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Interactive comment on "Lithological and geomorphological indicators of glacial genesis of the upper Quaternary strata in the lower courses of the Nadym River" *by* Oleg Sizov et al.

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NADYM RIVER GEOLOGY

The paper is very interesting because it provides the first detailed characterization of sediments in the area of the Nadym River and provides very convincing evidence that the sediments were formed during the continental glaciation during the Pleistocene. The authors used lithological column samples from the lower Nadym River area to study the lithological, petrographic, and geomorphological characteristics of material collected from the upper stratum of Quaternary sediments. The authors also completed very important benchmark studies using Digital Terrain Models (DTM's) to characterize

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Discussion paper

the geomorphic features of study sites, thus allowing the identification of specific terrain areas that were most likely the result of glaciation. The results indicate that postglacial sites appear to represent extensive lacustrine-alluvial plains that existed in the Nadym River Basin.

The petrographic diversity of erratics in Western Siberia has been used to describe paleographic regions that unite several dozen distributed provinces with a definite set of petrographic features. As a result, observations on the petrographic diversity of glacial erratics in Western Siberia can be applied to distinguish different paleoglacial regions. In this study, the authors indicate that the petrographic analyses of the erratics suggest the possibility that the main zone of material washout could be located in the Taimyr region to the North. But, they also note that they plan further research that will include expanded sampling with analyses of trace metal composition and absolute dating.

The paper notes that currently there is no uniform concept of the landform genesis in Western Siberia, and that the basing of the Nadym River is considered as most important for quaternary interpretation of this region in the Pleistocene. In my view, the results of these studies make a very significant contribution to the formulation of a clearer picture of the geological and the subsequent biological genesis of an important area of Western Siberia. Understanding the historical processes that shaped the landforms and ecosystems of an area in the past may reveal useful clues to evaluating changes occurring at present and in the near future. And some of those clues may help us to adapt to changing climate and to make science-informed decisions for managing a sustainable planet.

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