(which may also tend to decrease vegetative canopy cover during the typically dry spring months).

The annual basinwide ET in these watersheds ranged from 840 mm to 1080 mm. They are all less than the ET_p value of 1200 mm given in Table 3. The most likely reason is that the watersheds do not meet the Penman criterion of "full canopy cover, never short of water" over all areas of the watershed throughout the entire year.

3.1.2 Monthly Water Budget

The EAA consists of about 190,000 hectares, for which the water budget method was applied (Mierau, 1974). In 1980 about 75% of the area was used for sugarcane production and the remaining 25% of the area was under truck crop and pasture production. Several unique features exist in the EAA. First, only organic soil is found in this area. Second, it is entirely devoted to intensive agricultural production. Third, the crops are produced year around. Fourth, it is surrounded by levees and the inflow and outflow are well regulated by gates and pump systems. Fifth, the canal system within the basin is well maintained for seepage irrigation and drainage. Sixth, historical water budget components have been monitored extensively. Seventh, it is an area of negligible surface outflow and Floridan aquifer leakage (Stewart, 1980). Because of these unique features, the EAA is considered to be ideal for demonstration of the application of the techniques introduced in the previous section (Shih, et al., 1983).

Climatological data were obtained from the weather station located at the University of Florida's Agricultural Research and Education Center (AREC) in Belle Glade. Averages based on 52 years' (1924–75) data of pan evaporation, rainfall, and mean are temperature; 19 years' (1958–76) relative humidity data, and 7 years' (1934–39, 1978–79) wind velocity data at 2 m height are given in Table 6. Twelve years' (1967–78) data of the percentage of possible sunshine obtained from the Tampa International Airport Weather Station are also included in Table 6.

The potential ET was computed on a monthly basis using the Penman method as defined in Equation 10 ($\alpha = 0.05$) and 18 ($k_1 = 0.7$) and using weather data from Table 6. The resulting ET_p values are listed in Table 7. The annual E_o of 1479 mm compares favorably with the annual pan evaporation of 1569 mm (a 6% difference). Applying the 0.7 k_1 value in equation (18), ET_p was estimated to be 1035 mm. The 10 years' (1962–71) water budget ET data for the EAA as reported by Mierau (1974) are also shown in Table 7. The average annual ET as measured by water budget was only 17 mm more than ET_p. A rounded value of 1020 mm was then used to establish the coefficients k_2, k_3, k_4, and k_5 used in Equations 11, 14, 15, and 16, respectively. All coefficients except for the Penman method (k_1) are "calibrated" against this watershed. The results are