



Measuring Water & Farm Labor Interactions

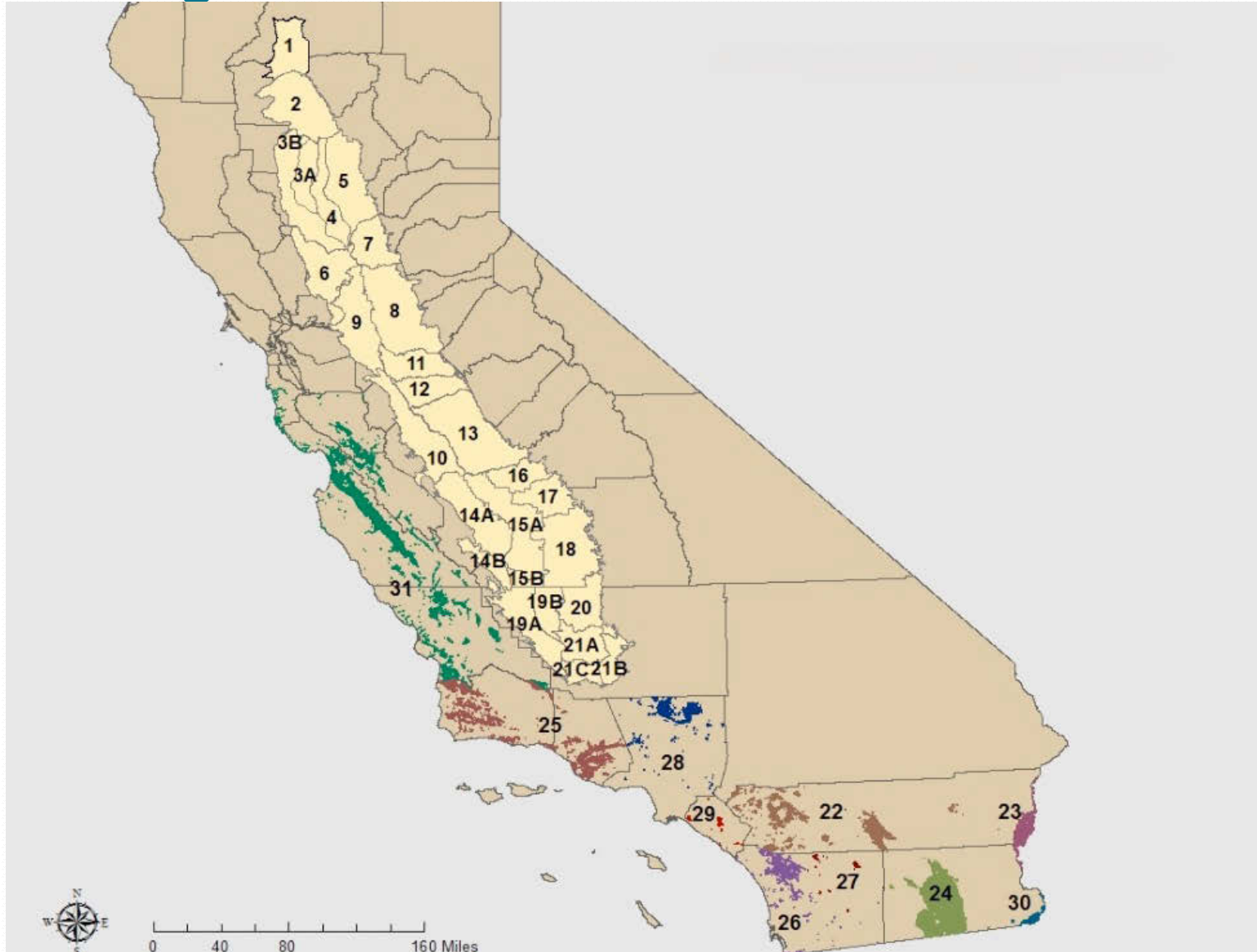
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Labor, Water, and California Agriculture in 2014
King Hall, UC Davis, April 18 2014

