The Arizona Riparian Council Newsletter

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President's Column

In the four years since its inception, the Arizona Riparian Council has attained a preeminent position in the state as the forum for information exchange on management, education, research, and policy issues related to riparian systems. The organization owes much of its success to the efforts of a few dedicated and hard-working individuals. Among these have been the efforts of Dr. Duncan Patten, the Council's first president.

Duncan's own personal background and involvement in riparian research in the West lent the organization an immediate level of expertise, credibility and prestige not easily attained by a fledgling group. The Council has benefitted greatly from Duncan's leadership and as a result, I find myself in the much easier role of assuming the presidency of an established organization with a solid track record. I would especially like to take this opportunity to thank Duncan for going the extra mile and having the dedication to see to it that it worked. I am very pleased to report that as an ex-officio, Duncan is looking forward to continuing his involvement with the Council as a member of the Board of Directors.

As with any organization, change is a rather constant companion. Recently Bill Bayham has submitted his resignation as Chair of the Inventory and Classification Committee due to a recent job change and the concomitant responsibilities a new job brings. The C and I Committee has been one of the more active and productive Committees on the Council. Bill can take a large share of the credit in making this such a successful Committee and we extend our thanks to Bill for his efforts. With luck, maybe Bill can jump back into the fray in the not too distant future. In the meantime, this Committee is in need of a new Chair. I urge those of you with an interest to contact Denny Haywood (942-3000, Ext 248); he can fill you in on the fun and games that you have been missing.

A second Committee change is also around the corner as Bruce Roundy of the University of Arizona Agricultural Extension Service will be handing the reins of the Land Use Committee to Mike Leonard, Forest Biologist for the Prescott National Forest. Mike is a recent arrival to Arizona and hails from the sagebrush deserts of eastern Oregon where he was very active in riparian management issues, especially in the areas of wildlife and livestock management. Mike's experience with riparian systems and his fresh perspective developed in another geographic region of the country will be a valuable asset to the Council.

The future holds no major changes as the Council is likely to continue to function largely through the existing Committee structure. Committees are always open to new members and I urge you to write to the Council if you would like to be more involved.

Andy Laurenzi

Governor's Riparian Task Force Begins its Work

As noted in our previous newsletter, Governor Mofford signed into effect an executive order (#89-16) which not only emphasized the importance of the state's streams and riparian resources, but directed state agencies to determine impacts of state action on those resources, and established a riparian task force.

Governor Mofford convened that task force in October appointing Nell Evans as her personal representative. The Governor has set an ambitious agenda for the group. Under the leadership of Sue Lofgren, a commissioner with the Commission on the Arizona Environment, the task force has now held three meetings. The first of these in October was basically an introductory one for directors of various state agencies. During the November meeting the group mainly reviewed the availability of existing riparian inventories. On December 4, the task force got down to specifics. The group established a set of objectives, a mission statement, and developed a much better idea of what could actually be accomplished in the time allowed.

In assessing the task to be done and the time constraints, the task force reached a number of decisions. It was decided that to develop a riparian inventory through use of the National Wetlands Inventory system would be too costly and could not be accomplished within the time allowed. This system would involve extensive photo interpretation and digitizing of

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New Projects within State Parks Department

Arizona Rivers

The Arizona State Parks Department has several new projects underway, most of which are a direct result of the Arizona Rivers, Streams, and Wetlands Study that was conducted as part of the 1989 Statewide Comprehensive Outdoor Recreation Plan (SCORP).

This agency has established a new rivers program called the Arizona Streams and Wetlands Heritage Program and has hired a coordinator to develop and implement this new statewide effort. The initial efforts will focus on information gathering and dispersal and coordination among the many entities responsible for and interested in the management of our rivers and riparian areas. The following are some of the projects currently being accomplished under this program:

Arizona Rivers and Streams Guide

A first of its kind recreational guidebook to Arizona's rivers and streams has been published. The guide highlights those waterways that offer opportunities and access for recreational pursuits such as whitewater rafting, canoeing, kayaking, tubing, fishing, camping, bird watching, swimming, and wading. It also offers descriptions about each stream segment and the attributes that set each area apart from all others. There are also color photographs throughout the book demonstrating the incredible diversity of our state's waterways. The guide can be purchased through the Parks Department as well as at many bookstores statewide.

