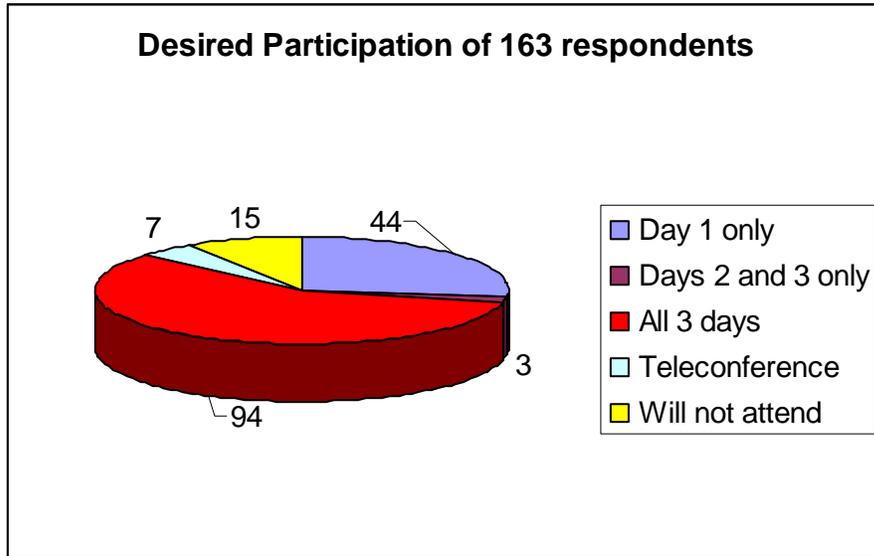


**U.S. Fish and Wildlife Service / U.S. Geological Survey
Climate Change Forum for Alaska
Questionnaire Results**

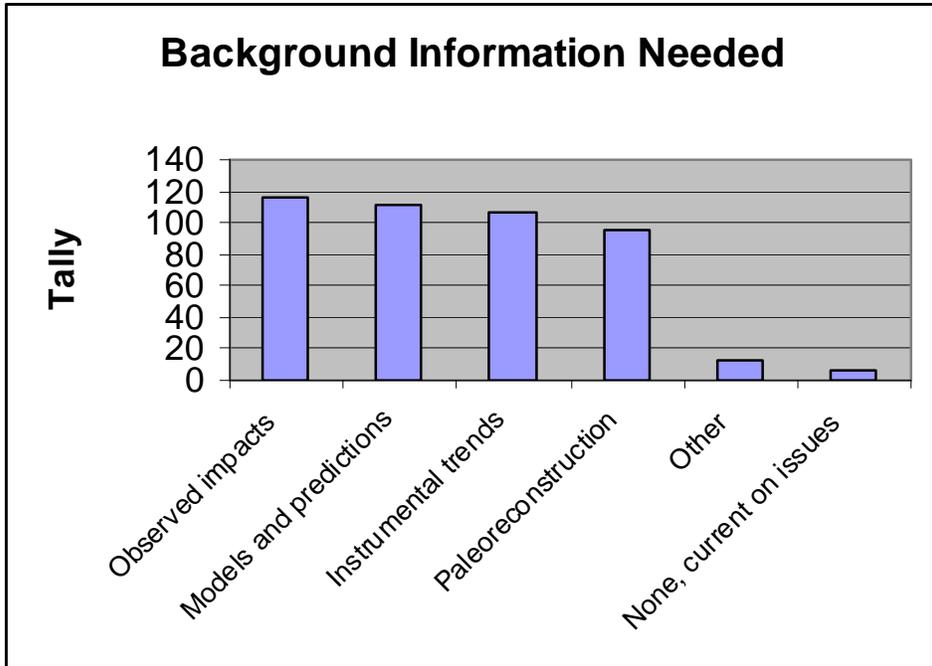
In October 2006, U.S. Fish and Wildlife Service (USFWS) and U.S. Geological Survey (USGS) employees in Alaska were asked to respond to a questionnaire regarding climate change and its potential effects on management of FWS trust resources. Based on the responses received, the steering committee for the USFWS and USGS Climate Change Forum for Alaska tailored the agendas for both the one day Technical Session and the two day Workshop. The results of the questionnaire are summarized below.

