

CONSERVATION EFFORTS WERE DOCUMENTED IN THE KIOSK LAND USES SURROUNDING SELECTED HYDROPOWER RESERVOIRS IN SARAWAK

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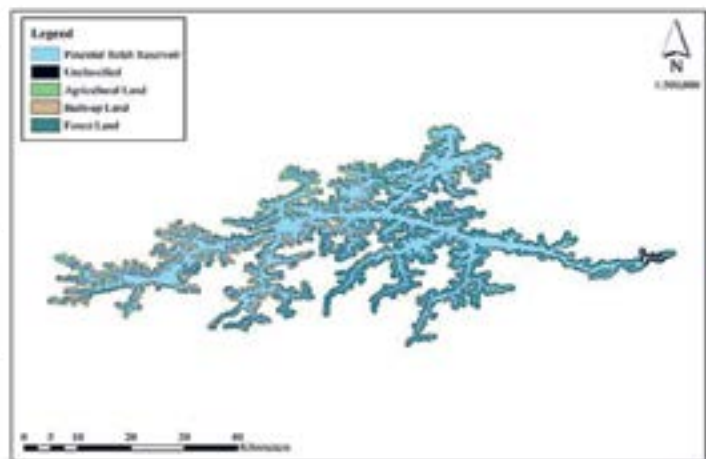
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Sarawak is blessed with abundance of water resources. The state is drained by forty major river basins and has a combined installed capacity of hydropower potentials of approximately 20,000 MW. In view of these potentials, this study was aimed to understand the general land use composition surrounding the existing and planned hydropower reservoirs in Sarawak. A total of ten sites was selected and the land use surrounding these study sites was identified using the Remote Sensing and Geographic Information System tools. The primary source of data was the United States Geological Survey (USGS)'s Earth Explorer. The remote sensing data were pre-processed by using ERDAS Imagine 2014 and were analysed by using ArcGIS 10.3. The satellite images were classified by using both unsupervised and supervised classification tools. A detailed assessment on land use changes was conducted for Batang Ai site. The study found that a total of six sites had higher forest land (>50%) compared to the built-up and agricultural lands. The regression analysis also found that 85% variation in built-up land was explained by the reservoir area and there was a strong correlation between the two variables. The detailed assessment found that agricultural land was calculated to have increased at the mean rate of 2.25% within 500-m buffer width from Batang Ai reservoir shoreline. The findings of this study shall contribute to the knowledge on hydropower reservoir planning and management. Therefore, the design of riparian buffer zone for future hydropower reservoirs shall take into considerations the size, function, management objectives, and the adjacent land uses surrounding each reservoir. The understanding on land use composition within 500-m width from the reservoir shoreline may contribute to the potential establishment of riparian buffer zone that serves various ecological functions and reservoir management objectives.

Code	Land Use	Colour	Description
1	Built-up Land		Residential areas, longhouses, facilities, access roads, logging road, mixed development or other built-up land
2	Agricultural Land		Cropland, orchards, shifting cultivation, monocrop cover
4	Forest Land		Undisturbed forests, secondary forest

Signature Editor Files for Supervised Classification



Land Use Classification within 500-m width for potential Baleh Reservoir in year 2016