

Place: Russia, *Sverdlovsk region, town Zarechny.*

Team: The members of UNESCO Clubs “Prometeus” (President - Lev Shusharichev), “Constellation” (Resudent – Anastasia Shusharicheva).

Project name: ”Let’s restore the original purity of the Ural rivers”.

Project appeal: Water is an earthly miracle. But how should we save it? When should we start? That’s a question! Let’s start now: from thoughts to ideas and from ideas to action and from action to results. So we’ll win! All together!

Project description:

Today, virtually there is no technology in industrial protection, wherever water is not involved: it is a coolant, and a cooler, and a solvent, and a cleaner... But we constantly forget that water is the source of life on the Earth. It is brought to us by the rivers as a divine gift.

Zarechny is a small town in the Urals, Russia. The river Pyshma flows through the town. But there is a serious problem.

Our common river Pyshma pants with wastewater enterprises of Verkhnyaya Pyshma, the Northern sewage plants of Ekaterinburg and with the water of Berezovsky mine.

Water in the upper river is polluted. There are arsenic, nitrogen, ammonium and constant shortage of oxygen.

The Beloyarskoe man-made reservoir makes its contribution to the pollution of the rivers. It is used as a cooling water pond of the BNPP. Our problem is in it. The main way of hitting the radioactive contaminants in the pond is discharge channel. Sediment is storage radionuclide: cold waste has been passing through it for a long time.

The Beloyarsk Nuclear Power Plant had the greatest influence on Olhovskaya marsh-river ecosystem. It includes an collector, where water was escaped and entered into Olhovskoe swamp. The major pollutants of the swamp were radio nuclides, which migrated mostly with water flow of a small river Olhovka, which flows into the Pyshma.

A lot of water is required for the reactor cooling of the Beloyarsk NPP, and returns to the being warmed. Discharge of warm water leads to the growth of microorganisms. Water is green, it is impossible to swim!

After the decommissioning of the second reactor unit of the BNPP radiation situating on the Beloyarskoye man-made reservoir does not cause serious fears: radiation background on the banks and on the surface of the pond isn’t over the natural level, the concentration of isotopes in the water does not exceed allowed levels for drinking water.

But evacuation of polluted water from the towns, such as Asbest, Sukhoi Log, Bogdanovich, Kamyshlov, Talitsa, takes place on the river from Beloyarskiy to Talitsa. In this water pollution of the river Pyshma increases a further downstream. There are concentrations of

nitrogen, ammonium, nitrites, easily oxidized organic matter, nickel, the iron, causing great damage to the ecosystem of the river Pyshma.

We must remember that the river is not just sewage ditch. This is a kind of a very complicated natural ecological system, formed thousands of years. A state of water is an important indicator of the health of the biosphere, human civilization, every one of us. The essence of the river is stream. It is similar to time. Leonardo da Vinci wrote: "When you put your hand to the streaming water of the river, you understand that you touch the past of those upstream and future for those living down stream". So, let us think together about our future and the future of the River. We can to use it, know how to spoil it and we should be responsible for it. And no matter how difficult the way, all along we need to find methods and ways to overcome obstacles and restore the river life and the future of our descendants.

Action plan:

- ✓ Appeal to the UNESCO Clubs of the clearing the river Pyshma. - *We have already done it!*
- ✓ Open Letters to the regional and city newspapers with calls and information about the condition of the river. – *We are doing it now!*
- ✓ Appeal to the city, region and State authorities. And also appeal to the Ministry of Environmental Protection. – *We are doing it now!*
- ✓ Organization of environmental patrol. – *We did it in spring and will do it in September!*
- ✓ Test of water quality and chemistry! – *We need special devices for it!*
- ✓ Study materials on the environment. – *We are doing it now!*
- ✓ Information community about the implement of the project. – *We are doing it now!*

Project needs:

We have some needs for realize our project.

And our first priority need is autonomous (mobile) plant for make an analysis (test) of water quality.

We need it because:

1. The health service in our town is usually too busy for doing some additional task (for example, these water-test for our project);
2. We would like to be sure that results of the tests are true and independent.

If we have this device (autonomous (mobile) plant for make an analysis (test) of water quality), we can:

1. Make this tests our-self. It will be interesting for children, so we can involve more pupils in our activity.

2. Get the true scientific information. So we can talk with community and stakeholders on the languages of the facts.
3. Became a local centre of research of river Pyshma state and cooperate with others UNESCO Clubs in neighbour cities and other organizations.

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