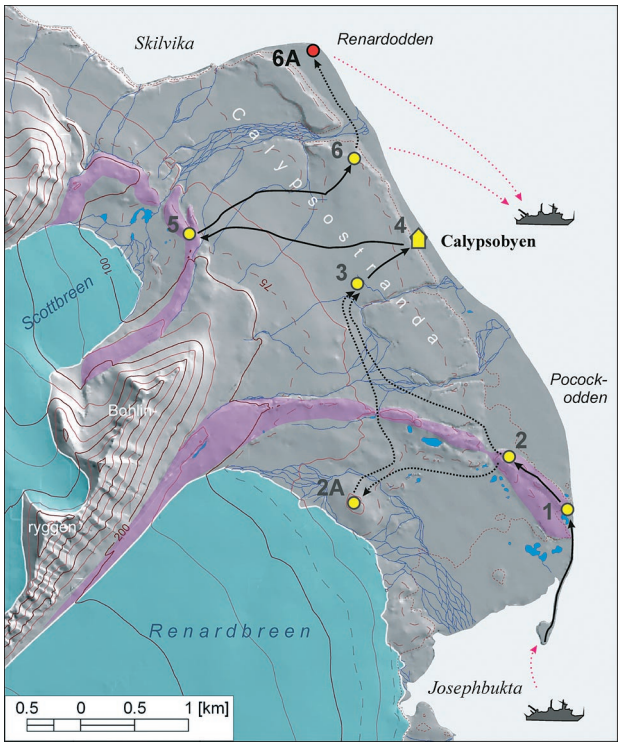
Point 6A – Renardodden *77° 34' 21" N, 14° 28' 49" E*

Present morphogenesis of the shore and the importance of archaeological sites for reconstructing the stages of development

Piotr Zagórski*

Department of Geomorphology, Institute of Earth Sciences, Maria Curie-Skłodowska University, Lublin, Poland



The Renardodden Region is unique example of the influence of marine factors on development and conversion of shore zone of accumulative character. The development of terrace I (2–8 m) was connected with the rise of the delivery of the material by the proglacial river of the Scott Glacier during the Little Ice Age. The additional reason of so big deposition could have been the change of the angle of the pass of the waves to the shore, which force accumulation. Here, longshore currents play the important role. Their zone of convergence exists in the section of the highest bend of the shore (Harasimiuk 1987, Harasimiuk, Jezierski 1991, Harasimiuk, Król 1992, Jezierski 1992, Zagórski 2004) (Fig. 26). The old storm ridges are well developed in that part of the shore are cut abrasively from the north and are aggradated with present storm ridge.

To estimate the role of marine processes in the Renardodden region it was crucial to recognise numerous archaeological sites here (Krawczyk, Reder 1989, Jasinski et al. 1993). Archaeological data show intensive exploration of this area since XVII century. The nearest to the shoreline zone is located the site Renardodden 1 (Fig. 27). It is remain of the Russian station of walrus hunters dated on the first half of XIX century. Probably, the building was out of reach of storm waving, but after the latter rise of activity of the abrasive processes caused the most probably by the changes of the sea level, the old storm ridge was destroyed and storm waves dragged pieces of bricks and organic remnants over the tidal flat zone (Jasinski, Zagórski 1996). The sediments of the following storm ridge, now intensively transformed, cover traces of the dragged occupation layer. Such conditions was kept till the beginning of 60s, so since the moment of start of quick recession of the Scott Glacier (Reder 1996, Zagórski, Bartoszewski 2004). Till 1990 the intensification of the delivery of the material caused aggradation of the cape of over 20 cm (Fig. 26). Yet the last years show that the delivery of

