

Original Article

Genetic Structure of Mongolian Gazelle (*Procapra gutturosa*): The Effect of Railroad and Demographic Change

Ayumi Okada¹, Takehiko Y. Ito², Bayarbaatar Buuveibaatar^{3,4}, Badamjav Lhagvasuren^{3,5} and Atsushi Tsunekawa²

¹School of Veterinary Medicine, Kitasato University, 23-35-1 Higashi, Towada, Aomori 034-8628, Japan,
Fax: +81 176 23 870, e-mail: okada@vmas.kitasato-u.ac.jp

²Arid Land Research Center, Tottori University, 1390 Hamasaka, Tottori 680-0001, Japan

³Institute of Biology, Mongolian Academy of Sciences, Ulaanbaatar 210351, Mongolia

⁴Mongolia Program, Wildlife Conservation Society, Ulaanbaatar 211238, Mongolia,
e-mail: buuveibaatar@wcs.org

⁵Mongolia Program Office, World Wide Fund for Nature, Ulaanbaatar 211238, Mongolia,
e-mail: lhagvasuren@wwf.mn

Abstract

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Correspondence:

okada@vmas.kitasato-u.
ac.jp

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The Mongolian gazelle (*Procapra gutturosa*) is a representative ungulate species of Mongolia that inhabits steppes. Their number and range decreased during the last century, and the population has been suffered from occasional demographic changes caused by human and environmental factors. During the summer of 2005, we obtained genetic samples from gazelle carcasses encountered along the international railroad between Russia and China, to examine genetic diversity and its changes in relation to historical demographic shifts. Gazelle genetic structure and diversity were investigated using mitochondrial control region sequence. In the phylogenetic analysis, we confirmed that there are two genetic groups unrelated to geographical location. We also showed the genetic structure of gazelles was unrelated to existence of the railroad. Based on the genetic diversity indices and demographic parameters, the population was suggested to have experienced demographic expansion historically, and effect of known demographic decline was not detected.

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Introduction

Mongolian gazelles (*Procapra gutturosa*) a migratory antelope species; they are recognized as one of the largest remaining wildlife populations in Asia. During 1950s, Mongolian gazelles widely distributed in steppe and

semi-desert ecosystems of 780,000 km² range throughout Mongolia, parts of Kazakhstan, the Russian Federation, and in China (Bannikov *et al.*, 1961; Lhagvasuren & Milner-Gulland, 1997). In the past 50 years, however, their entire range