



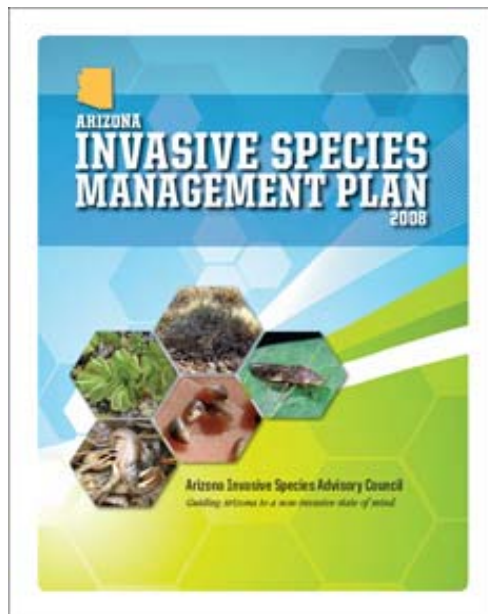
Arizona Riparian Council

ARIZONA INVASIVE SPECIES MANAGEMENT PLAN ADOPTED BY GOVERNOR NAPOLITANO

by Tom McMahon, Arizona Game and Fish Department; Brian McGrew, Arizona Department of Agriculture; and Larry Riley, Arizona Game and Fish Department

During July, Governor Napolitano gave us something we hadn't exactly had in the past – a unified approach to address invasive species in Arizona. With her interest in invasive species growing, and her concern piqued by notable events like the Cave Creek Complex Fire and the arrival of quagga mussels in the southwest, Governor Napolitano set out a road map to develop a unified state approach to this prickly and sometimes controversial issue. Culminating the work across a number of years, the Governor put her stamp of approval on a strategic management plan submitted to her by the Arizona Invasive Species Council at the end of June. The plan, and many of the work products that led up to finalization of the plan, is posted on the Governors web site at <http://www.governor.state.az.us/AIS/>.

To say that Arizona did not have approaches to invasive species response and management would be false, but the Governor saw benefit in linking, broadening, and expanding upon those approaches. The goal was to build a partnership in invasive species management



that crosses programs, jurisdictions, and boundaries and foster leadership from the state of Arizona in invasive species management. To accomplish this, state agencies would need to be linked together at the hip and partnerships with federal, tribal, and local jurisdictions would need to be formed. Stakeholders, both from the private sector and the public sector would need a forum for joining forces strategically, and eventually logistically. We can't say that these goals have fully flowered as yet, but they are starting to germinate.

The concept of an Arizona Invasive Species Management Plan didn't take root spontaneously. It was a long road to get to the plan. The initial concept development grew out of a coordination meeting between the Arizona Game and Fish Department and The Nature Conservancy in 2003. The idea was to bring a small group of individuals together to develop a strawman proposal for a Council. Working among the Game and Fish Department, the Department of Agriculture, and the Department of Transportation, with the able facilitation of John Hall of The Nature Conservancy, a concept was developed to share with the Governor's Office. With a little nurturing, that grew in to Executive Order 2005-09 that was signed by Governor Napolitano on April 1, 2005 (no

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PRESIDENT'S MESSAGE

I can tell that it's fall. The temperatures are in the high 90s, the vegetation is turning that lighter shade of brown, and it's time for the Arizona Riparian Council's fall meeting! This year we had our fall campout at the OX and Date Creek Ranches on October 25 and 26. These ranches are located less than an hour northwest of Wickenburg. A map showing the campout location is on the ARC website. We started around 1:00 and talked about the two ranches; how they manage livestock while maintaining and even enhancing the riparian area. We will also talk about the management of beavers in this area. Both ranches have conducted riparian restoration projects that we discussed and saw on our hike.

Tom Hildebrandt and Matt Peirce, both from Arizona Game and Fish Department, led our hike and discussed the RSRA assessment technique and the restoration efforts for the ranches, respectively.

There are a few topics that are gaining attention on the national scene. Congress is looking at reforming the 35-year-old Clean Water Act and has proposed the Clean Water Restoration Act (H.R. 2421 and S. 1870). Two recent Supreme Court decisions (*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* and *Rapanos v. U.S.*) have placed the policies of the Clean Water Act into a quagmire (intentional pun). One issue stems from the question of navigable waters. The Clean Water Restoration Act would

delete the word "navigable" from the Clean Water Act to clarify that the Act is principally intended to protect the nation's waters from pollution, not just maintain navigability. It would address authority over the nation's waters, including smaller waters and so-called "isolated" waters. In Arizona, perennial, intermittent, and ephemeral streams are important for wildlife as sources for food, habitat, and migration corridors to name a few. These systems are also important for people for recreation, water sources, etc. ARC will keep tabs on the status of this new bill and the other challenges to the existing Clean Water Act.

