



Comments to the State Water Resources Control Board on Drought Response—October 14, 2014

Modernizing Drought Water Allocations

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This past year's severe drought conditions meant that most users of surface water flows—agricultural, urban, and environmental—had significant unmet demands. In May, the State Water Resources Control Board (Board) launched a surface water curtailment process for the first time since the 1976-77 water year. The curtailment orders followed the seniority of water rights, with riparian right-holders as a group having first claim on the available water, and appropriative right-holders following by the dates of their appropriations. Many junior appropriators were prohibited from diverting water. With few exceptions, the Board did not factor in other considerations, including environmental needs and public health and safety.

The experience this past year provides valuable lessons for California, which needs to modernize drought water allocations to improve the use of scarce water resources. This will require some urgent actions for the coming year, which also may be dry. It also behooves the state to use this experience to help establish a more robust allocation process going forward, given the increasing competition for scarce water resources in a growing state and the likelihood that droughts will occur more frequently as the climate warms and hydrologic conditions change. In this note, we reflect briefly on the lessons learned from the curtailment experience in 2014 and describe urgent steps the Board can take to improve its regulation and management of water rights in 2015 and beyond.

A Brief Recap of Surface Water Allocation in the 2013-14 Water Year

The Board encountered two significant challenges in 2014 for allocating water under conditions of critical scarcity: (1) limitations in measurement and analytical capacity for surface water availability and use; and (2) lack of clarity on policies regarding factors other than water rights seniority, including protection of public health and safety and the environment. As a result, the Board invoked its curtailment process quite late in the year. It also largely failed to factor in public health and safety and environmental considerations.

On a positive note, the Board was able to use newly available data on surface water diversions to estimate the total demands of right-holders within river systems. These data were required under Senate Bill X7-8, one of the policy bills enacted as part of a comprehensive water package in November 2009. This law requires all surface water users (including riparians and pre-1914 right-holders, who are not subject to the Board's permitting and licensing jurisdiction) to report their diversions to the Board. The Board's ability to use estimates of actual diversions made the curtailment process fairer to more junior appropriators than if the Board had used the face value of water rights, which are generally

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substantially higher than actual diversions. This new data source—though still imperfect—is an important building block for modernizing the drought allocation process.

A Promising New Approach

This past year, the Board commissioned a valuable experiment in developing a more formal system for determining surface water availability and allocations. The UC Davis Center for Watershed Sciences worked with the Board to develop a pilot model of allocations on the Eel and Russian Rivers, using data on flow availability from the National Weather Service and the newly available data on surface water diversions. The UCD pilot effort, described more fully in a companion note (Lund et al. 2014), provides a promising approach for systematizing the use of water availability and use data so that California can make the most efficient use of surface water under scarcity. This approach provides a transparent method for considering available flows and allocating water according to the priorities under state law (including seniority of water rights and other factors).

Recommended Near-term Actions

We believe the state should expand this formal approach for water allocation under scarcity as quickly as possible for California's other major watersheds. The state also needs to begin now to address the most urgent gaps in policy and measurement.

Step 1: Modernize Curtailments

If precipitation in the 2014-2015 water year is below average, the Board will likely be required to issue curtailments again. To make this process timelier, fairer, and more efficient, the Board should do the following:

- The planning and adjustment process for curtailments should begin with a transparent technical process that forecasts full natural flow in basins that are likely to see curtailments.² This process should be defined by January of the water year and updated monthly thereafter. The process can rely on the expertise of the National Weather Service (which already makes routine flood flow forecasts throughout California) and the Department of Water Resources (which assists NWS in flood forecasting). Some technical modifications will be needed to make low-flow forecasts. The forecasts will improve with experience; to this end, the Board should collect data to evaluate the accuracy of forecasts.
- The Board should continue to use reported water use information, rather than the face value of water rights, to guide assignment of curtailments. Over time, the Board should develop systems for cross-checking the accuracy of data reported by water users, e.g. with remote sensing information (as is now done in Idaho).
- To improve the accuracy of water right curtailment calculations and make fuller use of available water, larger water users should be required to "call" their planned use. This can be done at the beginning of the irrigation season (March 1) for general planning purposes, and then on a more

