

The Sacramento/San Joaquin River Delta

Michael Patrick George, Delta Watermaster

The WEF's Delta Tour

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Disclaimers

- I am not speaking for the SWRCB or the DSC
- I am not presenting State policy
- I am expressing personal observations and opinions, except where specifically referenced to published materials



Role of the Delta Watermaster

- The Office of the Delta Watermaster was created as part of the Delta Reform Act of 2009
- The Watermaster is an independent officer of the State
- Appointed to a four-year term by the State Water Resources Control Board (Water Board)
- Reports jointly to the Water Board and the Delta Stewardship Council
- The Watermaster is responsible for:
 - Administration of water rights in the Delta
 - Assisting with realization of legislative mandates (co-equal goals)
 - Coordinating implementation activities of many agencies
 - Advising on policy and practice in the Delta



Brief Overview of Water Rights

➤ Strange bedfellows:

- Riparian: carryover from English common law; unquantified; limited by beneficial use on streamside property; shares correlatively in shortage
- Pre-1914: invention of miners; “first in time, first in right;” ossified by the Water Commission Act
- License: regulation originated in 1914; Projects closed out in 1927
- Groundwater: 2014 law born of the drought



Coordinating Plans and Actions

- Demise of the Bay Delta Accord and the 2009 Delta Reform Act: Grand Bargain or Temporary Truce?
- Demise of the Bay Delta Conservation Plan
 - WaterFix: Pending proposals for alternative water conveyance
 - EcoRestore: Restoration or reconciliation?
- Bay-Delta Water Quality Control Plan Update
 - Phases 1 through 4
 - Litigation or Voluntary Agreements?
- The Delta Plan (and the DPICC)



“You can’t manage what you don’t measure,”

- so...we’re working on several fronts to improve both data and insight about water use in the Delta
 - Measuring **diversions** presents specific challenges in the Delta:
 - Tidal influence (including use of tidal pumps to capture water)
 - Siphons are inherently unstable
 - Retrofit of heritage systems is expensive and value is uncertain
 - Delta Measurement Experimentation Consortium is organized and working
 - Study of Delta **consumptive use** will be published this summer
 - Delta **drainage water** is probably next for study under CWA
 - Knowing three variables should allow us to solve for **seepage**
 - Refinement of Delta inflow/outflow estimation is progressing with the usual contentiousness
 - There is a lot at stake, so everyone is watching to protect a host of conflicting interests



Weather Whiplash: From Drought...



- Drought responses included:
 - The Voluntary Diversion Reduction Program of 2015
 - Identification of dry period limitations on models of Delta water use
 - Salt water intrusion barrier at West False River
 - Water availability analyses comparing monthly projections of supply and demand
 - Issuance of curtailment notices in attempt to administer the priority water rights system
 - Prosecution against two Delta water districts for diverting out of priority
 - Retrospective (“lessons learned”) is in progress

Weather Whiplash: ...to Flood

➤ Flood responses included:

- Coordinated operation of the Delta watershed's rim reservoirs to limit damage
- Disaster averted at Oroville dam during failure of main spillway and first-ever use of emergency spillway
- Rapid response to levee problems throughout the Delta (on going)
- Levee investment over the last 20 years generally supported the flood fight
- The Delta received a healthy "flush" which should reduce salt build up, improve water quality (HAB and hyacinth) and provide insight into flow-responsive species indicators

