

INTISARI

Wilayah Telaga Swiwi sebagian besar bersebelahan langsung dengan lahan pertanian, hal ini dapat memicu peningkatan limpasan residu pupuk dan pestisida menuju perairan telaga dan menyebabkan eutrofikasi perairan. Penelitian ini bertujuan untuk menganalisis kondisi kualitas lingkungan Telaga Swiwi akibat aktivitas pertanian di sekitarnya, menentukan tingkat pengetahuan dan perilaku petani di sekitar telaga dan merumuskan strategi pengendalian kerusakan lingkungan Telaga Swiwi karena adanya aktivitas pertanian disekitar telaga.

Metode penelitian yang digunakan adalah metode survei dan sampel diambil dengan metode *purposive sampling* di bagian dekat dengan area rekreasi dan dekat dengan area pertanian. Parameter yang digunakan meliputi komponen abiotik (pH, suhu, kekeruhan atau intensitas cahaya, nitrogen total, fosfor dan organofosfat), komponen biotik yakni *fitoplankton*, dan komponen kultural (pengetahuan dan perilaku petani). Analisis komponen abiotik berupa analisis tingkat eutrofikasi (status trofik) dengan pengukuran kandungan nitrogen total dan fosfor. Analisis komponen biotik yaitu dengan nilai indeks keanekaragaman *fitoplankton* yang didapat masing-masing stasiun selanjutnya dikelompokkan berdasarkan tabel klasifikasi nilai indeks keanekaragaman *Shannon Wiener*. Penentuan pengetahuan dan perilaku petani di sekitar telaga swiwi dengan tingkat nilai rata-rata distribusi pengetahuan serta perilaku petani. Strategi pengendalian kerusakan lingkungan dianalisis menggunakan metode deskriptif kualitatif.

Hasil penelitian menunjukkan adanya eutrofikasi perairan telaga yang menyebabkan nilai indeks keanekaragaman *fitoplankton* rendah dan tergolong tercemar. Kondisi ini diduga disebabkan oleh komponen kultural, rendahnya nilai rata-rata distribusi pengetahuan petani tentang pencemaran lingkungan telaga akibat aktivitas pertanian di sekitarnya menyebabkan perilaku petani dalam menggunakan pupuk dan pestisida berlebihan.

Kata kunci: abiotik, biotik, kultural, *fitoplankton*, organofosfat.

ABSTRACT

Most of the Telaga Swiwi area is directly adjacent to agricultural land, this can trigger an increase in runoff of fertilizer and pesticide residues towards the lake area and cause eutrophication of the waters. This research aims to analyze the environmental conditions of Swiwi Lake due to agricultural activities around it, determine the level of knowledge and behavior of farmers around the lake in carrying out agricultural activities and develop strategies to control environmental damage to Swiwi Lake due to agricultural activities around the lake.

The research method used was a survey method and samples were taken using a purposive sampling method in areas close to recreation areas and close to agricultural areas. The parameters used include abiotic components (pH, temperature, turbidity or light intensity, total nitrogen, phosphorus and organophosphates), biotic components, namely phytoplankton, and cultural components (farmer knowledge and behavior). Analysis of abiotic components in the form of analysis of the level of eutrophication (trophic status) by measurement total nitrogen and phosphorus content in air, soil and sediment samples, measurement results the total nitrogen and phosphorus content of each sample will be grouped based on a table that describes the trophic status of a body of water. Biotic component analysis is by looking for the phytoplankton diversity index value. The phytoplankton diversity index values obtained by each station were then collected based on the Shannon Wiener diversity index value classification table. Determining the knowledge and behavior of farmers around Lake Swiwi in carrying out agricultural activities which is determined by the average level of knowledge and behavior of farmers around the lake. Environmental damage control strategies were analyzed using qualitative descriptive methods, formulated with a matrix of the relationship between the level of damage and the knowledge and behavior of farmers around Telaga Swiwi.

The results of the research at all collection points from sample one to point five showed that there was eutrophication of the lake waters, this caused the phytoplankton diversity index value to be low and classified as polluted. This condition is thought to be caused by a cultural component, the average farmer's low knowledge about environmental pollution of the lake due to agricultural activities next to it causes farmers' behavior in using excessive fertilizer and pesticides around the lake. For this reason, the strategy for controlling environmental damage is carried out through prevention, management and recovery efforts carried out jointly between the community, organizational groups and the government.

Keywords: *abiotic; biotik; cultural; phytoplankton; organophosphates.*