



Tectonic conditionality endogenic geoecological processes on a shelf

Mikhail Kholmiansky (1), Vladimir Anokhin (1), and Galina Kholmianskaia (2)

(1) VNIIOKEANGEOLOGIA, St-Petersburg, Russian Federation (holm936@rambler.ru), (2) Centre of Innovational Technology, St-Petersburg, Russian Federation

Influence on a sea ecosystem of deep tectonic structures and processes is considered.

From the point of view of studying endogenic geoecological processes and the phenomena ensuring origin of «endogenic» ecological dangers, us the following interests, first of all: a structurally-tectonic structure, a lithologic-stratigraphic section, hydro- and lithodynamic, a hydrology, seismic activity, endogenic ingress of heavy metals, a structure cryolithozone

The map of endogenic dangers to water area Barents and Karasky seas is made. In the list of the endogenic dangers which have been taken out on the map, have entered:

- Areas of heavy metals endogenic origins;
- Zones of hyperactivity of corrosion processes;
- Zones of the raised seismological activity;
- Areas active roiling at seismological influences;
- Zones of negative influence on biogene communities,
- Characteristics of influence of natural electric field on lithodynamic processes.

The most part flooded at the bottom of technogenic objects is located within the tectonic zones characterised by raised intensity of corrosion processes. The tectonic reasons, in the big degree, cause dynamics of the deep hydro-geological processes providing receipt in hydrosphere of the sea highly mineralized waters, negatively influencing on a biogenic component of an ecosystem. The most vulnerable are the biogenic forms living in deeper sites of the sea. On the map are allocated and ranked some zones endogenic hydro-geological dangers to biogenic communities. At displays of seismological activity endogenic tectonic nature process roiling the ground deposits, menacing to normal dwelling biota, leading to death ground invertebral organisms, to sharp pauperisation of a forage reserve benthos feeder will have fishes, to sharp reduction of population nectobentofages and predators. At last, infringement of a hydrochemical mode in aggregate with endogenic receipts can strengthen aforementioned negative processes.

The geoecological map of water area Barents and Kara seas is the first attempt to combine exogenic and endogenic dangers.

On the map are allocated ecological geological formation zones (ekologo-formation zones), characterised by us, as: «ekologo-formation zone – the existential set of natural-technogenic processes characterised by general facial, geochemical, geocriological, engineering – geological, geodynamic signs and the same display of ecological functions litosphere».

In total it is allocated eight ekologo-formation zones: Kola, Central Barents, Prinovozemelsky, Amdermsky, Central Kara, Obskoenisejsky, Northern, Boundary shelf. The most difficult ecogeological conditions differ central Barents and amderma zones where dangerous cryogenic processes are developed along with the raised seismicity, active accumulation of heavy metals and the high maintenance of a suspension in sea water.