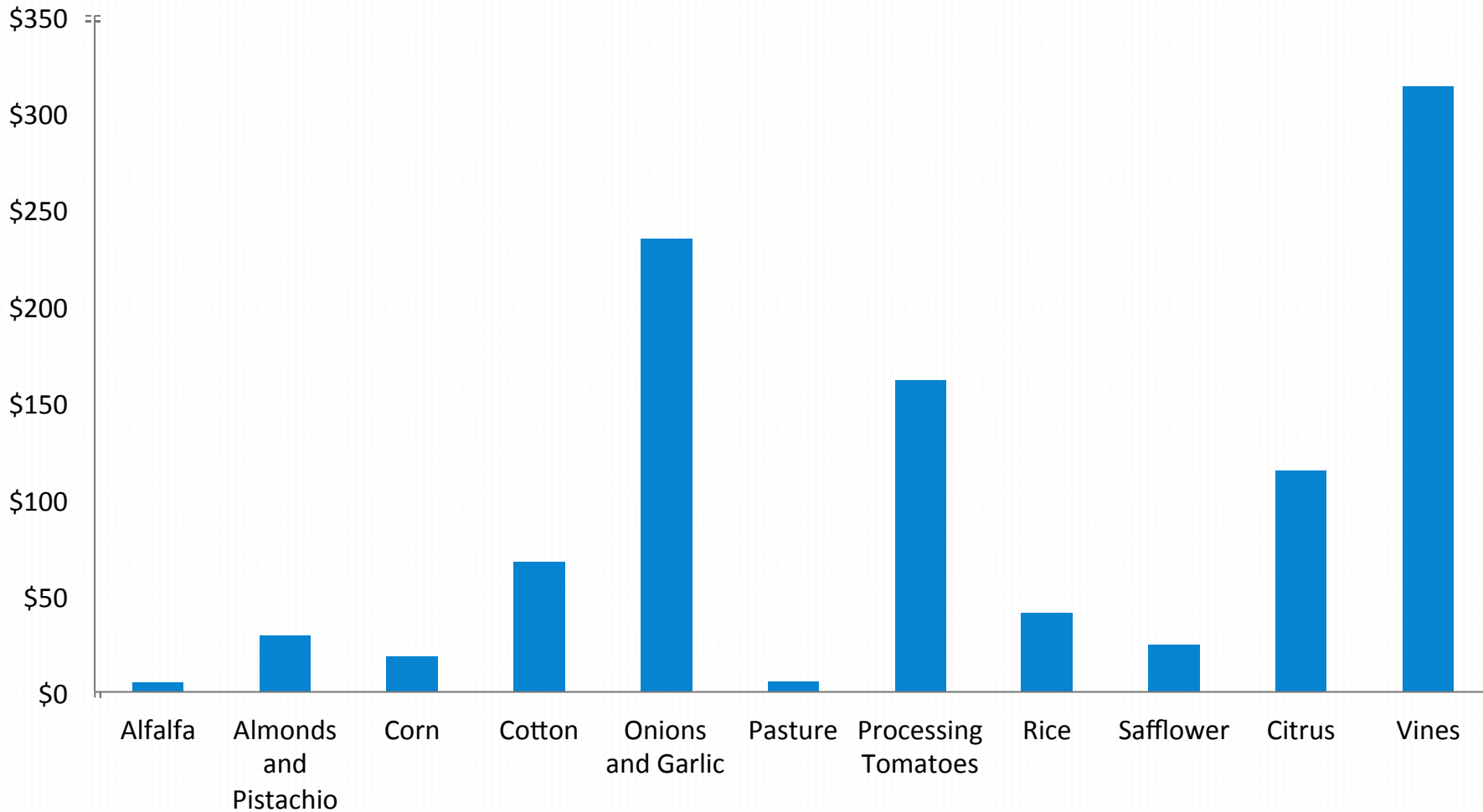
Measuring Water & Labor Interactions in 2014

- Value and scarcity of water varies greatly, since the priority of the water rights is determined by the appropriation date.
- Measuring labor impacts of drought needs to consider:
 - What crops are grown in the area?
 - What are the water rights in the area?
 - How mobile is the labor force?
 - How mobile are the crops and crop contracts?
- The 2014 water supply/demand imbalance is made worse due to:
 - Increased Delta export restrictions
 - Increased perennial crop plantings
 - Depletion of groundwater stocks

