



Arizona Riparian Council

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February 2004

ARIZONA GAME AND FISH DEPARTMENT'S ROLE IN RIPARIAN HABITAT MANAGEMENT

by William Werner, Aquatic Habitat Coordinator, Arizona Game and Fish Department, Phoenix

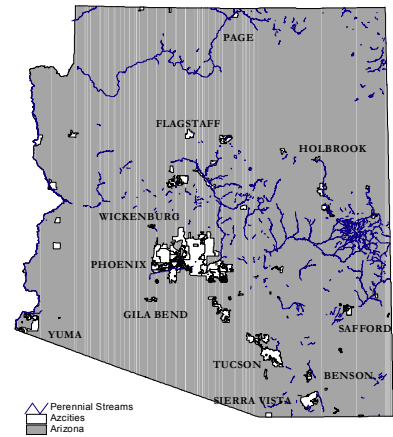
The Arizona Game and Fish Department (Department) is involved in many aspects of riparian habitat management in Arizona. Riparian habitats are of particular interest because so many of the State's fish and wildlife species depend on them for at least a portion of their habitat needs. Riparian habitat is a very broad term encompassing many circumstances in Arizona, where elevations range from 120 ft to 12,633 feet above sea level and mean annual precipitation ranges from about 3 inches in Yuma near the low point to 23 inches in Flagstaff near the high point. Compounding the complexity is the general aridity of the state.

While we have a variety of physical situations providing riparian habitat many of those situations, and the fish and wildlife associated with them, are represented on only small portions of the landscape (see map of perennial streams as an example). Further compounding the complexity is the land ownership pattern of the state, which is based on the pattern of early development. In this arid

region early settlement was located near streams or springs. Lands associated with that early settlement has the longest record of intense use and often became private land. Thus, conservation of native fish and wildlife often means conservation of riparian habitats, including private land programs.

Programs and policies of the Arizona Game and Fish Department, including those related to riparian habitat issues, are based on the following provisions of Arizona law:

Wildlife, both resident and migratory, native or introduced, found in this state except fish and bullfrogs impounded in private ponds or tanks or wildlife and birds reared or held in captivity under permit from the commission [Arizona Game and Fish Commission], are property of the state and may be taken at such times, in such manner, and with such devices as provided by law or rule of the commission. (ARS § 17-102). [The modified Department role in wildlife management on Indian reservations is based on the US Supreme Court case



Mescalero Apache Tribe v. State of New Mexico.]

The laws of the state relating to wildlife shall be administered by the game and fish department. Control of the game and fish department is vested in the game and fish commission. (ARS § 17-201)

Cont. AGFD pg. 3

Inside This Issue

| | |
|-------------------------------------|----|
| President's Message | 2 |
| Water Resources Committee | 6 |
| Spring Meeting | 7 |
| Noteworthy Publications | 10 |
| Calendar | 12 |

PRESIDENT'S MESSAGE

Happy New Year one and all! As we dive into 2004, I have a few reminders, updates, and notes I would like to pass along.

First and foremost is this year's spring meeting *The Lower Gila River: Then and Now*. This year's meeting will be held on March 12th at Estrella Mountain Community College in Avondale. This event will be unique in that our meeting is being held in conjunction with the first annual Tres Rios Nature Festival. The Nature Festival will be held March 13th and 14th at Estrella Mountain Regional Park in Goodyear and will feature a variety of "on-ground" tours, recreational activities, and lectures. More information on the Festival is provided later in this newsletter. Opportunities are available for ARC members to provide riparian systems interpretive information to the festival participants along the Gila River on both days. Contact Tom Hildebrandt at (480) 981-9400 X221 to volunteer to help on field trips and Cindy Zisner (480) 965-2490 to assist with our educational display booth.

Also at the spring meeting, we will be holding elections for three Member-at-Large positions on the Board of Directors. A Member at Large position is a great opportunity to participate in ARC and help guide the Council in its mission. To serve on the board,


you must be a member in good standing of ARC but no prior board experience is required. If you or someone you know is interested, please contact Cindy Zisner for more information.

