Appendix E – Estimating Hydrologic Cover Density

HYDROLOGIC COVER DENSITY (from ADOT, 1968)

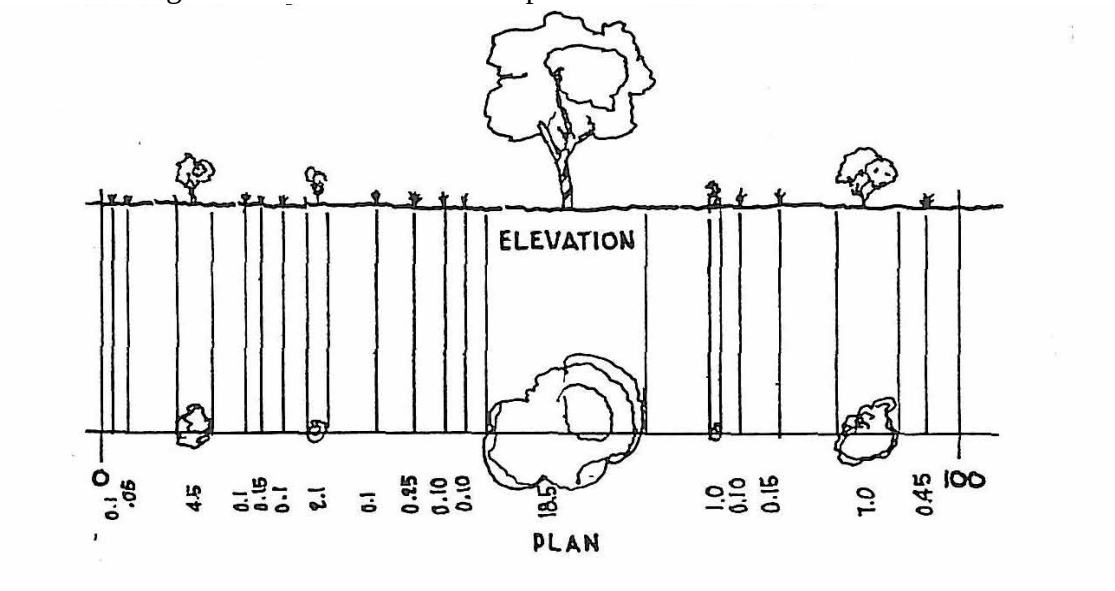
Hydrologic cover density is defined as the percent of the ground surface covered by the crown canopy of live plants and litter. The Soil Conservation Service determines vegetation cover density by field surveys of carefully selected locations within the drainage area. However, where runoff from numerous small drainage areas is to be calculated, an approximation of the vegetative cover based on visual observation may be adequate. Three broad ranges of vegetative cover density have been established:

- Poor 0 - 20% Vegetative cover
- Fair 20% - 40% vegetative cover
- Good 40% + Vegetative cover

When possible, vegetative cover densities should be determined by field investigation conducted in the following manner:

1. An area representing the typical vegetative cover density for the drainage area is selected.
2. A 100 foot chain is stretched out between two posts, approximately 3 feet above ground level.
3. The intercepts of the vegetative cover along the 100 foot length are noted.
4. The total distance covered by vegetation and litter along the 100 foot length are summed up and represent the percent of vegetative cover for the selected area.
5. Several determinations may have to be made to compute the average percent of cover for the drainage area.

The following sketch illustrates the field procedure:



Vegetative Cover = 0.1+ 0.05 + 4.5 + 0.1 + 0.15 + 0.1 + 2.1 + 0.1 + 0.25 + 0.1 + 0.1 + 18.5 + 1.0 + 0.1 + 0.15 +7.0 + 0.45 = 34.5’

$$\text{Density} = \frac{34.5'}{100'} = 34.5\%$$

While the aforementioned field procedure is not required for drainage studies, an understanding of the method used in determining the vegetative cover density by field survey methods will aid in visual determinations.

When large scale aerial photographs are available, they may be used in a similar manner to determine the vegetative cover density.