

Application Method of Multi-directional Ecological Restoration Technology in River Water Environment Treatment Project

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Abstract: In the process of China's industrial development, more or less, it will cause certain pollution to the river water environment of China, which is closely related to people's daily life. In addition, in the current era, with the enhancement of people's awareness of environmental protection, river water environment treatment project has become an urgent problem to be solved in the current society. In order to ensure the effect of river water environment treatment to the greatest extent, relevant staff need to select the right ecological restoration technology in combination with the requirements of river water environment treatment and needs, so as to protect the ecological China's environment through multi-directional ecological restoration technology.

Keywords: Multi-directional; Ecological Restoration Technology; River Water Environment; Treatment

In the process of harnessing the river water environment in China, the staff should use the ecological restoration technology to carry out daily work. In addition, it is necessary to strengthen the survey and analysis of the climatic and hydrological conditions around the river water environment. Finding out the pollution factors and pollution sources that affect the river water environment in time, selecting the correct ecological restoration technology, and promoting the orderly progress of the river water environment treatment are also crucial.

1. Introduction of multi-directional ecological restoration technology

When using multi-directional ecological restoration technology, the staff should deeply analyze and study the meaning and scope of multi-directional ecological restoration technology, so as to ensure the orderly

progress of various works. Multi-directional ecological restoration is an advanced ecological restoration technology, which can comprehensively treat the pollution of river water environment, and the technology used in the restoration process is also very advanced and effective. The application of multi-directional ecological restoration technology in river water environment treatment can integrate endogenous control and self-purification reinforcement measures into each other, and it can also improve river water environment by artificial purification^[1]. Many aspects abandon a single traditional water environment treatment method for ecological restoration technology. The overall restoration effect is very open and diversified, showing great advantages in river water environment management. First, in multi-directional ecological restoration technology, the water environment of the river can be effectively intercepted to prevent pollutants from enter-

-ing the river directly, and to a certain extent, the degree of eutrophication of the river can be reduced and pollution can be controlled from the source. Secondly, multi-directional ecological restoration technology can also periodically clear and desilt the river water environment to prevent the river from silting year by year. The technology effectively eliminates endogenous pollution. Multi-directional ecological restoration technology can also be manually purified. When the water quality of the river water environment changes to a certain extent, it can not only effectively purify the water body, but also to a certain extent improve the transparency of the water body, so that the water environment treatment can be carried out orderly. Finally, multi-directional ecological restoration technology can also properly improve the aquatic ecosystem, which can stably purify the water quality with a good aesthetic effect for the river water environment. It can be seen that the multi-directional ecological restoration technology plays an irreplaceable role in the river water environment treatment project. With more attention, relevant staff should understand the multi-directional ecological restoration technology. They need to carry out daily work to protect the water environment in China by choosing the correct ecological restoration technology in accordance with the requirements of river water environment treatment and needs^[2].

2. Application status of multi-directional ecological restoration technology in river water environment treatment project

Nowadays, river water environment governance has become an urgent and key problem in current society. Relevant staff also use many ecological restoration techniques in river water environment governance, and in practice, the governance effect is quite good. China has only begun river restoration in recent years. River management has always been based on flood control, but not enough attention has been paid to river ecological problems. In recent years, with the gradual aggravation of water environmental pollution in rivers, relevant departments and staff have attached great importance to

the treatment of water environment in rivers. Researchers have carried out various research on river water environment treatment in China, and some experts and scholars have strengthened their research on river restoration. In the process of river water environment restoration, it is necessary to carry out daily work from the perspective of integrity and overall situation. However, in the process of river water environment treatment, the relevant staff has not strengthened the improvement of vegetation ecology and water quality. They only focused on the construction of gardens around the river water environment. This kind of ecological restoration can not exert its due value and effect in practice. Therefore, in the current era, with the continuous enhancement of people's awareness of governance, multi-directional ecological restoration technology has been widely used in river water environment governance.

When applying multi-directional ecological restoration technology to river water environment management, the relevant staff abide by the principle of ecology, mainly according to the laws of natural development of rivers, and they reasonably utilize river resources to construct the natural ecosystem where people live in harmony with rivers, thus improving the development level of river system^[3]. Secondly, in the actual work process, the relevant staff also adhere to the principle of sustainability. They objectively and systematically analyze the applicable conditions of the restoration scheme and its effectiveness in the actual application process, so that the multi-directional ecological restoration technology can effectively solve the pollution problem of river water environment. Finally, in the actual work process, the relevant staff also follow the principle of maximizing comprehensive benefits. They integrate the short-term and long-term benefits by comprehensively comparing several schemes, so as to obtain the final results of river restoration, integration of social and economic benefits and protection of our water environment.

