



Arizona Riparian Council

Volume 16, Number 2

June 2003

NATURAL RESOURCES CONSERVATION SERVICE AND RIPARIAN AREAS



by Cindy D. Zisner, ARC, Ron Joy and Gilbert Two Two, Natural Resources Conservation Service

The Natural Resources Conservation Service (NRCS) assists private landowners with conservation of soil, water, and other natural resources. They provide technical assistance based on sound science to help the landowner with their specific need. Most of the work is done at the local level and the NRCS has local conservation districts in nearly every state.

In Arizona there are several conservation assistance and incentive programs available. They include:

- Conservation Reserve Program
- Farmland Protection Program
- Flood Risk Reduction Program
- Wildlife Habitat Incentive Programs
- Conservation Farm Option
- Conservation of Private Grazing Land
- Emergency Watershed Protection Program
- Resource Conservation and Development Program
- Small Watershed Program
- River Basin Program
 - Locally Led Watershed Initiatives
 - Special Resources Studies
 - Flood Plain Management Studies

- Cooperative River Basin Studies
- Environmental Quality Incentives Program
- Soil and Water Conservation Assistance (SWCA)
- Wetlands Reserve Program
- Forestry Incentive Program
- Water Quality Incentives

All of the program will not be mentioned here, but as you can see there are many available. The SWCA program is authorized by the Agricultural Risk Protection Act of 2000 and is a voluntary program for farmers and ranchers that offers cost-share incentive payments. Its purpose is to address threats to natural resources (i.e., grazing land, wetlands, wildlife habitat); to comply with federal and state environmental laws; and to make cost-effective beneficial changes to conserve soil, water, and related natural resources.

The Wetlands Reserve Program is a voluntary program to restore and protect wetlands on private property. It is an incentive program to retire land from agricultural use to enhance wetlands.

The Flood Risk Reduction Program provides payments to farmers for not using frequently flooded land for agricultural purposes. In return, participants

have to give up some other USDA benefits.

The Wildlife Habitat Incentives Program (WHIP) is a new program offering cost-share incentives to landowners to develop and maintain wildlife habitat on their land. Participants work with their local NRCS district to develop a wildlife habitat plan.

Conservation of Private Grazing Land is a voluntary program to conserve and enhance natural resources on nonfederal grazing lands. NRCS provides technical, educational, and related assistance to private landowners in better grazing land management, protecting soil from erosion, conserving water, providing wildlife habitat along with other practices.

(Cont. NRCS pg. 3)

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VICE PRESIDENT'S MESSAGE

Greetings! Jeff is letting me sit in this issue. We have just completed another successful spring meeting, and also have a number of issues and activities to tell the membership about. Jeff will discuss the meeting elsewhere. I just want to add that personally I thought it was very successful and enjoyable, even if we did miss seeing some of you there.

Our subcommittee that recently completed a public comment response regarding possible changes to the Clean Water Act should receive a round of thanks from all of us. Julia Fonseca, Diane Laush, Kris Randall, Theresa Pinto, and Cindy Zisner worked diligently to research and craft an authoritative response from the Council. If you'd like to read it is posted on the web at <http://aztecfreenet.org/ARC/Issues>.

Another activity that the Council is not yet directly involved in, but which I hope we will be active with in the future, is the West Valley Natural History Festival. As many of you know, I hope, the lower Salt River and the Gila River west of Phoenix have an extremely rich assemblage of riparian resources. Native plants, mixed with an assortment of

non-natives, form a ribbon of green splashed with the color of egrets, orioles, chats and bobcats for about 35 river miles, at least to the old Gillespie Dam area southwest of Arlington. From that point westward, the riparian zone is patchier, but still offers a richness of wildlife and wildlife habitat. The fishery here is largely non-native, but due to the rich nutrient loading (much of the water is effluent), it has a density of biomass exceeding most similar-sized systems. As a result it supports an incredible assortment of fish eating wildlife. A few years ago we even had a coyote that could be reliably seen fishing in a riffle just downstream of the Hwy. 85 bridge! A Christmas Bird Count has been conducted in the Buckeye area for many years, and another one has been re-established in the Tres Rios area recently after about a 20-year hiatus.

Much of the property in the active floodplain is in public ownership and thus has been left largely alone, but this may not continue into the future. There are strong developmental pressures in the area and a desire to see flood control and habitat restoration efforts. While these efforts have many good things to offer, there

are risks to any changes that might occur. One solution that has occurred to some of us is to ensure the retention of this rich wildland community by making it more important to the local population. By raising awareness of this rich resource through a natural history festival, we hope to encourage the local communities to become a voice for its preservation. A festival will provide an economic incentive in the communities to preserve the habitats, and also develop a group of recreational users that can perhaps displace some of the less desirable uses that some of this area is subject to today.

