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Title: *Landscape consequences of the glaciers' recession in the mountains south of Longyearbyen*

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The central-western Nordenskiöld Land was mostly free of glaciers even during the Little Ice Age. However, the northern slopes of higher mountains (up to 1000 m) and shadowed valleys below them (down to 200-350 m) were almost completely covered by compact and thick glaciers 3-5 km long in 1936 yet, according to the old topographic map 1:100,000. Since the beginning of the 20th century, climate warming has prevailed and glaciers have undergone progressive recession described by several authors. The retreat of three glaciers - Grumantbreen, Håbergbreen and Dryadbreen on the northern slopes of the Linströmfjellet-Håbergnuten mountain range - was surveyed in field by the author in 1995, 2001, 2006 and 2012. Equilibrium line altitude (ELA) had risen by at least 150 m, from ca. 500-550 m in 1936 to 650-700 m in 1995. These glaciers shrank but survived fully active until 1995 because their higher parts are situated above 700 m. Afterwards, the ELA rose to at least 750 m in 2001 and at least 800 m in 2006. Hence, Håbergbreen, located below 800-850 m, has declined as an active glacier. Grumantbreen, situated below 900 m, is hardly active even in its highest part. Dryadbreen, reaching 1030 m, is really active in its highest part accumulated on the northern steep (and not concave) slope. The retreat of glaciers left the upper or steeper mountain slopes devoid of morainic cover, while the glacier tongues have been transformed into marginal zones which consist mainly of ice-cored moraines, with a lot of kettle holes. They are detached from the glaciers by sandurs developed on dead ice (such a sandur appeared in front of Longyearbreen in the period 2007-2011). The surfaces of these zones are being lowered by a few meters per year due to the ablation of dead ice. The state of the glaciers is not balanced with the current climatic conditions. In the period after 2006, that has referred not only to temperature but also to precipitation. There has been much more snow on glaciers during past few summer seasons than previously. Hence, the raising of the ELA has slowed and the firn (accumulative) fields of glaciers do not recess as quickly as before. However, the rate of shrinking of their lower parts remains similar. The type of mountain glaciation in the area is just in change: the valley glaciers undergo shortening and thinning and are being transformed into slope (hanging or cirque) glaciers.