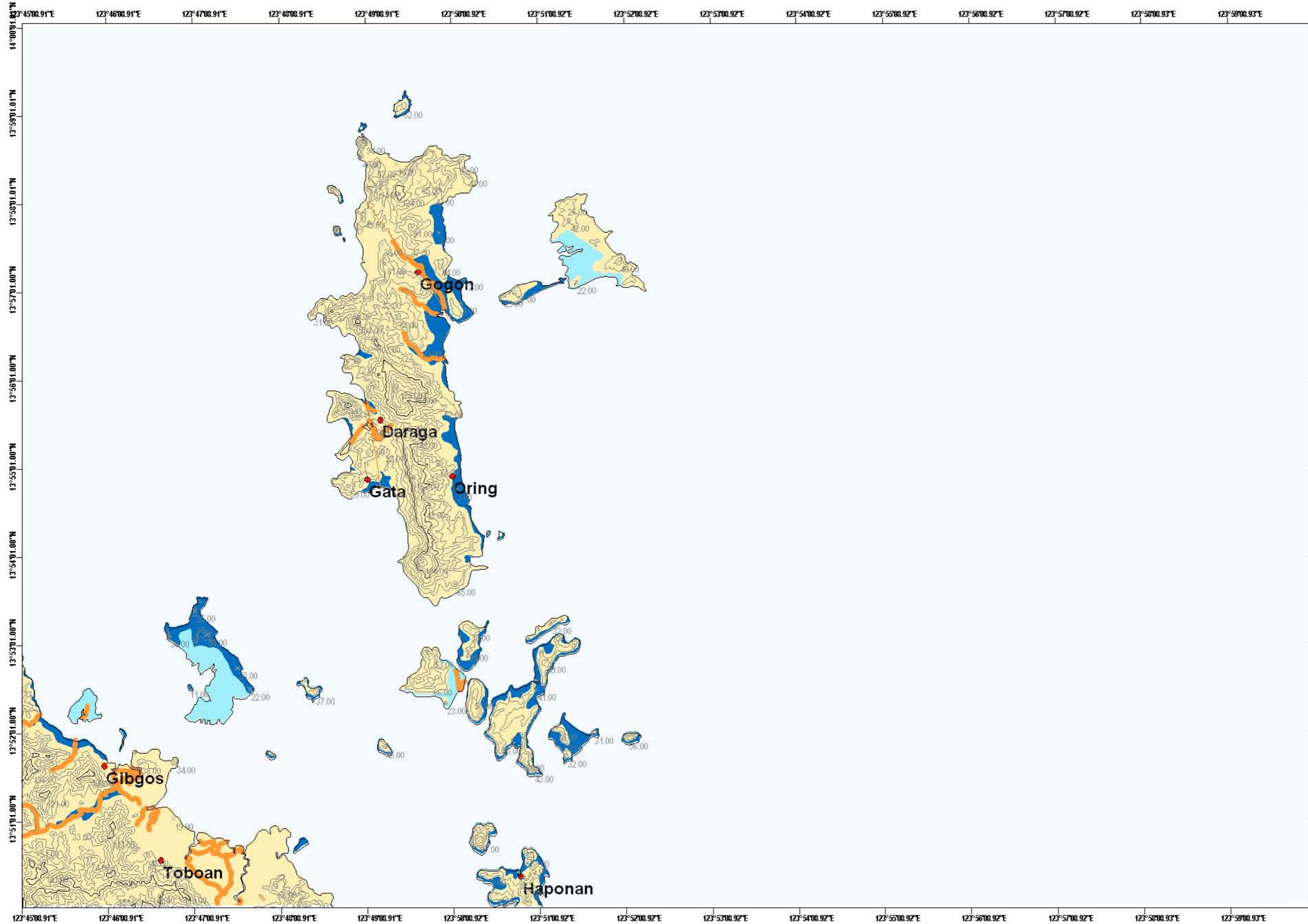


# FLOOD HAZARD MAP OF GIBGOS QUADRANGLE



**MAP LEGEND:**  
Flood Hazard Zones:

- Frequently to regularly flooded areas
- Occasionally to rarely flooded areas
- Non flood prone areas
- areas prone to bank erosion

— River  
— Road

**EXPLANATIONS :**  
Flood hazard susceptibility zones were derived based on the geomorphological analysis of landforms and the fluvial system. Information on flood occurrences, flood depths, duration of inundation as well as topographic information supported the geomorphologically-based flood hazard mapping.

