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**Hydrology and bedload transport of the creeks on the forefield
of Baranowski Glacier (King George Island)**

**Hydrologia i transport rumowiska wleczonych potoków na przedpolu Lodowca Baranowskiego
(Wyspa Króla Jerzego)**

The key objectives:

- to determine the relationship between the intensity of bedload transport and flow conditions in the creeks located on the forefield of Baranowski Glacier;
- to determine the relationship between the intensity of bedload transport and armoring of the bed surface of considered creeks.

Research methodology:

The bedload transport measurements were carried out in two creeks located on the forefield of Baranowski Glacier. Bed surface of these troughs differ in terms of participation of individual fraction of debris, which build of the bed substrate and fraction of transported bedload material, although they appeared in the same moraine cover. It seems, that one of the reasons for the different level of transportation can be formation of the troughs at different moment of time and with non-uniform degree of creeks' sluice. Determination of the links between the flow conditions (discharge and velocity) and bedload transport in the two creeks: Fosa Creek and in the newly created trough at the forefield of Baranowski Glacier is therefore a main objective of the study. This will be achieved by analyzing the data, taking into account the spatial distribution of transported bedload fractions in both creeks.

PhD's hypotheses:

The level of differentiation in the amount of transported bedload material in proglacial creeks is closely associated with the degree of their paving.

Results:

In the Fosa Creek, the bedload transport was observed once, during few days, while in the second outflow from the glacier, the bedload transport was continuously with one single day without moving bedload material.