Of 163 respondents, 148 indicated they wish to participate in the Climate Change Forum in some capacity.



81 % of the respondents were USFWS employees (132 respondents)
One person from BLM responded, which is curious as the questionnaires were not sent to agencies other than USFWS and USGS.
The other 30 respondents were USGS.

Responses to *Question 3*: What background information about global climate change would you like to learn about? (Circle all that apply). **Important for Technical Session**



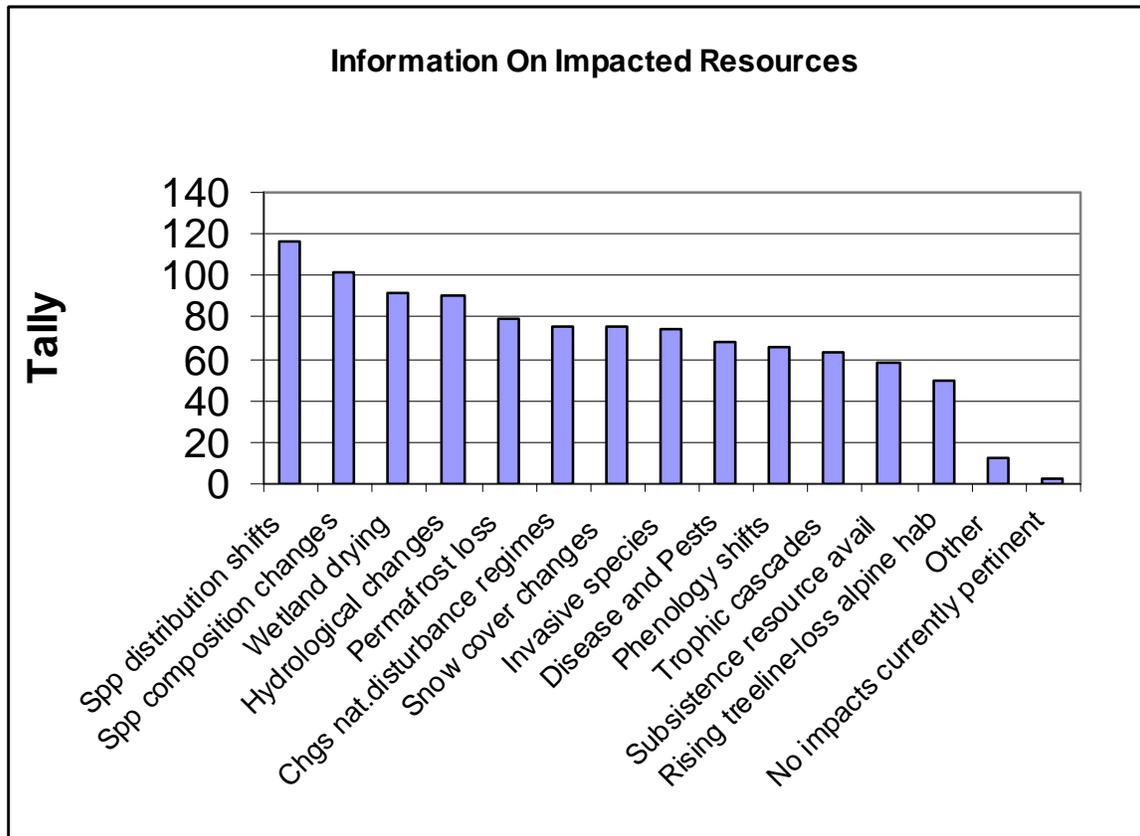
80% of respondents replied Observed Impacts, 77% Models and predictions, 73% Instrumental Trends, 66% paleoreconstruction. Other topics that were written in included:

OTHER TOPICS written in for Question 3 on Background information needed

- Influence of climate change on spp distribution and movements
- Species invasions associated with climate change
- How climate change will affect contaminants and their effects on biota
- All for the circumpolar region (not just Alaska)
- Status of knowledge of climate change effects on AK NWRs
- Discussions on potential collaborations to track climate effects
- Effects on temperate rainforests (SE AK)
- Planning for future management: how distribution/migration corridors of our trust resources may change over the next decades and what we can do to prepare for these changes
- Observed lightning occurrence and spatial fire history
- FWS initiatives, funding for habitat research, Interior Department Support
- Social impacts on refuge users
- Arctic marine and nearshore responses
- Traditional ecological knowledge
- vegetation change for the boreal region

