

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
GAINESVILLE, FLORIDA**

TECHNICAL NOTE ENG-FL-22 - 30 Day Curve Number

PURPOSE. This technical note is to provide information on the 30 day curve number (CN) by climatic zone for Florida. A 30 Day CN can be used to estimate runoff from a watershed on a monthly basis or when a daily level of accuracy is not necessary. A 30 day CN is also a required input to computer programs such as AWM (Animal Waste Management), WATNUTFL (Water Budget and Nutrient Balance Worksheet), and RIP (Resop Input Program for design of dry hydrants). These programs calculate a monthly water budget for a storage facility/reservoir.

BACKGROUND. Because of varying rainfall patterns in Florida, six different sites were selected to determine the 30 day CN. For the selected sites, the daily rainfall data were obtained from the UDSA-NRCS Climatic Data Center in Portland Oregon. Over 50 years of rainfall data were obtained for each site and analyzed. Daily runoff was calculated using the NRCS curve number procedure and summed over 30 day periods. The 30 day rainfall for the same periods were then used with the 30 day runoff values to calculate a 30 day curve number. This process was repeated for a range of curve numbers from 45 to 95 to create a chart of curve number versus 30 day curve number (See Figures 2 through 5).

The values of the 30 day curve number were averaged over the period of rainfall record for each station. These values were then used to determine the values for 30 day CN by climatic zone. Climatic zones 3 and 4 were combined as well as climatic zones 5, 6, and 7 since the 30 day CN curves for these data sets were very similar.

DETERMINING 30 DAY CURVE NUMBER. Figure 1 shows the climatic zones of Florida. Figures 2 through 5 show the relationship of a 1 day curve number to the 30 day curve number by climatic zone. To estimate the 30 day curve number, first estimate the curve number for the site (using Chapter 2 of the National Engineering Handbook, EFM2, TR 55, etc.). Once the curve number is calculated, then use the curve for the site's climatic zone to determine the 30 day curve number.

Example

What is the 30 day curve number to use in the RIP program for the proper design of a dry hydrant in Defuniak Springs, Florida. The current watershed contributing runoff to the dry hydrant has a curve number of 75.

From Figure 2 for climatic zone 1, the 30 day curve number for a normal curve number of 75 is 48.

