

Subregion Breakout Reporting Template

Breakout Region: North

Name:

Organization:

1. Identify the key landscape level processes that have changed or are likely to change in this region.

Key processes are those that will change due to climate changes, and that have important impacts on ecosystem function.

Process	Description of anticipated changes	State of knowledge about this process		
		Existing data about the process (how much data is available? how comprehensive is it?)	Scientific uncertainties (what is lacking in current understanding?)	Ease of getting additional data (consider costs/ resources required, availability/ accessibility of data)
Shifts in Hydrologic Cycle	Drought; Increased frequency of extreme events (flooding); increased precip; increased rain to snow ratio; change in freeze up and break up (river and lake ice); change in base flow	D/E: 80% of the area lacks measures/data	quantity of precip; flow; water temps; direction of change uncertain	high cost; remoteness; winter measurements difficult
Permafrost Change	temp; active layer depth; thawing; establishment of taliks	G	ice content; distribution; thickness; controls on vulnerability	same
Ice Conditions and Dynamics (Changes in Sea Ice)	latter onset of formation; thickness, concentration; stability; reduce extent; interannual variability; duration; land fast ice	C	dynamics; thickness; prediction	same
Fire Regime	return interval; location; severity; timing; recovery; flammability; soil moisture	C	tundra reagions; vegetation/fuel changes; history (in tundra relative to forested)	same
Coastal Process Changes	increased erosion; salinization/ sedimentation of coastal lakes; sea level change; animal range shifts	C	sea level rise;	process to measure is difficult; traditional knowledge; don't have volume lose; need maps of stability/vulnerability
Vegetation Change	shrub expansion; forest composition (deciduous/coniferous); species diversity; distribution and proportion of community types; litter quality; invasive species	veg maps exist; C/d	succession; habitat changes for animals; successional pathways; phenology	scale, lack of good models
Severe Storm Events (coastal processes)				
Terrestrial Snow Conditions	duration; snow character/structure; thermal affect on permafrost and active layer; snow water equivalent; vegetation, albedo; depth; sublimation	E	snow character and how it affects animals and plants; variability across landscape	hard to remotely sense; scale; hard to collect in field; large spatial variation hard to capture
Soil Moisture Changes	Will affect: fire; nutrient cycling, carbon storage; vegetation establishment; surface energy balance; hill slope stability could be drier or wetter	E/F	drier or wetter?	scale, lack of good models

2. List additional data sources (not captured above) that can provide relevant information about important process changes.

3. Identify the key species or species assemblages within each taxa for this region.

Key species may include those that are of direct management interest, assemblages that support those species, or other species or assemblages considered "informative" - species that tell you when something is changing in the system, and where the tipping points/thresholds are. For workshop purposes, those species should also be clearly connected to climate drivers of change and to management objectives.