As an update, in January 2003, the Bush administration published the controversial Advanced Notice of Proposed Rule Making to clarify the extent of the Clean Water Act (CWA). A draft rule that was recently leaked to the media indicated that the Bush administration was considering removing large numbers of wetlands, streams and other water bodies from CWA protections. This likely would have impacted numerous isolated wetlands throughout the southwest. The Council provided a well-researched and comprehensive set of comments to that proposal. In December 2003 the EPA and Army Corps of Engineers did an about-face and reiterated the Bush administration's commitment to the goal of "no net loss" of wetlands by not issuing a new rule on federal jurisdiction over isolated wetlands.

Another potentially controversial action being contemplated at the state and federal levels is the start up of the Yuma Desalting Plant (YDP) and the potential impacts to the Cienega de Santa Clara in Mexico. The Cienega consists of more than 40,000 acres of wetlands and is home to thousands of migratory and resident birds and other wild-

life. Some of you may remember our 1998 Spring Meeting field trip to the Cienega. Operation of the YDP is expected to decrease flows as much as 70%, while tripling salinity levels. These changes would likely have devastating negative impacts on the wetlands and the wildlife that depend on its existence. In November 2003, the Council prepared and submitted a letter to Governor Napolitano urging her to protect riparian resources in the Cienega by finding alternate solutions to operation of the YDP. Stay tuned for more updates on this issue.

Finally, the ARC Board of Directors is working to set up a "visioning" meeting in April with the goal of setting a course for the Council into the future. The Council is rapidly approaching its 20th year anniversary (2006) and the Board is looking for input from the membership. As time does not stand still, neither should the Arizona Riparian Council. We anticipate conducting the visioning meeting in an informal, outdoor setting in a convenient location on a Saturday in April. Information on the date, times and location will be forthcoming. I want to encourage all members to attend this meeting or to send us your thoughts so that we can hear what is important to you as it relates to the future of the Arizona Riparian Council.

Jeff Inwood, President 

(AGFD Cont. from pg. 1)

The Commission shall:....2. Establish broad policies and long range programs for the management, preservation and harvest of wildlife. (ARS § 17-231)

On July 26, 1987, the Arizona Game and Fish Commission formally adopted a policy titled *Wildlife and Wildlife Habitat Compensation* which states, in part, that:

It is the policy of the Arizona Game and Fish Commission that the Department shall seek compensation at a 100% level, when feasible, for actual or potential habitat losses resulting from land and water projects.

Among factors deemed important by the Commission are potential impacts to special category species and/or economically important wildlife species as well as issues which reflect the value, quantity, and quality of habitats which may be impacted by proposed projects.

Further, on October 16, 1987, the Arizona Game and Fish Commission formally adopted a policy, titled *Riparian Habitat*:

It is the policy of the Arizona Game and Fish Commission that the Department shall recognize riparian habitats as areas of critical environmental importance to wildlife and fisheries. The Department shall actively encourage management practices that will result in maintenance of current riparian habitat, and restoration of past or deteriorated riparian habitat....

Department programs to conserve habitat, including riparian habitat, include:

- acquisition and management of lands and water;
- review of proposals that would impact habitat;
- participation in land use planning efforts at the local, county, state, and federal levels;
- participation in planning and implementation of habitat management activities,
- assistance with implementation of programs by other entities; and
- a variety of functions to support the basic objectives.

Land ownership and management has been an integral part of Department programs for many years. Many early acquisitions were for sites to operate fish hatcheries. In the first half of the 20th century many areas were set aside as State Refuges to protect and raise hunted species. While that program has evolved, habitat protection was a central theme. In the early 1950s, lands along the Salt and Gila Rivers in the Phoenix area were acquired for the Gila River Waterfowl Project, using money from the federal excise tax on firearms and ammunition provided for by the Pittman-Robertson Act, to protect habitat and to actively manage the area for waterfowl hunting. The value of those lands as dove nesting habitat was also recognized. The Department still manages those lands, ranging from passive protection to active daily management depending on the site, and we recognize and strive to manage for their value as habitat for all wildlife.

