
Materials for

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Presentation

Water Banks: Voluntary and Flexible Water Supplies for the Colorado River's Uncertain Future

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- I. Water Banking Basics
 - A. What is a water bank? As defined by Larry MacDonnell in 1995
 - B. Why might water banks be needed in the Colorado River Basin?
 1. Supplies are increasingly uncertain
 - a. Climate change – need to plan for the worst
 - b. Uncertain water allocations and administration, within and between states
 - c. Large scale augmentation is uncertain and expensive
 2. More flexibility is needed
 - a. Can be scaled up or down
 - b. Relies on existing infrastructure
 - c. Flexibility reduces uncertainty
 3. Voluntary market mechanism may be preferred
 - a. Puts complex solution closer to the ground
 - b. Relies on incentives and established water rights
 - C. Why is The Nature Conservancy interested in water banking? It's a solution that could both protect water supplies for people and help keep rivers healthy
- II. Four Prominent Examples for the Colorado River Basin
 - A. Arizona-Nevada Groundwater Banking
 1. How it works/conceptual illustration on Colorado River Hydras (base map courtesy of National Geographic)
 2. References
 - a. Margaret B. LaBianca, Note, The Arizona Water Bank and Law of the Colorado River, 40 Ariz. L. Rev. 659 (1998)
 - b. O'Donnell, M., B. Colby. 2010. Water Banks: A Tool for Enhancing Water Supply Reliability. Department of Agricultural and Resource Economics, University of Arizona.
 - B. Intentionally Created Surplus (ICS) for Lower Mainstem
 1. How it works/conceptual illustration on Hydras
 2. References
 - a. U.S. Department of Interior, Record of Decision, Colorado River Interim Guidelines and the Coordinated Operations for Lake Powell and Lake Mead, December 2007
 - b. Colby, B., K. Pinttenger, L. Jones. 2007. Voluntary Irrigation Forbearance to Mitigate Drought Impacts. Department of Agricultural and Resource Economics, University of Arizona.
 - c. Peter Culp, PowerPoint on "Embracing Flexibility: New Mechanisms for Water Allocation on the Colorado River," May 22, 2008
 - C. Intentionally Created Mexican Apportionment
 1. How it could work/conceptual illustration on Hydras
 2. References
 - a. U.S. Department of Interior, Final Environmental Impact Statement, Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations

for Lake Powell and Lake Mead, October 2007, Appendix K, Attachment B:
Taking ICS to Mexico

- b. International Boundary and Water Commission, Minutes 317 (June 17, 2010) & 318 (December 17, 2010)

D. Colorado Compact Water Bank in the Upper Basin

1. Key points about emerging proposal
 - a. Diverse coalition – east, west, and environmental water users
 - b. Proactive strategy to address difficult questions in setting up a water bank before crisis hits
 - c. How to organize market mechanism, offset socio-economic impacts, and maintain/enhance healthy river flows
2. How it could work
 - a. Pre-22 rights in Colorado voluntarily sign-up for deposit and pooling
 - b. Yet to be defined "critical" post-22 rights pay to make withdrawals instead of being curtailed
 - c. Straight exchange over curtailment period
 - d. Build up storage reserves to release over curtailment period
 - e. Conceptual illustration on Hydras
3. References
 - a. Tom Iseman, Colorado River Compact Reconnaissance Study, The Nature Conservancy, December 2009
 - b. Chris Treese & Taylor Hawes, "Colorado Aims to Establish Water Bank to Combat Impact of Potential River Curtailment," Irrigation Leader, January 2011

III. Concluding Issues

- A. Thinking Like A River Basin, Leaders' Perspectives on Options and Opportunities in Colorado River Management, Center for Natural Resources & Environmental Policy, University of Montana in cooperation with Carpe Diem West, April 2011
 1. The footing ahead is unstable, while a host of unresolved legal issues could confound solutions like water banking.
 2. Can we hold enough of the legal issues and potential conflicts in abatement to see how something like Intentionally Created Mexican Apportionments or the Colorado Compact Water Bank can work?
 3. How can healthy rivers be part of a water banking solution?
- B. Agricultural/Urban/Environmental Water Sharing: Innovative Strategies for the Colorado River Basin and the West, Colorado Water Institute, Colorado State University, April 14, 2011
 1. Western States Water Council called for the "states to work with interested stakeholders to identify innovative ways to allow water transfers from agriculture to urban use while avoiding or mitigating damages to agricultural economies and environmental values."
 2. Major recommendations from west-wide working group
 - a. Pilot an expedited review process for water sharing projects
 - b. Foster a flexible, basinwide approach
 - c. Create state cabinet level advocates and voluntary water sharing zones
 - d. Build inclusive and robust stakeholder processes
 3. Can we act on such recommendations by opening water banks for the Colorado River Basin?

Water Bank Surveys

Clifford, P., C. Landry, A. Larsen-Hayden. 2004. Analysis of Water Banks in the Western States. Washington Department of Ecology, Publication No. 04-11-11.

MacDonnell, L.J., C.W. Howe, K.A. Miller, T.A. Rice, S.F. Bates. 1994. Water Banks in the West. Natural Resources Law Center, University of Colorado School of Law.

Lawrence J. MacDonnell, Water Banks: Untangling the Gordian Knot of Western Water, 41 Rocky Mtn. Min. L. Instit. 22-1 (1995).

O'Donnell, M., B. Colby. 2010. Water Banks: A Tool for Enhancing Water Supply Reliability. Department of Agricultural and Resource Economics, University of Arizona.

Taylor, J. 2008. Water Laws and Policies for a Sustainable Future: A Western States' Perspective. Western States Water Council.

WestWater Research, forthcoming 2011