ARCUS
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Polar Politics: The Marriage of Scientists, Stakeholders and Policymakers

ARCUS Conference Statement

- “The Arctic is a complex integrated system of natural, physical and social domains inextricably connected to the larger global system.” Our goal is to “…develop partnerships and innovations to transcend disciplinary, geographical, political and mission-related boundaries.”
- This is important for many reasons, including the complexity of the issues, scarce resources, agency budget constraints, and rapidly changing systems.

Questions to Address

- How can scientists better communicate their research so stakeholders and policymakers understand it?
- How can we make it easier (and more desirable) for policymakers and stakeholders to use that research to improve decisions?
- How can we make science that is relevant to policymakers and stakeholders more interesting to the scientific establishment ?

Changing World

- Population
- Technology
- Information
- Globalization
- Resource utilization
- Species extinction
- Governance
- Climate change

Center for Strategic International Studies

- What role should universities play in shaping the future?
- Seven Revolutions
- www.7revs.org

Revolution 1 Population

- Christopher Columbus reached the New World: Global population=500 million
- July 1,2005 Global population= 6.5 billion
- By 2025 close to 8 billion people, with 80% of the growth in countries least able to support it economically or environmentally, and 75% of the total population will live within 37 miles of the coast

Source: Center for Strategic International Studies www.7revs.org

Revolution 2 Resources

- Water: by 2025, 54 countries (home to 4 billion people) will face serious constraints on their capacity to meet water demands for safe drinking water, food production, economic development
- Energy: exponential demands for oil, gas, coal will be driven by population and expectation for higher standards of living (by 2025 OPEC will account for up to 50% of world's supply of oil)
- Land: poor land management and overuse of fertilizers causing land degradation, soil erosion and desertification (842 million people are undernourished today)

Source: Center for Strategic International Studies www.7revs.org

Revolution 3 Technology

- Computation
- Genetics and biotechnology
- Nanotechnology
- Complexity: privacy, ethics, equity

Source: Center for Strategic International Studies www.7revs.org

Revolution 4 Information

- The death of distance (99% of public schools have internet access)
- Short shelf life of information (3 out of 10 Americans get news online)
- Decentralization vs. concentration of media (16 million blogs, three major phone companies)
- Borderless economies (oversea sourcing)

Source: Center for Strategic International Studies www.7revs.org

Revolution 5 Integration

- Globalization: benefits and costs
- International trade 12 fold increase since WWII; it will grow 6%/year
- Multinational corporations control global integration (500 co= 2/3 of all trade)
- Disparities: 15% of the world's population = 56% of total consumption; 40% = 11%
- 2.8 billion people live on < $2/day

Source: Center for Strategic International Studies www.7revs.org

Study of Environmental Arctic Change

"…increasing average annual surface air temperatures, decreasing summer sea ice extent and sea ice mass, changing ocean circulation, northward movement of tree lines and vegetation zones, thawing glacial ice masses and permafrost and changing socioeconomic dynamics" (SEARCH 2005, vii)

Shishmaref, Alaska

- One of dozens of communities at risk from coastal erosion and flooding
- Adaptation strategies: move the village?

Photos by Tony A. Weyiouanna Sr.

Shishmaref, Alaska

10-08-02 Storm

Photos by Tony A. Weyiouanna Sr.

Erosion rate: These two photos were taken two hours apart. Note the ATV tracks in the road and the 55 gallon barrel. This road no longer exists.