The establishment of the Game and Fish Heritage Fund through a voter initiative in 1990 provided the Department

with additional money to acquire land to protect and manage habitat. The statute specifies that 60% of the monies received by Game and Fish from the Lottery shall be spent on the identification, inventory, acquisition, protection, and management, including maintenance and operations, of sensitive habitat, and that a least 40% of the monies thus available shall be spent on the acquisition of sensitive habitat utilized by endangered, threatened and candidate species.

Many property acquisition projects involve funds from several sources, depending on eligibility and suitability of the site under various programs. When purchasing a parcel we may, as an example, acquire a section of stream with associated riparian habitat values, floodplain pasture, associated water rights, upland grasslands, and adjacent forested lands.

Heritage money has played an important role in acquisition of the Wenima and White Mountain Hereford Wildlife Areas in the upper Little Colorado River watershed. These lands include important habitat for the Little Colorado River spinedace in addition to significant riparian habitat values. Heritage money was used to acquire lands in the headwaters of the Verde River to conserve stream and riparian habitat for a variety of species including spikedace and loach minnow. We knew the area contained important springs, which we now know, based on scientific investigation by the US Geological Survey, provide most of the base flow of the upper Verde River. Heritage



Wenima Wildlife Area on Little Colorado River.

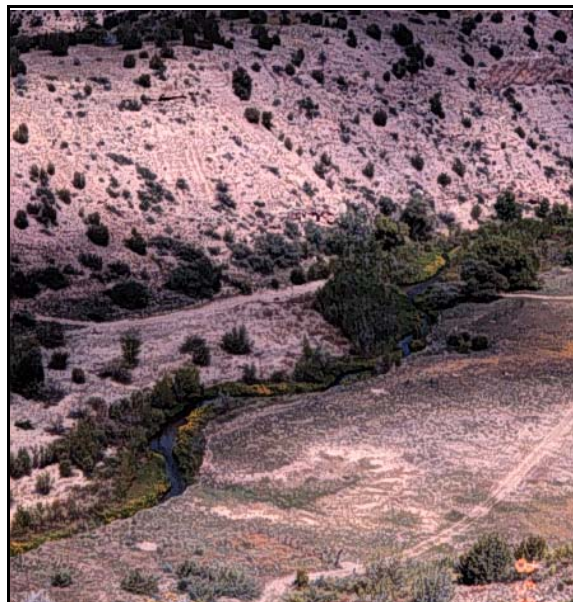
money was used to acquire lands in Whitewater Draw, near Douglas, that contain important wetlands.

The Department has been involved in the review of proposals that would impact habitat for many years. The Department takes advantage of opportunities provided by various legislation to express concerns about potential impacts of proposed actions, among others things, to streams and riparian resources. What is now the Department's Project Evaluation Program began with a focus on river development activities, under the auspices of the federal Fish and Wildlife Coordination Act of 1935, funded with Pittman-Robertson and Dingell-Johnson federal excise tax money from the sale of firearms and ammunition and fishing equipment, respectively.

The program became broader following passage of the National Environmental Policy Act in 1969. Capacity of the Project Evaluation Program was expanded with creation of the Arizona Game and Fish Heritage Fund, which specifies

that 15% of the Lottery money received by Game and Fish shall be spent on habitat evaluation or protection activities.

Review of National Environmental Policy Act documents is a cornerstone of our program but the Department also participates in review of Endangered Species Act compliance documents and reviews projects proposed for permitting under the Clean Water Act, among others. Water quality is important to fish and wildlife and we review draft permits for discharge of pollutants into



Upper Verde River Wildlife Area

Waters of the US under Section 402 of the Act, processed either by the Arizona Department of Environmental Quality as Arizona Pollution Discharge Elimination System (AZPDES) permits or the Environmental Protection Agency as National Pollution Discharge Elimination System (NPDES) permits. Section 404 of the Act requires federal permits, issued by the U.S. Army Corps of Engineers, for "discharge of dredged or fill material" into Waters of the U.S. and adjacent wetlands, which often involves impacts to riparian areas. The Colorado River is navigable under the definition in the federal Rivers and Harbors Act of 1899. The Department is reviewing proposed actions for permitting under Section 10 of the Act as well as reviewing Corps of Engineers public notices. In that review we look at effects to the stream from construction activities. In summary, the Department takes advantage of opportunities provided by a variety of legislation to express concerns about potential impacts of proposed actions to streams and riparian resources.



