

**Vertical distribution of microbial community in peat bog of Sarobetsu mire in Hokkaido**

# Masaru Akiyama[1]; Satoru Shimizu[1]; Yoji Ishijima[1]; Takeshi Naganuma[2]

[1] Horonobe RISE; [2] School of Biosphere Sci., Hiroshima Univ.

<http://www.h-rise.jp>

Sarobetsu mire is a high moor which has developed in Sarobetsu River mouth of northern Hokkaido. One of artificial affection to mire vegetation is the invasion of sasa bamboo to original vegetation. A main factor for the change seems that development of agricultural fields and equipment of water line has brought decrease of groundwater level, which induce drought situation in mire area. Furthermore, it has been afraid that input to mire with soil and fertile materials by decreasing forests and modification of farm results in elimination of original vegetation. It is necessary for preservation and restoration of Sarobetsu mire to clear hydraulical, geomorphologic and meteorological parameters which give the impact to natural vegetation.

It has been well-known that methane gas and nitrite, which are aware as global warming gas, has been released from mire. Their gasses are formed by microorganisms living in the subsurface. Methane has been formed in anaerobic dissolution of organic substances by methanogenic bacteria. Nitrite has been formed by denitrification bacteria as a result of denitrification of nitrate compounds which are megatrophic substances and bring soil and water contamination. Their microorganisms interact with geochemical surroundings to utilize energy derived from redox reaction of subsurface materials. To investigate vertical distribution of microbial community in the subsurface is necessary for estimating the effect brought by lowering of groundwater level on Sarobetsu mire. This study aimed at basically understanding the interaction between microbial community and material cycling in peat bog of Sarobetsu mire by phylogenetic analysis of DNA cloning library.