Figure 1: Climatic Zones of Florida

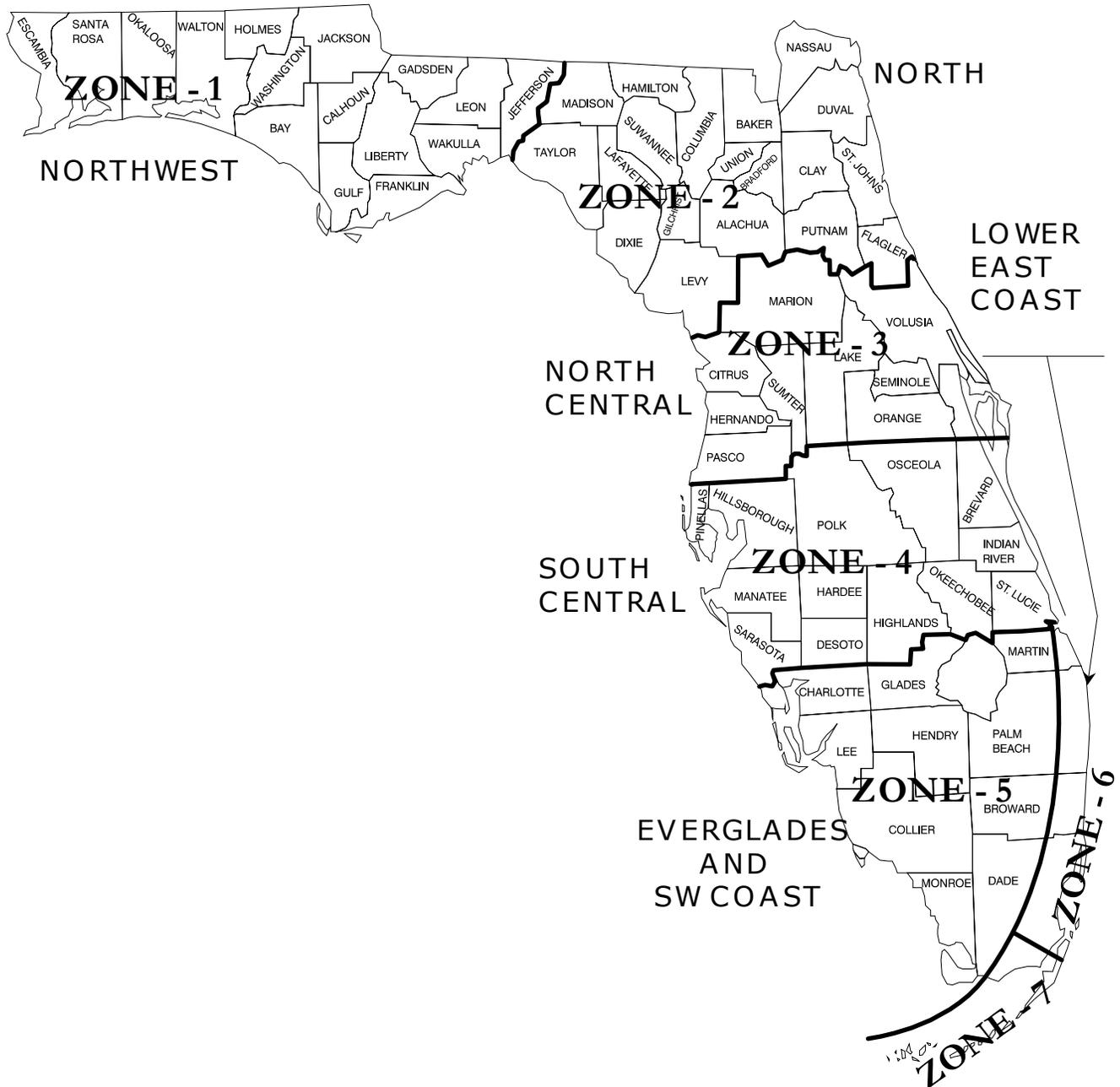


Figure 2: 30 Day Curve Numbers for Zone 1

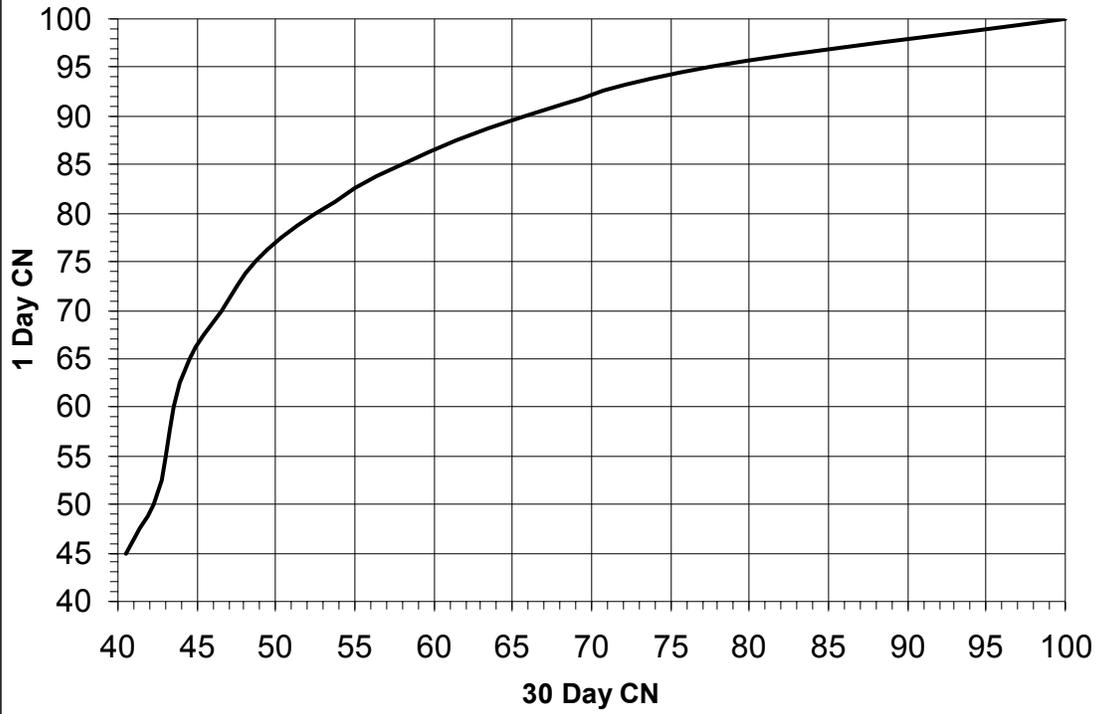


Figure 3: 30 Day Curve Numbers for Zone 2