Bubbling Ponds Hatchery spring source.

The Department participates in land use planning efforts at the local, county, state, and federal levels. Early efforts in guiding land use policy can avoid conflict over impacts later. Department participation in planning and implementation of habitat management activities occurs at a variety of scales ranging from site-specific improvements to large-scale watershed and river planning efforts.

As an example, the Department is involved with the Little Colorado River Multi-Objective Management Project, a stakeholder group involved in multi-objective management with goals to, among others, reduce flood and sediment damage, improve watershed and stream function and enhance water, recreation, wildlife, aquatic and other resources. Also within the Little Colorado River watershed we are involved in the Upper Little Colorado River Watershed Partnership, which has identified objectives to: manage water quality issues, particularly sediment; manage water supply, including to supply irrigators and maintain

base flow; management of flood impacts; manage stream as fish and wildlife habitat; maintain endangered species habitat, including critical habitat; and to provide recreational opportunity including to maintain and improve public access. This group secured funding from the Arizona Water Protection Fund for a demonstration stream restoration project on the Little Colorado River, utilizing natural channel design and bioengineering approaches, implemented on a Game and Fish parcel adjacent to Springerville. The intent of this demonstration project is to provide

an example and outdoor classroom setting to educate people about approaches that may be utilized elsewhere in the area, particularly on private lands.

The Lower Colorado River Multi-Species Conservation Program is a stakeholder-based program to provide for the needs of threatened and endangered species, and species that may become listed that may be affected by operation and maintenance of the Lower Colorado River. Creation and management of riparian habitats for southwestern willow flycatcher and yellow-billed cuckoo will be cornerstones of that program.

The Department has been a participant in other large-scale efforts involving riparian habitats including, as examples, the Rio Salado Environmental Restoration Project, Tres Rios River Management Plan and Environmental Restoration Project, Gillespie to Yuma Reconnaissance Study, Bill Williams River Corridor Steering Committee and Alamo Dam Arizona Feasibility Study, and Glen Canyon Dam Adaptive Management Program.

The Department assists with implementation of riparian habitat related programs by



Whitewater Draw in Cochise County

other entities. We provide the Biologic/Ecologic Review of applications for funding through the Arizona Water Protection Fund as part of the formal evaluation process. We review documents submitted to the Arizona Department of Water Resources to support

claims for instream flow water rights as part of their review process. The Department is an active player in implementation of federal Farm Bill programs related to habitat conservation.

In summary, Game and Fish is opportunistic in our efforts to advocate for the needs

of fish and wildlife and associated riparian habitat.

Information about Arizona Game and Fish can be found at <http://www.azgfd.com/> and Department offices statewide.



WATER RESOURCES COMMITTEE ACTIVITIES 2003

by Julia Fonseca, Committee Chair

The Water Resources Committee is a standing committee of the Arizona Riparian Council. Its purpose is to generate information and recommendations on managing water resources as they affect aquatic and terrestrial parameters in riparian systems. Julia Fonseca is the current Chair; Juliet Stromberg, former Chair, continues as a member.

Committee members are particularly interested in the connections between water policy and aquatic and riparian protection. Active projects of the committee include:

- *State Drought Plan.* The Committee has provided input to the State Drought Plan on behalf of ARC's interests.
- *Input to Active Management Areas (AMAs).* AMAs are used to regulate groundwater use in the most popu-

lated areas of the state. Riparian issues need representation. Mike Block has submitted an application to represent ARC in discussions in the AMA Groundwater User's Advisory Councils for Tucson.

- *Input to the Nature Conservancy's state-wide freshwater assessment.* This effort, led by Jeanmarie Haney, will identify important biological diversity that is dependent on natural surface water systems and attempt to delineate where that diversity is most highly threatened by current and potential future water development. Doug Rautenkranz and others have volunteered to help Jeanmarie locate information sources and also with publicizing the results.
- *Identifying what tools local*

communities in Arizona can use to protect water resources needed for riparian areas. Julia Fonseca has prepared an outline for proposed content of a webpage.