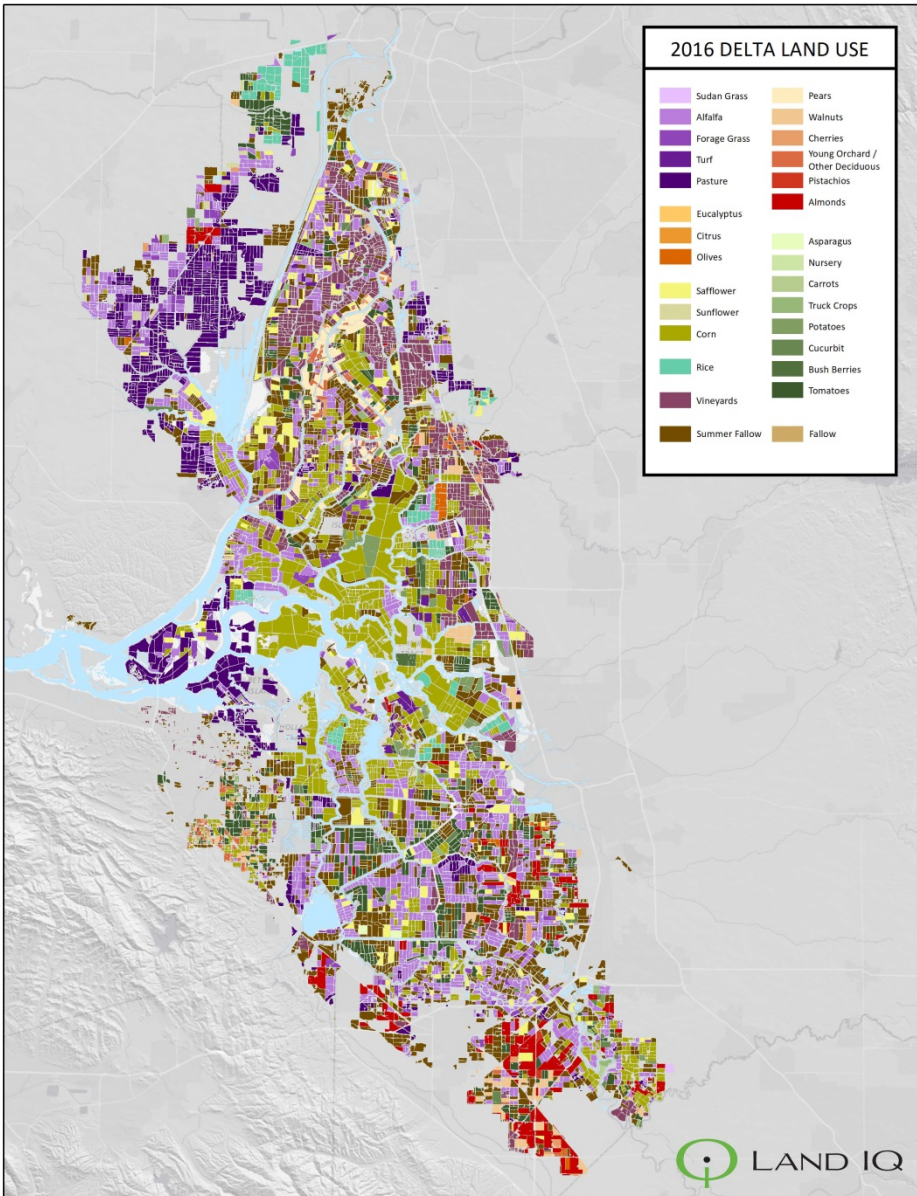
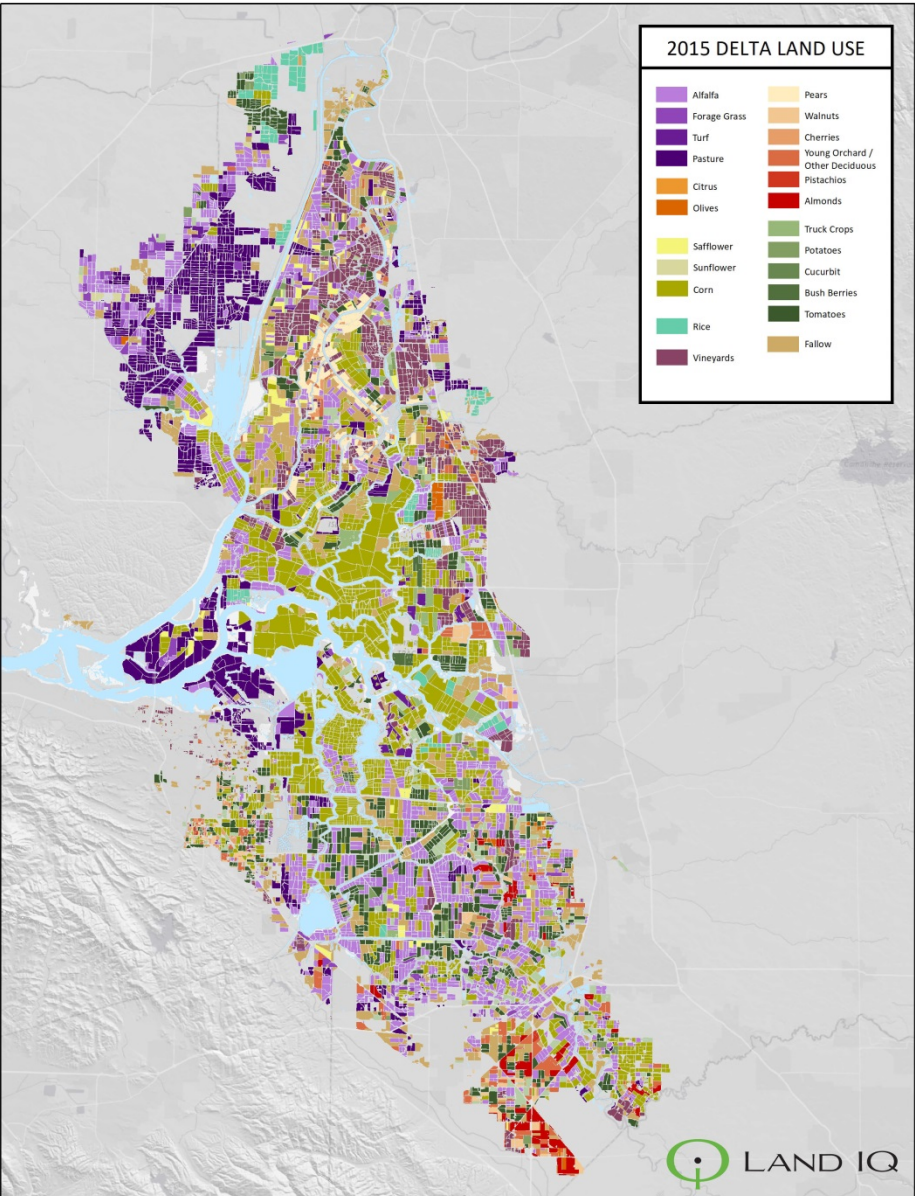