* e-mail: pzagorsk@biotop.umcs.lublin.pl

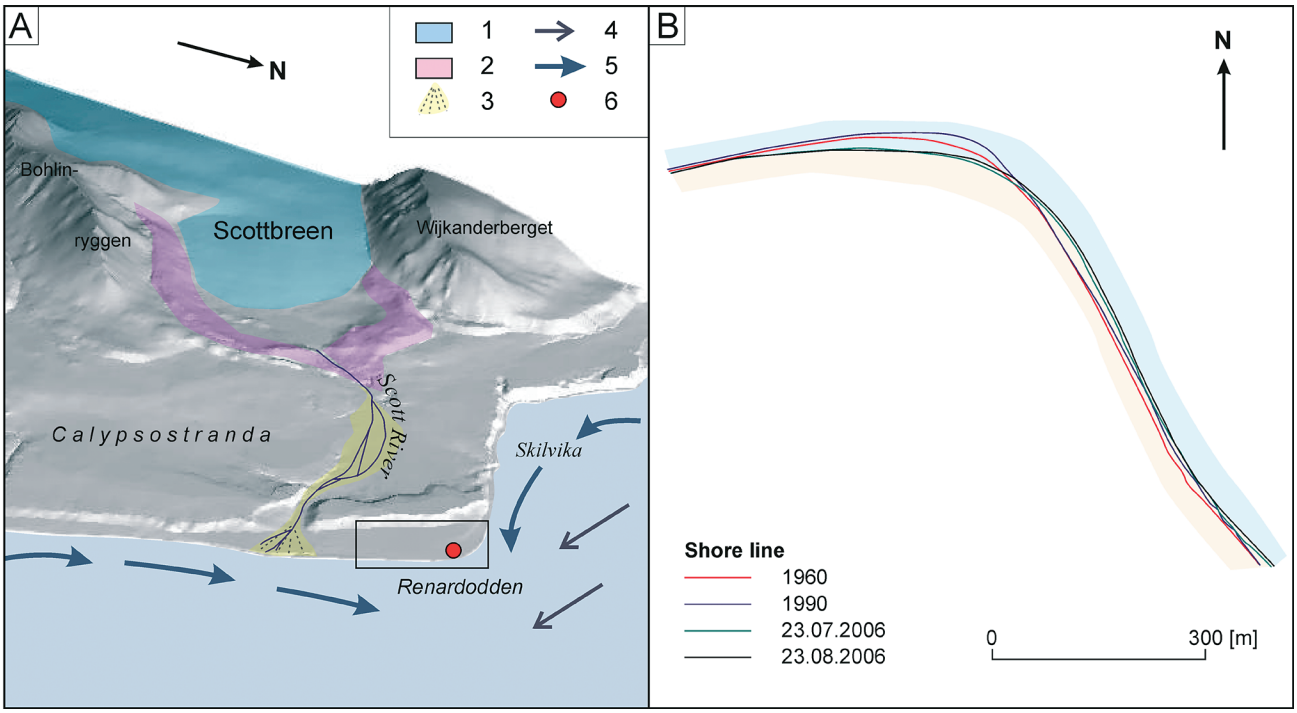


Fig. 26. A. Main factors that influence on formation of the shore in the Renardodden region
1 – glacier surface in 1990, 2 – frontal moraine ridges, 3 – sandurs, 4 – drift of western winds, 5 – directions of displacement of the longshore currents (after: Harasimiuk, Jezierski 1998, 1991), 6 – localisation of the archaeological site Renardodden 1.
B. Changes of geometry of the shoreline combined on the basis of archival data and GPS measurement (Zagórski 2007)