3. Application of multi-directional ecological restoration technology in river water environment treatment

3.1 Exogenous pollution control

The cause of pollution of river water environment and pollutants in rainwater at the beginning of rainstorm are inseparable. Research shows that the quality of rainwater in river water at the beginning of rainstorm is more serious than that of domestic sewage. Moreover, the pollution contained in rainwater is diversified and it is difficult to carry out routine repair work in an orderly manner. However, with the continuous improvement of our scientific and technological level, in the river water environment treatment, the workers have used the external pollution control technology in ecological restoration technology to solve this problem^[4]. In the actual work process, automatic membrane filtration equipment of rainwater source is mainly used to repair the river. This repair technology belongs to ultra low voltage filtration membrane, which is integrated with membrane filtration. It can effectively remove pollutants in rainwater to purify the original water body. Rainfall repeatedly filters the filter cartridge of equipment in the filtration system, which can reduce pollutants in rainwater. Water outside the ecosystem can be restored independently through the natural ecosystem and it reduces receiving water. In the past work of river water environment treatment, the relevant staff focused on the flood control and water transport functions of the river, but they did not comprehensively consider the ecosystem around the river water environment. However, when using ecological restoration technology, the surrounding vegetation can be well restored, which not only can stabilize water and soil, but also can conserve water source. It can be seen that ecological restoration technology can not only maintain the ecosystem around the river water environment to the greatest extent, but also enhance the ecological characteristics of the surrounding environment and the self-purification ability of the water body in the river water environment treatment. It is an ideal ecological restoration technology in the current era.

3.2 Endogenous pollution control

When controlling the endogenous pollution of the river water environment, the main focus is on the silt in river water. Sediment pollution is formed from river sediment and it is also a secondary source of pollution affecting urban water quality. Even though the relevant workers effectively control the external pollution in the

actual work process, the river sediment contains a large amount of nitrogen, phosphorus and heavy metals. These substances will be released to the water body again under the action of water body, affecting the water quality of the water body and causing secondary pollution. In the work of river water environment treatment, when controlling the endogenous pollution of water environment, the staff adopt the combination of mechanical dredging and biological enzyme repair to effectively control the endogenous pollution through multi-directional ecological technology. They combine physical with biological aspects to improve the application effect of remediation technology^[5]. This technology can be applied quickly and sustainably in a high decontamination rate. Mechanical dredging can improve the physical and chemical properties of sediment in river water body to a certain extent. However, the cost of mechanical dredging is relatively high in the application process, so it is suitable for small area and highly polluted sediment remediation waters. For large area and low pollution sediment remediation, biological enzyme repair is usually used. The main principle is to activate the activity of original microorganisms in sediment through the performance of enzymes, which can effectively remove harmful substances with better degradation ability of microorganism under the action of natural conditions. At the same time, the activity of microorganisms can also be used continuously, and the treatment effect of river water environment is better.

3.3 Water self-purification system

Establishing water self-purification system for water body is also an important control measure for ecological restoration of water environment of rivers in China. Relevant workers usually make use of a natural chain composed of aquatic organisms and aquatic plants. This chain can degrade and transfer pollutants in water well, and it also absorb useful substances in water to produce a purification effect when applying biological control measures^[6]. During the construction of natural ecological chain, relevant staff arrange the underwater turf of evergreen dwarf hay all the year round in the area of reducing diving along the river bank, and they arrange the underwater plants with higher length in the middle water depth area to form the aquatic biota of evergreen underwater forest all the year round. It is mainly

composed of large fish and subordinate animal, which can prey on organic matter in geology and decomposed residues of aquatic animals and plants, such as the mussels. These plants absorb fine putrefaction in water and cyanophyce, thus improving water transparency. In addition, the relevant staff also use cladocera zooplankton such as the water flea that can convert the blue-green algae in water into animal protein which is preyed by fish to form a complete ecological chain.

4. Conclusion

River water environment is an important part of urban environment. If the river water environment is damaged, it will affect the pace of ecological city construction. Relevant staff should use multi-directional ecological restoration technology in the principles of ecology and sustainability to maximize the comprehensive benefits of ecological restoration technology when carrying out river water environment treatment. At the same time, relevant staff should also carry out targeted restoration techniques to meet the requirements of river water environment governance.

They should gradually restore the ecological functions of the entire river water environment to promote the healthy development of our economy.

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