Fossil Creek is moving closer to being designated as Wild and Scenic. ARC, along with other environmental organizations, has been working with Arizona Public Service to get stream flows restored to this unique river system. When this river is designated, it will be only the second river in Arizona with such distinction. About 40 miles of the Verde River flowing south from Beasley Flats through the Mazatzal Wilderness was designated by Congress through the Arizona Wilderness Act in 1984. We will be following this designation as it unfolds.

Right now our nation is going through a very tough time regarding the economy. We all feel it whenever we gas up our vehicles or buy groceries. I am hopeful that wildlife and their habitats continue to be valued and not put at risk for short term

economic gain. Arizona and the Southwest have some of the richest and most diverse forms of wildlife and need water in streams to drink, insects in riparian trees to eat, and grasslands to nest. A struggling economic climate is not a time to stop considering wildlife and their needs.

Diana Stuart, ARC Vice President, has been organizing speakers for our dinner speaker series at the Sonoran Brewery, 322 E. Camelback Rd., Phoenix. These meetings have been well attended. So far we have had speakers come in May, July, and September. November 13th is our next dinner meeting. Our speaker will be Dr. John Brock, Professor Emeritus from Arizona State University. Dr. Brock will speak either on "Range Management for Riparian Health" or on his recent research work in China. Please join us for a lively discussion and good food. We are also looking to have a dinner meeting in Tucson in January. If you have an idea please contact Diana.

Ron van Ommeron, Board Member At Large has moved to Colorado. The vacancy created on the Board has been filled by Ron Tiller. Thank you Ron van Ommeron for all your help on the ARC Board and welcome aboard Ron Tiller!

*Kris Randall, President
Arizona Riparian Council*



PS Remember to vote November 4th. Casting your vote is your right as an American and your duty as a citizen.

Invasive . . . Cont. From pg. 1

foolin'). That order assembled the first 'Council,' the Arizona Invasive Species Advisory Council (AISAC), a limited-lifetime body, and charged it with developing a report to her a consensus vision, an Arizona definition of 'invasive species' and the framework for a management plan.

Definitions can be bothersome things, but necessary. Defining what we meant by the term 'invasive species' was pretty important to staying on task. Borrowing liberally from federal definitions, AISAC reached a consensus definition that it's:

A species that is (1) non-native to the ecosystem under consideration and, (2) whose introduction causes or is likely to cause economic or environmental harm, or harm to human health.

The AISAC recognized that this definition is pretty broad and open to even broader interpretation. They provided the proviso that it was not intended



Crayfish - Photo by George Andrejko, Arizona Game and Fish Department.

to be a regulatory definition, but was intended to provide counsel and guidance to State agencies and subdivisions of the State, the public, and our partners. Processes that are supported by statutory authority, like the Arizona Noxious Weed List and Restricted Live Wildlife List are the tools for regulatory restrictions. The AISAC recognized that not all non-native species are invasive and many have notable value to the people of Arizona. And, while

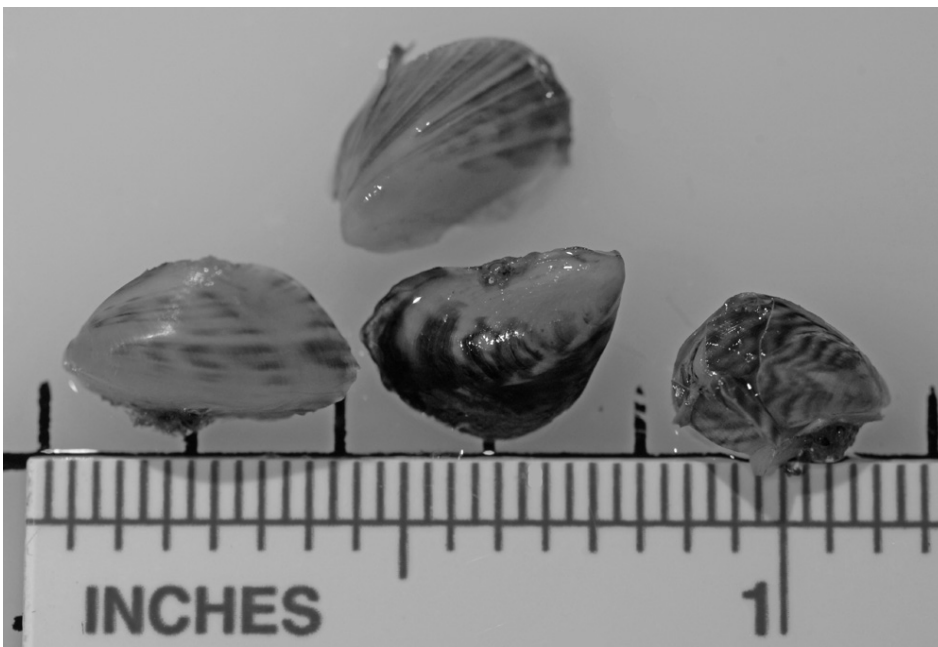
some native species can behave in an invasive manner, they were not the intended subject of this definition.

