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## **Reindeer increased tolerance to wind turbines in severe winter conditions and high predator abundance**

Anna Skarin, anna.skarin@slu.se, Swedish University of Agricultural Sciences, Uppsala, Sweden

Per Sandström, per.sandstrom@slu.se, Swedish University of Agricultural Sciences, Umeå, Sweden

Moudud Alam, maa@du.se, Höskolan Dalarna, Falun, Sweden

Sven Adler, sven.adler@slu.se, Swedish University of Agricultural Sciences, Umeå, Sweden

Daniela Sant Ana, dancisantana@gmail.com

Kerstin Lilja, kerstinlilja@live.se, Tåssåsen Sami reindeer herding community, Sweden

Anja Fjellgren Walkeapää, anja.fjellgren@gmail.com Mittådalen Sami reindeer herding community

Bernardo Brandão Niebuhr, bernardo.brandao@slu.se, Swedish University of Agricultural Sciences, Uppsala, Sweden

The aim of this study was to record and quantify habitat selection and movement decisions of reindeer (*Rangifer tarandus tarandus*) herded within their winter range in two Sami reindeer herding communities in Sweden in relation to winter grazing conditions and land use change. To document and estimate reindeer habitat selection including herders' decisions we used an approach of co-production of knowledge documenting reindeer herding activities and winter grazing conditions in focus group meetings and through single herders' documentation in combination with official weather statistics and reindeer GPS-data. We developed habitat selection functions using reindeer GPS-data from ten consecutive winters (2008-2018) in relation to good, intermediate and severe winter grazing conditions, lichen abundance, wind power (before and after development), forestry, road network, recreational areas, and predator presence. Our results showed that reindeer used low elevation and lichen-rich areas in winters with good grazing conditions, but in winters with intermediate or severe grazing conditions reindeer preferred higher elevations and decreased selection of lichen-rich areas. This led them to use the area around the wind turbines more often especially in winters with high predator abundance. Reindeer moved closer to wind turbines and roads as the abundance of wolverines and wolves increased, respectively. However, the expected increase in use of areas high up in the terrain under severe snow conditions was lower (45%) on one wind farm site compared to nearby mountains. Reindeer herders work also got much more intense by the combined effects of winter conditions, predators, and the presence of the wind turbines. Even though reindeer tend to avoid infrastructure, here we observed that winter conditions and predators may have stronger effects on reindeer than that of wind turbines. This brings several challenges to both reindeer and reindeer herders as climate and landscapes continue to change due to human activities.