I hope the many talents and resources that are a part of the Arizona Riparian Council can be counted on to be a part of this effort. For any that are interested in getting involved, we are forming a steering committee to plan future events and will have many opportunities for the Council and its members to assist. Please contact me if you have a personal interest.

*Tom Hildebrandt,
Vice President* 🐾

Tom Hildebrandt introducing speakers at spring meeting.



(NRCS Cont. from pg. 1)

The Emergency Watershed Protection Program provides technical and cost-sharing assistance for projects that affect a group of people with the same common problem, however, individuals may also qualify. Typical assistance is in removing debris from stream channels, road culverts, and bridge abutments; protection of eroding streambanks; repair damaged drainage facilities; repair of levees and structures; and reseeding of damaged areas.

Technical and financial assistance for rural community projects to improve and develop water and land resources in watersheds is provided by the Small Watershed Program. Issues covered are flood prevention, water management of agricultural water, fish and wildlife development, public recreation, groundwater recharge, water quality management, and conservation and proper land use.

The River Basin Program: Cooperative River Basin Studies are done at the request of local sponsors in cooperation with federal, state, and local agencies. The studies range in size from small watersheds to entire river basins. The main objectives are to identify water and land resource interests; to study the economic base and environment; and to form alternative ways to meet the needs of the identified interests and to improve the economy and environment. River basin studies in Arizona include the San Juan River, Santa Cruz-San Pedro River; Little Colorado River; Colorado River Indian Reservation; Pinal Active Management Area; and the Verde River.

Floodplain Management Studies are conducted at the request of locals in coordination with a county flood control district and are on a cost share basis. The studies find information on flood-prone areas, potential flood damage, and alternative methods of solving problems that are

identified. Ecological, economic, and social values of a floodplain are other values that are often assessed, along with restoration and preservation opportunities.

The Environmental Quality Incentives Program (EQIP) addresses identified problems with natural resources at the local level. EQIP offers contracts that provide incentive payments and cost sharing for conservation practices, such as water conservation, animal waste management systems, erosion control, and other practices to improve and maintain the health of natural resources and the environment.

EQIP PROGRAM EXAMPLES Perkinsville

If you ask most people in Arizona where Perkinsville is, you're going to get a confused look from them. Yet, for the people who know where this little place is actually located, they will tell you it's a hidden piece of Arizona paradise.

Not only is this area of the upper Verde River beautiful to look at, it is also now an area where environmental stewardship is nationally known. Much of these accolades are due to a partnership formed by Dr. George and Sharon Yard and the Natural Resources Conservation Service (NRCS).

The Yards own the 56-acre Y bar D Ranch, located on the upper Verde River. In 1991, they also added the 15,000-acre Horseshoe Allotment in the Prescott National Forest. The 15,000 acres goes from approximately the 3,800-foot level (which includes 4 miles along the upper Verde River) to more than the 7,200-foot level in the Mingus Mountains.

Perkinsville itself is 26 miles from Chino Valley, AZ, and 36 miles from Williams, AZ, and has a total population of less than 50 people.

The area is made up of high plains, arroyos, canyons and even some cottonwood, pinyon and pine

trees. It's such a beautiful area, that the Verde River Canyon Railroad uses a way station there as a turnaround point for their excursion trains.

The area was first developed for ranching and some farming in 1899 by Ben Perkins who at one time had up to 10,000 head of cattle on the property. There are several members of the Perkins family that still live in the area.

The Yards appear to be a perfect match for this area. George is a retired medical doctor who had a thriving practice in Flagstaff, AZ, for more than 36 years and Sharon was his nurse.

The Yards are not new to ranching as George grew up on a ranch, and they also owned the 25,000-acre Robbers Roost Ranch in Munds Park near Flagstaff from 1959 through 1978. In addition, they also owned a 25,000-acre ranch from 1980 to 1986 near Young.

When the Yards decided to retire they began looking for a place with two major requirements. First, it had to have a river by it and the second it had to be in Arizona. A friend told them about Perkinsville and they decided to take a look.

When they first saw the property, it was a bit rundown and there wasn't even a house for them to live in. However, they also saw the potential of the ranch even though it had some empty corrals, some overgrown cropland and no trees. Yet, they fell in love with the land and began development. According to George, the land has become better than what they had envisioned or imagined.