The Governor cogitated over the merits of the report and adopted it, setting the next set of milestones in her roadmap. Executive Order 2007-07 established a new Council and charged it with development of a 'strategic' management plan for invasive species using the framework recommended in the initial report.

The framework for the plan revolves around four basic concepts:

1. Leadership and Coordination,
2. Research and Information Management,
3. Anticipation and Outreach, and
4. Control and Management.

These concepts were the fodder for 'working groups' of AISAC members, collaborating with others, as focal areas for objectives that the state has set for itself. These are really the organizing principles in the plan that the Governor approved. Oh, and there is a



Zebra mussels. Photo courtesy of Larry Riley, Arizona Game and Fish Department.

fifth concept, and without question the most difficult, funding. The plan emerged during difficult financial times, not particularly conducive to investment. But the plan does broach the subject of financial need and offers some approaches for the state to pursue financing for this effort.

The AISAC brought together state leaders and stakeholders to address the invasive species issue. The AISAC is under the joint leadership of the Arizona Game and Fish Department and the Arizona Department of Agriculture, and sought to bring together fairly diverse representation. The AISAC was limited in size, as all such things must be. But the AISAC doesn't intend to exclude partners or stakeholders. An agreement has been developed through the AISAC that will initially link core state agencies together on this issue, but is intended to extend its reach to invite broader federal, tribal, local, and stakeholder participation and involvement in implementation of the plan. The AISAC and its working groups live on as we move into implementation.

We're challenged to implement this plan. It's not perfect, and if you read it with an eye for specific tactical responses to your "most despised invader" or the "invader de jour," you might be disappointed. The plan is intended to be strategic in nature, helping us build and refine systems that will assist the state to prevent unwanted "hitchhikers"; manage scientific, technical, and occurrence information and share it; reach out to the public to inform and stimulate action; and establish networks of

people that can work across jurisdictions and boundaries on invasive species issues that they hold in common. The first step in this is assembling a virtual "Center for Invasive Species." Perhaps difficult to conceptualize, the Center isn't really a building or an office but a partnership in providing service. The Center is envisioned as an alliance among the Department of Agriculture, the Game and Fish Department, and the Arizona Cooperative Extension Service (University of Arizona). There is much work to be done to get this virtual Center off the ground — but all such things have to start with a germinal idea.

We know that the issue of invasive species links directly to other issues that are keen in the heart of the Governor — Growth, Forest Health, and Climate Change. Invasive species can be a stressor in-and-of-themselves, and at the same time the probability of establishment or expansion of an unwanted visitor may be facilitated by other stressors. Among the challenges that the AISAC and the plan will have to address is how we make sure that the invasive species initiative stays linked with other interrelated initiatives like Forest Health, Smart Growth, and Climate.

We hope that the Arizona Riparian Council and its members will stay plugged into the AISAC, this plan, and its implementation. There's room for lots of partnerships and collaboration in getting this effort on its feet. AISAC meetings will be a little less frequent than they were during plan development, but the AISAC's working groups will be moving into higher gear over the next few months. AISAC

meetings and working group meetings are publicly noticed and open to attendance. The AISAC's working groups are less formal and always have room for advisors.





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ARIZONA RIPARIAN COUNCIL'S ACTIVITIES THIS YEAR

by Cindy D. Zisner

The Arizona Riparian Council has been very active this year attending environmental education fairs and getting our Riparian Stream Rapid Assessment (RSRA) Team effort off the ground. For those of you who are unfamiliar with our activities here is what we've accomplished this year.