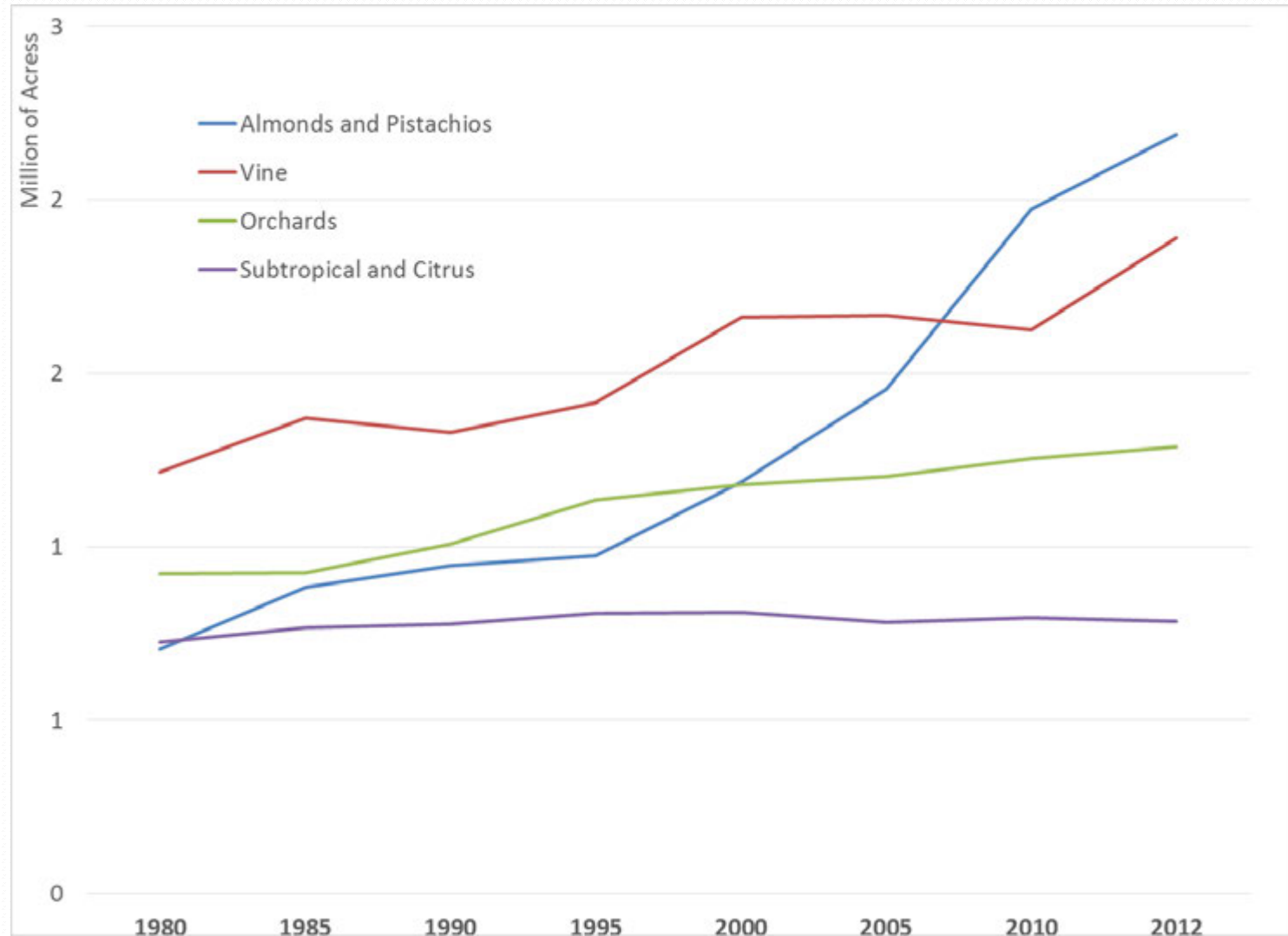
Regions in the Economic SWAP Model



Wide variation in Labor