



Use of crayfishes as ecological indicator of water quality in natural lakes and city water grid

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Crayfishes are organisms having strong demands for water quality. Their different species have different ecological limits. Nobel crayfishes *Astacus astacus* are organisms with narrow ecological limits need clear water that crayfish *Pontastacus leptodactylus*. Relation between populations of different crayfishes is criteria of water pollution, level of water bodies eutrofication and ecological pressure. Environmental policy of all countries is directed to water supply by drinking water of high quality and preserving the rivers, lakes and seas, suitable for people and wildlife. However, now freshwater reservoirs and water bodies, as well as including centralized drinking water supply, have been exposed to escalating anthropogenic loading, and risk of sudden emergency pollution. Besides, the problem of providing an ecological safety of the population and prevention of threats of ecological crime and terrorism in a zone of drinking water for many countries. The work is devoted to realization and perspectives of use of the biological early warning stations about changes of quality of surface waters, dangerous to a biota, on the basis of bioelectronic systems as elements of environmental monitoring of water areas. Regular monitoring of crayfish population is a way to follow ecological evolution of ponds. Such a monitoring took place in some lakes of Pskov and Leningrad regions. Ecological characters of crayfishes are appropriate for control of water quality in St. Petersburg and Khabarovsk grids. Fore species were used: *Procambarus clarcii*, *Cherax quadricarinatus*, *A. astacus* and *P. leptodactylus*. The results of the present work and experiments carried out us to conclude that before assessing any concentration of pollutant on water organisms, it is necessary to investigate not only their development, growth and survival, also their adaptive capacity relative to the variation of environmental parameters. Regular monitoring of heart oscillation was base for control of water pollution in real time. Algorithm and equipment for such a monitoring would be demonstrated.