Aplication Efficiency: Alfalfa 2010

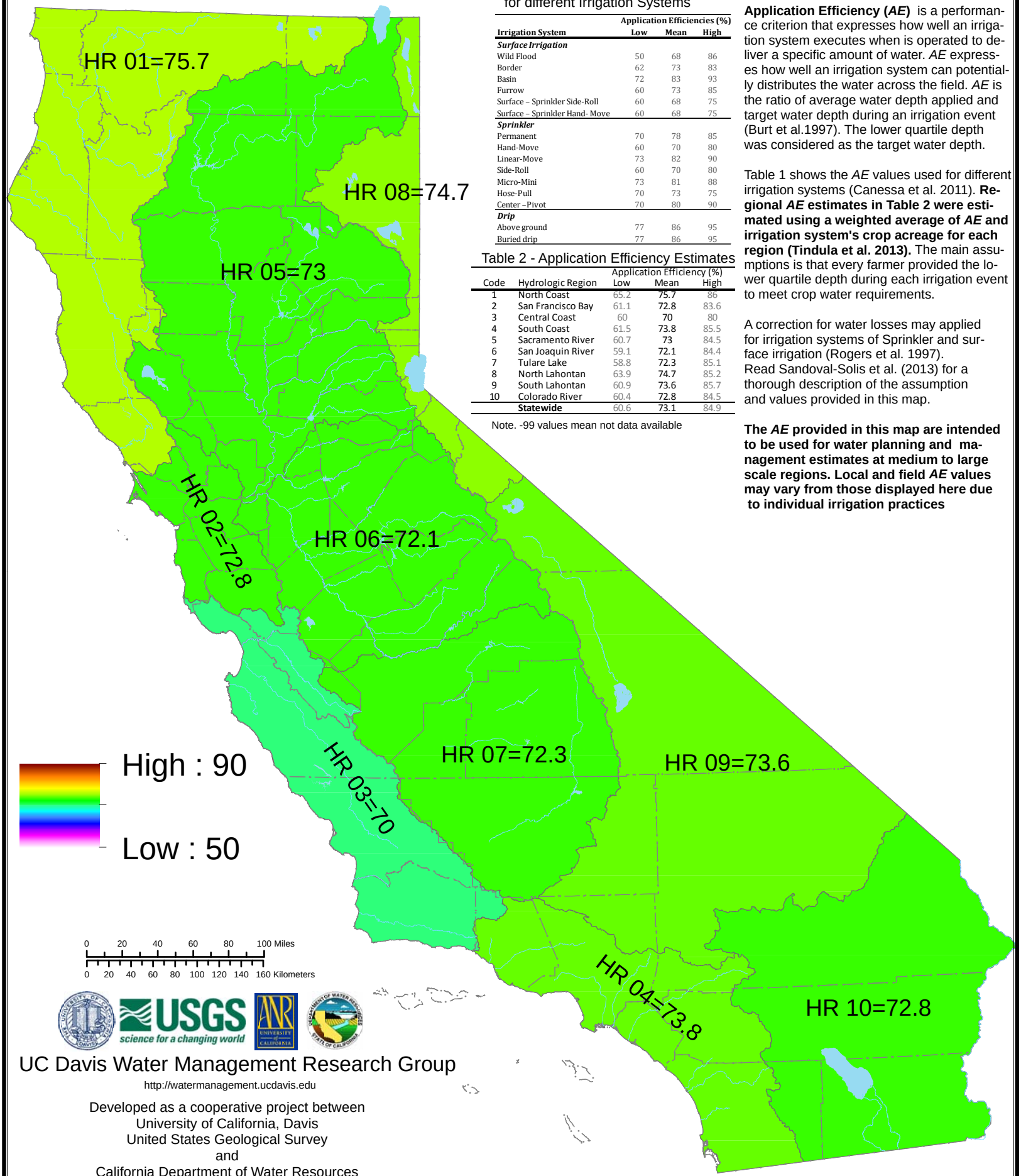

Table 1 - Application Efficiencies for different Irrigation Systems

Irrigation System	Application Efficiencies (%) Low	Mean	High
Surface Irrigation			
Wild Flood	50	68	86
Border	62	73	83
Basin	72	83	93
Furrow	60	73	85
Surface – Sprinkler Side-Roll	60	68	75
Surface – Sprinkler Hand- Move	60	68	75
Sprinkler			
Permanent	70	78	85
Hand-Move	60	70	80
Linear-Move	73	82	90
Side-Roll	60	70	80
Micro-Mini	73	81	88
Hose-Pull	70	73	75
Center –Pivot	70	80	90
Drip			
Above ground	77	86	95
Buried drip	77	86	95

Table 2 - Application Efficiency Estimates

Code	Hydrologic Region	Application Efficiency (%) Low	Mean	High
1	North Coast	65.2	75.7	86
2	San Francisco Bay	61.1	72.8	83.6
3	Central Coast	60	70	80
4	South Coast	61.5	73.8	85.5
5	Sacramento River	60.7	73	84.5
6	San Joaquin River	59.1	72.1	84.4
7	Tulare Lake	58.8	72.3	85.1
8	North Lahontan	63.9	74.7	85.2
9	South Lahontan	60.9	73.6	85.7
10	Colorado River	60.4	72.8	84.5
	Statewide	60.6	73.1	84.9

Note. -99 values mean not data available

Application Efficiency (*AE*) is a performance criterion that expresses how well an irrigation system executes when is operated to deliver a specific amount of water. *AE* expresses how well an irrigation system can potentially distributes the water across the field. *AE* is the ratio of average water depth applied and target water depth during an irrigation event (Burt et al.1997). The lower quartile depth was considered as the target water depth.

Table 1 shows the *AE* values used for different irrigation systems (Canessa et al. 2011). **Regional *AE* estimates in Table 2 were estimated using a weighted average of *AE* and irrigation system's crop acreage for each region (Tindula et al. 2013).** The main assumptions is that every farmer provided the lower quartile depth during each irrigation event to meet crop water requirements.

A correction for water losses may applied for irrigation systems of Sprinkler and surface irrigation (Rogers et al. 1997).
Read Sandoval-Solis et al. (2013) for a thorough description of the assumption and values provided in this map.

The *AE* provided in this map are intended to be used for water planning and management estimates at medium to large scale regions. Local and field *AE* values may vary from those displayed here due to individual irrigation practices

UC Davis Water Management Research Group

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Map prepared by P.I.: Samuel Sandoval Solis, Ph.D. © 2013.

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