

Approaches to Address Riparian Issues in Arizona

The 1980s, 1990s, and the New Century

W. E. Werner

Environmental Program Manager

Arizona Department of Water Resources

1980s

- Increasing interest in riparian communities and value as fish and wildlife habitat
- Concern increased about sand and gravel mining in the Verde River channel



Verde River Sand and Gravel

- Sand and gravel mines were working the channel of the Verde River
 - Channelization was conducted to move water out of active excavation
 - Riparian habitat removed in the path of excavation
 - Headcuts and channel changes impacted riparian habitat

Verde River Sand and Gravel

- Enforcement Actions began
- State of Arizona asserted ownership of the streambed under the Equal Footing Doctrine

Arizona State Parks on the Verde

- 1973 Arizona State Parks acquired Deadhorse Ranch State Park lands
- 1986 ASP purchased corridor along the river downstream from Tuzigoot National Monument to Bridgeport
 - Includes the site of one of the gravel mines

Navigable Stream Adjudication

- Began with State asserting ownership of the Verde River channel near Cottonwood in 1985
- Legislature disclaimed ownership in 1987
- 1987 Act found to be unconstitutional in 1991
- Legislature created the navigable stream adjudication process in 1992

Navigable Stream Adjudication Commission

- Charged with determining whether streams were navigable or susceptible to navigation at the time of statehood (February 14, 1912)
 - Technical studies began
 - Commission makes findings
 - Legal challenges follow

Verde ADID

- Environmental Protection Agency funded an advanced identification of resources
 - Used in pre-identification of issues anticipated during processing of CWA Sec 404 permit review
 - Especially 404(b)(1) alternatives analysis, including whether the activity is “water dependent”
 - Finding that sand and gravel mining is not suitable in the Verde River channel

San Pedro RNCA

- 1986 BLM acquired a large tract of private land owned by Tenneco through a land exchange for BLM lands between the White Tank Mtns and the Hassayampa River
- 1988 Congress designated San Pedro Riparian National Conservation Area

San Pedro River



Las Cienegas National Conservation Area

- 1988 BLM acquires land owned by copper company that had been acquired as a water source for a big mine in the Santa Rita Mtns.
- Congress designates as Las Cienegas National Conservation Area

Gila Box Riparian National Conservation Area

- Designated by Congress in 1990

1990s

- Attempts at legislation
- Large scale planning studies
- Arizona Heritage Initiative

Arizona Heritage Initiative

- 1990 voters pass initiative directing money from Arizona Lottery, after other priorities
 - \$10m/yr to Game and Fish Heritage
 - Includes land acquisition
 - Habitat Evaluation and Protection
 - More people at AGFD reviewing projects, engaged in planning
 - \$10m/yr to State Parks Heritage
- After passage legislature tries to rescind

Campbell Ranch – Verde Headwater Springs area



Riparian Area Advisory Committee

- Develop recommendations back to the legislature
 - Diverse stakeholder group
- In the same legislation:
 - Information be compiled by the Department of Water Resources
 - Game and Fish to develop classification and map riparian areas
 - Statewide Riparian Inventory and Mapping

Arizona Water Protection Fund

- “An annual source of monies for the development and implementation of measures to protect water of sufficient quality and quantity to maintain, enhance, and restore rivers and streams and associated riparian habitat.” Enacted 1994
- 2007 Grant Cycle anticipated to include \$3m

Alamo Dam Studies

- Corps of Engineers reconnaissance study with ADWR, recommended stakeholders convene in 1989 report
- Bill Williams Corridor Steering Committee
 - Bill Williams River Corridor Technical Committee
 - Developed a consensus recommendation for operation of Alamo Dam to optimize Alamo Lake and Bill Williams River resources
 - Recommended monitoring and adaptive management
- Corps Alamo Lake, Arizona Recon. Study
- 1993 flood



Alamo Dam Studies

- 1995 flood
- Corps Alamo Lake, Arizona Feasibility Study
- Water Resources Development Act of 1996 changed authorized purposes of Dam, subject to completion of studies
- Record of Decision 1999
- Revised Water Control Manual



Studies Associated with 1993 Flooding in AZ

- Appropriation to Corps to look at flood control, water conservation, environmental restoration on the Salt and Gila River in the vicinity of Tempe and Phoenix
 - Rio Salado Project
 - Tres Rios Project
- Gillespie to Yuma studies

Glen Canyon Dam Operations

- Glen Canyon Dam Adaptive Management Program, based in NEPA, ESA, Grand Canyon Protection Act
 - Record of Decision for EIS in 1995
 - Biological Opinion



Understand Stream Processes

- Interest in applied fluvial geomorphology increases
- Understand how streams function in their natural setting
 - Game and Fish and Department of Environmental Quality each hire Dave Rosgen for training
 - ARC sponsors workshops

Watershed Groups

- Verde Watershed Association
 - Identified technical studies as highest priority, esp. hydrology
- Little Colorado River Multi-Objective Management
 - Has secured funding for studies, including geomorphology
 - Assessment by Tom Moody
- San Carlos-Safford-Duncan Non-Point Source Management Zone
 - Several technical studies funded
 - Large USGS geomorphology study

The New Century

- Compliance based programs based on ESA
- Concern about water use

Compliance Based Programs

- Lower Colorado River Multi-Species Conservation Program
 - Lake Mead to San Luis
- Roosevelt Lake Habitat Conservation Plan
- Horseshoe-Bartlett Habitat Conservation Plan
 - Includes Verde River to Granite Reef Dam

Bill Williams River NWR (Reference site for LCR MSCP)



Yuma clapper rail
(In cattail marsh)



Yellow-billed Cuckoo
(In overstory)



Southwestern willow flycatcher
(In understory/mid story)



Razorback sucker
(In open water)

This graphic illustrates habitat use on the Bill Williams River as an example of how MSCP habitats would be designed.

Horseshoe Lake – Spring 2005



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International Programs

- Minute 306 to 1944 Mexico Water Treaty
 - “Conceptual Framework for U.S. - Mx Studies for Future Recommendations Concerning the Riparian and estuarine Ecology of the Limitrophe Section of the Colorado River and its Associated Delta.”
Approvals: United States - December 12, 2000
Mexico - December 13, 2000
 - Conference held September 11, 2001 in Mexicali
 - Same treaty involves management of Rio Grande

Range Reform

- Standards and Guidelines for Rangeland Health
 - Goal of Proper Functioning Condition for riparian areas
 - Need to understand the system in its physical context
 - Includes concepts from geomorphology

Compliance/Land Use Planning

Sonoran Desert Conservation Plan

- Addresses 56 Priority Vulnerable Species

Implemented through:

- Pima County Comprehensive Plan
- Pima County Multiple Species Conservation Plan
 - ESA § 10(a)(1)(A) permit for 35 species

Concern About Water Use, Examples

- Groundwater importation by Prescott
- Sierra Vista and Fort Huachuca effects on San Pedro
- Well development in Pine/Strawberry area
- Groundwater use along Santa Cruz

Data collection is important



