

**Supplementary material S1: Images from the study area.**



A typical valley of western Norway, with a lake surrounded by tall mountains and this image shows the lake Lodalsvatnet (Stryn municipality, Sogn og Fjordane county). Scattered settlements can be found in areas with lower risk of rock and landslides. Ultrasound detectors were deployed here, but the data was not included in the analysis due to precipitation during the night of deployment.



In many areas there are no tunnels to protect vehicles from falling rocks and stopping in risky locations is not allowed (near Lyngdalsvatnet, Ørsta municipality, Møre og Romsdal county).



The lake Eikesdalsvatnet (Neset municipality, Møre og Romsdal county) surrounded by mountains higher than 1200 m. Due to high risk from falling rocks and landslides, most areas are not inhabited by humans and roads are protected by tunnels. Ultrasound detectors were deployed in the forested hillsides in the centre of this image. This is a landscape protection area.



The landscape in this area is unique and parts are protected in the UNESCO World Heritage programme. This image shows the fiord Geirangerfjorden with a low salinity surface layer. Here, bats show similar distribution patterns to those found in valleys.



Although several bat species can be found at northern latitudes in Norway, their distribution is limited to lowlands where mean July temperatures exceeds 12 °C. This image shows elevated areas of Strynedalen (Stryn municipality, Sogn og Fjordane county) and at these altitudes only the northern bat is found during summer. Thus, in this type of landscape, very small portions of the landscape is suitable for most bat species.