Expenditure/Acre foot

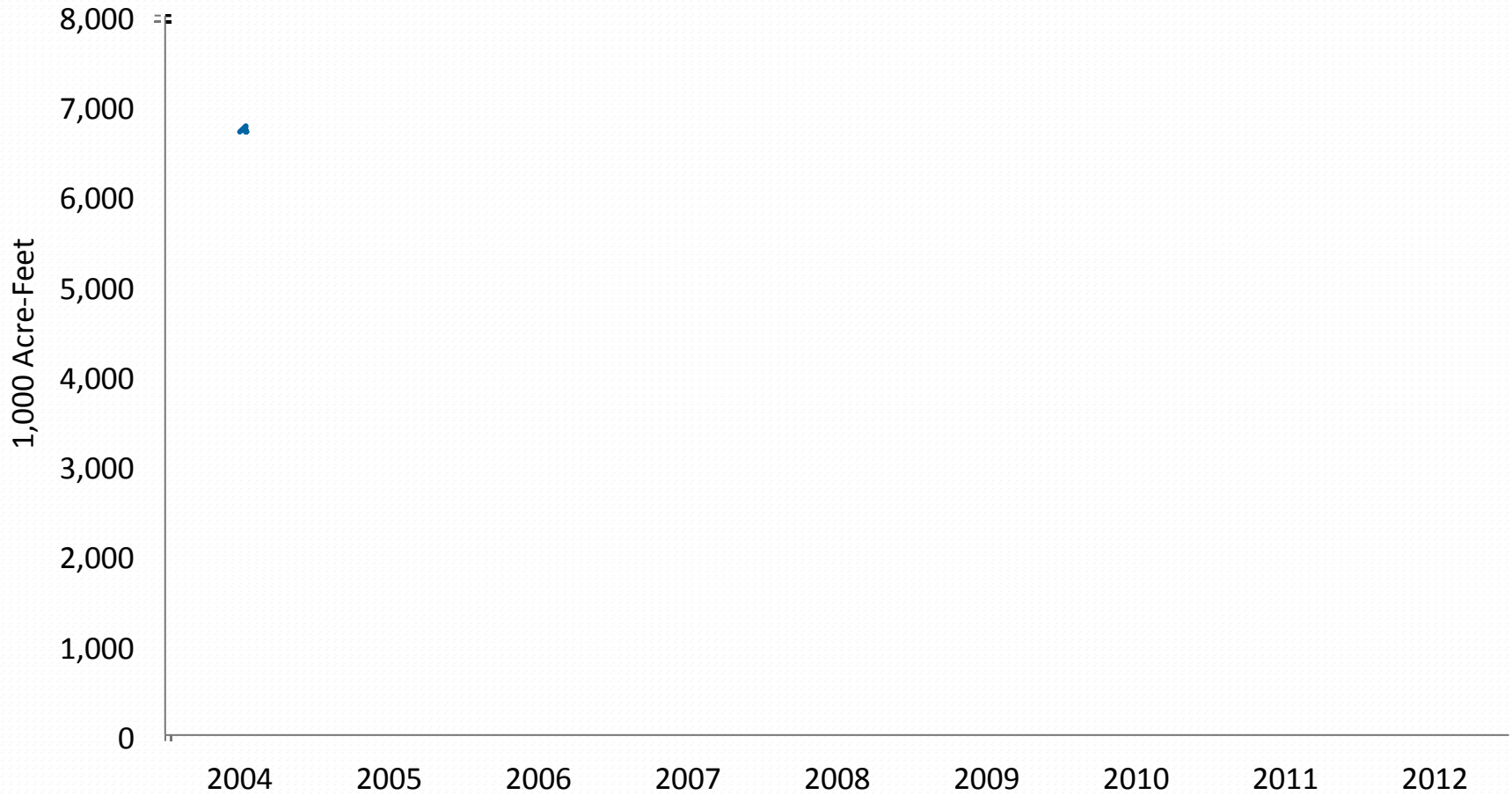


Perennial Crop Acreage Trending Up



