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California's Water Market, By the Numbers: Update 2012

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Summary

This report provides an overview of the policy context for water marketing and the related practice of groundwater banking and summarizes recent trends in both areas. The water market enables the temporary, long-term, or permanent transfer of the rights to use water in exchange for compensation. The ability to transfer these rights adds flexibility to the state's water supply—helping to address temporary drought conditions and to accommodate longer-term changes in the pattern of demand. Groundwater banking involves the deliberate storage of surface water in aquifers during relatively wet years, for use in dry years. Both tools are part of a modern water management portfolio that will enable California to manage its water resources sustainably, benefitting both the economy and the environment. Given the physical, financial, and environmental limits on expanding overall water supplies in California and the prospect of supply reductions caused by a warming climate, both tools are likely to become increasingly important.

Although state and federal policies have supported the development of water marketing and groundwater banking, no official publications track their evolution in California. Since the early 2000s, PPIC has tracked these trends in an effort to fill this information gap. This report provides an update of the 2002 PPIC report *California's Water Market, By the Numbers*, with an expanded analysis of statewide water market trends from 1982-2011 and new information on groundwater banking in Kern County and Southern California.

Jump-started by a prolonged drought in the late 1980s and early 1990s, the water market now accounts for roughly 5 percent of all water used annually by California's businesses and residents (about 2 million acre-feet of water trades are committed annually, with around 1.4 million acre-feet in actual flows exchanging hands). Over time, the market has shifted from primarily short-term (single-year) contracts to one dominated by longer-term and permanent trades. Farmers are the primary source of water, and the destinations include other farmers, cities, and the environment. Market growth has slowed since the early 2000s, reflecting a variety of infrastructure and institutional constraints, including new pumping restrictions in the Sacramento-San Joaquin Delta (a major conveyance hub) and more complicated approval procedures.

Although water agencies in several parts of the state have engaged in active groundwater storage for local water users for some decades, the practice accelerated in the mid-1990s with a new form of banking involving storage for offsite parties. These water banks—located in Kern County and Southern California— had built up reserves of nearly 3.4 million acre-feet by 2006. During the drought of the late 2000s, they made nearly 1.9 million acre-feet available to their depositors, considerably more than the drought-related water market sales. In Kern County, where basin management is still voluntary, these withdrawals have sparked controversies because they occurred during a time when overall groundwater levels were falling.

The report offers a number of recommendations for strengthening these tools and fostering their responsible development, including the following:

- Address infrastructure weaknesses in the Delta, which have already limited the market's ability to furnish dry-year water supplies, and which have begun to limit the availability of wet-year water supplies to replenish groundwater banks.
- Clarify and simplify the institutional review process for transfers, while continuing to prevent harm to the environment and adverse effects for other legal users of the state's waters.

- Strengthen local groundwater management to support both marketing and groundwater banking. Outside pressure—with a credible threat that the state would step in if local agencies fail to do so—might be the best way to proceed, ideally accompanied by positive financial incentives to improve basin management.
- Develop models for mitigating the economic effects of large-scale land fallowing deals. Economic shifts make it likely that some cropland will be permanently retired in the future, and alleviating the community-related effects of fallowing would help ease economic transitions.
- California should continue to pursue—and find the funds to support—environmental water purchases, which can help reduce the conflicts associated with reallocating water to the environment while improving the efficiency of environmental water management.
- Because routinizing marketing and banking transactions will require some risk-taking, high-level state and federal officials should be involved. One option might be to develop a coordinating committee from relevant agencies, with the authority to facilitate discussions and transactions.

Attending to these priorities will help ensure the success of two of the state's most critical strategies in its efforts to efficiently manage its water resources—water marketing and groundwater banking.

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Technical Appendices to this paper are available on the PPIC website:
http://www.ppic.org/content/pubs/other/1112EHR_appendix.pdf