

Temporary Urgency Changes During California's Drought

May 2014



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California Drought

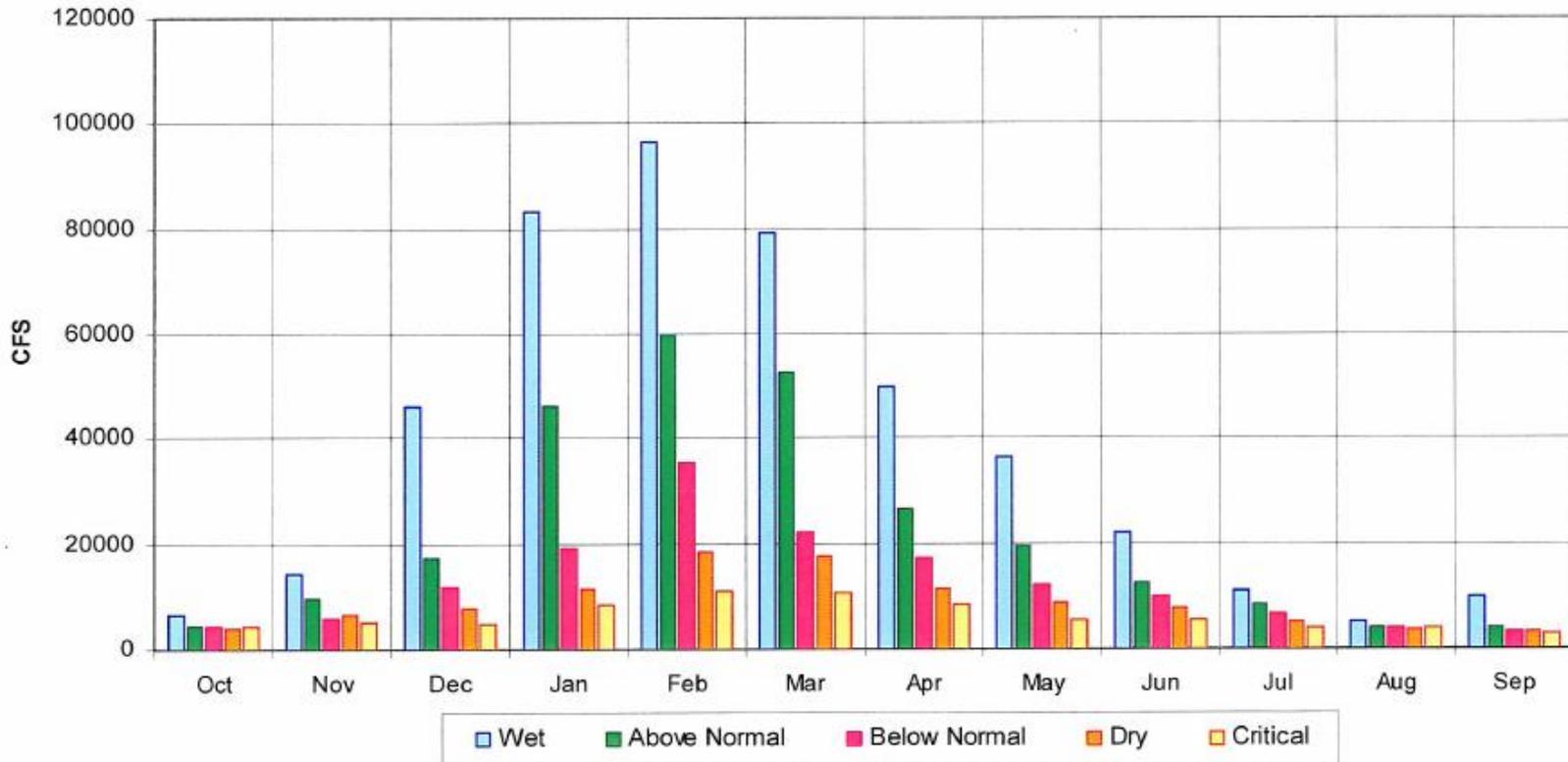
- 2014 will be a very tough year for farmers, some cities and rural communities, native fisheries and migratory birds
- The water management decisions we make during droughts last decades:
 - Winter run Chinook salmon were listed under the ESA in 1989/1990, and listed as endangered in 1994
 - Winder *et al* 2011: water management during drought facilitates invasive species in the Bay Delta

