

# Alaska Forum on the Environment - 2010

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# Takeaway Message

- Focus on the Alaska North Slope and offshore and the tasks facing managers
- Many challenges face resource managers and our political leaders in a changing Arctic
- Better understanding of the environment as a whole (interdisciplinary) can lead to better adaptation strategies that address multiple issues

**Geopolitical Issues:**  
**\* Law of the Seas**  
**\* International Boundaries**

**295,000 km<sup>2</sup>**

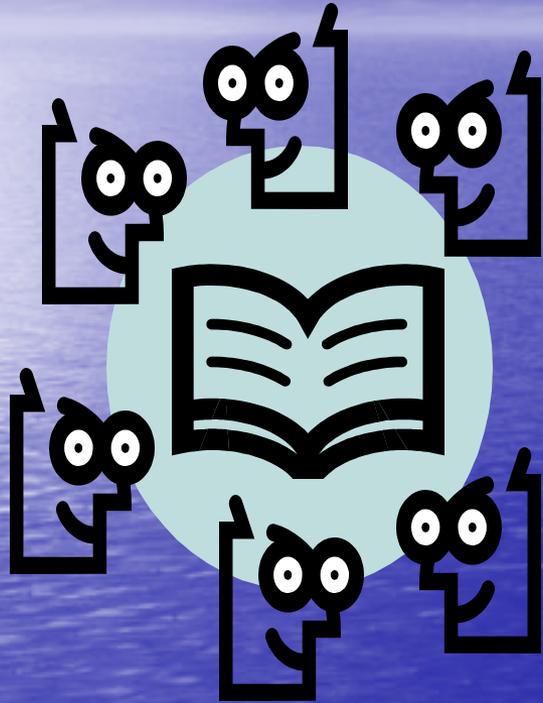
**Chukchi Sea**

**Beaufort Sea**

**231,000 km<sup>2</sup>**

# Emerging Issues: The Process

- OG identified broad issues
- Senior Staff Committee identified questions and concerns
- Iterative process involving STAP, Senior Staff Committee, and others to generate summary papers



# Issue: Weather and Climate



- Current data collection ad hoc
- Inventory existing stations
- Canvas user needs
- Pool resources to systematically improve network
- Make data accessible

# Issue: Increasing Marine Activities



- Identify the range of likely future scenarios
- Develop potential environmental effects modeling methods that can inform management decisions
- Baseline information needed! (species, sound, water quality, sediment, currents, etc.)
- Short- and long-term monitoring

# Issues: Changing Sea Ice/Ocean Conditions



- Need access to high quality, user-friendly data and model projections at appropriate scale
- Incorporate historical data (remote sensing, local knowledge, etc)
- Identify models that can be scaled to regional and local resolution on 2, 5, 10, and 20 year time frames
- Work needed on fate and effects of petroleum on/in ice

# Emerging Issues: Permafrost



- Main issue is active layer, NOT permafrost
- Recognize heterogeneity of soil (especially ice content)
- Existing data insufficient
- Data need to be centralized
- Combining ground and remote sensing data may be promising but needs work
- Start work on threshold conditions at which thawing accelerates

# Issues: Coastal and Riverine Erosion

- High & increasing rate
- Sea level rise, increased fetch, thicker active layer, tougher storms contribute
- Inventory of shoreline data needed
- Need an accurate coastline and river corridor map and program to remap
- Coast should be instrumented for waves and wind
- Improved risk assessment



# Issues: Hydrology and Lake Drying



- Critical need for hydrological networks
- Remote sensing technologies maturing but need further support
- Status and trends poorly understood
- Workshop to identify data needs

# Issue: Coastal Salinization



- May change vegetation and reduce water availability for ice roads
- Need better understanding of vegetation tolerances
- Not known to have impacted large area

# Issues: Contaminants



- Atmosphere is most significant transport route
- Continued vigilance needed
- Dose-response data needed
- Subsistence diet should be monitored

# Issue: Fire Regime



- Despite Anaktuvuk River fire in 2007, we cannot say that fire regime on North Slope is changing
- Fire management addressed by Alaska Wildland Fire Coordinating Group
- Should continue monitoring fire recovery at Anaktuvuk River

# Issue: Vegetation Change



- Although much of North Slope has been mapped, maps are of limited value
- No formal change detection plan is in place
  - Need to inventory vegetation change sites
  - Implications of vegetation change are complex and interwoven with other issues
  - Need a reduced list of pressing management needs