Camping out on the banks of the upper Verde River, the Yards planted trees and began building their new home. Today, there is a beautiful three-bedroom ranch house, which features a natural rock fireplace that was built from river rock located on the property. There are also fruit trees, which lead from the house to the river.

With that completed, the Yards gazed out at the river itself

and potential pastureland. What they thought could be good pastureland was now covered with an Arizona-listed noxious weed called Russian knapweed. In addition, the irrigation system was in bad shape.

They called the NRCS field office in Prescott Valley, Arizona, and Tim Garcia and Bob Adams responded. Garcia and Adams' initial evaluation also showed the noxious weed was not only degrading the Yard's potential pasture, but was also affecting other areas such as wildlife habitat and riparian conditions.

After some consultation, the Yards agreed to an NRCS Environmental Quality Incentives Program (EQIP) collaborative effort that would include a new irrigation pipeline system, rid the area of the Russian knapweed, and improve the watershed by reducing erosion. At the same time, they would improve the rangeland associated with the pastureland.

Their efforts have been paying off for the riparian areas too. Another major concern was the riparian areas that had been abused from overusage of cattle trampling down the riparian areas and overgrazing of the forestland. Not only did Garcia and Adams offer assistance for this issue, but Adams also assisted the Yards cutting back tamarisk trees, which were overpowering native vegetation along the river bank. Cutting back the tamarisk trees is allowing the native plants to grow back to a level they once were.

The Yard's love of the land paid off in other areas away from the main house. According to an article from the *Range and Pasture Press*, much of the 15,000 acres of Prescott National Forest was seriously degraded. However, with the help of NRCS, the Rocky Mountain Research Station, and the Prescott National Forest, the Yards have developed new water points, installed 5 miles of water line, dug wells, cross-fenced and implemented rotational grazing. They even herded animals to

improve grazing distribution and plant health. The *Range and Pasture Press* article also noted that monitoring by a variety of sources for the past five years have shown the Yards are achieving these objectives.

The extra effort the Yards and their partners have done, since they purchased the property in 1991, are evident to many people throughout the state and nationally. In February 2002, the Yards were part of the Upper Verde River Adaptive Management Partnership (UVRAMP), which received the Forest Service Chief's 2000/2001 National Rural Community Assistance Action Award. Four area ranches, including the Yards, shared the prestigious award.

The Arizona Cattleman's Association also took notice and the Yards won the Arizona State Environmental Stewardship Award, the Regional Environmental Stewardship Award and were nominated for the National Environmental Stewardship Award.

Some people think of paradise as being high in the Colorado Rockies, or on a beach in Hawaii. However, the Yards have found their little paradise in a little-known area of Arizona called Perkinsville.

Sells

Subsistence farming, using flashflood waters, has played an important role in the lives of the native population of the arid Sonoran Desert area.

Arizona's Tohono O'odham Nation, derive a considerable part of their livelihood from farming their floodplain fields with the storm waters of intermittent watercourses, locally termed *ak chin* "arroyo mouth." More accurately, they farm where floods spread out, letting the waters irrigate their crops automatically.

The O'odham learned to plant where both rain and runoff are naturally concentrated and held, by means of impermanent weirs,

low embankments, dikes and dirt ditches.

The Tohono O'odham, have been described as one of the world's most remarkable agricultural civilizations in the desert south of Tucson along the border with Mexico. These clever agriculturists grew ancient crops, specialized kinds of corn, beans, and squashes that produced a harvest on fewer inches of rainfall than are used anywhere else in the world.

Roughly 9,900 acres of crops were grown via floodwater farming on the Tohono O'odham Nation around 1913; by 1960, there were only about 988 acres of flood fields on the Nation. Traditional fields are used less frequently today, and over the last few decades what is not being utilized for crops have been left to undergo secondary vegetative succession.

O'odham families complain that the elderly masters of flood farming are dying, while a smaller percentage of the young are learning the basic skills. Time-tried seed stock have been abandoned or lost viability over the years since the last planting.

Today, the O'odham food production strategy remain viable in arid lands, even though the amount of land floodwater farmed has been drastically reduced over time. As a high-risk system, floodwater farming is not now competitive with conventional irrigation agriculture in arid lands, but may become so as groundwater pumping costs continue to affect crop production economics.

Community projects have sprung up across the O'odham Nation in attempt to keep this ancient technology alive, by merging traditional farming techniques with more modern irrigation methods.

