

Rungnapa Jamjumras 2013: Certain Water Quality in Forest, Agroforestry and Agricultural Area of Huai Raeng - Klong Peed Subwatershed, Trat Province. Master of Science (Watershed and Environmental Management), Major Field: Watershed and Environmental Management, Department of Conservation. Thesis Advisor: Ms. Supattra Thueksathit, Ph.D. 94 pages.

The main objectives of this research were to study and evaluate certain water quality in forest, agroforestry and agricultural area at Huai Raeng - Klong Peed subwatershed, Trat province. The study focused on the effects of land use practices on some parameters of surface water quality. Water samples were collected in wet and dry period during July to December 2010 at each outlet of six sample watershed. The comparison and assessment of water quality were performed by using Water quality index (WQI) with statistical analysis by T - test, F - test and Duncan multiple range test (DMRT)

The results showed that the water quality in forest, agroforestry and agricultural area of the average temperature were 25.6, 26.4 and 26.8 °C, electrical conductivity 58.22, 44.95 and 31.70 $\mu\text{S}/\text{cm}$ total solids 58.01, 55.64 and 59.13 mg/l, total dissolved solid 36.34, 27.31 and 20.80 mg/l, suspended solids 21.67, 28.33 and 38.33 mg/l, pH 7.08, 6.68 and 6.78, dissolved oxygen 4.55, 4.00 and 3.70 mg/l, biochemical oxygen demand 1.15, 1.20 and 1.38 mg/l and nitrate nitrogen 0.44, 0.76 and 0.79 mg/l respectively. All water quality parameters were categorized within the standard value of natural water sources and standard value of surface water quality except dissolved oxygen in agricultural area. Results from statistical analysis of water quality among land use types showed that electrical conductivity, total dissolved solid and dissolved oxygen were significantly differences. The comparison of water quality between wet and dry period showed that temperature in forest area and biochemical oxygen demand in agroforestry area were significantly differences while in agricultural area, the temperature, electrical conductivity, total solid and total dissolved solid were significantly differences.

According to the water quality assessment by WQI, it could be concluded that water quality of forest and agroforestry area were good which was classified as type II of water quality standard while water agricultural area was at fair level as type III of water quality standard and water quality of Huai Raeng - Klong Peed Subwatershed was at fair level as well

Student's signature

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