² See Lund et al. (2014) for an illustration from the UC Davis pilot exercise.

real-time basis as the season advances. Senior right-holders who intend to transfer water to other users would include this water in their call for planned use.³

- Because what ultimately matters for system availability is net diversions— i.e., the amount diverted minus the amount that is returned to the system and available for downstream use—the state should work towards building a system that accounts for discharges as well as diversions. Building on SB X7-8’s requirement to report water diversions, the state should require large users to report return flow discharge volumes and locations.⁴ Urban users already report discharges (through waste discharge permits from Regional Water Quality Control Boards), and it would be fairly straightforward to require large agricultural water users to do the same, especially when they discharge through canals, pipelines, and other conduits. As an interim step, the Department of Water Resources might be charged with developing a default estimation method for agricultural discharges, with water diverters specifying the locations of return flows.
- Experience from 2014 shows that the Board also needs to get out in front on the curtailment process, with notifications ready by the beginning of the calendar year for all surface water users, including riparian and pre-1914 users. The Board should also introduce a transparent process of notifying monthly adjustments, factoring in changing water availability conditions, with the possibility of rapidly relaxing curtailments in response to improved conditions.

Step 2: Set and Implement Policy on Water Allocation Priorities for Public Health and Safety and the Environment

Senior water rights holders objected to the Board’s consideration of public health and safety needs and environmental flows as part of its curtailment decisions this year. Yet the Board has a strong legal basis—and indeed a legal obligation—to take these factors into account in its allocation decisions under the reasonable use requirement of the California Constitution (Article X, section 2),⁵ the public trust doctrine,⁶ and numerous statutes including the Porter-Cologne Act, Section 106 of the California Water

³ See Water Code § 1017: “The beneficial use of water pursuant to a transfer or exchange . . . shall constitute a beneficial use of water by the holder of the permit, license, water right, or other entitlement for use that is the basis for the transfer or exchange”

⁴ It may be impractical for the Board to successfully solicit water use and discharge data from all water right-holders and to process that volume of information in curtailments. Experience gained from the UC Davis pilot exercise suggests that approximately 10 percent of water right-holders account for 90 percent of water use. Therefore, the Board may choose to adopt a policy of requiring information from all right-holders, but focus curtailment efforts on a subset of rights that likely affect water availability most.

⁵ The fundamental mandate of state water policy is set forth in Article X, Section 2 of the California Constitution, which declares that “because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.” In *Light v. California State Water Resources Control Board* (2014) 226 Cal.App.4th 1463, the California Court of Appeal confirmed that the constitutional reasonable use mandates apply to *all* California holders of water rights (including riparians and pre-1914 appropriators), not only to post-1914 permittees and licensees. See also Water Code §§ 100, 102.

⁶ *National Audubon Society v. Superior Court* (1983) 33 Cal.3d 403. The California Supreme Court held in *National Audubon* that “the state has an affirmative duty to take the public trust into account in the planning *and* allocation

Code,⁷ Fish and Game Code section 5937,⁸ the federal and state Endangered Species Acts,⁹ and other laws.¹⁰

To better implement these policies in future water rights curtailments, the Board should do the following:

- The Board should adopt policy that narrowly defines urgent public health and safety considerations impacted by water scarcity. These would include supplies adequate for domestic safe drinking water, sanitation, and fire suppression under conditions of urgency, often thought of as roughly 50 gallons per capita per day. Water allocation under this provision would need to be for urgent conditions, when users cannot reasonably be expected to find alternative sources in a timely way (such as through market transfers), and they would need to be clearly spelled out and quantified. These amounts would count against any other allocation to these users. The Board should then set the priority of these urgent needs within the curtailment process.
- The Board should clearly identify the priority of various environmental uses of water in the curtailment process. This includes waters used to maintain fish in good condition and supplying water to state and federal wildlife refuges.
- In anticipation that curtailments are likely to be necessary, the state and federal fish and wildlife agencies should clearly identify drought flow and temperature requirements for priority river segments.¹¹ The Board should be explicit about the priority of these flows and related temperatures to improve planning on the part of water right-holders.