Responses to *Question 4*: What potential impacts of global climate change, if any, do you need information about to effectively conserve trust resources? (Circle all that apply)

Important for Technical Session



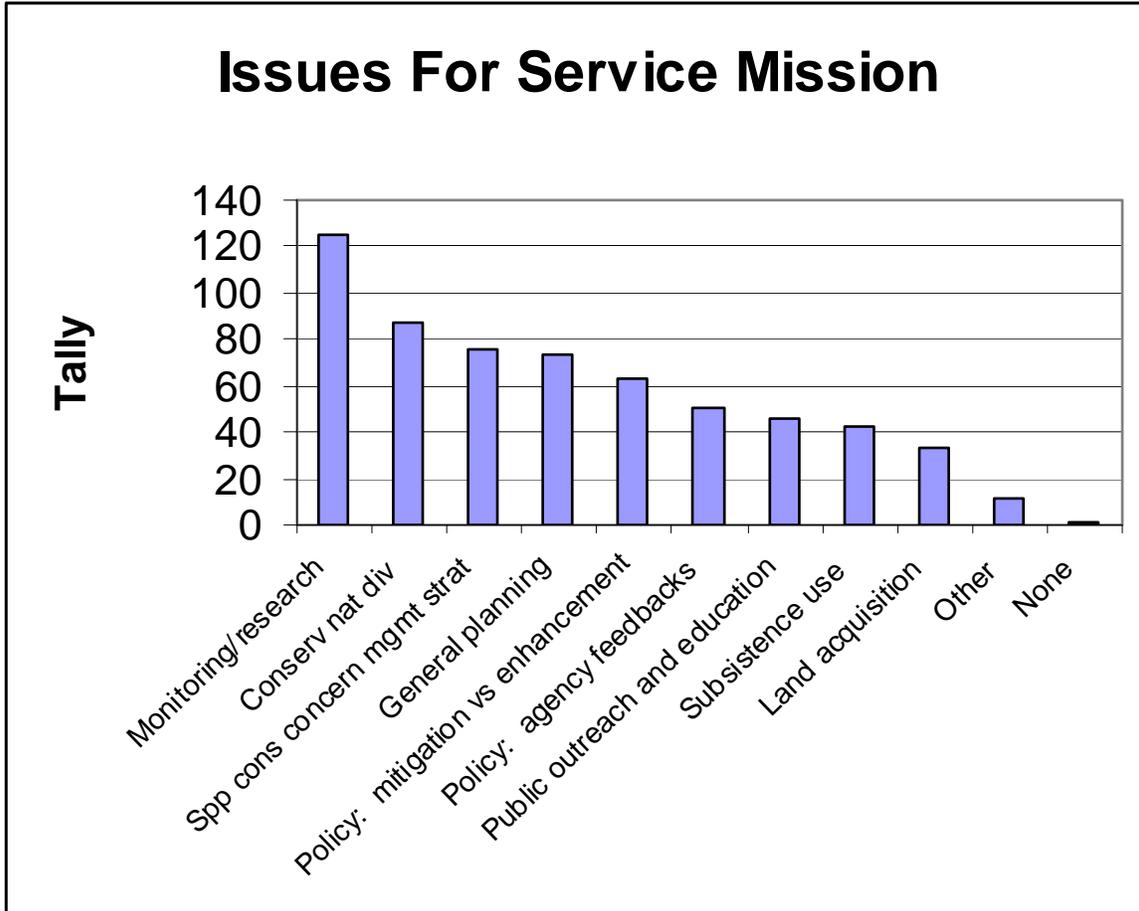
80% responded Species distribution shifts, 70% Species composition changes, 63% Wetland drying, 62% Hydrological changes, 55% Permafrost loss, 52% Changes to natural disturbance regimes, 52% Snow cover changes, 51% Invasive species, 47% Disease and pests, 45% Phenology shifts, 43% trophic cascades, 40% subsistence resource changes, 34% rising treeline and loss of alpine habitat. Other topics written in included:

OTHER Topics written in for Question 4 on impacted resources information needs

- Rising sea level and loss of coastal habitat
- sea ice changes, Changes in sea ice extent and location, Changes in sea ice, coastal erosion
- Changes/shifts in freeze-up/break-up, changes in snow depths and ice thickness in interior rivers & lakes
- Climatic changes; limnology changes
- Changes in disturbance regimes (Yukon River flooding/erosion events)
- Influence of climate change on contaminant concentrations in biota. How will change affect interactions of various stressors like increased temperature, disease, parasites and contaminants?
- The expected pattern of trees moving out to the tundra
- Changes in snow cover and other climatic factors
- Infrastructure
- All listed apply to subsistence

Loss of discrete permafrost ponds; shoreline changes resulting from sea level rise
 Contaminant transport/pathways

Responses to *Question 5*: What issues concerning global climate change would you most like to see addressed by the USFWS in order to better fulfill our mission? (Circle all that apply) **Important for Workshop**



86% want to see monitoring and research addressed, 60% conservation of natural diversity, 52% species of conservation concern, 51% incorporation into general planning, 43% Policy: mitigation vs. enhancement, 35% Policy: agency feedbacks, 31% outreach, 29% subsistence, 23% land acquisition. Other topics written in include:

OTHER Topics written in for Question 5 on issues to be addressed by USFWS

Increased contaminants concentrations (e.g. mercury in fish) may prompt need for FWS mgt actions on nwr's in coord w/state partners. Reductions in the extent and thickness of ice may prompt incr shipping &/or offshore oil devt in Arctic reg that need to be considered in planning

Implications for the management of water birds at continental scale

New initiatives to address funding support for research, management and education at Alaska NWRs

Need more knowledge about the topic to pick approaches to be used

Do we manage resources for status quo as much as possible or watch and adapt to the changes

Why was the opposite of 'I' not an option? I.e. adaptation to the inevitable vs. pouring money into mitigation efforts that will be drowned, dried, or otherwise swept away within the next 2 decades?

Interagency land management collaboration: policy, planning and program implementation

Strategic water acquisition to protect habitat of trust resources

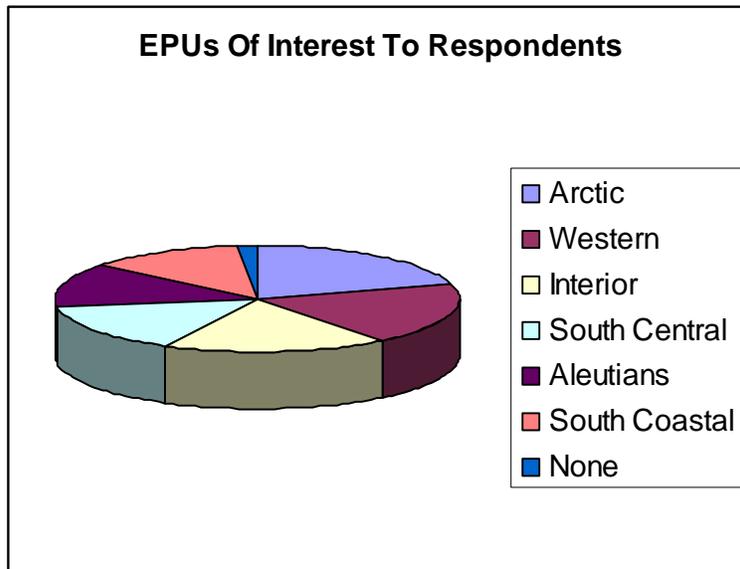
Addressing wide natural variability over long time periods (geologic time)

Incorporation of climate change as a "forcing function" to be considered in all management activities - and not as a stand-alone topic

Collaborating monitoring/research efforts with other land management agencies (e.g. nps, usfs)

Budget initiatives

Responses to *Question 6* indicate that respondents' area of expertise and interest are pretty evenly distributed throughout the Region.



EPU	Percent
Arctic	0.510345
Western	0.482759
Interior	0.455172
South Central	0.386207
Aleutians	0.324138
South Coastal	0.317241
None	0.041379