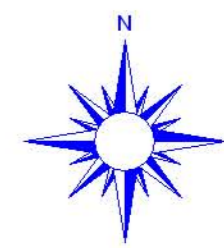
**Regularly to Frequently Flooded Areas :**  
Areas that are frequently flooded. Mere heavy rains of 1 to 2 days could bring about flooding in these areas. Moderate to strong typhoons could submerge these areas to 0.5 to 3 m. in flood waters for a few days to a few weeks. This type of flood occurs on backswamps & river terraces of Bicol River. Housing development in these areas is not recommended.

**Occasionally to Rarely Flooded Areas :**  
Areas that become inundated during moderate to strong typhoons. Flood depths vary from a few centimeters to 1 meter. Floods last from a few hours to a few days.

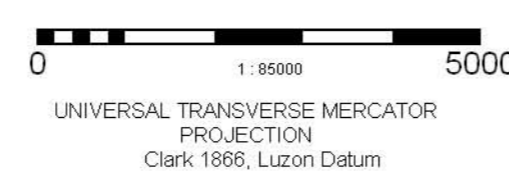
**Non-Flood Prone Areas :**  
Areas with no reported flood occurrences except along low lying

Field data collection by : D. R. Dizon  
GIS processing by : D. R. Dizon  
Digital Processing by : R. L. Mapalad  
Checked by : A. E. Dayao  
Approved by : R. A. Juan

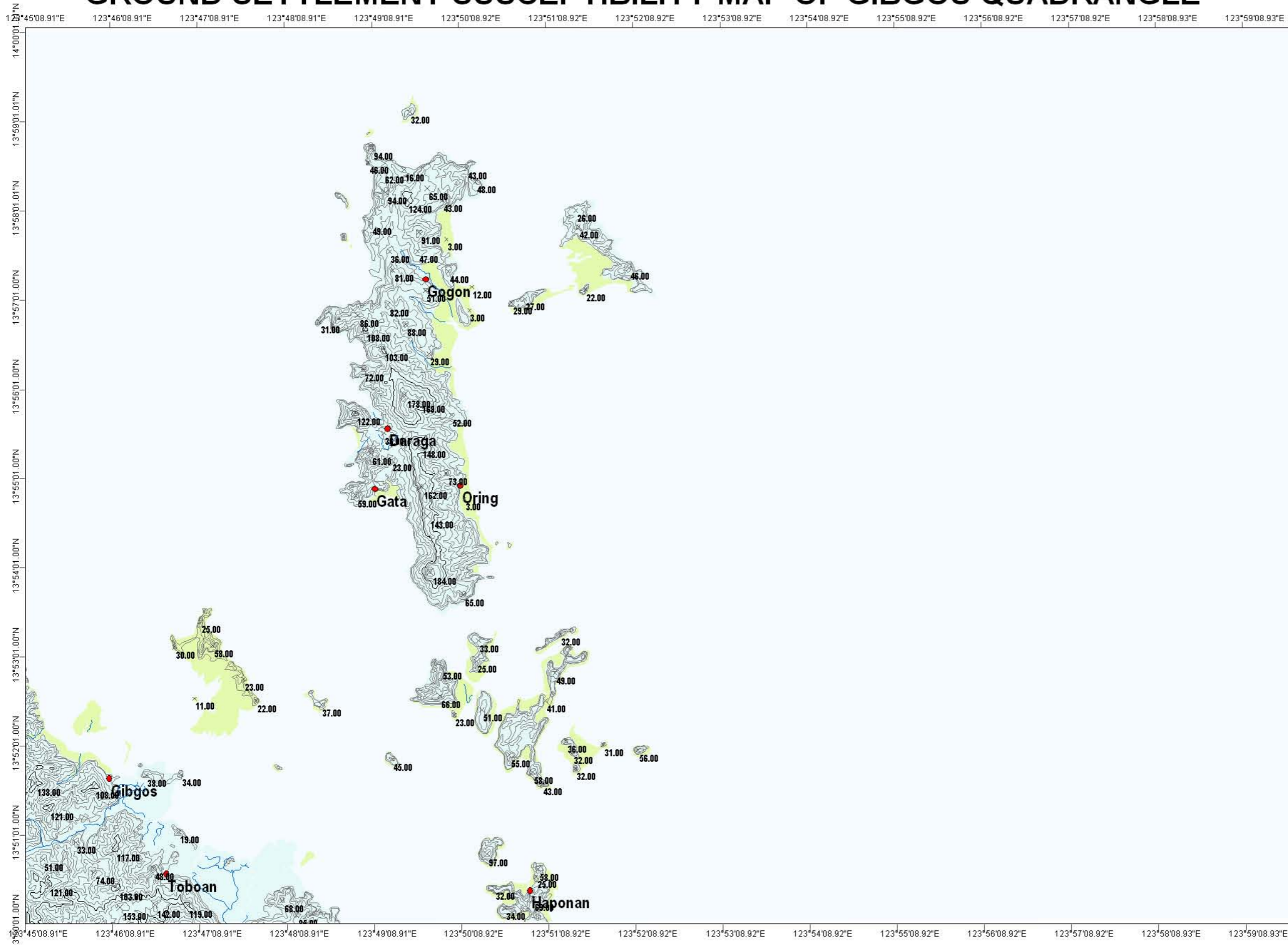
Other sources of Information :  
1:50,000 scale NAMRIA Topographic Map  
1951 B/W Aerial Photographs