With assistance in the form of the USDA Natural Resource Conservation Service's cost share programs, communities can carry out activities that increase conservation of natural resources, support

economic development, and enhance the environment and standard of living. Soil conservationists realize they do not have to reinvent the wheel, however, only attempt to subtract some of the risk factor out of this time proven method of farming.

Designing low output sprinkler systems contours, earth tank reservoir to supplement the crop irrigation needs only when infrequent, and discrete and largely unpredictable water inputs of the desert ecosystem failure to meet the crop water demands. So,

in periods when storm events are more probable; in July through August and in December through January, these floodwater-charged ecosystems will continue to produce crops, which have shown higher protein contents and more physiological and drought and heat tolerance than crops grown under conventionally irrigated fields.

Editor's Note: One of ARC's former Presidents, Ruth Valencia, has been a member of an NRCS committee and the Council is

committed to continuing its involvement with the NRCS and its committee.

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CLEAN WATER ACT PROTECTION

By Julia Fonseca

The Arizona Riparian Council Board has prepared comments on a recent proposal to pare back the Clean Water Act. Our letter can be viewed on the ARC website at: <http://aztecfreenet.org/ARC/Issues>.

ARC is concerned about the potential effects of reducing the application of the Clean Water Act in Arizona upon riparian areas. The Clean Water Act (CWA) regulates discharges of pollutants to streams, and is administered by Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers in various programs.

The State of Arizona has no wetland protection program, nor any other regulatory program addressing the biological integrity of riparian or wetland systems. The State of Arizona has historically relied upon the Clean Water Act (Sections 401 and more recently, Section 402) to gain a measure of state influence over changes to the physical character of its waters, and discharges of pollutants to her streams.

Reductions in scope of the CWA would minimize the extent of the powers that can be delegated to the state. Comments submitted

by industry and municipalities suggest exempting from intermittent streams, ephemeral streams, perennial streams deemed non-navigable, channelized or man-made drainages, and streams tributary to larger streams from federal regulation. If the CWA were changed so as not to apply to these streams, then Arizona would no longer have any federally delegated authority to regulate impacts to riparian areas under Section 401 or under Section 402.

It seems extremely unlikely that any new state program to regulate the physical, biological or chemical integrity of the state's waters will be authorized in the near future. Arizona's legislature has repeatedly rejected proposed measures to protect the physical or biological characteristics of even the most sensitive perennial springs and streams, let alone ephemeral systems.

Reductions in the extent of Clean Water Act jurisdiction mean less protection for endangered species and archeological and historical resources. Because issuance of permits under the CWA is a federal action, the permit recipients have a responsibility to comply with the

Endangered Species Act and the National Historic Preservation Act. The removal of Endangered Species Act reviews for Section 402 permits issued by Arizona has already prompted a recent lawsuit by Defenders of Wildlife.



SPRING MEETING – FIRE ON THE WATERSHED: ARE WE BURNED OUT OR READY TO FAN THE FLAMES?

The 17th ARC spring meeting was held on April 4-5 at the Hon-Dah Resort outside of Pinetop, Arizona. Following last year's Rodeo-Chediski fire and with prolonged drought conditions throughout the state, the topic *Fire on the Watershed: Are We Burned Out or ready to Fan the Flames?* was timely and relevant. This year's meeting was informative and entertaining. Although the turnout was less than spectacular, those in attendance were treated to many engaging presentations and visual images of areas impacted by wildfires.

The morning plenary session consisted of five presentations beginning with a broad-based historical perspective of fire regimes in Arizona by Paul Sheppard and ending with Tom Subirge's focused presentation on fire effects on riparian areas. In between, Peter Ffolliott examined impacts of the Rodeo-Chediski fire on a single watershed along Stermer Ridge. Laurel Lacher examined water-related impacts of wildfires and results of post-fire mitigation efforts in the White Mountains. Grant Loomis discussed the Burn Area Emergency Rehabilitation (BAER) process, and water quality and

hydrologic effects to burned areas. The presentations were followed by a question-and-answer session with the plenary speakers.

Following lunch, there were seven technical presentations. These presentations included a thought-provoking discussion about the philosophical, social, scientific and political aspects of post-fire ecosystem restoration. Jim Crosswhite utilized animated drawings to emphasize new solutions for long-term riparian restoration. Other presentations covered topics including plant species diversity along the San Pedro River, water resources and land use planning at Emperita Ranch, bat observations in a riparian corridor, changes in riparian vegetation along the Upper San Pedro. The technical presentations concluded with a woody fuel load study in the middle Rio Grande of New Mexico. There were also three posters presented at the meeting. Elections were held and Theresa Pinto and Cindy Zisner were re-elected to their positions of Treasurer and Secretary, respectively.

