

## **Integrated Landscape Assessment: North Slope Rapid Ecoregional Assessment**

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Alaska is largely considered pristine, yet faces increasingly complex threats to its intact ecosystems. Oil and gas development, on and off shore, is likely to have impacts on some of these intact systems. In order to better anticipate the cumulative impact of oil and gas development, as well as other changes to the landscape, the U.S. Bureau of Land Management has instituted a “Landscape Approach” to managing their lands. The crucial first step in the landscape approach is the Rapid Ecoregional Assessment (REA) that transcends management boundaries by synthesizing existing data at an ecoregional level for current, near-term (2025), and long-term (2060) landscape trends. This research summarizes the key findings from the North Slope REA, focusing on the cumulative effects of climate change, wildfire, invasive species and human land use and development on overall ecosystem function. I specifically present on the spatial and temporal distribution of these stressors to understand when and where stressors might combine to change the landscape. I also discuss the development and use of a conceptual model so that impacts to ecosystem integrity can be developed based on these results. This assessment is based in a Geographic Information System, with the goal of providing a spatially-explicit planning tool for more informed arctic planning in Alaska.