

FL630.0901(d) 30 day curve number

A 30 day curve number (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.

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 USDA-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 was then used with the 30 day runoff values to calculate a 30 day CN. This process was repeated for a range of curve

numbers from 45 to 95 to create a chart of 1 day CN versus 30 day CN (See Figures 2 through 5).

(1) Determining 30 day curve number

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

Example

What is the 30 day CN 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 CN of 75.

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

Figure 1 Climatic zones of Florida



Figure 2: 30 Day Curve Numbers for Zone 1

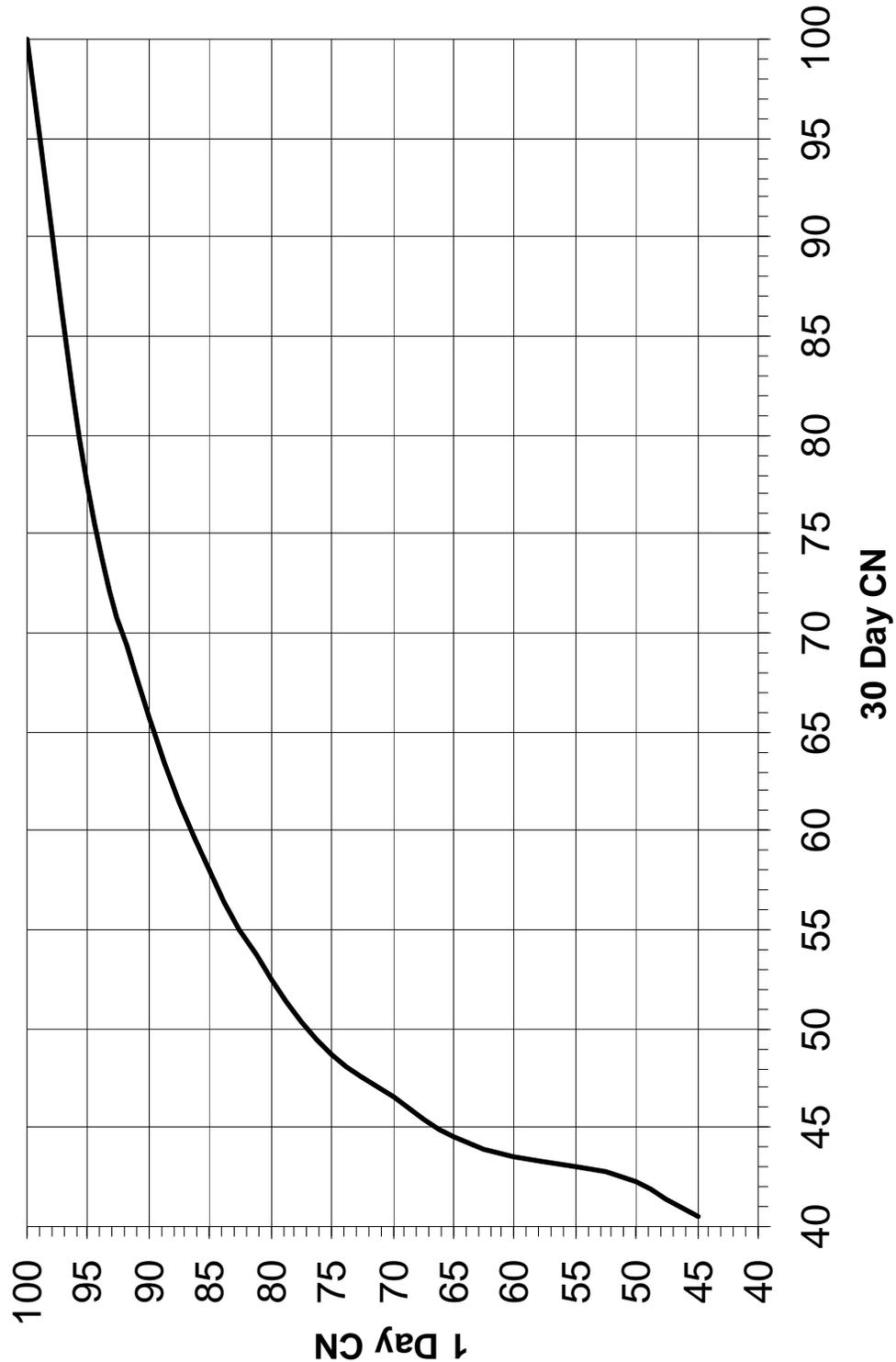


Figure 3: 30 Day Curve Numbers for Zone 2