For those who stayed in town Friday night, dinner was held at El Rancho Mexican Restaurant. On a

chilly Saturday morning, Dr. Ffolliott led a field trip to the watershed along Stermer Ridge, south of Heber. The group of 10 traveled 7 mi south from the Black Mountain Ranger District Office on a Forest Service road to reach the site. The group spent 2.5 hours examining the heavily burned hillside and learning about past and ongoing study efforts on the watershed. From the ground, it appeared that the Rodeo-Chediski fire impacted approximately 70 to 80% of the watershed and evidence of bark beetle infestation was present. Ponderosa pine seedlings were also visible throughout the site. One location showed significant soil movement following the loss of ground cover. We would like to thank Dr. Ffolliott for giving members a close-up view of wildfire impacts and watershed monitoring efforts. 📷



Dr. Ffolliott leading field trip at the Stermer Ridge site. Photos by Tim Flood.



LEGAL ISSUES OF CONCERN

Richard Tiburcio Campbell, Law Offices of Withey, Anderson & Morris, Phoenix

RECENT LEGAL DEVELOPMENTS

Recent legal maneuverings at the state and federal level hold the potential for significant change regarding the management of riparian resources in Arizona.

Phelps Dodge Continues Its Challenge to Instream Flow Rights in Arizona

As discussed in the previous issue of the *Arizona Riparian Council Newsletter* (16[1]:13) Phelps Dodge had filed an administrative challenge to an application filed by the Tonto National Forest for instream flow rights along two reaches of Cherry Creek as it flows south from Young to its confluence with the Salt River just east of Roosevelt Lake. The challenge went beyond the specifics of the case, and to the very heart of Arizona Department of Water Resources' (ADWR) ability to issue instream flow permits.

In essence, Phelps Dodge asserted that ADWR has no legal authority to issue such permits because the Arizona Legislature never expressly authorized the Department to issue permits to appropriate water for instream flows. Specifically, Phelps Dodge argued that because the Arizona Revised Statutes require an "open, physical demonstration" to appropriate surface water, permits for instream flow are unavailable because instream flow does not require a physical diversion of water out of the stream.

The Administrative Law Judge rejected the challenge, concluding that the Arizona Legislature had indeed granted ADWR authority to issue instream flow permits, and that "Arizona's prior appropriation system does not require an actual physical diversion of water where no

diversion is necessary to put the water to beneficial use."¹ In other words, "a water rights applicant must provide evidence of a diversion only if the particular type of proposed beneficial use requires a physical diversion."² On March 25, 2003, Phelps Dodge appealed the decision of the Administrative Law Judge to the Maricopa County Superior Court.³ Once again, Phelps Dodge is asserting that the Arizona Legislature has not authorized the issuance of water rights for instream flow. As of this writing an answer has not yet been filed. Joining with ADWR in defending the case are, among others, SRP and the Tonto National Forest.

A victory for Phelps Dodge would throw into doubt the legal basis for the approximately 24 instream flow permits that have been approved, and the 50 or so applications currently before ADWR.

The Colorado River Delta

On March 31, 2003, the U.S. District Court for the District of Columbia granted the Department of Interior's summary judgment motion with regard to the lawsuit brought by four American and four Mexican environmental groups to require the Bureau of Reclamation to consult with U.S. Fish and Wildlife on the effects of its lower Colorado River operations on endangered and threatened species in the Colorado River Delta region in Mexico.⁴ It is unclear whether this decision will be appealed to the D.C. Circuit Court of Appeals.

At issue in this case was the Bureau's lower Colorado River operations and its effect on endangered and threatened species across the international boundary

with Mexico in the Colorado River Delta and Upper Gulf of California. Threatened and endangered species include the Mexican populations of the Yuma Clapper Rail, the Southwestern Willow Flycatcher, the Desert Pupfish, the Totoaba Bass and Vaquita Harbor Porpoise. The environmental plaintiffs demanded that the Bureau consult with U.S. Fish and Wildlife as required under the Endangered Species Act, with regard to the effect of the Bureau's actions along the lower Colorado River, including the Multi-Species Conservation Plan (MSCP), on the species in question. The Bureau countered that its duty to consult under the ESA does not extend to its operations affecting extra-territorial species in Mexico because it is without authority to act to protect those species in Mexico.