The group participated in providing input to the Board on water resource management for the Santa Clara Cienega/Colorado River. Joe Feller is monitoring the Clean Water Act revisions. In addition, Jeanmarie Haney and Jim Lombard contributed newsletter articles about water resource issues.

If you would like to be involved in any of the above issues, please contact Chairperson Julia Fonseca at Julia.Fonseca@dot.pima.gov, or chat with a committee member during the March meeting!



ARIZONA RIPARIAN COUNCIL PARTNERS WITH TRES RIOS NATURE FESTIVAL

This year's Arizona Riparian Council spring meeting will be held on March 12, 2004, at the Estrella Mountain Community College, Avondale, Arizona. The meeting will be located in Center for Teaching and Learning in Montezuma Hall. The Council meeting this year is a unique opportunity to partner with a first-time event in the Gila River valley. The APS Tres Rios Nature Festival will be held the rest of the weekend on March 13-14. The Festival was conceived as a strategy to conserve the rich riparian wildlife and habitat values of the Gila River system west of Phoenix in the face of the rapidly expanding human population in the area. This growth may well lead to degradation of this area through the impacts of flood control, mosquito control, direct development and adverse impacts from off road vehicles, trash dumping and the like. By drawing attention to this area, and developing a sense of appreciation associated with its habitats and recreational opportunities, we hope to lend a hand to conserving these areas for the future.

Our Friday session on March 12th will have a theme associated with this event, *The Lower Gila River: Then and Now*. The morning plenary session will include:

- *History and Cultural Issues*, Wendy Bigler, Arizona State University
- *Ecological and Wildlife Values*, Tom Hildebrandt, Arizona Game and Fish

- *Floodplain Management Issues*, Doug Williams, Flood Control District of Maricopa County
- *Urban Growth and Sustainability Issues*, William Werner, Arizona Game and Fish

The plenary session will be followed by a panel discussion of the speakers and the afternoon technical session.

We have arranged rooms at the Best Western Phoenix Goodyear Inn (623-932-3210) at \$79/night including breakfast. Rooms will be held until February 20th at that rate.

The Meeting Registration form is included in the newsletter. You may also go to the web for a copy at <http://azriparian.asu.edu/2004/2004Registration.pdf> Please print off and mail in. The pre-registration deadline February 23, 2004. Maps to the College and to the motel may be found on our website at <http://azriparian.asu.edu/2004/2004mtg.htm>.

Our usual spring meeting Saturday field trips will be folded into those offered by the Festival.

Please come join us, as an attendee, volunteer or both to help preserve this important riparian zone. This is a family event, so bring yours! Contact Tom Hildebrandt, (thildebrandt@gf.state.az.us, 480-981-9400 x221) to volunteer to assist the festival with interpretation of riparian issues and values. We will need volunteers for field assignments and to staff the Council's exhibit on the Festival grounds.

You can purchase a gate pass for Saturday attendance at the Festival on our spring meeting registration form. Or you can volunteer and get in free! See the Festival web page to pre-register for specialty tours and lectures for which there may be an additional fee.

Festival admission is \$10 per car - so bring your family and friends (a few classes and tours require an additional fee).

The Festival will be held at Estrella Mountain Regional Park (14805 W. Vineyard Ave. Goodyear, five miles south of I-10 on Estrella Parkway).

For more Festival information, please contact Heidi Vasiloff at:

Phone: (623) 204-2130

Email: Tresriosfestival@cox.net

Website:

www.tresriosnaturefestival.com



BIOGRAPHIES OF MEMBER-AT-LARGE CANDIDATES

At this year's meeting the Member-At-Large positions are up for election. Nominees include: Diana Stuart, Diane Laush, and Jim Lombard.

Diana Stuart. Diana holds a BS in Conservation Biology from Arizona State University and is currently working on a Master's degree in Applied Biological Science, focusing on riparian restoration. She has been a Research Technician at the Center for Environmental Studies at Arizona State University for four years, working on the Central Arizona - Phoenix LTER project. In that position she has done bird and arthropod population studies and K-12 education outreach. Diana has been actively attending Board of Director meetings for the past year and is greatly responsible for starting an ARC seminar series.

