

GENERAL

MAPPING

OVERVIEW

Maps represent the world on a smaller scale. To do mapping, methods such as study area determination, satellite image referencing, digitization, and image classification are done. This section provides the methods aforementioned to map the mangrove forest cover change in Jaro Floodway, Brgy. Bito-on, Jaro, Iloilo City.

A. Study Area Determination (Flores, Larroder)

The study area included the mangrove cover area at the mouth of the Jaro Floodway in Brgy. Bito-on, Jaro, Iloilo City (Figure 30). A grid with a 200 m spacing bounded by geographic coordinates 122.5836°E, 10.7487°N and 122.5982°E, 10.7361°N was created in Quantum Geographic Information System (QGIS) software, version 3.4.6. The grid served as a guide in downloading high resolution images from Google Earth for the years 2005, 2009, 2012, 2014, 2016 and 2018.

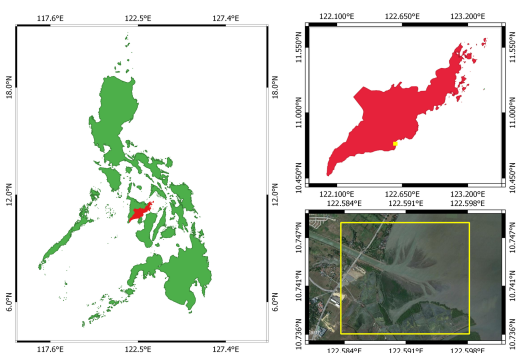


Figure 30. Study area.

B. Satellite Image Georeferencing (Flores, Larroder)

Satellite images available from Google Earth as of December 2018 were georeferenced using Google Earth Pro, version 7.3.2 and Smart Geographic Information System (SmartGIS) 2019, version 19.11. Images were available for the years of 2005, 2009, 2012, 2014, 2016, and 2018. The georeferenced images were saved as a Geospatial Tagged Image File Format (GeoTIFF), a format that incorporates the latitude and longitude data into an image, then imported as a raster layer to QGIS for digitization.

C. Digitization and Image Classification (Flores, Larroder)

The georeferenced images for each year were then classified into four (4) thematic classes using visual interpretation namely water, fishpond, mangrove, and non-mangrove areas. Water was identifiable as a dark blue color in the satellite image. Fishpond areas were rectangular shaped with a well-planned distribution, as seen through the satellite image. Mangroves were identifiable in the satellite images as green regions along the coast. These are the only plant species which could thrive on the salinity of the brackish water. Other areas which do not fit the criteria for the other three thematic classes were classified into a non-mangrove area. Every thematic class was then manually traced over using QGIS and saved as a shapefile layer. After the digitization process, the area of each thematic class, which was measured in hectares, was automatically determined by the software. An ocular inspection was also conducted in order to verify the classified areas.

