

リュツォ・ホルム湾袋浦におけるアデリーペンギンの採餌・繁殖生態：
2010-2011年の結果

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**Foraging and breeding ecology of Adelie penguins in Hukuro Cove, Lutzow-Holm Bay, in the
austral summer of 2010-2011**

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Understanding the effect of changing sea ice conditions on marine predator ecology is a central topic of polar biology. Adelie penguins breeding in Lutzow-Holm Bay experience unique foraging conditions under the extensive sea ice cover (fast-ice) of the Bay, and therefore their foraging and breeding ecology should be strongly affected by sea ice conditions. Here we report on the overview of foraging and breeding ecology of Adelie penguins in Hukuro Cove, Lutzow-Holm Bay, in the austral summer of 2010-2011, conducted under JARE 52. Fast-ice covered the sea around the Hukuro Cove colony throughout the breeding season. Penguin breeding success in 2010-2011 was low, compared to previous records (1995-2001) for the same colony, mainly due to failures during incubation and early brooding periods. The foraging trip duration was relatively long, and the proportion of krill in the diet was relatively low, suggesting poor at-sea foraging conditions. Biologging devices such as GPS-depth loggers, accelerometers, and video recorders were deployed on penguins to examine their at-sea foraging ecology. The foraging locations determined from GPS-depth loggers showed that the dive locations were limited to the narrow tidal cracks along the coast, with a maximum foraging range of 11.6 km. The accelerometers and video recorders documented the under-ice foraging behavior of penguins. These biologging information will be used to examine the ecological processes how sea-ice conditions affect breeding success via changes in at-sea foraging ecology of penguins.