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ORAL presentation

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Dynamic Interplay: a new model of governance for the Arctic

Governance plays a pivotal role in effecting ecosystem-based management by providing a framework for integration across sectors and institutional arrangements. Innovation in theoretical models of governance applied to the Arctic is crucial given the proliferation of environmental regimes (Young 1996) in a previously naïve environment. The challenge of integration across scientific, policy, or science-policy sectors is in how we view/define integration and how integration is executed. Integration is traditionally thought of as one end of a fragmentation – integration spectrum (Cicin-Sain and Knecht 1998) when managing environmental resources. The concept envisions a normative movement *towards* integration. Such a model has certain characteristics i.e. it is a static, uni-directional, and end-point driven. This model serves the purpose of integration of knowledge. However, such a model loses the value derived from fragmentation. Additionally, from the standpoint of adaptation to a changing environment this static model does not necessarily meet the need for response to constant change i.e. a different kind of integration necessary to fully implement an ecosystem approach to management.

I present a new theoretical model of regime integration that considers the dual benefit of fragmentation derived from independent scientific or policy sectors and the benefit derived from integration of those sectors. Most significantly my model accommodates adaptation to change among sectors and across time. I argue that a dynamic model is more likely to serve the needs for sustainable management of a dynamic ecosystem. In whole my model is a novel framework for both scientific interaction across disciplines and a novel framework for governance among resource sectors in service to a complex and adaptive ecosystem.

I present the basic characteristics of the theoretical model consisting of concepts I term divergence, convergence, and flow. I demonstrate the function of different interacting sectors within this theoretical concept. The basic theoretical components are applicable across any type of interacting disciplines or sectors. The model is also scalable to any level of interaction. From a practical standpoint, the model envisions full utilization of existing institutional arrangements and adds a novel functional arrangement. Such characteristics mean that no new governance structures are required, rather, simply that a new orientation to governance is considered.

I illustrate the theoretical model in a long-standing empirical case in Alaska. The case history is one of a challenging ecosystem based management problem in the interaction between the large-scale commercial groundfish fisheries and the endangered Steller sea lion. I demonstrate the structural and functional characteristics of my theoretical model in this case history. I conclude with suggestions for application to the challenge of ecosystem based management in any realm. I give particular interest to the proliferation of science and policy issues in

the emerging Arctic, where the success of ecosystem based management is critical to long term sustainability.

Cicin-Sain, B., and R. Knecht. 1998. Integrated Coastal and Ocean Management. Island Press. Washington DC.

Young, O.R. 1996. Institutional Linkages in International Society: Polar Perspectives, Global Governance 2: 1-24