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Title: *The major factors affecting the modern condition terrestrial biota and landscapes in Russian Arctic*

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The one-third of the circumpolar Arctic (21.2 million km^2) belong to Russia, terrestrial area alone accounting for nearly 7.2 million km^2. The most typical landscapes are forest-tundra, tundra, polar desert and it's altitudinal variants. Lowland complexes of boreal rivers, flowing mainly from south to north and serving as specific ecological corridors for the dispersal of more southern boreal flora and fauna. Particular landscapes with brushwood and woody fragments, grasslands on bogs and aggregations of inflated alluvial sands are represented there.

Among the major factors influencing the modern condition of landscapes of the Russian Arctic:

natural

- global and regional climate change, expressed in extended vegetation (for plants) and nesting periods (for birds), the warm season (for invertebrates), leading in some areas to northward shifts of the forest line, to active expansions of plants, birds and mammals realms, to changes in their migration ways;

- transformation of climatic conditions for terrestrial biota (growth of climatic anomalies frequencies) caused by changes in atmospheric circulation and oceanic currents, this leading to mass mortality of some populations;

- active neotectonic processes expressed in several cases in modern land raising and the formation of its new areas for settling by biota;

anthropogenic

- global and regional pollution, such as tropospheric transmission, emissions from impact sources, emergency oil pollutions etc.;

- mechanical alterations of the soil-vegetative cover as the result of unrestricted traffic, construction activities, geological prospecting etc.;

- destruction of the plant cover as a result of domestic reindeer overgrazing and infringed traditional norms of grazing;

- poaching and an unregulated use of biological resources;

- biotic invasions; opening of new habitats by them, premeditated or random introduction of alien species.

The following main integrated parameters defining the stability of Arctic landscapes:

1. Low-level biodiversity, restricted "interchangeability" of species.

2. The exceptional vulnerability and susceptibility of ecosystems to chemical pollution (prevalence of non-vascular plants - lichens, mosses).

3. The sharp seasonality of functioning, the brief vegetative period, the prevalence of migrating species.

4. Low rates of biota’s and soil self-restoration following disturbances.

5. Presence of permafrost grounds and their "mobility" upon transformation.

6. The openness of broken landscapes and new anthropogenic habitats for alien species.

All of the above integrated parameters of stability or instability of arctic landscapes can be quantified and can be used in simulating the modern their climatogenic dynamics.