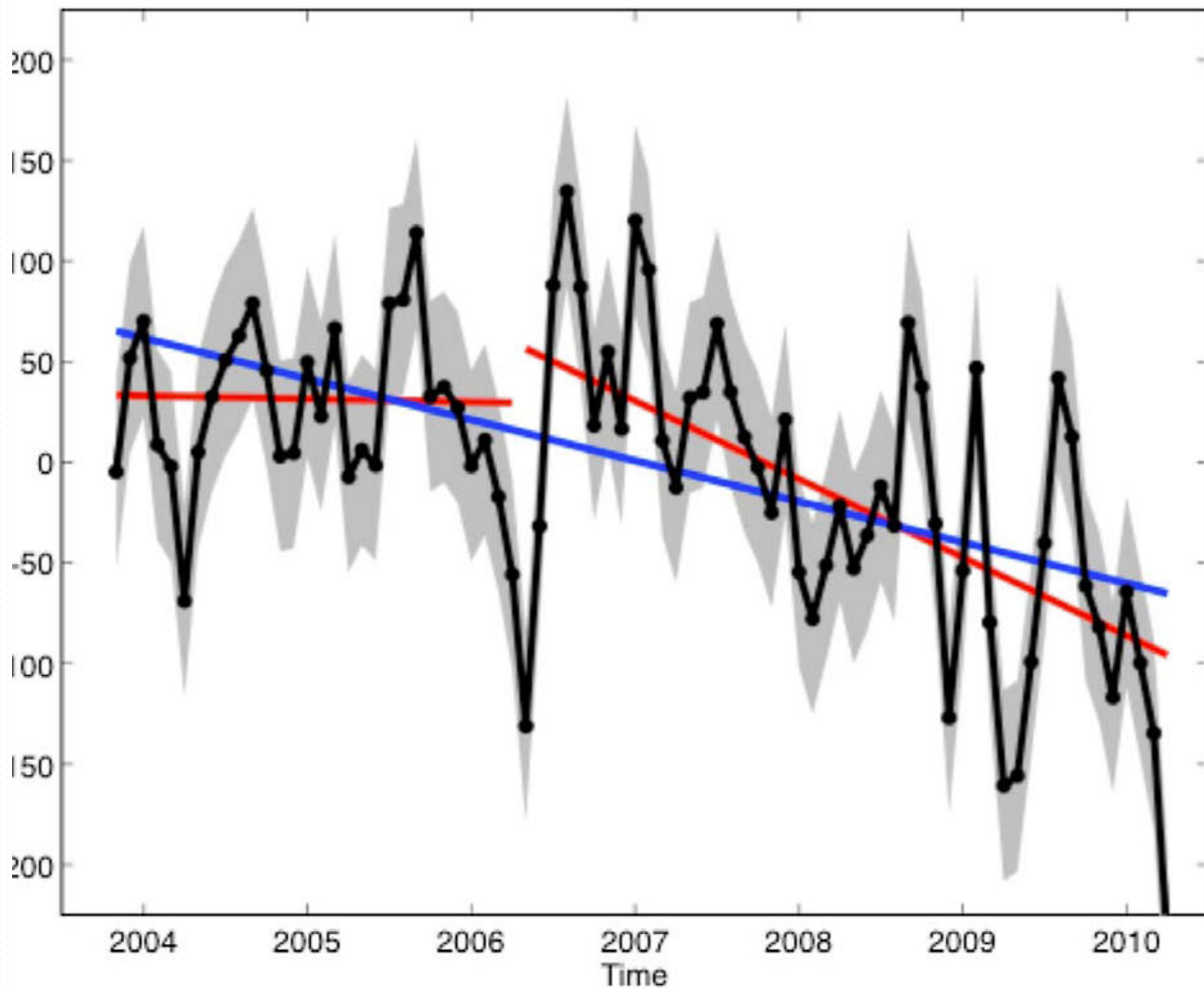
Delta Exports Reduced in Drought Years

Total Delta Exports (Acre-Feet)