Drought and Delta Outflow

- Under Decision 1641 and the biological opinions, environmental protections for the Bay-Delta are already significantly weaker in dry years
- For instance, D-1641 requires significantly lower Delta outflow during dry and drought years than wetter years

Average Delta outflows under D-1641

EXHIBIT SVWU-4
D-1641 DELTA OUTFLOWS
AVERAGE MONTHLY BY WATER-YEAR TYPE FOR 1922-2003



Source: Sacramento Valley Water Users / MBK Engineers 2010

Why NRDC did not Protest the January 31, 2014 Order

- NRDC did not object because this Order relaxed delta outflow requirements in order to conserve upstream storage for both environmental and water supply purposes
 - *But what happened to the conserved water?*

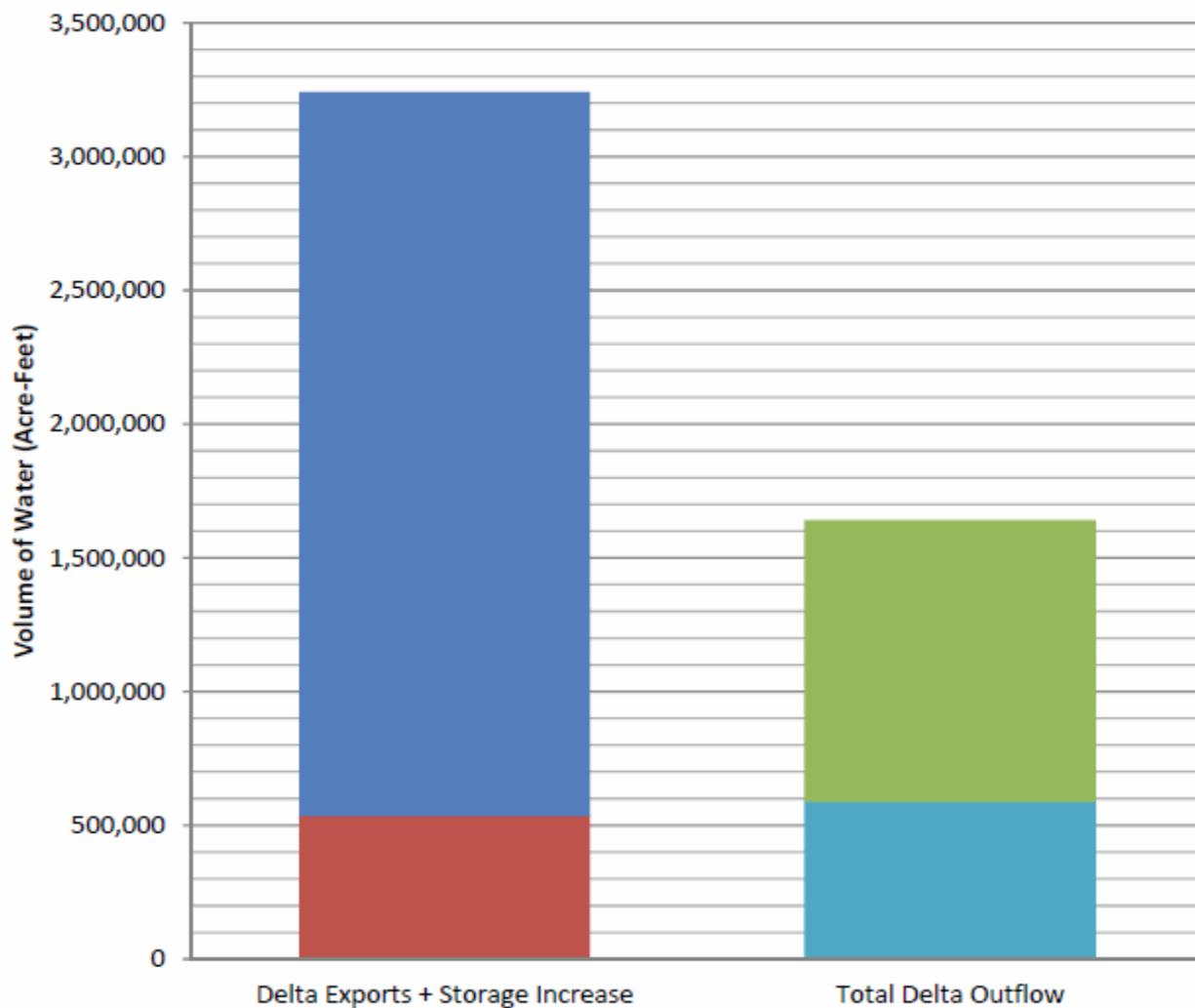
Why NRDC protested the March 18, 2014 Order