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# GROUND SETTLEMENT SUSCEPTIBILITY MAP OF GIBGOS QUADRANGLE



**MAP LEGEND :**

**Ground Subsidence and Ground Settlement Susceptibility Zones :**

- Areas not prone to ground settlement/subsidence
- Areas susceptible to ground settlement

**EXPLANATIONS :**

Susceptibility map for ground subsidence due to karst of solution processes was primarily derived from the lithologic map of the study area. Areas of possible ground settlement were delineated through the analysis of the geomorphology of the study area, the sub-surface soils and the ground water levels.

Areas Susceptible to ground settlement : areas where fluvialite sands, silts and clays coupled with shallow ground water table are site of possible ground settlement. ground settlement may be reduced through appropriate foundation design. Buildings having 3 storeys or more should be tested for settlement and/or consolidation. Buildings having 5 storeys or more should undergo detailed geotechnical studies.

Areas not susceptible to ground settlement or ground Subsidence:  
Areas where the possibility of ground settlement or ground subsidence is low or absent.

Field data collection by : D. R. Dizon, J. Malto, M. Miraballes, E. Basilan  
 Geomorphological Interpretation by : D. R. Dizon  
 Digital catographic processing by : D.R. Dizon  
 GIS Processing by : D. R. Dizon  
 Checked by : R. A. Juan  
 Approved by : R. A. Juan

Other sources of information :  
 1:50,000 NAMRIA Topographic Map  
 1951 Aerial Photos

