

**HE'EIA COASTAL WETLAND AS A SINK FOR  
NITROGEN, PHOSPHORUS, AND POLYCHLORINATED  
BYPHENYLS IN WATERS ENTERING KANE'OHE BAY**

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## ABSTRACT

He'eia Coastal Wetland was monitored over several months to document its potential to remove nitrogen, phosphorus, and polychlorinated biphenyls (PCBs) from He'eia Stream water. He'eia Wetland is classified as a free-water natural wetland, with *Honohono grass (Commelina diffusa)* as the dominant vegetation. Its total area is about 80 ha., and the mean depth of the ponds is less than 1 meter. The wetland receives the majority of its water from He'eia Stream. Water samples for nutrient analysis were collected in two-week intervals from various locations upstream and downstream of the wetland over a period of four months in 2000. The samples were analyzed for nitrate and phosphate concentrations. A United States Geological Survey (USGS) station at the highest elevation sample site provided flow data for that site that were correlated to nitrate and phosphate concentrations. There was a decrease in both nitrate and phosphate after stream water passed through the wetland.

Two soil samples were collected in He'eia Wetland and one core sample was collected in He'eia Fishpond during the study period. These samples were analyzed for PCBs. The results suggest that the He'eia freshwater wetland is a sink for nitrogen, phosphorus and PCBs.