

INTRODUCTION TO DROUGHT INDICES

INTRODUCTION

Success of Georgia's agricultural community is in part dependent on the amount and timing of precipitation. National focus on El Nino and it's effects further emphasize the importance of understanding climate conditions.

WHAT IS A DROUGHT?

A drought can be defined as *abnormally dry weather sufficiently prolonged to cause serious hydrological imbalances*. By definition a drought can vary in time and space, depending on an area's water budget. Components of the water budget are separated into inputs and outputs. Inputs include precipitation in the form of rain, sleet, hail, or snow. The primary output is evapotranspiration. Other important factors include water stored in the soil and that which runs over land. All of these components of a water budget influence the timing and magnitude of droughts.

DROUGHT SEVERITY

The severity of a drought can be measured climatically, socially, and economically. A fundamental problem is determining the severity of a drought. Droughts affect individuals in different ways. For example, you might "feel" the effects of a drought when your water bill goes up. A farmer might measure drought conditions in bushels/acre. To make the measurement of drought conditions more meaningful, indices have been developed which examine different meteorological and hydrological conditions.



DROUGHT INDICES

Palmer Drought Severity Index (PDSI)

PDSI is a meteorological index of the severity of a wet or dry period. The monthly/weekly index value ranges from -6 to +6. Negative values indicate a dry period, whereas positive values indicate a wet period. This index is generally used to examine short-term weather conditions.

Palmer Hydrological Drought Index (PHDI)

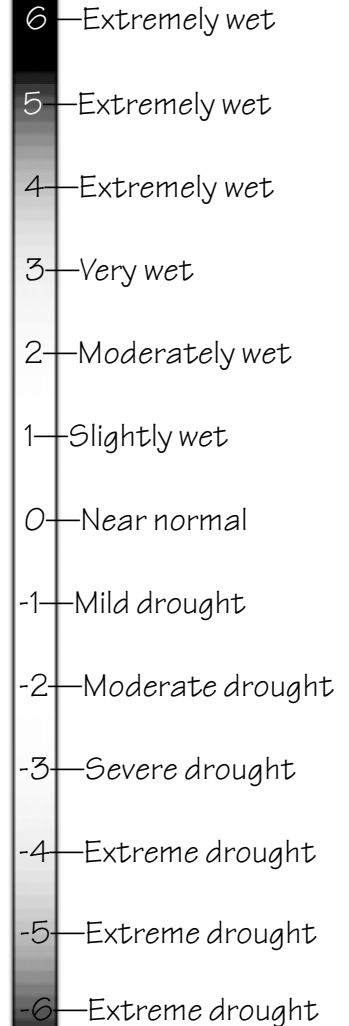
PHDI is a hydrological index of the severity of a wet or dry period. The monthly index values are exactly the same as PDSI. This index is generally used to examine long-term moisture conditions.

Percent of Normal

This index of drought is very useful for examining a single region or season. It is calculated by dividing the actual precipitation by the annual average multiplied by 100%. Values for this index range from 0 - 100, where 100 indicates normal precipitation.

Crop Moisture Index (CMI)

This index uses meteorological information to monitor weekly crop conditions. CMI is based on weekly average temperature and precipitation. Because this index was developed for short-term monitoring, it may be misleading over the long-term.



Need more info? National Drought Mitigation Center <http://enso.unl.edu/ndmc/>

Georgia State Climate Office
Driftmier Engineering Center
University of Georgia
Athens, Georgia 30602-4435

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<http://www.bae.uga.edu/climate/>
climate@bae.uga.edu
706-542-8806(fax)