The district court acknowledged that "there is no serious question that Reclamation's ongoing operations on the lower Colorado River have had and will continue to have a significant impact on the delta region and the [endangered and threatened] species in question."⁵ The district court also found that although there is a general presumption against the extraterritorial application of U.S. statutes, a statute "does not present a problem of extraterritoriality, so long as the conduct which Congress seeks to regulate occurs largely within the U.S."⁶ Thus, although the district court did not explicitly say so, it appears the scope of the ESA, and its consultation requirements, could under the right circumstances extend across the border.

Notwithstanding the adverse effects of the Bureau's operations in Mexico, and the conclusion that the ESA's scope, and correspond-

ingly the Bureau's scope of review, could include Mexico, the district court found that the Bureau was not required to consult with U.S. Fish and Wildlife under the ESA because the Bureau was without any discretion to manage the lower Colorado River for the benefit of the Delta or Upper Gulf. The Bureau was without this discretion because the current status of the "Law of the River", i.e., the over-allocated status of the Colorado River, simply will not allow the Bureau to divert any excess Colorado River flow to Mexico.⁷ The court explained:

[I]t seems unlikely that any case will present facts that more clearly make any agency's actions nondiscretionary than this one: a Supreme Court injunction [i.e., the 1963 Arizona v. California decision], an international treaty [i.e., the 1944 Treaty Between the U.S. and Mexico guaranteeing the latter its share of Colorado River water], federal statutes, and contracts between the government and water users that account for every acre foot of lower Colorado River water.⁸

It is unclear at the time of this writing whether the district court's decision will be appealed to the D.C. Circuit Court of Appeals.

Impacts of Fort Huachuca Groundwater Pumping on San Pedro River

On May 7, 2003, the U.S. House Resources Committee approved an amendment to the "National Security Readiness Act of 2003" by Rep. Rick Renzi (R-Ariz.) that picks up where Rep. Jim Kolbe (R-Ariz) left off last year in his failed attempt to nullify a decision by the U.S. District Court in Tucson requiring U.S. Fish and Wildlife to consider the

impact of groundwater pumping attributable to the Fort Huachuca military base on the San Pedro River.

The April 2002 federal court decision declared that the Service's Biological Opinion for the U.S. Army's operations at the 3,000 acre Fort Huachuca base was arbitrary, capricious, and contrary to the legal requirements of the Endangered Species Act ("ESA").⁹ The court found that the Service's Opinion not require any specific, enforceable measures to address the development and unrestrained groundwater pumping resulting directly or indirectly from Fort Huachuca's actions.

In response to the decision, Rep. Kolbe attached a rider to a government appropriations bill to exempt the military from the need to mitigate off-base environmental impacts, such as groundwater pumping. Ultimately, however, Kolbe was unable to find a Senator to attach the rider to the Senate version of the bill.¹⁰

Renzi has revived Kolbe's arguments. Under Renzi's rider, only water consumption on a military installation (or off the installation if the Department of Defense has authority over the water source) need be considered by the U.S. Fish and Wildlife Service when it issues Biological Opinions with regard to military installations. In the Committee, Renzi argued that just as Yosemite National Park should not be held accountable for water usage by nearby restaurants and hotels, Fort Huachuca should not be required to consider the impacts of nearby residential development in Sierra Vista.¹¹

At issue in the San Pedro River is the continued survival of over 400 bird species, 180 butterfly species, 87 mammal species, and 68 species of amphibians and reptiles.

REFERENCES

1. *Decision of the Administrative Law Judge, In the Matter of*

the Application for Permit to Appropriate Public Water of Cherry Creek, a Tributary of Salt River; Application No. 33-96609, No.

02A-SW002-DWR (Jan. 24, 2003) at 17.

2. *Id.*, citing generally *State v. Moros*, 104 Nev. 709, 766 (1988), and *State, Dep't of Parks v. Idaho Dep't of Water Admin.*, 96 Idaho 440 (1974).
3. *Phelps Dodge Corps v. Arizona Department of Water Resources, LC* 2003-000243-001, filed March 25, 2003, in Maricopa County Superior Court.
4. *Defenders of Wildlife v. Norton*, 2003 U.S. Dist. LEXIS 5031 (D.D.C. March 31, 2002)
5. *Id.* at *25.
6. *Id.* at *26.
7. *Id.* at *39.
8. *Id.* at *40.
9. See *Center for Biological Diversity, et al., v. Rumsfeld*, 198 F. Supp. 2d 1139 (D. Ariz. 2002).
10. *Arizona Daily Star*, "Military wants to be exempt from environmental lawsuits," (June 18, 2002).
11. E&E Publishing, L.L.C., *Land Letter* (May 8, 2003); <http://www.eenews.net/Landletter/Backissues/050803/05080311.htm#5>





NOTEWORTHY PUBLICATIONS

Jere Boudell, Department of Plant Biology, Arizona State University

National Research Council.

