

## Analisis kesetimbangan massa dan distribusi spasial nitrogen di Danau Tondano, Provinsi Sulawesi utara

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### Abstrak

Tondano is one of 15 lakes in the lake management priority by the Indonesian Government. Land use of the catchment area for agriculture and the use of the waters for fisheries, tourism and power plant have passed environmental problems for the sustainability of Lake Tondano. High water discharge needed for the power plant and the siltation caused by other activities have reduced the lake capacity. In addition, the agricultural activities cause nutrient transport into the lake. This study evaluated the nitrogen balance and spatial distribution of nitrogen concentrations in the lake. Water conditions on the surface horizontally were studied in relation with the activities in the lake. The result showed that the spatial distribution of the nitrogen levels was not distributed well. The nitrogen balance in the inlet was higher than that in the outlet. The results indicated that there was accumulation of nitrogen elements in the lake that could lead to the eutrophication. In managing the lake ecosystem, the zonation is needed for each purpose such as tourism, fisheries, power plant, and drinking water in order to maintain the lake functionally and ecologically.