

Jatuporn Teanma 2014: Ecosystem Services and Its Value Changes from Land-Use in Huai Sammor Watershed, Chaiyaphum and Khon Kaen Provinces. Doctor of Philosophy (Sustainable Land Use and Natural Resources Management), Major Field: Sustainable Land Use and Natural Resources Management, Interdisciplinary Graduate Program. Thesis Advisor: Mr. Decharut Sukkumnoed, Ph.D. 294 pages.

This research aimed to study ecosystem service and its values changes from land use activities between B.E.2545 to 2557 and to provide an appropriate land use guidelines. Land use types were classified using aerial photographs scale 1:4000. Value transfer technique, analytic conclusion and describing the details were used for valuation methods. The result shows that Huai Sammor Watershed were divided into 6 categories of land use types including urban, agriculture land, perennial land, grassland, water and tropical forest. In B.E. 2547 urbanize area increased the percentage by 18.18, water areas expanded by 10.40%, perennial land expanded by 7.57%, and agriculture land expanded by 2.79%, while grassland and tropical forest decreased by 38.77% and 1.70%, respectively. And ecosystem services value increased by 1,797,770.87 US\$ or the percentage by 1.33 from B.E. 2545. The ecosystem services value of habitat function, water control, recreation, and raw material production increased, which corresponded with the expansion of water, perennial and agriculture areas.

An appropriate land use guidelines suggested the conservation scenario of water area was not change compared to B.E. 2557, with highest value of ecosystem services of 157,682,097.25 US\$ per year (increased from B.E. 2557 by 15.22%). Whereas only the value of pollination function, biological control and food were decreased. In the further, Huai sammor Watershed Organization should contribute to increase small area of water in agricultural land together with supporting appropriate land use incentives in cropping. And also, tropical forest defining corresponded with forest laws and watershed classification laws will be needed for supporting the sustainable land use.

---

Student's signature

---

Thesis Advisor's signature