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Title: *Ecosystem Stewardship: A Framework for Managing Ecosystem Resilience and Human Well-Being in a Rapidly Changing Arctic*

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As society seeks to meet the needs of a growing human population and rising aspirations for consumption, there is an urgent need to move toward a more sustainable trajectory for ecosystems and society. *Ecosystem stewardship* is a framework for this transformation, through actively shaping trajectories of ecological and social change to enhance ecosystem resilience and human well-being.

This framework for responding to rapid change is particularly appropriate in the Arctic, which is warming twice as fast as the rest of the planet. Given that people and the rest of nature are mutually interdependent, stewardship addresses two goals – ecosystem resilience and human wellbeing – that are shaped by broadly held societal norms and values. By creating opportunities for public dialogue and social learning, enhancing the capacity of ecosystems and society to adapt, and focusing on solutions rather than problems, ecosystem stewardship seeks to shape change, including transformative change, toward a more sustainable future.

The stewardship framework suggests a broad policy approach that shapes trajectories of interacting social and ecological changes toward sustainability in response to a variety of stresses, including climate change and resource development. Stewardship integrates the social and ecological dimensions across spatial scales to address interactions of issues and sectors and must recognize the spectrum of institutions and opportunities available at local to global scales. At the household scale, programs that strengthen local culture and sense of place motivate stewardship values. At the community-to-regional scale, institutional arrangements that engage stakeholders through consultation, co-management, or networking among formal institutions can lead to more effective dialogue to inform the development of appropriate regulations and a framework for flexibly responding to change (adaptive governance). A key piece of this framework is management to sustainably support a spectrum of ecosystem services, including harvested resources, linkages among ecosystems and landscapes, and the delivery of critical recreational, aesthetic, and spiritual benefits. An emerging need and opportunity is for stewardship at national and international levels to address the panarctic nature of arctic change. Needs include more effective climate mitigation, as well as coordinated commitment to arctic adaptations that respond effectively to changes in climate and resource development.

