

From: Robert Siegfried [mailto:rsiegfried@valleywater.org]
Sent: Tuesday, March 08, 2011 5:08 PM
To: Agriculture Water Use Efficiency
Subject: water level fluctuations

AgWUE,

Doubtless there are members of the subcommittee better versed in this issue than I, but I have yet to observe a canal in which the water level was not constantly fluctuating. Accounting for fluctuating water levels looks to be expensive. Those interested in agricultural water consumption have available to them the volumes of water delivered to the districts. These will exceed water delivered by districts to end users because of transmission losses. If the difference between volumes delivered to a district and the sum of volumes delivered to end users within a district exceeds reasonable transmission losses, that will be apparent without complex calculation. Difference between the two quantities, exclusive of reasonable allowance for transmission losses and as a percentage, will have to be less than or equal to farm gate measurement error, or farm gate measurement accuracy must be considered suspect.

Farm gate measurements are indicative of individual on-farm water use efficiency, and probably most pertinent to relations between growers and their irrigation district. Deliveries to a district are indicative of water use efficiency at the scale of the district's service area, and are a more reliable indicator of district-wide water use efficiency than is the sum of data from farm-gate deliveries. Freely available satellite imagery permits quite reasonable estimates of actual crop water use within a district against which to compare district deliveries. Maps of district service areas coupled with imagery are sufficient to enable evaluation of districts' water use efficiencies. This seems more to the point than attempting to account for head fluctuations.

From the standpoint of concern about water use of the agricultural sector, district water use efficiency integrates transmission losses and on-farm water use efficiency. Integration makes evaluation at the district scale more useful than measurement at the farm scale.

Regards,

Bob Siegfried
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose CA 95118
408 265 2607