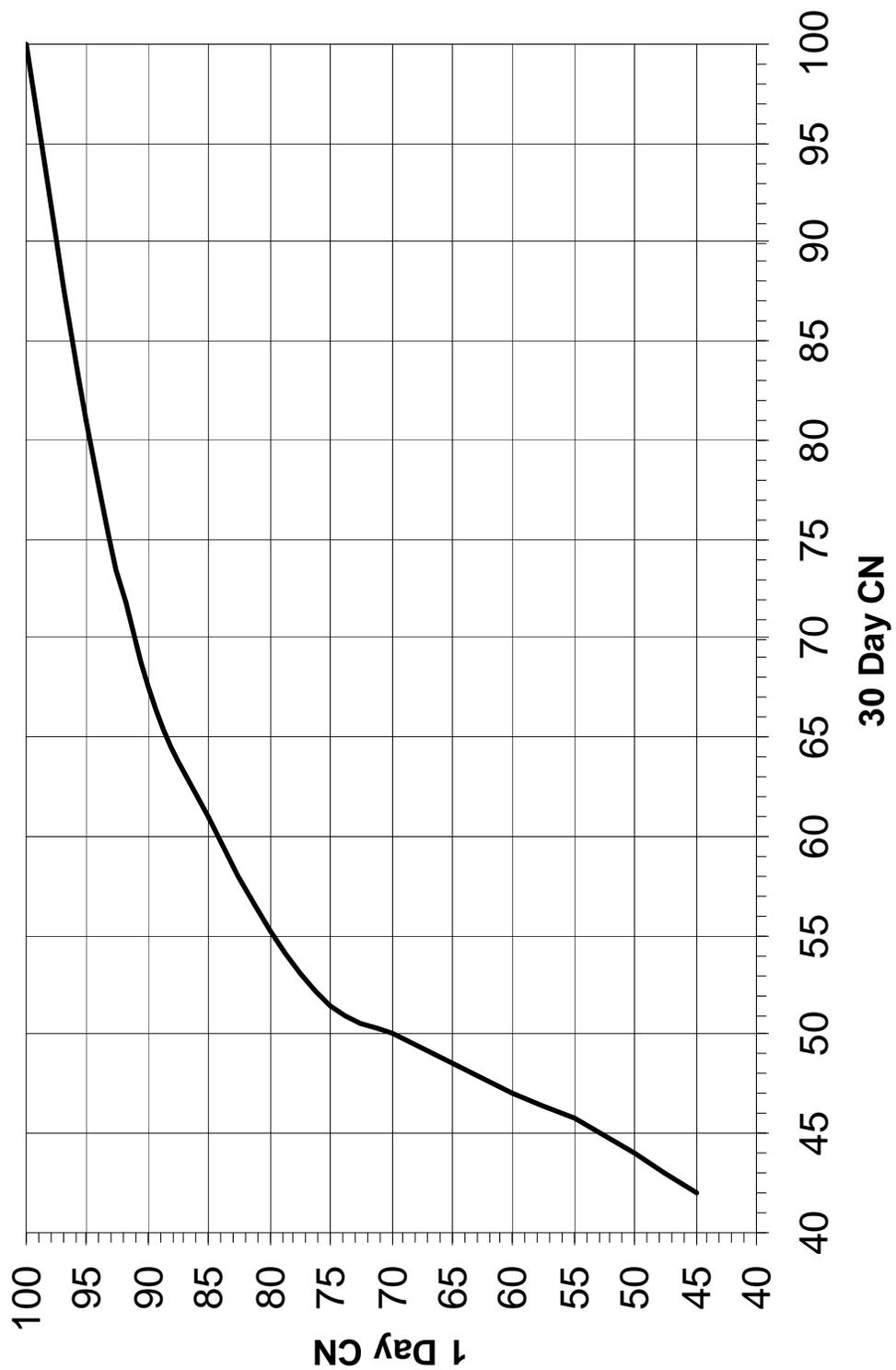


Figure 4: 30 Day Curve Numbers for Zones 3 & 4

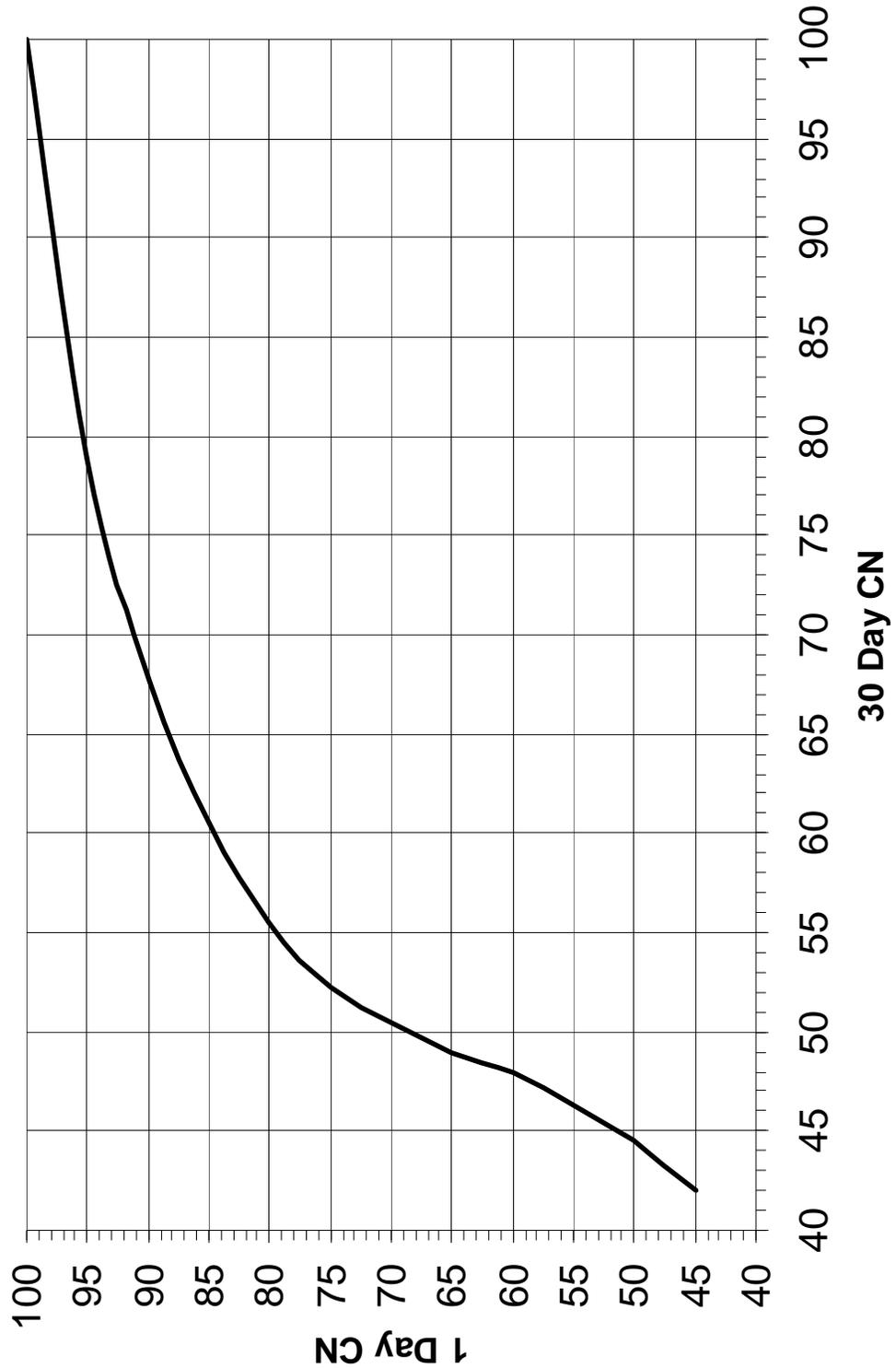
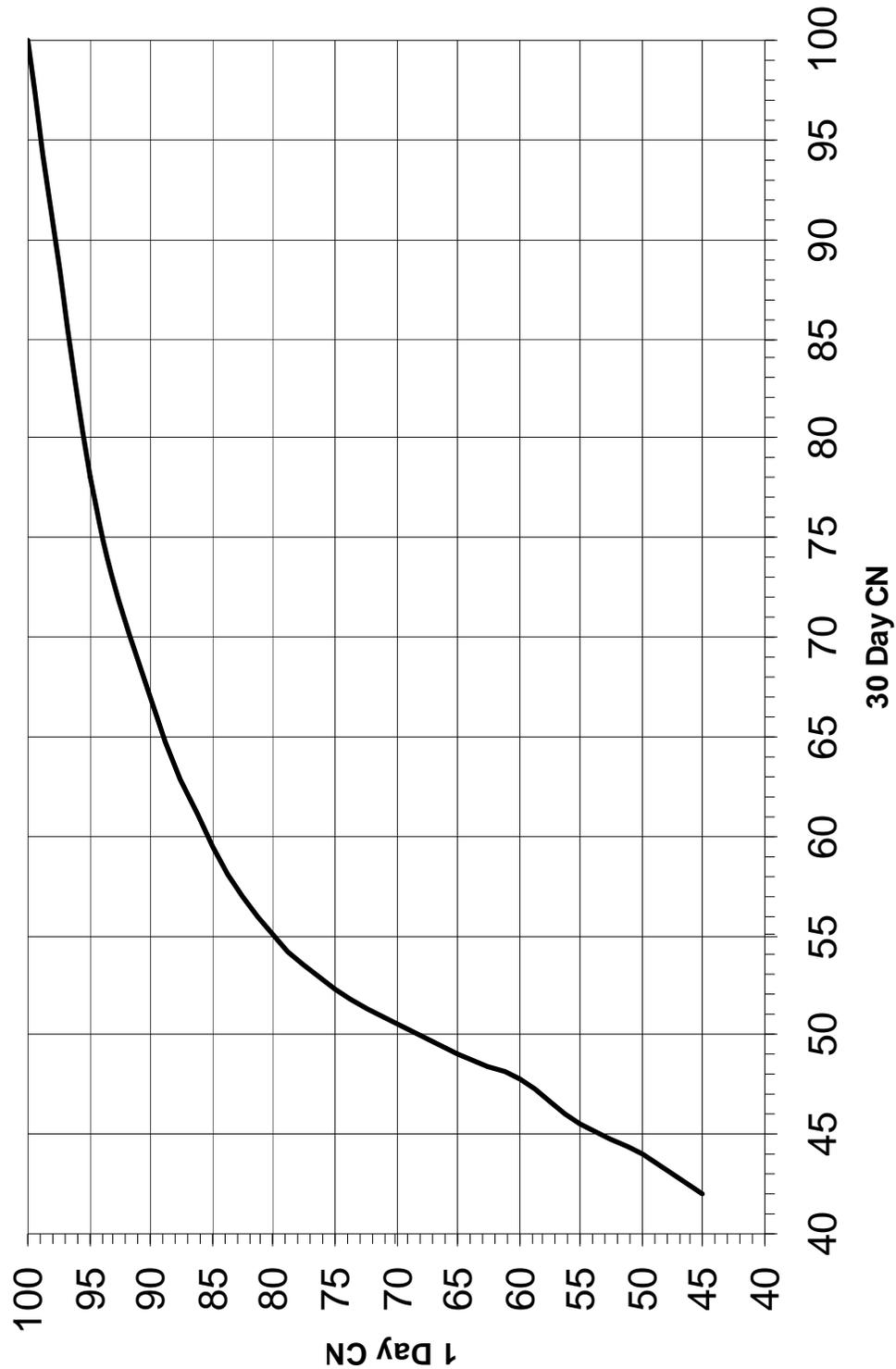


Figure 5: 30 Day Curve Numbers for Zones 5, 6, & 7



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