- Order permitted increased exports without meeting minimum outflow requirements
- **No** benefits to upstream reservoir storage from this Order
- Significantly reduces Delta outflow
- Connected to waiver of minimum ESA pumping restrictions to protect migrating winter run Chinook salmon

Why NRDC Protested the April 11, 2014 Order

- Reduced San Joaquin River inflows which are critical to protecting migrating salmon and steelhead
- Order results in **reduced** Delta exports (~42,000 acre feet)
- Connected with waiver of ESA pumping restrictions for steelhead
- No analysis of impacts to fall run Chinook salmon

Preliminary Water Balance for February 1 to April 15, 2014 in the Bay-Delta Watershed



- Upstream Storage Increase
- Total Delta Exports
- Delta Outflow for Fish and Wildlife
- Delta Outflow for Export Water Quality

Nearly 66% of the approximately 4.9MAF of Full Natural Flow from this period has been stored or exported.

Only 33% of the Full Natural Flow for this period remained as Delta outflow, and nearly 1/3rd of that was simply to maintain water quality for the export pumps and other water diversions.

Preliminary Water Balance for Feb 1-April 15

- Only ~33% of the 4.9 MAF of unimpaired flow (Full Natural Flow) during this period remained as Delta outflow.

Trends in Destinations and Uses

Period	Average Annual Total (MAF)	Outflow	in-Delta	Exports	Delta Watershed
1930 to 1949	25.80	81%	5%	0%	14%
1950 to 1969	31.71	67%	4%	4%	24%
1970 to 1989	34.34	51%	5%	15%	29%
1990 to 2005	32.85	48%	4%	17%	31%

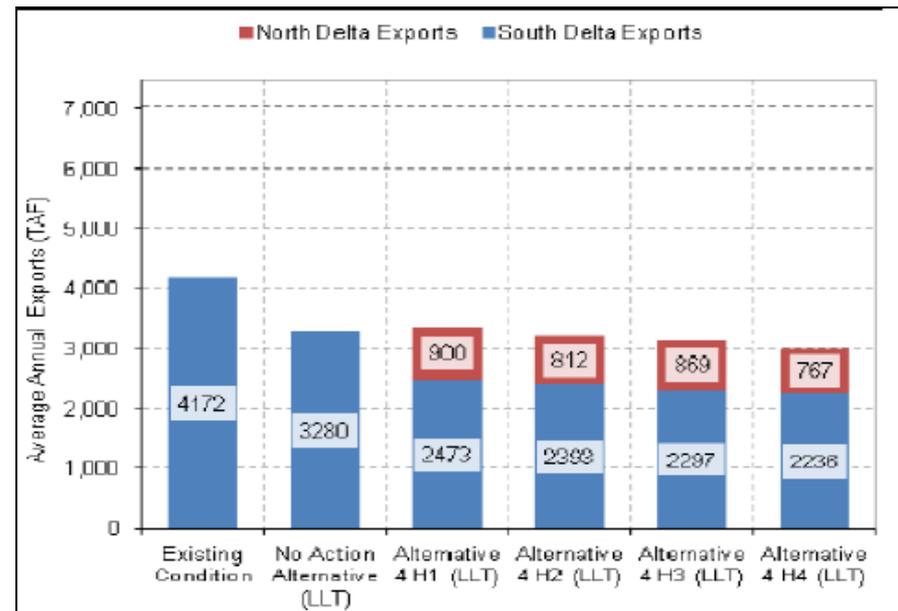
Source: Delta Stewardship Council 2012

Impacts of Drought and Water Management on Native Fisheries

- Endangered Winter run Chinook salmon:
 - very low survival for juvenile fish migrating in 2014
 - could lose half or as much as the entire year class in 2015 (depends on summer/fall water temperatures)
- Fall run Chinook salmon –
 - Anticipate significant losses for fish spawning this fall
 - Likely very low survival of wild spawned fish this year
- Invasive species? (Winder 2011)

What does this mean for BDCP?

- BDCP proposes *lower* exports in dry and critical years. But will the rules be followed?
- Will water quality for ag and M&I customers in the Delta be maintained under BDCP?



Protecting the Bay-Delta Protects Fishing Jobs and Delta Farmers

California's salmon fishery was closed in 2008 and 2009, for the first time in the State's history. The State of California estimated that the closure resulted in thousands of lost jobs and hundreds of millions of dollars of lost income each year.