In March we were very busy and exhibited our booth at the BassPro Shop in Mesa, the Tres Rios Nature Festival in Avondale, and the Feathered Friends Festival in Gilbert.

This was closely followed by a Mesa School District, Science night at Powell Junior High School in April. We also had our 22nd Annual Meeting in Prescott at the Hassayampa Inn, focusing on the Verde River.

May gave us a little breather but then in June we started right up again. We were able to send Kathleen Tucker for training on the RSRA technique. We also re-started our dinner meetings with guest

speaker, Jessica Catlin from the Arizona League of Conservation Voters. Diana Stuart has been responsible for starting this every other month series. If there is a speaker you think we would enjoy hearing please contact her (dms@mail.maricopa.gov). We would also like to have these talks in Flagstaff and Tucson and not be restricted to the Phoenix area.

The RSRA team successfully conducted its first full riparian assessment on July 16 on a reach of the Agua Fria River downstream of the Horseshoe Ranch near Bloody Basin Road. The RSRA outings on the Monument are a joint effort of the Arizona Riparian Council, Friends of the Agua Fria National Monument, and Audubon Arizona. We also had a dinner meeting in July with Ray Schweinsburg, PhD, Arizona Game and Fish Department and Siobhan Nordhaugen from Arizona

Department of Transportation, discussing *The Wildlife Corridor Linkages Project*.

In August the RSRA Team went to Sycamore Creek, which is designated by Audubon as an Important Birding Area. September brought us another dinner meeting, with Dr. Paul Hirt, Department of History, Arizona State University speaking on water supply issues for Phoenix. We presented our booth at the Arizona Science Teachers Association Conference in Mesa and at Verde River Days in Cottonwood.

In October we had our fall meeting. This year we visited Date Creek and saw some restoration efforts by the OX Ranch and Date Creek Ranch. The RSRA Team also did an assessment of Date Creek and presented it at the meeting.

In November we will be exhibiting the booth at *Culture and the Global Water Crisis* seminar at Pilgrim Rest Baptist Church, Phoenix and will have another dinner meeting featuring Dr. John Brock, Emeritus Professor, Department of Applied Biological Sciences, Arizona State University.

We are currently in the planning phase for the spring meeting. Also if any one is interested in helping the RSRA Team contact Tom Hildebrandt at tomarc@cox.net.



Verde River Days.



SPECIES PROFILE



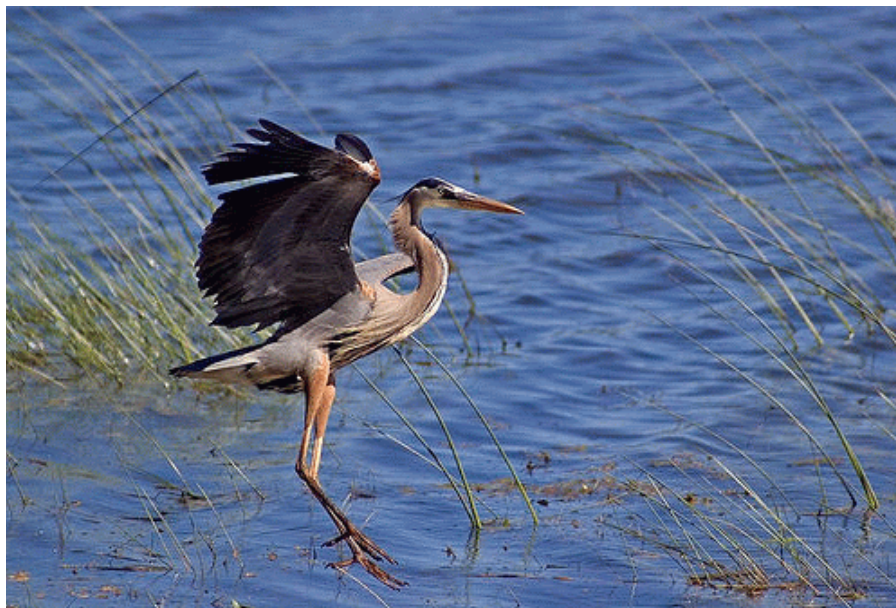
GREAT BLUE HERON (*ARDEA HERODIAS*)

by Carol Birks, Arizona Department of Water Resources

The Great Blue Heron is a water bird and may seem out of place in the desert but is actually quite common around permanent water here. It is easy to recognize both on the ground and in flight because of its size, distinctive silhouette and characteristic behaviors.