Verde River Corridor Project

This study is targeting the upper Verde. State Parks and the Arizona Department of Commerce are facilitating this regional planning effort with Yavapai County and the communities in the Verde Valley.

Corridor planning refers to initiatives by public and private interests to address problems and opportunities associated with a river and its riparian lands through the development of a river plan. The objective is to look at a river area as a whole and to devise meaningful strategies for its conservation and wise use. To be successful, this effort usually necessitates a planning process that is concerned about a variety of interests including landowners, river users, management authority, and the public. Ultimately, the success of these efforts can be measured by the extent to which the proposed management concept can be supported by all affected parties.

The planned corridor project will concentrate on the upstream segment of the Verde from its headwaters near Sullivan Lake and Perkinsville to Beasley Flats. Land ownership in this segment varies and demands and pressures on the river's resources are tremendous. The project will look at these demands, problems, and opportunities, recommend solutions, and work on implementation strategies.

Public meetings and workshops for the project began in September and will continue through next year. The first step is identification of the issues that the plan needs to address, such as commercial use and development, economic values of the riverine resources, and protection of the natural and cultural resources. A coordinating team, composed of representatives of the communities, elected officials, business, landowners, agencies, and organizations will be established. The team will provide overall direction and coordination of the diverse issues. Work groups will be formed to address more specific issues. The work groups will listen to comments from the communities, businesses, and groups interested in the future management of the Verde River, and bring those comments to the coordinating team. Consensus building will be a major goal of public participation. Anyone interested in participating in the Verde River Corridor project is encouraged to contact State Parks or the communities involved.

Statewide Rivers Assessment

Two of the main strategies identified during SCORP (endangered resources and the need for coordination of efforts and increased public involvement) are combined effectively in the implementation of a statewide rivers assessment.

The Arizona Rivers, Streams, and Wetlands Study identified the need for the State, in cooperation with other interested parties, to undertake a systematic statewide assessment of rivers, streams, and wetlands. The purpose of a statewide rivers assessment is to develop a consistent and verifiable database of river and riparian resource information and to identify key river segments and riparian areas. A function of this project is the coordination of the development of a standard comprehensive database of river-related resources to effectively plan for the future management of Arizona's rivers. This project will be coordinated closely with the Arizona Land Resource Information System (ALRIS) to ensure compatibility of the assessment database with ALRIS.

The project is being undertaken as a cooperative effort to benefit all participants. The first use of the assessment will be to identify key riparian areas to help meet the mandate of the Governor's Riparian Habitat Task Force. It also may be used in land and resource management decisions, broad-based planning efforts, initial scoping of project plans and impacts, identification of conflicts, river and riparian policy, and identification of priority action areas. Additional uses may occur as the agencies and organizations discover the availability and usefulness of the information.

Many other states have just completed or are just starting similar rivers assessments. Some assessments are initiated to answer a state's questions about hydroelectric power needs. Other assessments are in response to legisla-

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tion, the need for wise management and protection of river-related resources or to identify waters possessing critical recreation and environmental values. The rationale behind the identification of critical resources is to foster a climate where integrated resource management occurs, where management has broad-based public support and is based on a clear set of priorities and strikes a thoughtful balance between competing interests.

The Arizona Rivers Assessment is being initiated by the National Park Service Rivers Conservation Assistance Program and Arizona State Parks and will involve all agencies and entities with an interest in the state's river resources. The key to a successful rivers assessment is broad-based public involvement. Decisions on resource categories and evaluation criteria will be made by those agencies that deal with those resources. Resource information currently scattered among the various agencies needs to be accessible to all resource managers. A statewide natural resource database is being created within ALRIS. The rivers assessment may help move that effort along and provide that needed link among the agencies concerned with Arizona's streams and riparian resources.