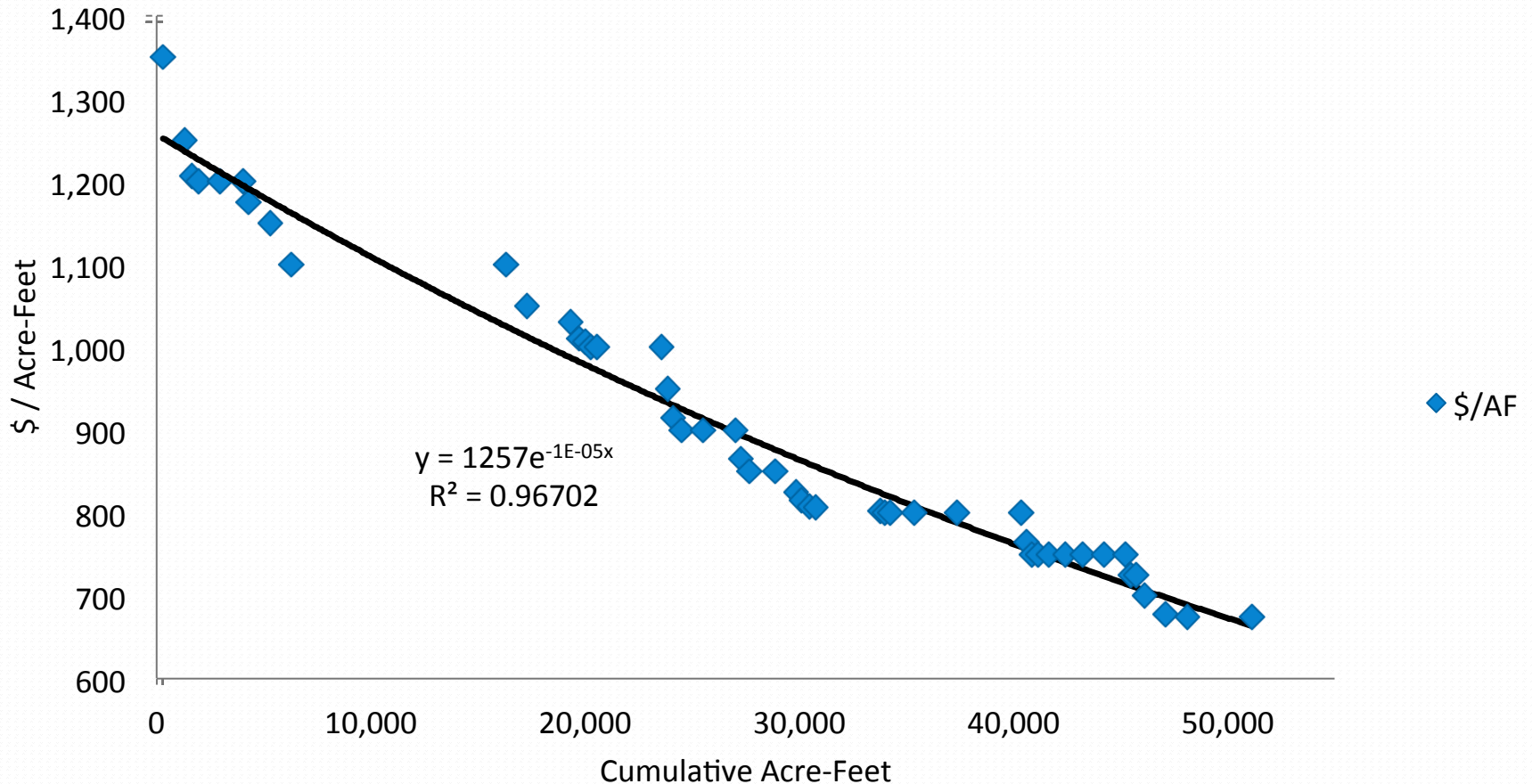
Depth to Groundwater is Trending Down

(Famiglietti et al 2011)



Record Bids for San Joaquin Valley Agricultural Water

Buena Vista Water Bids - February 7, 2014



South of Delta received only 25% of transfer requests in 2009

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Region	Requested Demand
North of Delta	44,860
South of Delta	824,045

Regions	Transfers as of October 2009
North to North	93,466
North to South	200,185

Conclusions

- Adjusting to droughts has become more difficult
- Lessons from 2009 will help to estimate 2014 labor impacts
- Record water prices in SJV may stimulate ground water management initiatives
- New East-West transfers are needed in the SJV
- Authorities should not attempt to set prices, but to facilitate the operational aspects of transfers
- Long run adjustment by agriculture will involve field crop flexibility and fallowing as part of the rotation