

## 북극 툰드라 생태계에서의 토양 이산화탄소 플럭스

채남이<sup>1\*</sup>, 이방용<sup>2</sup>, 최태진<sup>2</sup>, 이유허<sup>3</sup>

<sup>1</sup>고려대학교 생명자원연구소, <sup>2</sup>극지연구소 극지기후연구부, <sup>3</sup>극지연구소 극지생명연구부

### Soil CO<sub>2</sub> Flux in Arctic Tundra Ecosystems

N. Chae<sup>1\*</sup>, B. Y. Lee<sup>2</sup>, T. Choi<sup>2</sup> and Y. Lee<sup>3</sup>

<sup>1</sup>*Institutes of Life Sciences and Natural Resources, Korea University,*

<sup>2</sup>*Division of Polar Climate Sciences, Korea Polar Research Institute,*

<sup>3</sup>*Division of Polar Life Sciences, Korea Polar Research Institute*

Response of the Arctic to global warming is seen as a high-sensitivity indicator of climate change. Considering that 25% of Earth's terrestrial surface is underlain by permafrost, warming permafrost may play important roles in carbon cycle of the Arctic. The soil CO<sub>2</sub> flux in tundra ecosystems should be investigated in order to evaluate the potential future sensitivity of the carbon cycle to climate change. In this study, soil CO<sub>2</sub> flux were measured three sites in tundra ecosystem, Alaska, Norway, and Canada using various chamber systems. In Council, Alaska, which are moist tundra near tree-line in subarctic, the long-term measurement of soil CO<sub>2</sub> flux was conducted using automated chamber system during summer. In Ny-Alesund and Cambridge, which are semi-arid tundra in high-arctic, soil CO<sub>2</sub> flux was measured using portable systems at several locations. The magnitude of soil CO<sub>2</sub> flux was compared in three types in tundra ecosystem. The variability of soil CO<sub>2</sub> efflux is affected by local environmental and climatic factors, such as soil temperature, soil water contents, micro-topography, spatial heterogeneity of vegetation communities.

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\* Correspondence to : cnamyi@korea.ac.kr