

Hydraulic and environmental design of a constructed wetland as a treatment for shrimp aquaculture effluents

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Abstract

Shrimp aquaculture has grown to the extent that pressure on natural ecosystems has greatly increased. The shrimp farms effluents usually discharge their wastes, with high nutrients load, into coastal water bodies without any previous treatment. This work presents a method to design a constructed wetland for handling these effluents. Our method is based on a first order equation model and a hydrodynamic numerical model as the main component for the design process. Numerical results showed consistency with the first order theory, when pollutants concentration were reduced to values accepted by the applicable regulations.

keywords

Aquaculture, Environmental design, Numerical methods, Shellfish, Supercomputers. Wetlands.