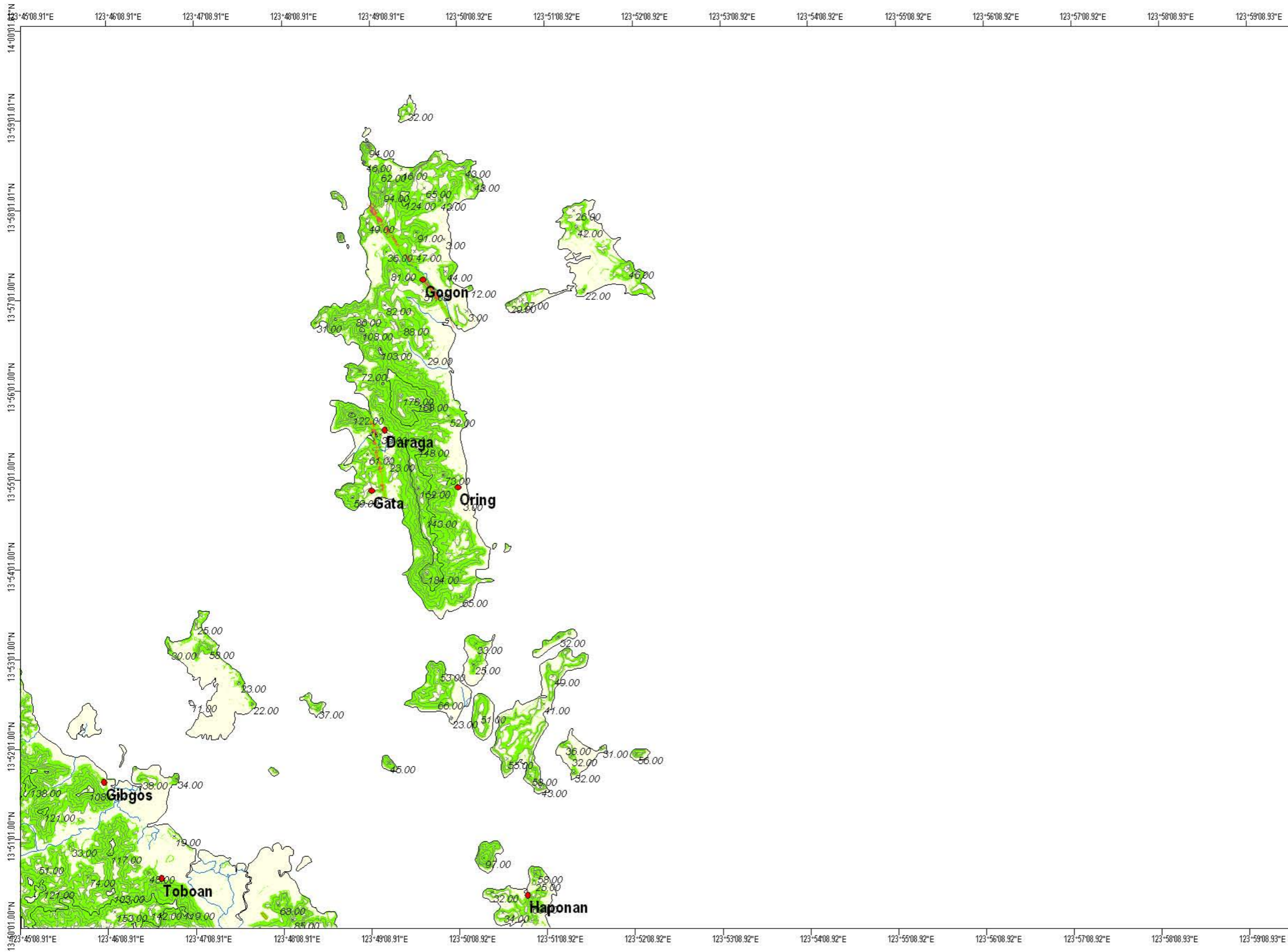


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 2008



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 Clark 1866, Luzon Datum

# LANDSLIDE SUSCEPTIBILITY MAP OF GIBGOS QUADRANGLE



**LEGEND:**

Landslide Susceptibility Zones:

- Low to Absent
- Low Susceptibility
- Moderate Susceptibility
- High Susceptibility

- 10
- fault
- river
- road

**EXPLANATIONS:**

Landslide hazard susceptibility zones were derived through qualitative map combination using lithology, geomorphology, slope gradient, road distance and fault distance. GIS was used in the map combination and subjective weights were assigned to each unit in the parameter map.

**Areas with High Susceptibility to Landslides :**  
Areas with equally high probability of occurrences of mass movements particularly rock slides, debris slides and slumps. Very steep to nearly vertical slopes and areas along fault lines are rated high susceptibility areas and are unsuitable for housing development and human settlement.

**Areas with Moderate Susceptibility to Landslides :**  
Areas having moderate likelihood of occurrence of landslides and are recommended for more detailed engineering geological and geohazard assessment prior to housing development.

**Areas with Low Susceptibility to Landslides :**  
Areas where the occurrence of landslides is low.

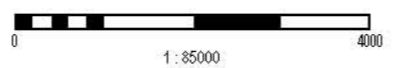
**Absent:**  
Areas where the likelihood of landslide occurrence is absent.

Field data collection by : D. R. Dizon  
Geomorphological Interpretation by : D.R. Dizon  
Digital cartographic processing by : D.R. Dizon  
GIS processing by : D.R. Dizon  
Checked by : A.E. Dayao  
Approved by : R.A. Juan

Other sources of Information :  
1:50,000 NAMRIA Topographic Map  
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