



Figure 3.27 Vegetation survey area.

3.6.1.1 Physiognomic Type

Strata/Lifeform, Height, Cover, Diagnostic Species - The community were visually divided into vegetation layers (strata). The average height of the stratum, and average percent cover were indicated and compared based on the vegetation category in Table 3.13. The classification of the vegetation type found within the study area was based on the definition described given in Table 3.13 whereby the formation classes were defined by the relative percent cover of the tree, shrub, dwarf shrub, herbaceous and nonvascular strata.

Table 3.13 Vegetation category including description of each category.

Category	Vegetation Type	Definition (modified from the UNESCO (1973) /29/ and Driscoll (1984) /30/ as presented in The National Vegetation Classification Standard /31/)
C1	Forest	Trees usually over 5 m tall with crowns interlocking (generally forming 60-100% cover). Shrubs, herbs and nonvascular plants may be present at any cover value.
C2	Woodland	Open stands of trees usually over 5 m tall with crowns not usually touching (generally forming 25-60% cover). Shrubs, herbs, and nonvascular plants may be present at any cover value.
C3	Sparse woodland	Trees usually over 5 m tall with widely spaced crowns (generally forming 10-25% canopy cover). Shrubs herbs and non-vascular plants may be present with any cover value.
C4	Shrubland	Shrubs and/or small trees usually 0.5 to 5.0 m tall with individuals or clumps not touching to interlocking (generally forming >25% canopy cover). Trees may be present, but with cover 10% or less. Herbs and nonvascular plants may be present at any cover value.
C5	Sparse shrubland	Shrubs and/or small trees usually 0.5 to 5 m tall with individuals or clumps widely spaced (generally forming 10-25% canopy cover). Trees may be present, but with cover 10% or less. Herbs and nonvascular plants may be present at any cover value.
C6	Dwarf shrubland	Low growing shrubs and/or dwarf trees are usually under 0.5 m tall (though known dwarf forms between 0.5 and 1 m can be included), individuals or clumps not touching to interlocking (generally forming >25% cover). Trees and shrubs greater than 0.5 m may be present but cover with canopy cover 10% or less. Herbs and nonvascular plants may be present at any cover value.
C7	Sparse dwarf shrubland	Low growing shrubs and/or dwarf trees usually under 0.5 m (though known dwarf forms between 0.5 m and 1 m can be included) with individuals or clumps widely spaced (generally with 10 %-25 % cover). Trees and shrubs greater than 0.5 m may be present, but with cover 10% or less. Herbs and nonvascular plants may be present at any cover value.
C8	Herbaceous	Graminoids and/or forbs (including ferns) generally forming >10 % cover. Trees, shrubs, and dwarf shrubs may be present, but with cover 10% or less. Non-vascular plants may be present at any cover value.
C9	Sparse vascular vegetation/non-vascular	Vascular vegetation is scattered or nearly absent. The cover of each vascular life form (tree, shrub, dwarf shrub, herb) is at most 10%; in some cases the total cover of vascular vegetation may exceed 10%. Cover of nonvascular plants (mosses and lichens) may be absent to continuous.

3.6.2 Results

As shown in Figure 3.28, the northern part of the study area, which is a part of Sultan Mahmud Airport, are grassland which is classified as herbaceous. Adjacent to this is area is also herbaceous as it contains creepers of >10% cover and *Casuarina* sp. trees that covers less than 10%. Further south of the coastline (including Area 1), the vegetation type is a mix of woodland and herbaceous vegetation. The woodland consisted largely of *Casuarina* sp. trees (Photo 3.50), with canopy cover between 40% and 60%. Creepers (Photo 3.51) and grasses were found among these trees and covering the rocks.



Figure 3.28 Vegetation types present within 200 m from the Project.

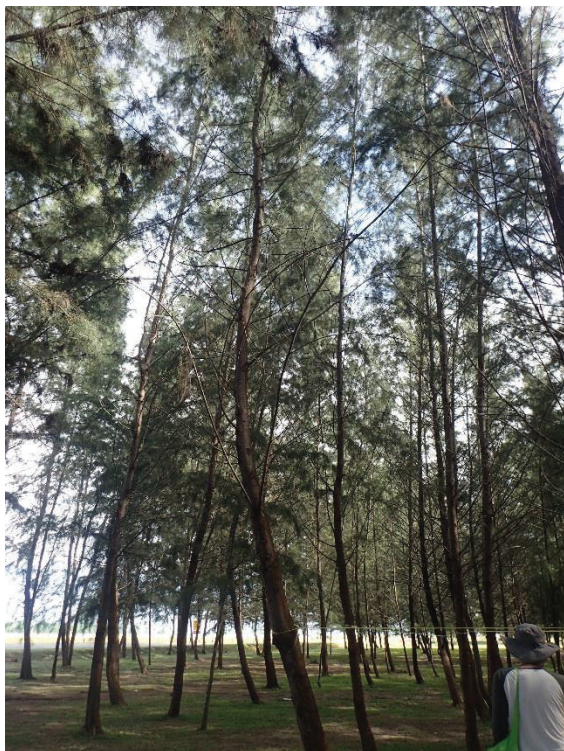


Photo 3.50 *Casuarina* sp. trees forming woodland at Area 1.



Photo 3.51 Creepers found over rocks at Area 1.

Further southwest is an area (which includes Area 2) that is similar to Area 1 but with more open spaces which are covered with grass (Photo 3.52). Due to the low trees and shrub cover (<10%), the vegetation type in this area is classified as herbaceous. Other species present within Area 2 are sea almond (*Terminalia catappa*) and coconut (*Cocos nucifera*) trees (Photo 3.52). Shrubs such as screw pine (*Pandanus* sp.) as shown in Photo 3.53 was also observed at this site. The remaining area not populated with trees or shrubs are covered with herbaceous plants and grass. Close to Area 2, rows of *Casuarina* sp. trees lined the roadside and with height of more than 5 m and canopy cover between 10-25%, this area has been categorised as sparse woodland.



Photo 3.52 Left: Open spaces covered with grass with a row of *Casuarina* sp. in the background; Right: Trees such as sea almond and coconut were observed within Area 2.



Photo 3.53 Left: Screw pine found within study Area 2; Right: Grass and other herbaceous plants.

Adjacent to Area 2 is a large area comprised of woodland vegetation. Orderly rows of young *Casuarina* sp. (Photo 3.54) were observed, indicating that the trees have been planted in the last few years. A few screw pine shrubs were also observed among the *Casuarina* sp. trees (Photo 3.55).



Photo 3.54 Orderly rows of *Casuarina* sp. trees at study Area 3.