

Remote Sensing Image Evaluation of Wetland Plants for Ecological Restoration of Constructed Wetlands Based on Computer Technology

Han Qi
Hainan Normal University
570000, Hainan, China

Abstract: In recent decades, wetland treatment systems have been widely used in sewage treatment, and pollutants can be removed through the retention, sedimentation, absorption, and transformation of substrates, plants, and microorganisms. Wetland plants play an indispensable role as an important part of it. This article briefly introduces the basic types and principles of phytoremediation. The construction of artificial wetlands is the main cornerstone of building a good ecological environment, and protecting the ecological environment is equivalent to protecting our homeland. In recent years, my country has gradually applied the wetland treatment system to sewage treatment, and removed harmful pollutants through the transformation of plants, microorganisms, and substrates.

Keywords: Remote Sensing Image Evaluation, Wetland Plants for Ecological Restoration, Constructed Wetlands, Computer Technology

1. INTRODUCTION

In the context of the information age, the ecological environment planning cannot be separated from the support of computer information technology [1]. Only by fully coordinating the relationship between the development theory of the ecological environment and computer information technology [2] can the scientific and accurate ecological environment planning be guaranteed. Information technology can provide precise databases and precise calculations for planning. Constructed wetland is a brand-new ecological project [3], which constitutes an organically combined ecological complex by systematically imitating natural ecological wetlands, including aquatic plants and animals and other ecological resources [4]. Constructed wetlands can reasonably control the sewage within the wetland, and can also control the sludge reasonably, which can protect the vegetation. Constructed wetlands are man-made ecosystems created by microorganisms, plants and substrates in a certain way [5].

In 1953, the MaxPlack Institute in Germany obtained certain research results [6]. In 1972, Kickuth and Seidel proposed artificial wetlands. The theory of wetland sewage treatment technology has deepened people's ability to treat wetland sewage [7]. Constructed wetland is an artificial complex ecosystem composed of substrates, microorganisms and plants configured in a certain way. The origin of this technology can be traced back to the Max Plack Institute in Germany in 1953 [8]. In recent years, the issue of ecological environment planning is an important subject of research, one of the important ways to coordinate the relationship between the national economy and social development, and an important link to realize the sustainable development strategy between the ecological environment and the social economy [9]. In the process of planning the ecological environment, it is necessary to rationally arrange the activities of social economic and ecological planning in time and space [10].

Under the influence of Cruikhoun on the cultural system, Niu Ruchen believes that the phenomenon of place names can also be regarded as a system, which includes proper names, generic names, place name affixes [11], abbreviations, elegant

names, common names, full names, old names and other factors. Since the birth of GIS (Geographic Information System) in the 1950s, the geographic information industry has gradually developed and [12] expanded with data as the core. Its main businesses such as collection, inspection, processing, database building and distribution services are all closely related to data. Data is the soul of the geographic information industry [13]. It is particularly necessary to establish a reliable big data analysis model to effectively process and analyze the relationship between data. Big data is typical unstructured data, and there are many difficulties in data analysis. [14]

Only scientific planning can ensure the effectiveness of planning. Constructed wetlands can absorb impurities, carry out oxidative decomposition and filter plants, and play a role in the overall construction of the ecosystem. Constructed wetlands have a larger area to deal with current sewage problems, so they have greater advantages in the field of protecting and promoting the diversity of ecological resources. Constructed wetlands are ecological projects created through human factors. They are complexes that imitate natural wetlands and combine plants, animals, water quality, etc [15]. and effectively control sewage and sludge on the ground and use them when they flow. Soil, plants and substrates intercept sewage and sludge to oxidize, precipitate, decompose and filter [16]. Constructed wetlands were officially introduced as an independent water treatment technology in the root zone theory proposed by Seidel and Kickuth in 1972 [17]. Plants are one of the constituent elements of wetland systems and are most affected by geographical and natural conditions [18].

but human intervention in plant management is possible. By understanding the status quo and impact of social, economic and environmental aspects, analyze the status quo of the ecological environment, and predict the future development trend, so as to take active countermeasures and provide reasonable and scientific solutions for the implementation of sustainable development strategies. Development Strategy. The essence of ecological environment planning is to make the ecological environment and the economy and society develop in harmony. Humans need to pay attention to various capitals in survival. Wetlands are the main environmental

capital and are also ecosystems with high productivity and various types of organisms. Wetlands not only have abundant natural resources.

2. THE PROPOSED METHODOLOGY

2.1 The Remote Sensing Image Evaluation

It can be said that different types of wetlands play an active role in human production and daily life, such as providing abundant water resources. Wetland is the most important environmental capital for human survival, and it is also an ecosystem with high productivity in nature. It has the characteristics of biodiversity and can effectively regulate the environment and improve ecological benefits. Wetlands play an important role in regulating climate, providing sufficient water resources, preventing floods, conserving water sources, degrading pollutants, protecting biodiversity, and providing living resources for human beings. Phytoremediation technology is to reduce the concentration of organic and inorganic pollutants in water bodies through plant metabolic activities, so as to relieve the self-purification pressure of natural water bodies, and then achieve the purpose of controlling environmental pollution. In order to ensure the rationality of the arrangement.

