NEVIS DROUGHT RISK

LEGEND

- LOW RISK
- MODERATE RISK
- HIGH RISK
- VERY HIGH RISK
- WATER ZONES NUMBER
- Roads
- Contours
- SETTLEMENTS
- Nevis water resource
- WELLS
- STORAGE RESERVOIRS
- "PONDS"
- "SPRINGS"
- "DAMS"

EXPLANATORY TEXT

Drought Risk Criteria for Mapping

Mapping of areas on the basis of their risk to drought, namely, low, moderate, high, very high is based on a set of criteria. Vulnerability to drought is associated with each criterion:

Environmental Meteorological

-Rainfall < 45 inches
-Exposure (wind)
-Strong marine influence
-Shallow soils
-Slopes >10°
-Cactus scrub vegetation
-Absence of moist forest (Palm Break, Montane, Elfin Woodland)
-Absence of Dry Evergreen Forest
-Absence of Dry Scrub Woodland

Hydrological/Infrastructural

-Absence of wells/springs
-Absence of storage reservoirs, ponds/dams

Human/Landuse

-Grazing
-Cultivated crops
-Settlements

Level of risk was determined by giving each criterion a numerical value of 1 and the total value used to rank watersheds as shown:

Low drought risk 1-5
Moderate drought risk 6-8
High drought risk 9-10
Low drought risk 11-12

Ranking was determined by:

-the spatial occurrence of vulnerability themes (criteria) in each watershed; and by
-overlaying themes and observing the frequency and extent to which intersecting of themes occurred.

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PGDM WEBSITE:

http://www.OAS.org/pgdm

USE AND LIMITATIONS OF MAP

Drought risk ranking by water zones for Nevis was achieved by manipulating data from six (6) data maps (rainfall, vegetation, soils, slopes, watersheds and land use) in accordance with the described drought risk criteria. This drought risk map can be used by planners and administrators as a point of departure for spatial analysis of vulnerability issues at the water zone level. Spatial analysis within and across water zones can be facilitated by GIS overlay or merging applications using digital versions of the data maps, along with a digital contour map previously produced by the PGDM project.

Only limited field observations were possible in preparing the data maps. Therefore, secondary sources were primarily used and problems were encountered getting up-to-date information for mapping. Inadequate infrastructure for data collection and management was also found to be a limiting factor in map preparation for the island. Therefore, while this drought risk map provides a useful point of reference for drought mitigation, field investigations are required to update information on the data maps, in some cases, to support additional spatial analysis of vulnerability and risk at the water zone level that would be critical to drought mitigation.