of water resources, and to protect public trust uses whenever feasible.” (Id. (emphasis added).) Public trust resources include fish, wildlife, and their habitat. (Id.) The court also noted that under California water rights law “neither domestic and municipal uses nor instream uses can claim an absolute priority.” (Id.)

⁷ Section 106 of the Water Code states that it is “the established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation.” Section 106.3 adds that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes,” and it directs the Board (and other agencies) when adopting or revising its policies. The California Supreme Court has held that these statutes “declare principles of California water policy applicable to any allocation of water resources.”

⁸ Section 5937 of the Fish and Game Code directs that all dam owners “shall allow sufficient water at all times to pass through a fishway, or . . . to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam.” The California Court of Appeal has held that this statutory directive is a proper exercise of the Legislature’s authority to effectuate the purposes of Article X, Section 2. (*California Trout v. State Water Resources Control Board* 1989) 207 Cal.App.3d 591, 622-625.

⁹ State and federal Endangered Species Acts prohibit the “taking” of any endangered or threatened species unless specifically authorized by the terms of a biological opinion or incidental take permit. (Fish & Game Code §§ 2080-2081.1; 16 U.S.C. §§ 1536, 1538 & 1539) To ensure against such unauthorized takings—and for the protection of those water diverters who might run afoul of the statutory prescriptions—the Board must include the biological and habitat needs of California’s fisheries when it determines the amount of water that is likely to be available for diversion and use by water right-holders.

¹⁰ See Hanak et al. (2011) for a discussion of the laws noted here and the related authorities of the Board and other regulatory agencies.

¹¹ It is impractical to set flow and temperature standards for all rivers in all conditions. Rather, the fish and wildlife agencies should identify which river segments or wildlife refuges are of highest biological value and estimate minimum flow and temperature standards needed for preserving at-risk species within them. Grantham et al. (in press) provide a method for prioritizing regulated rivers for protection of threatened fishes and salmon runs.

- The current practice of granting Temporary Urgency Change Petitions (TUCP) that relax environmental standards does not require a scientific assessment of the consequences for fish and wildlife, only concurrence of state and federal fish agencies. The Board should consider rapid external review of TUCP applications by a standing panel of experts to help inform its decisionmaking.¹²
- The Board, through its water rights enforcement staff, should be prepared to initiate targeted, expedited administrative and/or judicial proceedings to halt uses and methods of diversion that are both unreasonable and have high impact on water supply availability.

Conclusion

By taking these initial steps now, the Board will put California in a better position to cope with a dry 2015, and also position the state to better handle future conditions of scarcity. Indeed, given our hydrology, Californians should be planning *every* year for the possibility of a drought, since we rarely know before the late winter or early spring what the water year holds. Over time, this system will improve and evolve, with better measurement and more routinized reporting of essential information, making it easier for all water users to plan and anticipate how to manage available supplies. One medium-term priority will be to incorporate groundwater use, especially in basins where there is still a strong hydrologic connection between surface and groundwater flows.

The Board, along with state and federal government in general, has been criticized for being reactive during the drought, rather than having prepared for it. We applaud the Board's current efforts to plan for a fourth year of drought before it actually occurs. The two steps outlined above—modernizing curtailments and setting priorities and quantities for public health and safety and the environment—can be addressed relatively quickly and efficiently under current conditions of urgency. If it rains this winter, these preparations will be useful for the next drought. If it does not rain, they will help better manage the current crisis.

References

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¹² Such a panel should include both environmental flow experts and water resource experts, to better consider potential tradeoffs between public health and safety needs and environmental flow needs.