

Human Dimensions of Arctic Change

Translating research into solutions



4. Human Dimensions of Arctic Change

- Global warming data and projections show amplified changes at high latitudes and over continents.
- Other human impacts on oceans – habitat destruction, overfishing, pollution – have different distributions, particularly affecting mid-latitude seas.
- In recent Earth history there have been no previous periods when the climate remained stable $\pm 1^{\circ}\text{C}$ for 10,000 years – civilization.

4. Human Dimensions of Arctic Change

- Many indicators show that rapid change is in progress.
- Irreversible changes are likely without action.
- At what temperature will we stabilize?
 - +4.8°C business as usual
 - +3.8°C current proposals
 - Increasingly difficult to go lower
 - Delay makes it more difficult still

4. Human Dimensions of Arctic Change

- Arctic is becoming more integrated with global systems – physical, economic, political
- Less sea ice, sea level rise, precipitation changes & other impacts present the Navy with challenges as well
- +2.9°C globally could mean +8°C in Arctic, with possible global feedbacks
- Scientists need to better understand and communicate with non-science audiences, without becoming too partisan

4–4.3 Communicating Knowledge and Information

- Social scientists have examined the bases of public environmental decisions
 - Insights into what influences behavioral change
 - Wording, context, “question effects” matter
 - Create new “mental accounts” through feedback
- NOAA websites aimed at general public on sea ice, “Arctic report card,” future of Arctic ice & global impacts
- Mutually beneficial to link scientific with local/traditional knowledge

4–4.3 Communicating Knowledge and Information

- Engaging teachers in field science communicates the process and excitement of research to students
- Downscaling forecasts and monthly climate highlights provide information to Arctic residents
- Lessons from advertising (message, imagery, packaging) can help to communicate information
 - Fear appeals must be used carefully, also with hope

4–4.3 Communicating Knowledge and Information

- Researchers can use broad range of media and formats, engaging Arctic residents and students
 - in communicating their research
 - As collaborators and contributors to the research
- Outreach takes much effort & time
- When we write a paper, ~50 people read it. A website might get 10,000 hits a month.

4-4.3 Communicating Knowledge and Information

