

## **Recent ( 1952-1993 ) Trends in Pan Evaporation, Actual ET and Consumptive water use for Irrigated Fields in Eastern Colorado**

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**Abstract.** Long term pan evaporation data from 11 sites in Eastern Colorado show a decrease of 10 to 30 percent during the last 50 years. This pattern is consistent with data from other regions around the world and appears to be related to reduction in the daily diurnal temperature range and wind speed, while the atmospheric water vapor and rainfall are increasing. Many of the equations used to estimate potential evapotranspiration rates do not show the observed pattern of decreased pan evaporation rates during the last 50 years. Actual Evapotranspiration water loss from irrigated crops has increased to a maximum value in 1980 because of substantial increases in harvested irrigated land from 1960 to 1980. More recently actual evaporation water loss has been decreasing because of decreases in harvested irrigated crop land. Consumptive irrigation water losses follow the same pattern of dramatic increases until 1980 and decreases since 1980. The ratio of consumptive water use to actual evapotranspiration water loss has reduced during last 50 years reflecting the general trend for increases in summer time precipitation.