It is a large bird, weighing four to five pounds and standing four feet tall with a wing span of over seven feet. It has a grey body, long neck, long legs and a large dagger shaped bill. The white head has a dark eye stripe and dark feathers protrude from the back of the head. It is visible on shore standing tall and walking around the water's edge. In flight the bird folds its long neck into an S, holding it close to its body. The long legs trail behind the body under the tail and wings beat in slow swoops. These behaviors make the bird more aerodynamic and easily recognized in the air.

Great Blue Herons are found along lakes, rivers, permanent streams, marshes, impoundments, stock tanks and even canals. They build individual nests along the water's edge in the upper levels of deciduous trees though frequently many nests are grouped together in colonies called rookeries. Some rookeries may even contain several bird species. Nests are large, flat and made of interwoven sticks and lined with twigs, leaves and pine needles. Eggs are pale bluish



Great Blue Heron. Photo courtesy of Eyal Shochat, Global Institute of Sustainability, Arizona State University.

green and usually number three to five but herons can have up to seven. Clutch size may increase with latitude. Both parents incubate and take care of the young who leave the nest in 56 to 60 days.

Even though Great Blue Herons nest in groups, they forage alone and guard their fishing territories. They prefer small fish and aquatic invertebrates but being opportunists they also eat frogs, lizards, small mammals, and even human food scraps. They fish throughout the day but like most anglers prefer dawn and dusk. Herons use two methods to catch food. They stand motionless in the water with their head moving back and forth patiently watching for food to swim by or they stalk their prey walking slowly and

carefully through shallow water without creating ripples to alert inattentive animals. In either case when opportunity strikes the bird quickly bends down and grabs the prey out of the water, raises its head and swallows the food whole. It is a fast, smooth move for such a big bird and fascinating to watch.

The Great Blue Heron is a common bird throughout the United States and because of its size it has few enemies. Unfortunately, they do not tolerate people well during the breeding season and since they occupy prime desert real estate, land with permanent water, their numbers may eventually decline as more of that land is developed or over used. However, careful monitoring of this very visible riparian resident

could serve as a measure of how well we are managing our water resources in the desert.

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Field Guide to the Natural History of North American Birds. Simon & Schuster Inc.

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Sharp, Jay, 2008, *The Elegant Great Blue Heron*,

DesertUSA website, <http://www.desertusa.com/mag07/june07/heron.html>, accessed 4/2/2008



Great Blue Heron. Photo courtesy of Eyal Shochat, Global Institute of Sustainability, Arizona State University.



NOTEWORTHY PUBLICATIONS

by Elizabeth Ridgely, One Green World, LLC

Munne, A., N. Prat, C. Sola, N. Bonada, and M. Riera-devall. 2003. A simple field method for assessing the ecological quality of riparian habitat in rivers and streams: QBR index. *Aquatic Conservation* 13(2):147-163.

A riparian quality index that is useful for the management of streams and rivers is evaluated. The index provides managers with a simple method to assess riparian habitat quality. The index is easily calculated, and it can be used together with any other index of water quality to assess the ecological status of streams and rivers.

The index is named QBR, and it is based on four components of riparian habitat: total riparian vegetation cover, cover structure, cover quality and channel alterations. It also takes into account differences in the geomorphology of the river from its headwaters to the lower reaches. These differences are measured in a simple, quantitative way. The index score varies between 0 and 100 points.

The development of the QBR index included trials in four Mediterranean stream catchments in Catalonia (north-east Spain). Seventy-two sampling sites were assessed and results were used to test the index. No taxonomic expertise is needed to apply the index, although some knowledge of local flora is required to differentiate between native and non-native tree species.

The results show that the QBR index may be used despite regional differences in plant communities. In addition, the quality ranges obtained when the index is applied are not heavily influenced by observers at the same site. Presently, the index is being used by different research teams. It is being tested in a comparative study of 12 watersheds along the Mediterranean Spanish coast. The QBR index may be adapted for use in other geographical areas in temperate and semi-arid zones without changes in the index rationale.

Skagen, S. K., J. F. Kelly, C. Van Riper III, R. L. Hutto, D. M. Finch, D. J. Krueper, and C. P. Melcher. 2005. Geography of spring landbird migration through riparian habitats in southwestern North America. *The Condor* 107(2):212-227.