It is necessary to refer to the relevant laws and regulations and the current actual situation in various aspects when formulating the plan, and make an analysis. Only when the planning can be reasonably arranged according to the actual situation, can a good foundation be laid for the smooth progress of each work. Wetland vegetation is an important component of the current construction of artificial wetlands, and it is also a natural plant that must be planted, reflecting the importance of several aspects. First, wetland plants can absorb certain nutrients, and the roots can provide a good environment for the survival of microorganisms and the degradation of nutrients in water, which is conducive to the balanced development of the ecological environment. Inorganic pollutants are different from organic pollutants, and their remediation processes are also different. There are two main principles for the remediation of inorganic pollutants.

The first is mechanical handling, which is to remove pollutants from the soil through machinery, and the second is to reduce pollutants. the activity of it to transform it into a biologically inactive state. The method of removal is mainly carried out by means of harvesting. Pollutants are ingested by roots, stems, leaves and other organs, enriched in plants, and finally removed by harvesting, reducing the chance of artificial contact with pollutants in the whole process. After harvesting, reducing its volume or weight by crushing, incineration, etc., will reduce subsequent processing costs, and recovery is also valuable for certain heavy metals such as Ni, Zn, and Cu. In terms of ecological environment management, the integration of information technology into urban greening management, and the programmed and intelligent management of vegetation can greatly improve the convenience of ecological environment management and effectively improve work efficiency while reducing labor costs. 2) In ecological quality monitoring.

2.2 The Wetland Plants for Ecological Restoration

Computer information technology has powerful databases and information storage channels to ensure the timeliness of news. Plants are an important part of the ecosystem, releasing oxygen and purifying the air, and at the same time maintaining the ecological balance. The wetland vegetation is

an important factor in the current water and land system, and it plays a role in restoring the ecological environment. Wetland organisms play an important role in the restoration of the ecological environment of constructed wetlands. For example, Xiaocizao plays a positive role in the improvement of water quality. The leaves, stems, and roots of plants absorb pollutants, enrich them in the body, and then harvest them after they mature naturally, so as to achieve the effect of removing pollutants. In this process, it can effectively reduce the direct exposure to pollutants.

After harvesting, its weight and volume are reduced by methods such as incineration, thereby reducing the later disposal costs. The transfer law of organic pollutants in the environment mainly depends on the molecular polarity, surface charge and other characteristics of the pollutant molecules, as well as the ability of soil to absorb and chelate them, soil structure properties and pH value. From these parameters, it is inferred that the use of plants to solve environmental pollution is region-specific. This ensures the timeliness and accuracy of ecological detection information. 3) In the protection of wild animals, the computer positioning system can be fully applied, and the actual distribution and real number of wild animals can be known in time, so that the formulated protection plan can be effectively implemented. Bioremediation technology refers to the remediation technology that directly adds microorganisms to the polluted water body.

2.3 The Constructed Wetlands Based on Computer Technology

The key point of wetland soil remediation technology is the combined application of biological and ecological means. Through the use of chemical agents and biological agents, the state of wetland soil pollution is improved, and the use function of soil is improved and restored. Information technology has accelerated the process of urbanization, but it has transformed the fields that used to be covered by a large amount of vegetation into buildings made of reinforced concrete.

The urban heat island effect is becoming more and more serious, which seriously affects the living environment of wild animals and plants, resulting in a serious imbalance in the ecological environment. However, there are many factors affecting soil ecological restoration, and the restoration process is not easy to control. Although many researchers have carried out the development and research of this technology, due to the influence of various factors, so far, there has not been much progress, and there is no feasible solution. Application of technical achievements. The so-called ecological environment planning refers specifically to the reasonable arrangements made by human beings to promote the ecological environment and economic and social development. The planning objects have the characteristics of space, time, structure, and attributes, etc. specialty. In the era of information technology, only by making full use of advanced technology can the rationality of ecological environment planning be effectively promoted. Due to the different types of wetlands.

There will be differences in ecological functions, so the degradation mechanisms of wetlands will also be different, which cannot be judged according to the mindset. The repair mechanism research should not be carried out hastily, and the research plan should be refined on the basis of evaluation and investigation. Under the background of the information technology era, the speed of information acquisition and

collection has been continuously improved, so that the theories and methods of ecological environment planning have been continuously updated and improved. Ecological environment planning breaks the traditional limitations and can be displayed intuitively through tables and figures, which facilitates the acquisition of relevant information. Small wetlands refer to small wetlands with relatively stable ecosystems formed during the long-term evolution in nature, such as river bays, ponds, fish ponds, ditches, etc.

This type of wetland has many functions, a large number, and a wide distribution. However, there are few researches on this type of wetland by scientific researchers, and people's understanding also has a certain deviation. A large number of small and micro wetlands are gradually decreasing, and protection and management are lacking. Ecological agriculture is an important part of the ecological environment; therefore, ecological agriculture has a great impact on the ecological environment. In the specific planning process, the data processing advantages of the computer should be fully utilized to quickly analyze and process the huge data. Therefore, in the application of ecological agriculture.

3. CONCLUSIONS

Nowadays, artificial wetland technology is not only limited to sewage treatment, but more development direction is biased towards the construction of wetland parks that integrate sewage treatment and urban landscape. Therefore, wetland plants should not only consider the original decontamination effect, but also take into account the needs of the landscape to achieve the development trend of building livable homes. At present, wetland plants in the ecological environment of artificial wetlands are no longer simply limited to sewage treatment, but more gradually incorporate urban landscape and ecological environment into construction, not only to consider the decontamination ability, but also to consider the landscape demand, thus creating an ecological environment park integrating leisure, entertainment and governance.

4. REFERENCES

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