

## Vegetation distribution along environmental gradient at taiga-tundra boundary ecosystem in eastern Siberia

Tomoki Morozumi<sup>1\*</sup>, Maochang Liang<sup>1</sup>, Ryo Shingubara<sup>1</sup>, Shinya Takano<sup>1</sup>, Shunsuke Tei<sup>1</sup>, Atsuko Sugimoto<sup>1</sup>

<sup>1</sup>Graduate School of Environmental Science, Hokkaido University

Climate change is expected to cause extensive vegetation change in the Arctic. The studies from high latitude region, Alaska or northern Europe region, reveals impact of climate warming on vegetation change. However, not many studies have been done in northeastern Siberia region. We observed vegetation and species composition along the 50m transect then analyzed relation among vegetation-soil moisture-topographical level. We measured leaf  $\delta^{13}C$  and  $\delta^{15}N$ , leaf area index (LAI), and dry weight of above ground biomass in 10 plots along transect. Vegetation was categorized into 4 types of plant communities: driest Tree mound(Larix, Orthilia etc.), Shrub(Betula etc.), Sphagnum(Petasites etc.), wettest Hollow (Carex etc.). Isotope ratio showed species specific or taxonomic group specific character.  $\delta^{13}C$  of Salix, herbaceous eudicots and bryophytes increased with soil moisture. N content of eudicots plants and bryophytes were low in mid-wet area (Shrub and Sphagnum area). We suggested that recalcitrance of sphagnum litter provide low N condition, and make lower N content of leaves.

Keywords: arctic vegetation, C / N isotope, Larch forest, environmental gradient, ecosystem change, peatland