

Seasonal and interannual variabilities on limnological parameters obtained by mooring arrays in Nurume Ike, Langhovde, Oyako Ike, Kizahashi Hama, and Naga Ike, Skarvsnes on Sôya Coast, East Antarctica, as the monitoring studies on terrestrial biology

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南極陸域生態系モニタリング観測 2：東南極宗谷海岸湖沼（ラングホブデぬるめ池、スカルブスネスきざはし浜親子池、スカルブスネス長池）での係留観測による季節・年変動特性

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This is a report on the limnological parameters which were continuously recorded by means of mooring data-logger arrays in a monomictic lake, Nurume Ike in Langhovde, and two Skarvsnes lakes, Oyako Ike and Naga Ike (Fig. 1) during the 51st and 52nd Japanese Antarctic Research Expedition (JARE) in 2010-2011, and the 53rd and 56th JARE in 2012-2015. This study was a part of NIPR basic research observations entitled “Monitoring of terrestrial ecosystems (AMB06)”, that aimed to record of environmental conditions for terrestrial organisms living on ice-free areas in Syowa Oasis since 2010, under the umbrella of the VIII term of JARE plans. Water temperature, photosynthetically active radiation (PAR), chlorophyll fluorescence and turbidity, and water level in lakes were measured and recorded automatically at intervals of 30-60 min. Similar continuous observation of limnological parameters in those lakes and some shallow lakes in Skarvsnes using mooring arrays have been reported by Kudoh et al. (2003), Tanabe et al. (2008), Kudoh et al. 2009a,b), and Tanabe et al., (2012a,b).

本報告は複数個の環境測定ロガーを配した係留システムを構築し、宗谷海岸露岩域湖沼群の中でも湖沼生態系発達が顕著である3つの湖沼において湖沼環境変動特性をとらえるべく、長期連続観測を実施して得られた特性を報告する。典型的な部分循環子であるラングホブデぬるめ池、季節的流入の顕著なスカルブスネスきざはし浜にある親子池、コケボウズ群落が発達した閉塞湖であるスカルブスネス長池において、第51次～56次観測期間に得

られたデータを紹介します。この観測は第IIIIV期計画の陸域生態系モニタリング観測の一端を担うもので、昭和オアシス露岩域の湖沼環境特性を長期連続観測することを目的としている。湖沼環境特性として水温、水中光合成有効放射、クロロフィル蛍光、濁度と水位変動を30分から1時間間隔で記録し、それらはJARE-Data Reportなどとして報告してきた(Kudoh et al., 2015a,b,c)。この観測以前にも同様の変動記録をスカルブスネスのいくつかの浅い湖沼で観測試行しており、それらはデータレポート及び研究論文として公開されている(Kudoh et al. (2003), Tanabe et al. (2008), Kudoh et al.(2009a,b), and Tanabe et al., (2012a,b)。

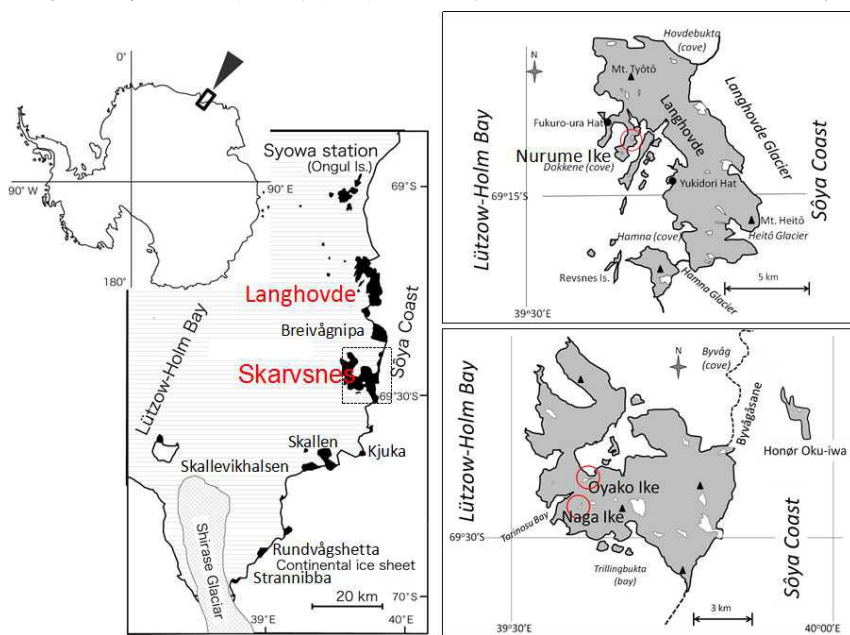


Figure 1. Ice-free areas on the Soya Coast (left, black areas), and the locations of Mooring observation lakes (right, red circles).

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