

Abstract

Keywords

1. Introduction

2. Basic theory and methods

2.1. Ecological economic value system of CW ecosystem services



2.2. Contingent valuation method

2.2.1. Basic theory

2.2.2. Calculation method

2.2.3. Survey

2.3. Shadow project approach

2.4. CW system description in Hangzhou Botanical Garden



Table 2

2.5. Response rate and statistical analysis


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Abstract

Based on a comprehensive analysis of various classifications of natural resource values, we summarized an ecological economic value system of constructed wetland (CW) ecosystems for treating eutrophic water. Using the CW located at the Hangzhou Botanical Garden as an example, the contingent valuation method (CVM) and shadow project approach (SPA) were applied to estimate the economic values of CW system ecosystem services. The CVM estimated a value of 800,000 yuan (yuan: Chinese Currency, 7.6 yuan = 1 USD as of August, 2007) as the total economic value of the CW in a twenty year period. Meanwhile, the SPA calculated a value of 23.04 million yuan as the total economic value of the CW in a twenty year period. It is determined that compared to the CVM, the SPA provides a more approximate value of the true monetary value of the Hangzhou Botanical Garden CW. This study could fill the gap of knowledge and provide a benchmark when evaluating constructed ecosystem services and help policy makers to promote the development of constructed wetlands in China.

Keywords

Contingent valuation method; Cost-benefit analysis; Economic valuation; Shadow price; Shadow project approach; Willingness to pay

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