

## Gliding performances of Siberian flying squirrels in low-canopy forests

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We describe the gliding performance of Siberian flying squirrels *Pteromys volans*, comprising basic abilities and patterns based on Asari et al. (2007) and Suzuki et al. (in press). We observed their gliding behavior in low-canopy forests with flat ground and good visibility. Gliding was recorded a total 66 times in 2004 (25 times), 2005 (6), and 2010 (35). Average gliding parameters were launch height 14.4 m, landing height 2.7 m, vertical drop 11.7 m, horizontal glide distance 21.4 m, and glide ratio 1.8. These did not differ between the sexes in 31 glides in 2004 and 2005.

Concerning gliding patterns, for short distances of less than 20 m, horizontal glide distance was strongly positively correlated with launch height but not with launch tree height. For long glides of more than 20 m, horizontal glide distance was significantly correlated with both height of launch and launch tree. For short glides, mean launch tree height did not differ from overall mean tree height, whereas in long glides launch tree height was greater than the overall mean tree height. Also, for short glides, the landing tree height was greater than the launch

tree height. Launch trees used for long glides were as high as the landing trees used in short glides.

From these results, we conclude that Siberian flying squirrels in low-canopy forests save energy by gliding initially from a tree with sufficient height to permit a glide to a taller tree. This taller tree then permits long-distance glides that are energetically more efficient.

Asari Y., Yanagawa H., and Oshida T. (2007) Gliding ability of the Siberian flying squirrel *Pteromys volans orii*. *Mammal Study* 32:151–154

Suzuki K., Asari Y., and Yanagawa H. (in press) Gliding locomotion of Siberian flying squirrels in low-canopy forests: the role of energy-inefficient short-distance glides. *Acta Theriologica*.