2002. *Riparian Areas: Functions and Strategies for Management*. National Academy Press, Washington, DC.

What does "riparian" mean? How do the hydrologic processes of rivers in the Southwest differ from those in the East? How are humans altering riparian areas? How can the Surface Mining Control and Reclamation Act be used to protect riparian ecosystems? How does the Proper Functioning Condition assessment method differ from the hydrogeomorphic approach to assessment? If you ask questions such as these, then the National Research Council's *Riparian Areas: Functions and Strategies for Management* is the book for you.

In response to the realization that riparian areas are often excluded from protection, as they are not always recognized as "wetlands," a committee composed of members from across the nation with varying backgrounds was assembled to write a report on riparian areas. The report explores six topics: definition of "riparian," description of the structure and function of riparian ecosystems, documentation of anthropogenic impacts to riparian ecosystems and an assessment of riparian acreage, legal strategies to protect riparian ecosystems, evaluation of assessment methods, and finally management and restoration practices. The book ends with a discussion on the importance of education in the protection of riparian ecosystems.

The NRC committee developed a comprehensive definition of riparian areas, which are

"...transitional between terrestrial and aquatic ecosystems and are distinguished by gradients in

biophysical conditions, ecological processes, and biota. They are areas through which surface and subsurface hydrology connect waterbodies with their adjacent uplands. They include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., a zone of influence). Riparian areas are adjacent to perennial, intermittent, and ephemeral streams, lakes, and estuarine-marine shorelines."

Using this definition as a guideline for defining riparian ecosystems, the committee then describes the structure and function of riparian areas across the U.S. Readers are treated to a journey through fluvial processes and sediment dynamics, hydrologic pathways and biogeochemical processes, the impact of climate on riparian areas, vegetation regions across the U.S., and the various animals that inhabit riparian areas. There is a table to compare the dominant tree genera in the Southeast riparian ecosystems to those in the Southwest, and a map to review mean annual runoff patterns across the U.S. The chapter ends with a section on riparian ecosystem services.

The following chapter describes anthropogenic impacts on riparian ecosystems. Structures such as dams, rip-rap, and jetties and their impacts on various riparian areas are explored. Groundwater withdrawal, phreatophyte control and eradication, drainage tiles, forestry, urbanization, and of course grazing are discussed. Would you like to know how much riparian acreage exists in Arizona or Virginia? Or, perhaps find the percent wetland loss in each state over the last 200 years. All of this information and much more can be found in *Riparian Areas*.

The committee includes a chapter on existing legal strategies for the protection of riparian areas. Federal programs such as Section 404 of the Clean Water Act, Endangered Species Act, and the Federal Power Act are explored. State and local regulatory programs such as Forest Practices Acts and Special Area Protection are discussed. The chapter includes a table listing the various riparian management approaches on private forestlands by state. Perhaps you are interested in ways to encourage private landowners to protect riparian areas. If you are, included are incentive-based approaches in the legal strategies section. With 40% of U.S. land publicly owned, the committee also included a discussion of federal land systems and their respective agencies such as the Bureau of Land Management, National Parks, and Wild and Scenic Rivers. As one who is not well versed in legal strategies, I was glad to see a section devoted to the various legal issues and the complexities involved in the protection of riparian ecosystems.

The final chapter in *Riparian Areas* is devoted to the various management practices of riparian ecosystems. Both protection and restoration are discussed in this chapter. The committee explores the value of passive restoration techniques vs. active techniques. Important issues such as the management of riparian areas from a watershed perspective are explored. Assessments techniques such as the Habitat Evaluation

Procedure and the various reference-based assessments are discussed. Would you like to review the pro's and con's of the various reference methods? You can do so in this section. If you would like to read about the USDA's approach to buffer design

you can. Finally, the chapter ends with a plea for riparian education.

As you no doubt noticed, I'm very pleased with the NRC's effort to explore riparian issues. Not only is the book fairly comprehensive, but it's also formatted

well. Each chapter includes cases studies, figures, and a lengthy reference section. Summary statements are included at the end of each chapter, and a summary is included in the beginning of the book. The committee makes sure

the reader understands the important points of the report. The NRC committee produced a fine product worthy of their effort.

Well done!