# Issue: Migratory Birds



- Basic information on habitat use needed
- Population status and trends monitoring needed
- Offshore spill in open leads could be devastating
- Understanding of impacts in wintering grounds needed
- Site-specific monitoring should occur well in advance of development and be followed by impact monitoring
- Need improved understanding of climate change impacts on birds

# Issues: Marine mammals and their prey

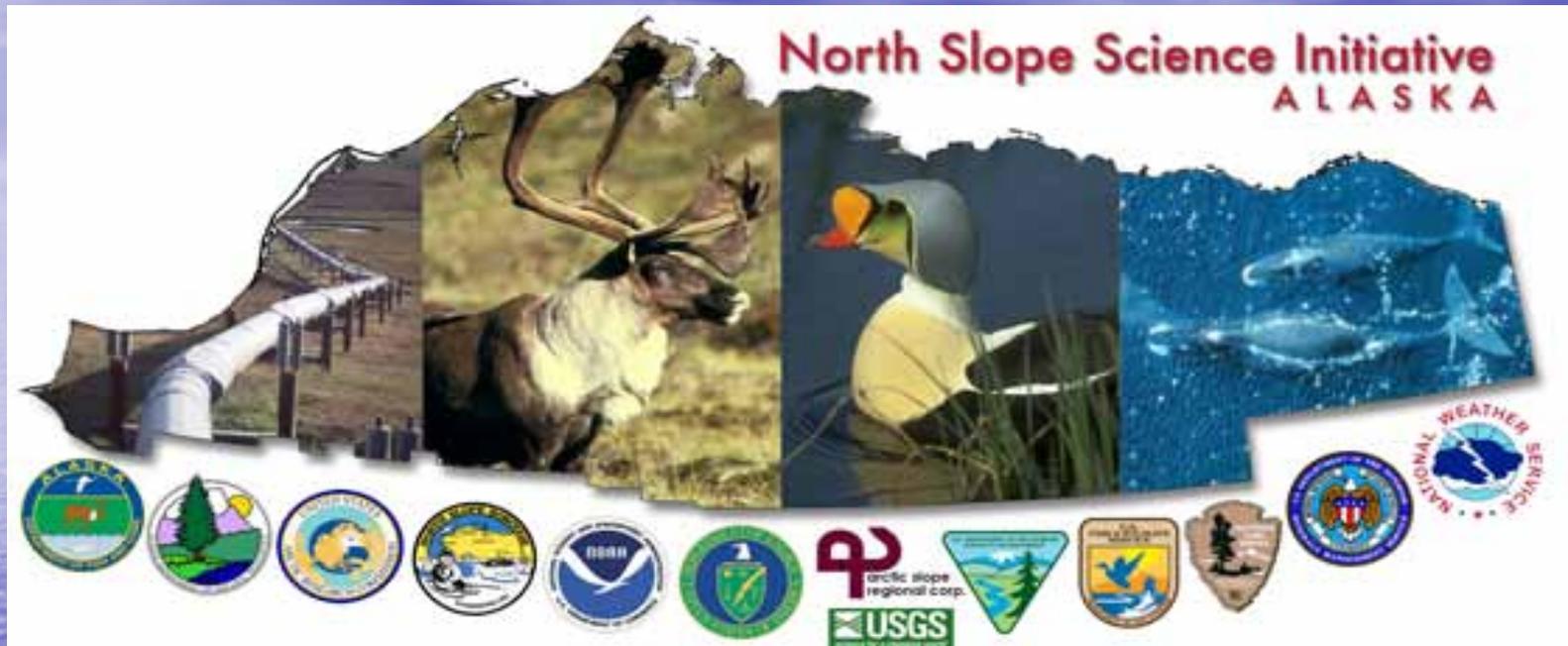
- Baseline and monitoring needed with at-risk species prioritized
  - Assessment of walrus and polar bear shifts to land needed
  - More prey studies needed
  - Acoustic work
  - Local knowledge and hunter harvest patterns
- Integrated marine ecosystem studies (oceanographic, prey, predators)
- Northward shift in prey species should be assessed
- Incorporate TEK as a priority



# Additional Emerging Issues

- Arctic fish and fisheries
- Socioeconomics
- Rehabilitation/restoration





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