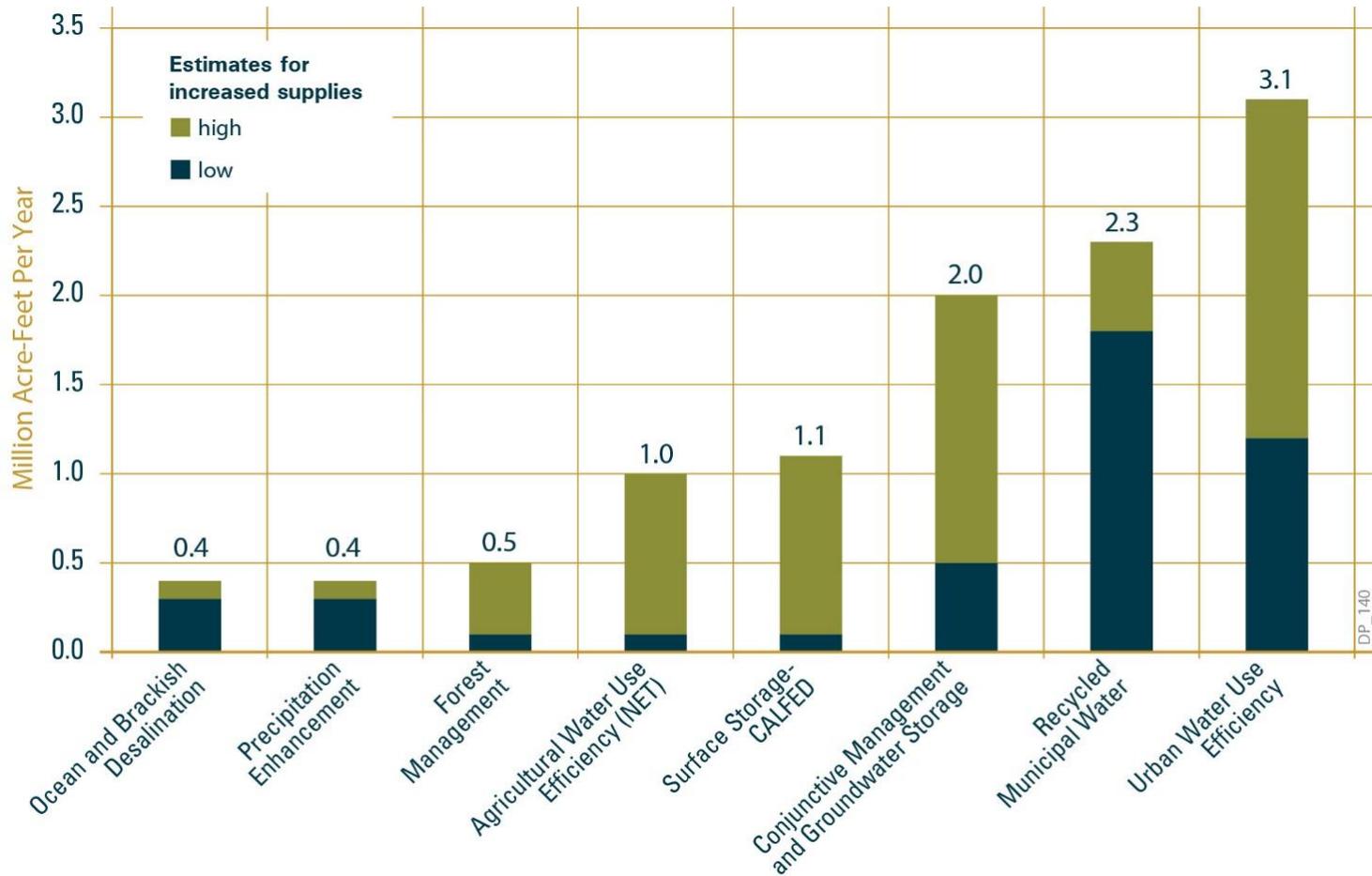


Conclusion

- The SWRCB should overturn the order on Vernalis flows in April and May to protect the environment and water supplies.
- The SWRCB should complete the update of the Bay-Delta Water Quality Control Plan.
- The SWRCB should revise procedures regarding Temporary Urgency Change Petitions.
- We all need to reduce reliance on water supplies from the Delta watershed.

California's Water Future

California's Wealth of New Water Supplies



Source: Delta Stewardship Council 2012