OASIS UNDER SEIGE: VIDEO PROMOTES RIPARIAN CONSERVATION

by *Sonja A. Diehn*

Growing up at the base of the Catalina Mountains in Tucson, Arizona, I used to play in the Rillito River where it merges with Tanque Verde wash at Craycroft Road. Until the big flood of 1983, Craycroft used to dip down into the wash bottom and was often covered with sand after rains brought flowing water.

Imprinted upon me are images of banks eroding away, debris floating downstream and houses caving into the raging, muddy floodwaters. When the road washed out, those of us living north of the river were cut off from the rest of Tucson, and I can still recollect the thrill of not having to go to school during those few days.

Even when they built the bridge after the flood, I would go and play in the riverbed among the old, grand cottonwoods of the thriving riparian forest. For several months of the year the Rillito would run, and I remember the tug of the current, as I waded in thigh-deep – strong enough to remain dangerous. People would kayak and inner-tube down the stream when it flowed, and it was a real privilege to have access to a living river so close to home.

Growing older, I visited the area less and less. As a teenager in the early 1990s I would drive across the river on the Craycroft Bridge, looking east towards the belt of green trees upstream, with the wilderness of the Rincon Mountains – then to the riverbed on the west, towards Tucson, which was channelized and practically devoid of vegetation.

Over the years I saw the riparian forest decline and watched as the river flowed less and less. The population of this area northeast of Tucson has perhaps tripled over the past decade. I remember when every corner of the intersection of Craycroft and River was unspoiled desert. On a recent drive to my old neighborhood, I noticed the last corner had finally succumbed to commercial development.

My experience with the Rillito led me to the video project I have recently completed, entitled *Oasis Under Siege: A Journey Through the Dying River*. Working with Pan Left Productions, a nonprofit group in Tucson, I produced, shot and edited a 24-minute documentary-style video about the loss of riparian areas in Arizona.

Focusing on groundwater pumping, the video is in part an examination and critique of Arizona water law, which has proven inadequate in protecting Arizona's remaining surface waters and riparian areas. Featuring interviews with experts such as Matt Chew (past ARC

Board member) and Julia Fonseca (current ARC Board member), the video also engages viewers with the compelling story of the psychological ramifications of the loss of places of water in the desert Southwest.

The video is currently available to the public and I am seeking to distribute it to people who are involved in educational efforts, especially with youth in Arizona. Please contact me if you are interested in purchasing a copy or scheduling a screening in your community, church, or school.

Editor's Note: Copies should be available in early July. The cost is \$13 which includes shipping. You may reach Sonya at sonya@greenbicycle.net or Sonya A. Diehn, PO Box 508, Tucson AZ 85702

Sonya lives in Tucson where she works for the Center for Biological Diversity. She loves the Sonoran Desert and has been active for several years on issues of media, globalization, and the environment.



Aravaipa Creek from the video.

The Arizona Riparian Council (ARC) was formed in 1986 as a result of the increasing concern over the alarming rate of loss of Arizona’s riparian areas. It is estimated that <10% of Arizona’s original riparian acreage remains in its natural form. These habitats are considered Arizona’s most rare natural communities.

The purpose of the Council is to provide for the exchange of information on the status, protection, and management of riparian systems in Arizona. The term “riparian” is intended to include vegetation, habitats, or ecosystems that are associated with bodies of water (streams or lakes) or are dependent on the existence of perennial or ephemeral surface or subsurface water drainage. Any person or organization interested in the management, protection, or scientific study of riparian systems, or some related phase of riparian conservation is eligible for membership. Annual dues (January-December) are \$20. Additional contributions are gratefully accepted.

This newsletter is published three times a year to communicate current events, issues, problems, and progress involving riparian systems, to inform members about Council business, and to provide a forum for you to express your views or news about riparian topics. The next issue will be mailed in September, the deadline for submittal of articles is August 15, 2003. Please call or write with suggestions, publications for review, announcements, articles, and/or illustrations.

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CALENDAR

Arizona Riparian Council Board of Directors Meeting, July 9, 3:30 PM, Maricopa County Flood Control District Offices, Phoenix. Contact Cindy Zisner, Cindy.Zisner@asu.edu or (480) 965-2490.

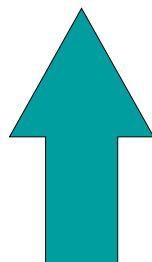
River Voices, River Choices, May 3-7, 2004, River Management Society meeting in Lake Tahoe, California. For more information, contact River Management Society, PO Box 9048, Missoula MT 59807-9048; phone (406) 549-0514; fax (406) 542-6208; email rms@river-management.org, website www.river-management.org.



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APOLOGIES FOR THE LATENESS OF THE NEWSLETTER!!
