

FLORAL BIODIVERSITY ASSESSMENT OF THE RIPARIAN
ECOSYSTEM OF YLANG-YLANG RIVER WATERSHED,
CAVITE, PHILIPPINES

THESIS

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ABSTRACT

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The study was conducted in the riparian ecosystem of Ylang-Ylang River Watershed (YYRW) from August 2018 to March 2019. Specifically, it aimed to: (1) describe the vegetation of YYRW using vegetation index; (2) identify the floral species in the riparian ecosystem of YYRW; (3) assess the distribution of floral species in YYRW according to richness, evenness, abundance and dominance; and (4) identify the indigenous plant species and its category.

The Normalized Difference Vegetation Index (NDVI), through the use of LandSat® imagery year 2017 and ArcMap 10.5, was calculated to analyze the vegetation cover of YYRW. The collection and identification of floral species were done using quadrat sampling method. In total, 45 sampling sites were established every 2 kilometers of the riparian zones in YYRW.

The vegetation in YYRW ranges from low to high NDVI with a value of -0.40634 to 1. Among the four local government units, Silang has the highest vegetation cover while Dasmariñas City, General Trias City and Imus City have low vegetation cover due to land conversion into built-up areas. A total of 722 floral species were identified and categorized into trees, intermediate, and understory. Among the identified floral species, exotic floral species (64%) have a greater number than indigenous floral species (36%).

The computed Shannon-Weiner Diversity Index in YYRW has a value ranging from 1.531 (very low) to 2.348 (moderate). Meanwhile, the evenness level of floral species in YYRW ranges from 0.459 (high) to 0.930 (very high). Based on the results

of the biodiversity indices computation, the floral biodiversity in YYRW is low and evenly distributed. As an ecosystem becomes less diverse, competition among floral species within the watershed is very low causing high survival rate. Due to similarities in species, results indicate that YYRW is unstable and vulnerable to anthropogenic activities.

With this, the conservation of the remaining indigenous floral species, especially those categorized as vulnerable, is needed. A greening program (tree planting) of indigenous floral species must be proposed and implemented to help revive the river watershed. Lastly, a seminar or program on the importance of indigenous floral species must be organized to increase the awareness of the communities within the watershed.

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INTRODUCTION

Philippines is an archipelagic country (Department of Environment and Natural Resources-Biodiversity Management Bureau, 2014). It consists of 7,641 islands and islets (DENR-National Mapping and Resource Information Authority, 2017). It is also one of the biodiversity hotspot countries which harbors the greatest concentration of unique species (The Field Museum, 2018). The country has many indigenous species of plants which accounts to approximately 33 percent of its plants. It is also considered as one of the world's richest country in terms of flora and fauna biodiversity (DENR-BMB, 2016). Despite of these, Philippines ranks among the top ten with the largest number of species threatened with extinction globally (The Field Museum, 2018).

One of the richest provinces in the Philippines is Cavite with six major river watersheds and a protected area. It is one of the fastest growing provinces because of its close proximity to Metro Manila and numerous industrial parks, thus, it is considered as an "industrialized belt of the country" (Oxford Business Group, 2016). Cavite lies in the western monsoon forest zone which is very beneficial for the