downside of this process is the spread of infection, contamination of ground water and the atmosphere, fires.

People around the world have long recognized that throwing trash is uneconomic, because the garbage is potentially raw. In some European countries, there is the law of separate waste collection, which greatly helps to cope with such a serious problem as waste. For Russia, the recycling of waste polymers is new; everything is just beginning to develop. However, in many cities there are already some plastic processing plants. For example, the Moscow Company "Eco-System" has been cooperating with many cities in Russia and produces disposition of garbage. In Tomsk, there are also collection points of plastic waste [2]. After collecting the waste polymers from the population, the garbage is sent for processing to the chemical industry specialized in the production of polystyrene. Nevertheless, this is just the beginning of the process; at present plastics processing becomes very relevant [4]. When we take recycling, we not only recycle the waste industry, but also save environmental resources. Recycling of plastic waste is much safer and more efficient than burning or burial. Raw materials, which are produced during the recycling, can be used in many industries. Sooner or later, the recycling of plastic waste will contribute to the improvement of ecological climate, increase in the number of business companies, both small and medium ones providing new opportunities for employment experts, the preservation of not only environment, but also Russia's energy resources.

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CURRENT ISSUES IN ECOLOGICAL MONITORING

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The modern term "monitoring" refers to observation, analysis and assessment of environmental conditions, its changes under the influence of human economic activity, as well as prediction of these changes. Testing results on a destructive action of water, wind, earthquakes, avalanches, etc., people have long realized the elements of monitoring, accumulating experience in weather forecasting and natural disasters. Such knowledge has always been necessary in order to reduce possible damage to human society and natural hazards, most importantly, reduce the risk of human losses.

The consequences of the majority of natural disasters should be assessed on all sides. For example, hurricanes, destroying buildings and causing casualties, as a rule, bring heavy precipitation, which in drylands provide a significant increase in yields. Therefore, the organization of monitoring requires in-depth analysis, including not only economic aspects of the question but, especially, the historical traditions, culture of each particular region.

Satellite of human activity is increasing in their various disasters. Natural disasters always occur. They constitute an element of the evolution of the biosphere. Hurricanes, floods, earthquakes, tsunamis, forest fires, etc. every year bring great material damage, absorb human life. At the same time growing anthropogenic strength causes many accidents. Regular failure of tankers with crude oil, the accident at Chernobyl, the explosions in factories and warehouses with the discharge of toxic substances and other disasters are not predictable, and they are the reality of our time. Increase in the number and capacity of accidents demonstrates our helplessness in the face of an approaching human ecological disaster. The only thing that can somehow assist the humanity is large-scale introduction of monitoring systems. Such systems have been successfully introduced in the North America, Western Europe and Japan. In other words, the answer to the question of the necessity of monitoring can be solved positively.

In recent publications, the importance of the design stage (or planning) of effective monitoring system has been noted [1]. It is emphasized that these proposed schemes or structure design is relatively easy to apply for a simple local monitoring systems, together with the design of national monitoring systems that face many challenges related to their complexity and contradictory. The essence of designing a monitoring system should consist of establishing a functional model of its work or planning the entire process of information treatment, where the quality of the set goals is prior to the issuance of information to the consumer for decision-making. Since all the stages of obtaining information is closely related to each other, insufficient attention is paid to the development of any stage that will inevitably lead to a sharp decrease in the value of all the information received. Based on the analysis of building national systems, we can distinguish the basic requirements for the design of such systems. In our opinion, these requirements must be presented in the following five basic steps (by the example of water quality monitoring system):

1) identification of tasks of monitoring water quality and requirements for information needed for their implementation;

2) establishing an organizational structure observation network and the development of principles of conduct;

3) construction of the monitoring network;

4) development of a system for receiving data information, and provision of information to consumers;

5) establishment of information verification system that would meet the corresponding initial requirements and revise, if necessary, the monitoring system.

When designing monitoring systems, one should remember that its results directly depend on the volume and quality of initial information [2]. It should include as much as possible detailed data on spatial and temporal variability in water quality, biota, sediment; it should also include details on the types and volumes of economic activity in catchments, including information on sources of pollution. In addition, there is need to rely on all legislation relating to the control and management of water quality, considering financial, general physical and geographical situation, as well as the basic ways of managing water quality and other information.

There is another rather curial issue is the problem of controlling the emission of pollutants by industrial enterprises. Maximum permissible concentration (MPC) is termed as concentration that does not affect directly or indirectly a man and his/her posterity, well-being, and sanitary living conditions.

Let us examine the information on MAC received by all departments and analyzed by MGO (Main Geophysical Observatory). To determine the values of air, the measured concentrations are compared with the maximum allowable concentration; after this the number of cases when MPC was violated, as well as how many times the maximum value was higher than the MPC is determined [3]. The average concentration for a month or per year is compared to long-term MPC. The state of air pollution including several substances, observed in the atmosphere of the city, is evaluated using an integrated index - the index of pollution of the atmosphere (IZA). The results have shown large concentrations of sulfur dioxide. The degree of air pollution with the major pollutants is directly related to the industrial development of the city. The highest maximum concentrations are typical for the cities with populations over 500 thousand inhabitants. Air pollution is caused by specific substances depending on the type of industry, development in the city. If there several large industries or enterprises in a city, this contributes to a very high level of air pollution, and the problem of reducing the emissions of many specific substances still remains unsolved.

To conclude, it can be stated that nature conservancy is a basic challenge of our century which has already become social in character. Again and again, one may hear about the danger to the environment. While many people find this information unpleasant, they still regard it as an inevitable product of civilization and believe that humanity still has time to deal with all the difficulties. However, the impact of humans on the environment has taken alarming proportions. To address this issue, it is important to deliberate a plan of thoughtful action. Accountable and effective policy towards the environment would be possible only if people have accumulated good data on the current state of the environment, sound knowledge of the interaction of important environmental factors. Based on such qualitative data, it would be possible to develop new methods to reduce and prevent harm to nature. The development of environmental monitoring programs and industrial environmental control is proposed.

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