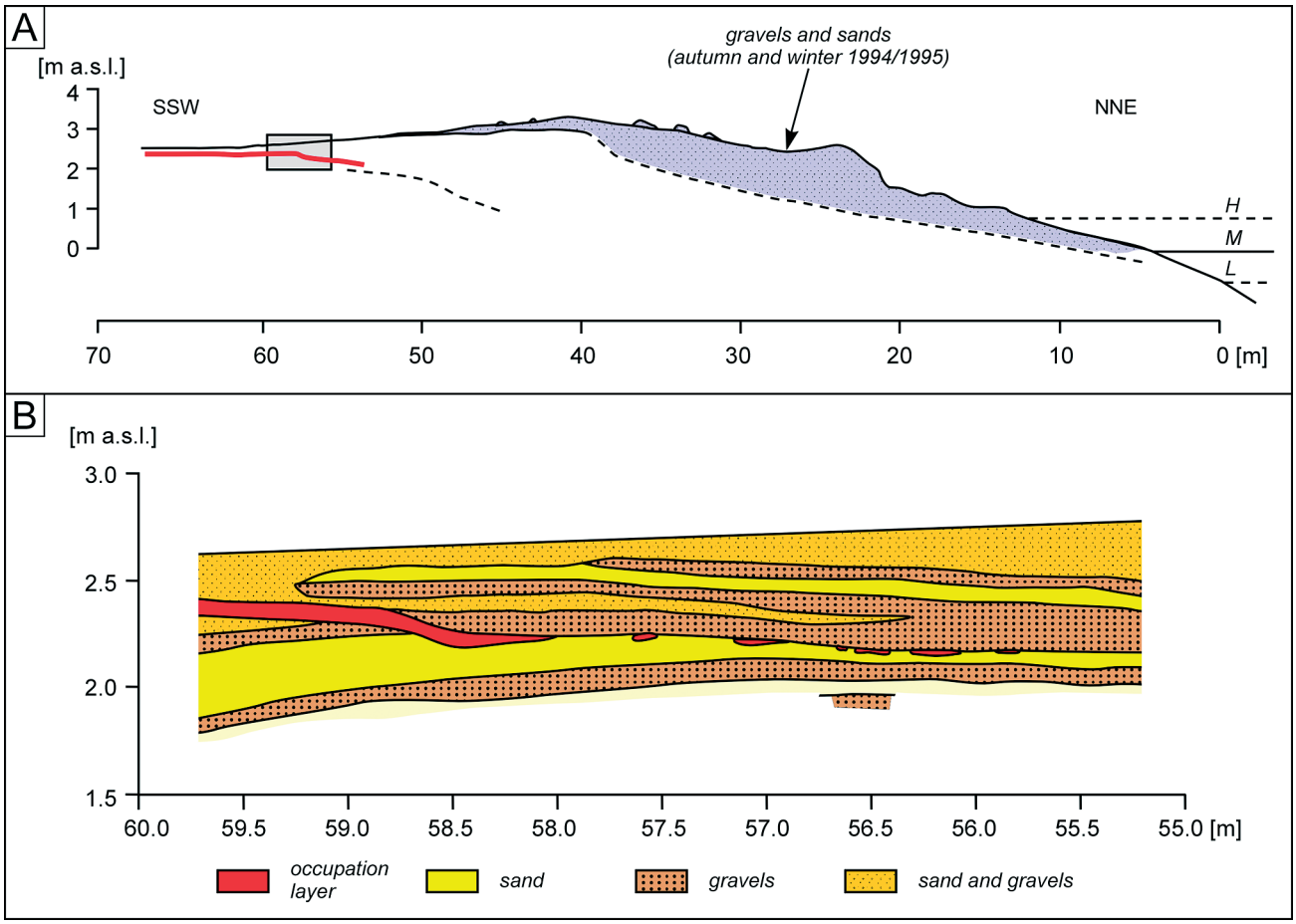


Fig. 27. Archaeological site Renardodden 1
A – Geological profile across the storm ridge, B – Geological profile across the fragment of storm ridge with dragged occupation layer (after: Jasinski, Zagórski 1996).

the material from the marginal zone of the Scott Glacier falls but the importance of marine processes rises (waving, longshore currents). The archival data (maps, air photos) and GPS measurement show the changes of geometry of the Renardodden. Strong cut of the part from the Skilvika is noticed but the section in the direction of the mouth of the Scott River is aggradated (Zagórski 2007).

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