

3.12. LONG-TERM FORECAST OF ECOLOGICAL SAFETY

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Determination of quantified cause-effect dependence of ecosystem wellbeing on technogenic impacts is the central problem of scientific ecology. Presented paper discusses impacts of main type like chemical impact of production and consumption wastes. This impact is governed by both state and regional regulations for ecological contaminations of every type. However, such regulations are groundless practically without consideration of features of natural environment objects. In other words, they do not take into account capabilities of ecosystems to transform pollutants into chemically inert or non-labile forms. Paper presents equations of the dependence of ecological pollutant concentration in natural objects on volume-weight indices of technogenic wastes. This function has form of the Riccati equation with coefficients that can be calculated by the results of ecologic analytical measurements. It allows both occurrence time of ecological catastrophe to be evaluated accurately and efficiency of environmental protection measures on reduction of technogenic impact to be calculated. As a main conclusion, it is stated that ecosystems subjected to permanent and, all the more, increasing technogenic load are doomed to complete degradation.