Riparian habitats, that are migration stopping habitat, are vitally important to landbirds across the arid southwest of North America. The effects of species biogeography and habitat affinity on spring migration patterns were simulated using existing bird abundance and capture data collected in riparian habitats of the borderlands between the U.S. and Mexico. The importance of the geographic factors longitude and latitude was determined in explaining variation in abundances and capture rates of 32

long-distance and three short-distance migrant species.

It was found that abundances and capture rates of 13 and 11 species increased with increasing longitude. In contrast, four species' abundance and capture rates decreased with increasing longitude. Riparian associates, but not nonriparian species, were more abundant in western sites. Their abundance patterns were slightly influenced by species biogeography (geographic distribution). Biogeography did influence abundance patterns of nonriparian birds. The data suggest that the nonriparian birds choose the shortest and most direct route between wintering and breeding areas.

It was hypothesized that riparian obligate birds (those with an affinity for riparian areas) may adjust their migration routes to maximize time spent in high-quality riparian zones. However, they are able to find suitable habitat when crossing more difficult landscapes. In contrast, the nonriparian birds have a direct relationship in which the migratory route is determined by biogeographic constraints. Conservation of riparian habitats is necessary to meet future habitat stopover requirements of many western Neotropical migrant birds (those who travel north in the spring to breed and return in the fall to the warmer climates in tropical regions). Further research will determine find patterns of distribution and habitat use so that conservation activities can be effectively focused.

Sogge, M., S. J. Sferra, and E. H. Paxton. 2008. *Tamarix* as habitat for birds: Implications for riparian restoration in the southwestern United States. *Restoration Ecology* 16(1):146-154.

Exotic vegetation has become a major habitat component in many ecosystems around the world, sometimes dramatically changing the vegetation community structure and composition. In the southwestern United States, riparian ecosystems are undergoing major changes in part due to the establishment and spread of the exotic *Tamarix* (saltcedar, tamarisk). There are concerns about the suitability of *Tamarix* as habitat for birds. Although *Tamarix* habitats tend to support fewer species and individuals than native habitats, Arizona Breeding Bird Atlas data and Birds of North America accounts show that 49 species use *Tamarix* as breeding habitat. Importantly, the relative use of *Tamarix* and its quality as habitat vary substantially by geographic location and bird species. Few studies have examined how breeding in *Tamarix* actually affects bird survivorship and productivity: recent research on Southwestern Willow Flycatchers (*Empidonax traillii extimus*) has found no negative effects from breeding in *Tamarix* habitats. Therefore, the ecological benefits and costs of *Tamarix* control are difficult to predict and are likely to be species specific and site specific. Given the likelihood that high-quality native riparian vegetation will not develop at all *Tamarix* control sites, restoration projects that remove *Tamarix* but do not

assure replacement by high-quality native habitat have the potential to reduce the net riparian habitat value for some local or regional bird populations. Therefore, an assessment of potential negative impacts is important in deciding if exotic control should be conducted. In addition, measurable project objectives, appropriate control and restoration techniques, and robust monitoring are all critical to effective restoration planning and execution.

Editor's Note:

This article discussed management implications in controlling *Tamarix*. One technique that is currently being used in the Southwest is the use of biocontrol insects such as the saltcedar leaf beetle, *Diorhabda elongata*. Original evaluations that were done prior to the release of the beetle stated that the insect would not overwinter or establish south of the 38th parallel. The beetles were observed in St. George, Utah, this summer and are likely to be in Arizona. It is unknown what this may mean for *Tamarix* areas along many of our streams such as the Colorado and the Verde. Federal agencies are initiating discussions on what the step(s) should be.



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 December 15, 2008. Please call or write with suggestions, publications for review, announcements, articles, and/or illustrations.

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CALENDAR

Arizona Riparian Council Board Meetings. The Board of Directors holds monthly meetings the third Wednesday of each month and all members are encouraged to participate. Please contact Cindy Zisner at (480) 965-2490 or Cindy.Zisner@asu.edu for time and location.

Arizona Riparian Council Dinner Meetings. Meetings with guest lecturer and dinner at the Sonora Brewhouse, Phoenix. Contact Diana Stuart (602) 506-4766 or dms@mail.maricopa.gov about upcoming events.

Nov. 13, 2008: John Brock: Professor Emeritus, Arizona State University

Jan 22, 2009: (Speaker TBD - Probably in Tucson)



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