Discussion on the protection strategy of Dahuofang river water ecological environment

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Abstract: China's per capita fresh water resources only account for one fourth of the world's per capita fresh water resources, therefore, the protection of fresh water resources and river ecological environment protection is very important. This paper focuses on the analysis of the current situation of Dahuofang river water ecological environment and the significance of protection, focusing on the ecological environment protection strategy, increasing project support, and actively applying ecological slope protection, Strengthen pollution prevention and control efforts, realize one area one world, scientific cultivation of aquatic plants, human ecological environment protection, so as to provide a solution direction for the exploration of river water ecological environment protection.

Keywords: Dahuofang River; Ecological environment; Ecological slope protection; Scientific planting.

1. Preface
The data show that 72% of the earth's surface is covered by water, but the fresh water resources account for only 2.5% of all water resources. Nearly 70% of the fresh water is fixed in the ice layer of Antarctica and Greenland, and the rest is mostly soil water or deep groundwater, which cannot be used by human beings. The freshwater resources that human beings can really use are part of rivers, lakes and groundwater, accounting for about 0.26% of the total water volume of the earth. At present, about 1.5 billion people in more than 80 countries are facing shortage of fresh water, of which 300million people in 26 countries live in a state of water shortage. It is estimated that by 2025, there will be 3 billion people in the world who will lack water, involving more than 40 countries and regions, while China only accounts for one quarter of the world's per capita freshwater resources. Therefore, it is very important to protect the freshwater resources and the ecological environment of river channels. This paper focuses on the analysis of the water ecological environment protection of Dahuofang river.
2. Analysis on current situation of river water in Dahuofang
Dahuofang water source protection zone is located in the East and central part of Liaoning Province, which crosses Hunhe River and Hunjiang River basins, including Dahuofang reservoir, Huanren Reservoir, Suzi River and Hunjiang water conveyance channel, with a total area of 8424 square kilometers. The area of Dahuofang water source protection zone in Fushun City is 6476.4 square kilometers, accounting for more than half of the total area of Fushun City. Dahuofang reservoir is built on Hunhe River of Fushun, Liaoning Province. It was completed in 1958 as the first large reservoir in China's first five-year plan. Here is a "big water tank" with a population of nearly 30 million. At present, it mainly contains pollution caused by industrial point source, urban living source and large-scale livestock breeding. The wastewater, waste gas and waste residue produced by people in production and life seriously affect the quality of water source [1]

3. Significance of river water protection in Dahuofang
River is always an important guarantee resource for human social development, and people's production and life can not be separated from it. Only by protecting water resources can people's daily production and life be carried out smoothly; Secondly, promote the ecological balance of river, create a pleasant living environment, and maintain the source of daily water use through the important carrier of river channel. Therefore, protecting the river water environment can not only effectively protect the river ecology, promote biodiversity, but also improve the local climate environment, create a more comfortable living environment, thus improving the quality of life of people[2].

4. Ecological environment protection strategy
With the development of social economy, people's awareness of environmental protection has been gradually improved, and more and more attention has been paid to environmental protection. The "fourteenth five year plan" proposed that the proportion of surface water reaching or better than Class III water body should reach 85% by 2025, and put forward the water control goal of "river with water, fish with grass, human water harmony".

4.1. Increase project support and improve the existing ecological level
In view of the current situation of Dahuofang River, we should scientifically and orderly organize the ecological protection work around the river, realize the conversion of farmland to grassland on both sides of the river, strengthen the wetland construction, enterprise sewage treatment plant construction, river ecological restoration, livestock and poultry breeding and other work, put things into practice, truly do practical things for the surrounding residents and enterprises, and the treatment effect is beginning to show. In 2018, compared with 2013 before comprehensive treatment, the total nitrogen concentration decreased by 34.6%, the total phosphorus concentration decreased by 64.7%, and the water quality of Dahuofang reservoir area remained at class II standard [3].
4.2. Active application of ecological slope protection

According to the characteristics of upstream and downstream river courses of Dahuofang reservoir, the method of soil and stone cage bag can be adopted to take local materials and adapt to local conditions. The northern part is rich in rocks. It can be applied in ecological revetment structure, forming a flexible integral protection surface, which is conducive to the exchange between air and water body and water source circulation, closer to the original ecological environment, convenient for the growth of aquatic animals and plants, and enhancing the self purification capacity of water body. The ecological disadvantages of traditional slope protection caused by concrete pouring and stone filling are solved to the greatest extent by preventing soil loss and enhancing flood control effect[4].

With ecological slope protection, a large number of green plants can be planted to lay the foundation for the sustainable development of the surrounding ecological environment. The river regulation project must adjust measures to local conditions, comprehensively consider the overall spatial structure layout, select appropriate green plant varieties, and optimize the spatial collocation, so it can form a unique and beautiful landscape line, and lay the foundation for the next step of green tourism.

4.3. Strengthen pollution prevention and control

Most of the environmental protection work in developed countries has gone through a tortuous road of "pollution before treatment", and then exchanged citizens' environmental protection awareness at the cost of blood. Now China has realized this problem. Therefore, the key to river regulation and water environment protection is to comprehensively strengthen pollution control, prevent river water environment from being damaged and ensure river water environment clean. With the improvement of economic level, domestic sewage and industrial wastewater have become important pollution sources. Therefore, it is necessary to formulate relevant measures to prohibit direct discharge into the river, strengthen dynamic detection, determine important monitoring points, comprehensively strengthen pollution control and interception, and adopt the concept of green, ecological and sustainable development to comprehensively treat industrial and domestic wastewater pollution, Improve people's life satisfaction.

4.4. Zone 1 - world, scientific cultivation of aquatic plants

In order to solve people's leisure and entertainment, leisure time can come to the riverside to relax. According to local conditions, aquatic plants and characteristic plants on both sides of the river can not only absorb the organic matter in the river, prevent the eutrophication of the river water environment, but also regulate the water quality and create a good living environment for the aquatic organisms in the river; So as to create ecological river landscape corridor, let the majority of people participate in it, enjoy in it, so as to improve the comprehensive treatment effect and improve the people's happiness index.

By creating a pleasant environment, the wetland park will become a "Bird Paradise". Every migratory season, these wetlands will be full of vitality, people will form habits, which is conducive to the improvement of people's comprehensive quality, therefore, it is also conducive to the ecological protection of river water [5].

5. Conclusion

People's life is closely related to water. As an important carrier of water resources, river course must take scientific and orderly protection measures. Starting from the actual needs of the people and the 16 character water control goal of "river with water, fish with grass and harmony between human and water", we believe that there will be more golden ideas to realize the protection of ecological environment and lay an ecological foundation for the better development of society in the future.
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