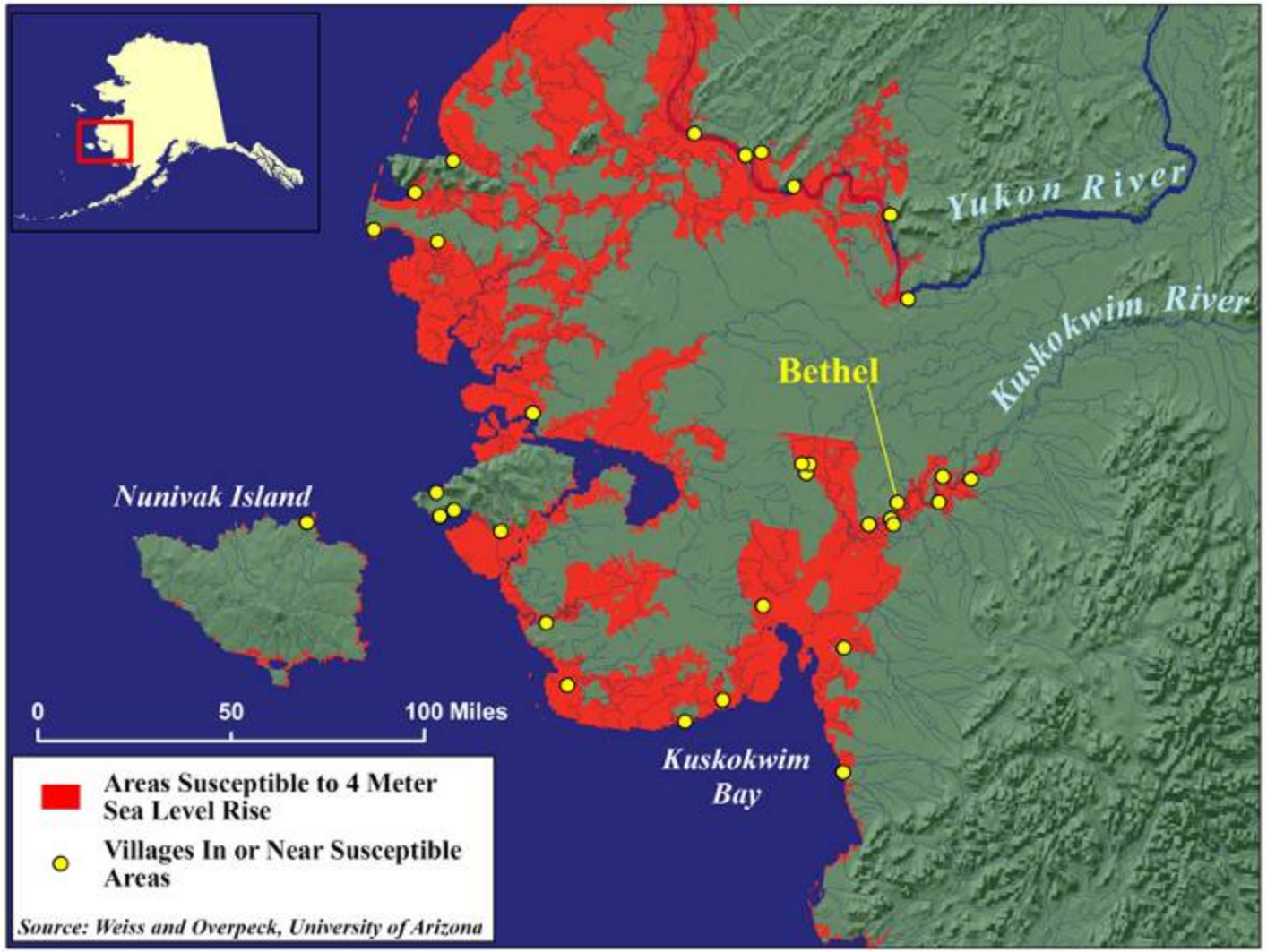
Yukon River
Kuskokwim River
Bethel
Nunivak Island
0
50
100 Miles
Kuskokwim Bay
Areas Susceptible to 4 Meter Sea Level Rise
Villages In or Near Susceptible Areas
Source: Weiss and Overpeck, University of Arizona

Photo by Charles Wohlforth

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Photo by Charles Wohlforth

Underutilization of Scientific Research by Decision-Makers

- Time
- Credibility
- Literacy
- Communication
- Culture

Solution?

- Strengthen existing organizations and programs that foster improved communication and collaboration among stakeholders, decision-makers, and scientists.
- Create new organizations in areas where none now exist, modeled on the most successful examples.
- Reward behavior of individuals and organizations that adopt best practices and achieve good marriages of stakeholders, policymakers, and scientists.

- ARCUS
- Arctic Council
- IPY
- U.S. Arctic Research Commission
- ICC
- International Whaling Commission
- NOAA RISAs
- NPFMC/NPAFC
- Aldo Leopold School Fellowship
- Union of Concerned Scientists


Photo from Arctic NPRA Power Point by Ken Whitten

Fran Ulmer

- Institute of Social and Economic Research
- University of Alaska
- www.iser.uaa.alaska.edu