Diane Laush. Diane, a member of the Council from the

beginning, is currently a Member-At-Large and has been fulfilling the position for a member who resigned. She previously held the position of Treasurer for the Council several terms. She holds a BS in Biology from Penn State University. Diane has worked as a Biologist for state and/or federal agencies in Alaska, Arizona, Illinois, Louisiana, and Oregon. She is currently a Biologist with the Bureau of Reclamation where her duties involve identification and implementation of mitigation measures. Some of the mitigation measures have included the acquisition and management of riparian and wetland habitats.

Jim Lombard. Jim holds a BA in Geology from the University of Pennsylvania and a MS in Geosciences from the University of Arizona. Jim's hydrogeology consulting practice focuses on conservation hydrology. After working

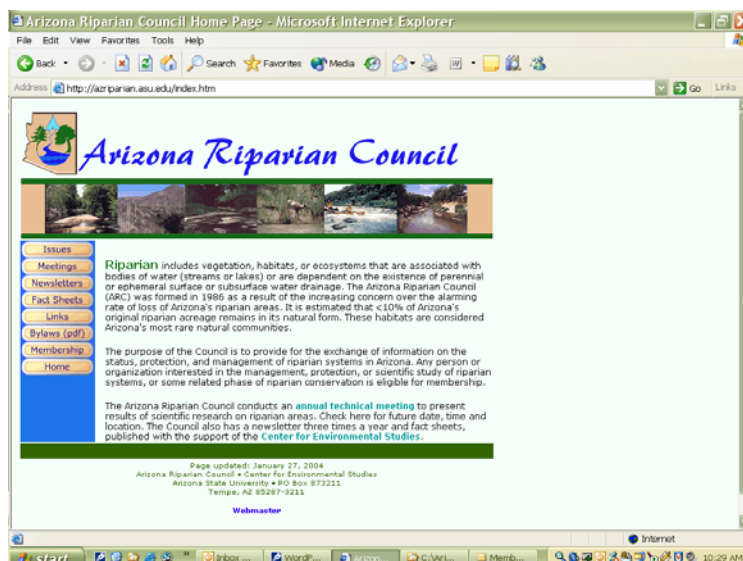
at Errol L. Montgomery & Associates and GeoSystems Analysis, he chose to open his own consulting practice where he assists conservation organizations with projects requiring hydrogeological expertise. To date he has worked with The Nature Conservancy, Earthjustice, and the Southern Environmental Law Center in Arizona, Florida, Georgia, and Ecuador. Jim specializes in investigating hydrogeologic settings where groundwater occurs at the land surface to form streams, lakes, and wetlands. Jim's office is in Tucson, Arizona, and a summary of his practice can be found on the Web at www.jlombard.com. He is licensed to practice geology in Arizona, California, Florida, and Georgia, and is a certified hydrogeologist in California.



ARIZONA RIPARIAN COUNCIL HAS NEW WEBSITE!

The Council has a new website. It has a new look and hopefully is easy to navigate. It also has changed location and is now hosted at the Center for Environmental Studies at Arizona State University. The new address is: <http://azriparian.asu.edu>

We hope that you will visit it often and please feel free to send suggestions for added information that you think we should include.



RMR TASK FORCE DATABASE

Cindy D. Zisner, CoChair, RMR Task Force Committee

Following the Arizona Floodplain Managers Association meeting of April 2000, a River Management and Restoration Task Force was formed. One of the missions of the Task Force has been to create a bibliographic database that would be useful to biologists, engineers, planners, geomorphologists, etc.

I would like to request of you, and anyone else you know that may be able to contribute, references related to riparian areas, river restoration, river management, habitat, etc.

We are also interested in information you can provide on:

- Examples of river management and restoration projects in the arid Southwest.
- Information to use to develop case studies including information which we can use on a website, e.g. PowerPoint slides, .pdf maps, text.
- Examples of habitat mitigation projects to illustrate various techniques in a case studies approach. Again, e.g. Powerpoint slides, .pdf maps, text.
- Names of what you consider to be significant

references on river management and restoration, especially those applicable to the arid Southwest. If you can provide a copy we would keep it in our library.

