

A Web Map Service Implementation for Assessment System of Tree Biodiversity in Dry Dipterocarp Forest

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ABSTRACT

This study aimed to implement a Web Map Service (WMS) for biodiversity assessment of trees in Dry Dipterocarp Forest (DDF). The study area was Nongrawiang Center of Rajamangala University of Technology ISAN. Nongrawiang Center establishes in the northeastern of Nakhon Ratchasima province, Thailand. Herein, GeoServer was used as WMS for biodiversity assessment of trees in DDF. Moreover, this study operated designing and system development to link data displaying for User Interface (UI) friendly based on PHP, GIS database management based on PostgreSQL, and retrieving of data layers based on Geoserver. This system development included 2 levels (administrator and member (general users)) and then this system development, was tested by Black box (to check errors of system), and was assessed by the concerned officers of Nongrawiang Center.

As a result, the spatial layers were created and storage in PostgreSQL such as line transect layer for sampling points, plot layer for tree survey, and the related-environmental layers (climatic layers, topographic layer, soil layer etc.). Then, GeoServer was implemented to serve such georeferenced layers over the internet that are generated by a map server using data from a GIS database that storage in PostgreSQL. Furthermore, this study created friendly user interface for administrator and general users. Herein this system tested by Black box and assessed in the satisfied levels that were in good to very good level from the concerned officers of Nongrawiang Center.

Key Words: Tree Biodiversity, Dry Dipterocarp Forest, Web Map Service, Nongrawiang Center