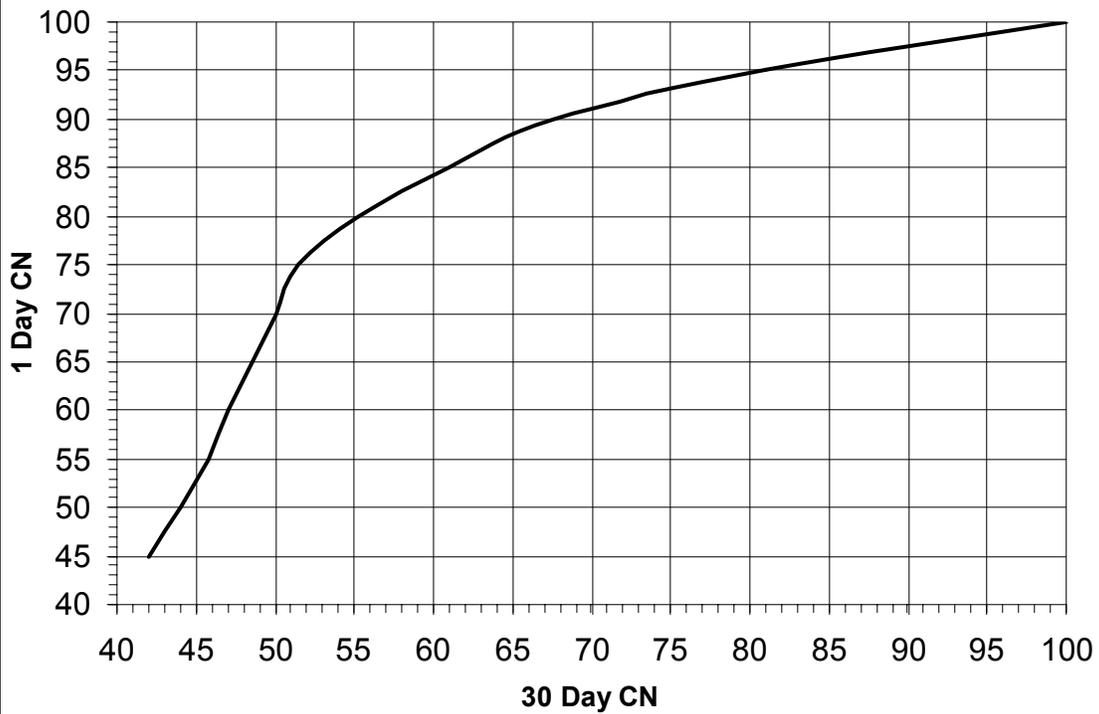


Figure 4: 30 Day Curve Numbers for Zones 3 & 4

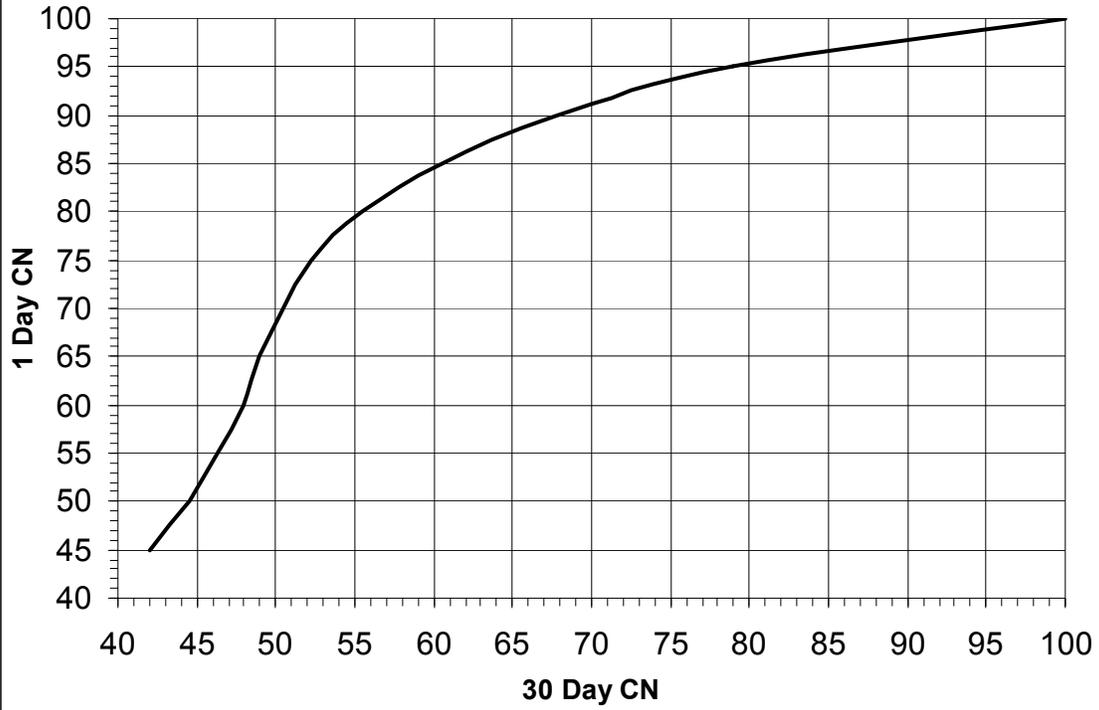


Figure 5: 30 Day Curve Numbers for Zones 5, 6, & 7