Please provide the following.

Your Name:

Phone Number:

E-mail:

Name of Project:

General Location:

Stream Name:

Year Implemented:

Project Objectives (be as specific as you can):

Entity Responsible for the Project on an Ongoing Basis:

Who Should we Contact for Permission to Feature the Project on a Web Site?:

Descriptive Information or Materials you can Provide (eg. Powerpoint slides, .pdf maps, text.):

The citations that you provide will be entered into the Center for Environmental Studies' online bibliographic database SEINet: Southwest Environmental Network at <http://seinet.asu.edu/>

Please send any information to Cindy.Zisner@asu.edu or mail to:

Sophi Beym
ATTN: RMR Data
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Promoting river system management and restoration using nonstructural approaches appropriate to the arid Southwest



NOTEWORTHY PUBLICATIONS

Elizabeth Ridgely

Gila River Indian Community, Pima-Maricopa Irrigation Project

Tiner, Ralph W. 2003.

Geographically isolated wetlands of the United States. *Wetlands* 23(3):494-516.

The author lists and investigates the different types of geographically isolated wetlands in the United States. He finds that while most geographically isolated wetlands probably form in closed basins, many also develop on flats. The dynamics of closed basins are described. Many of the same functions and benefits found in non-isolated wetlands are found in isolated wetlands e.g. surface-water storage/flood-water protection, nutrient transformation and cycling/water quality maintenance, aquatic productivity, shoreline stabilization, and wildlife habitat. This isolation has promoted endemism in plants and wildlife. Like other wetlands, isolated wetlands are threatened by human activities. Ground-water withdrawal poses an insidious threat. Livestock grazing and invasive species can negatively affect vegetation. The author recommends education, research, regulation, and incentives for landowners.

Katz, Gabrielle L. and Shafroth, Patrick B. 2003
Biology, ecology, and management of *Elaeagnus angustifolia* L. (Russian Olive) in western North America, *Wetlands* 23(4):763-777.

Elaeagnus angustifolia L. (Russian olive) is an invasive species, which invasiveness is attributed to adaptation to the environmental conditions that characterize semi-arid riparian environments, lack of pressure from herbivores, tolerance of the competitive effects of established vegetation, and the ability to take advantage of the reduced levels of physical disturbance that characterize riparian habitats downstream from dams. The authors discuss mechanical and chemical approaches to suppression. The effects of unknown factors are the rate of range expansion, the possibility that seed dormancy is not broken in the warm deserts, whether pathogens limit its spread in more humid areas, drought, inundation, and fluvial disturbance. The control of this plant is most likely to be effective where natural river flow regimes remain intact and where the restoration of native riparian forests occurs.

NEW NOTEWORTHY PUBLICATIONS EDITOR

With this issue please welcome our new Noteworthy Publications Editor, Elizabeth Ridgely. Elizabeth is an Environmental Planner, Pima-Maricopa Irrigation Project for the Gila River Indian Community. She is a new member to the Council who expressed interest in helping with the newsletter. As you can see I put her to work immediately, and I might add on very short notice. If you are aware of articles that you'd like to see reviewed please let us know.

Welcome aboard Elizabeth!



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 May, the deadline for submittal of articles is April 15, 2004. Please call or write with suggestions, publications for review, announcements, articles, and/or illustrations.

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CALENDAR

Arizona Riparian Council 18th Annual Meeting, The Lower Gila River: Now and Then. March 12, Estrella Mountain Community College, Avondale, held in conjunction with the Tres Rios Nature Festival, March 13-14, 2004. 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.

Biodiversity and Management of the Madrean Archipelago II: Connecting Mountain Islands and Desert Seas, May 11-15, 2004, Doubletree Hotel, Tucson, AZ. For more information contact Dale Turner, madreanprogram@tnc.org or The Nature Conservancy, 1510 E. Fort Lowell Road, Tucson AZ 85719.



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APOLOGIES FOR THE LATENESS OF THE NEWSLETTER!!
