Arctic Resilience Report

An assessment of rapid change and tipping points

Aim
The Arctic Resilience Report is a science-based assessment that aims to better understand the integrated impacts of change in the Arctic. Its goals are to:

- Identify the potential for shocks and large shifts in ecosystems services that affect human well-being in the Arctic.
- Analyse the interaction between different drivers of change that affect the ability of ecosystems and human populations to withstand shocks.
- Evaluate strategies for communities and governments to adapt.

An Arctic Council Project

The Arctic Resilience Report is an Arctic Council project and a priority for the Swedish Chairmanship of the Arctic Council (May 2011 – May 2013).

Why?
The Arctic region is changing rapidly and in so many ways that one can expect dramatic changes to people’s lives and to ecosystems in the region.1 Climate change is a major concern, but other environmental changes are occurring at the same time, along with rapid economic development and social transformation.

While some changes may be gradual, the interactions among different driving forces may also lead to rapid regime shifts with large impacts on Arctic peoples and economies, and on global ecosystem services. Shifts in keystone plant communities have already been observed throughout the Arctic.2 In marine systems, observations point to dramatic changes in both ice cover and the underlying water column with implications for marine ecosystems.3 Regime shifts can be difficult to predict. They may also be irreversible.4 For those charged with managing natural resources and public policy, early identification of potential tipping points can help in planning for an uncertain future.

When change is the only given
The purpose of assessing resilience is to prepare for change. The Arctic Resilience Report integrates knowledge about multiple drivers of change to assess the risk of crossing thresholds that lead to abrupt and possible irreversible changes in social-ecological systems. It will explore avenues to build resilience against shocks and disturbances.

How?
The Arctic Resilience Report combines science-based analysis with participatory engagement with user communities.5 It will assess interactions among social and ecological processes and connections across scales. It includes identifying valuable aspects of social-ecological systems and the drivers that affect them, analysing potential tipping points, and assessing sources of resilience.

The project will also identify policy and management options for strengthening resilience, for adaptation, and for transformational change.

What?
The Arctic Resilience Report builds on three types of activities:

- Case studies will develop the resilience methodology in contexts directly relevant to user communities and decision-makers in the Arctic.
- Integration activities will map potential shocks and risks of tipping points across the Arctic. This includes refining the resilience analysis methodology and connecting insights from the case studies.
- Capacity-building activities aim to ensure that resilience assessments can be used as a tool for dealing with rapid change after the project is finalised.

The project will organise workshops to ensure integration across knowledge traditions and to facilitate dialogue with stakeholders. Major planned outputs include an interim report in May 2013 and a final report in May 2015.

What is resilience?
Resilience is the long-term capacity of a system to deal with change and continue to develop and adapt, yet remain within critical thresholds.7 A stable resilient system can cope with shocks and disturbances and keep its identity. In an unstable system, a small disturbance can push the system over a threshold or tipping point.

Environmental and social changes can make a system less resilient.

References

More about the project:
The Arctic Resilience Report is led by the Stockholm Environment Institute and the Stockholm Resilience Centre and involves experts from across the Arctic.

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