

Substations or stations with homogeneous vegetation will be referred to as stands. Each stand was sampled by 5 to 25 quadrats, according to the homogeneity of the vegetation and/or the area of the stand. The quadrat was a heavy wire frame one square foot in area. With the aid of a face mask, the rooted plants within the quadrats were uprooted and brought to the surface. But sometimes, where the depth and substrate were suitable, a rake was used to denude one square foot of the bottom (estimated), instead of uprooting by hand.

To determine the volume of the plants, the displacement of water by the plants removed from the quadrats was measured using the method described by Dr. Davis (cited above), and an average volume per square foot was calculated for each stand. Since the specific gravity of submerged plants is close to one, these figures were used as an estimate of the wet weight of the plants. The percentage cover of the vegetation in each section of river was multiplied by the weight of the vegetation of the stand sampled in that section, and the results were converted to lbs./acre wet weight for each section. Wet weight of the vegetation in each section was weighted by the estimated relative area of the section in the river and the resulting figures were combined to produce an estimate of the average wet weight/acre in the river.

The percentage of volume contributed by each species was estimated for each quadrat, and an average was obtained for each stand. These figures were then weighted by the percentage cover and percentage area of each stand in the river, in the same manner as described above for the combined wet weights. Thus the percentage of the wet weight of plants in the river contributed by each species was obtained. The percentage of water content of each species as previously determined by Dr. Davis (unpublished data) was used to obtain the dry weight contributed by each species to the average dry weight/acre for the river.

Estimates of total standing crops, both as wet and dry weight, and the percentage of the total dry weight which was contributed by each species are presented in Table 1.

Figures 1 and 2 illustrate the spring-river systems whose standing crops were summarized in Table 1, and the locations of stations and the area estimated as representative of each station are shown.

Across a river, from shore to shore, different communities often occur within small areas, even at the same depth. Frequently, an environmental correlation is obvious, e.g., different substrates. However, in other situations no reason for the differences is apparent and it is probable that historical factors such as disturbance, availability of propagules, and conditions conducive to clone formation were largely responsible for the non-uniformity of the vegetation.