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P.3-10 POTENTIAL SOURCES OF MICROPLASTICS INPUTS TO TERRESTRIAL AND AQUATIC ECOSYSTEMS OF ANTARCTICA

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Antarctica is usually characterized by low levels of pollution of the environment. Nevertheless, despite the existence of the Antarctic Treaty System (1959) and the Protocol on Environmental Protection to the Antarctic Treaty (1998), intensive chemical, physical, noise, biological pollution of the snow and ice free territories (Antarctic oases) and coastal marine territories^{1,2,3} is currently taking place.

Microplastics in Antarctic ecosystems can come both from local sources and in the process of long-range (atmospheric and marine) transport:

- Incomplete incineration of wastes resulting in shredding of plastic packaging and accumulation of microplastics in soils and water bodies in the vicinity of polar stations. Accompanied by a sharp increase in concentrations of polycyclic aromatic hydrocarbons in soils, waters, plant materials, etc. The average exceedance of maximum permissible concentrations (MPC) for benz(a)pyrene on King George Island is 20-30 times, and in areas where incinerators are located - even more;
- Recreational source - at least 10 tourists arrive at King George Island stations every day in summer. Illegal and semi-legal tourism leads to the formation of accumulations of plastic and food waste up to 10 km away from the tourist sites.
- The use of equipment, clothes and containers (for example, from bottled water) having different types of plastic in their composition leads to accumulation of microplastics in different components of the Antarctic ecosystems⁴;
- Illegal dumping of plastic debris into the sea, including plastic containers, synthetic ropes, fishing nets, garbage bags, etc. A huge amount of plastic ends up on the shores of King George and Nelson Islands. On the latter, plastic is used to build illegal structures by tourists;
- Emergency removal of plastic building components and destruction of dilapidated abandoned structures at stations and field camps results in mechanical pulverization of the constituent parts of the structures in extreme winds.

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