Land/Water Uses Are Changing

- Most of the Delta is limited to agricultural use by statute, but economics currently favor migration to permanent crops (led, predictably, by almonds)
- Irrigation techniques are evolving—more in relation to yield and quality than water shortage
- Demand for land suitable for habitat restoration is projected to grow
- Fish- and bird-friendly farming experiments appear promising, particularly in the northern Delta
- Sea level rise is a predictable threat to sustainable agriculture—and to land values—in the Delta



Recent Changes in Delta Crops



Implications of Changing Land Use

- Migration from variable annual water demand toward predictable but hardened water demand
- Questions related to sustainability of permanent crops in the Delta based on groundwater levels, water quality and other factors
- Flux in value at risk indicators for pending Delta Levy Investment Strategies
- Constraints on long-term options for the Delta ecosystem and reconciliation
- Potential impacts on through-Delta conveyance



Some Final Observations

- In all but the wettest years, there is not enough water in California to serve all beneficial uses at current rates
- There is no good mechanism to allocate scarce water to best use, partly because society's notions of "best use" are in flux
- Weather Whiplash alerts us that current systems are inadequate to managing the priority water right system at the extremes of our weather variability
- Infrastructure designed and financed to serve water supply purposes is being redirected to serve environmental and other societal purposes inadequately
- The Delta as you see it today is unsustainable: how will we respond?



Questions

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