In order to take advantage of ongoing efforts by the state, the assessment will be coordinated with the task force established under the Governor's Executive Order on Streams and Riparian Resources. The initial phase of the assessment, which began in November, will concentrate on inventorying and evaluating specific river resources: wildlife, fish, riparian vegetation, stream hydrology, physical features, and cultural features. A second phase to begin later, will work with use groups to identify the uses we make of these resources: agricultural, flood control, industry, mining, power production, public water supply, recreation, and urban area.

Tanna Thornburg

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map and photographic information. The rivers assessment program to be conducted under the National Park Service Rivers Conservation Assistance Program and Arizona State Parks Department could provide needed information for the task force. However, because that program is so comprehensive and long term, it could not produce enough in the way of results nor quickly enough to meet the task force needs within the time allowed.

To meet their stated objectives, the task force also made some critical assignments to some of its technical staff. Carol Russell (ADEQ) was given the job of developing a definition of riparian. The working deadline for delivering this definition is January 31. The next task to be meted out was given to Denny Haywood (AG&FD) to further develop a riparian measures handbook. The handbook development is a cooperative effort involving ARC, BLM, ADEQ, and AG&FD to develop a set of stream and stream habitat measurements that resource managers can use as objective criteria for assessing the quality of riparian habitat. The current draft is to be given further review. That assignment is to be completed by July 1, 1990. Finally, Andy Laurenzi (The Arizona Riparian Council) was given the task of reviewing and summarizing past riparian assessments and their methodologies and recommending methods for identifying key riparian habitats and evaluating their status and need for protection or enhancement. Final recommendations will be presented to the Governor by September 30, 1990.

The task force will meet again on January 22.

Ed.

Changing attitudes about the beneficial uses of water - is Arizona keeping up?

A Survey of Instream Flow Programs in the West

Western water law and policy have historically focused on offstream water uses such as those for domestic and municipal purposes, irrigation, energy development, and industry. Over the years, however, several states throughout the West have adopted legislative programs designed to leave water in the stream, unavailable for consumptive use below a specified level, for fish, wildlife, ecosystem navigation, hydropower, and other "instream" uses. A recent report by McKinney and Taylor (1988) evaluates the design and implementation of legislatively created instream flow programs in the West.

While the statutory programs are discussed at length in the report, nonstatutory measures to protect instream flows are treated only to provide perspective. The report reflects one stage in the evolution of instream flow programs in the West, and thus does not include activities taken to refine and implement instream flow programs since 1988. These activities, many of which are quite significant, are discussed in a recent paper by KcKinney (1989).

The earliest instream flow legislation was adopted in Oregon in 1955, and the most recent was enacted in Utah and Wyoming in 1986. To date, nine western states have adopted statutory instream flow programs, including Alaska, Colorado, Hawaii, Idaho, Montana, Oregon, Utah, Washington, and Wyoming. Of the 13 western states, Arizona, California, Nevada, and New Mexico have not yet passed legislation specifically designed to protect instream resources. New Mexico does not yet have any apparent means to protect instream flow, with the possible exception of N.M.S.A. Section 17-4-15. The three other states possess various mechanisms for instream flow protection.

The major purpose of all legislated instream flow programs is to protect fish and wildlife, with protection of recreation close behind. Only three states recognize scenic and aesthetic values as valid beneficial uses, while six states have designated water quality as a beneficial use. Four states, Hawaii, Montana, Oregon, and Washington, employ a basin-wide planning strategy to identify and protect instream flows, while the rest of the states use a more case-by-case approach. With the exception of the programs in Utah and Wyoming, instream flows may be protected on any river or stream throughout the other states, although Hawaii is phasing in different areas of the state over time.

In every state except Alaska and Montana, the only entity that is allowed by statute to acquire and hold a water right for instream use is a state agency. In Montana, any political subdivision of the state, and federal government agencies, may hold an instream water right. In Alaska, any public or private entity may hold such a right. Every state except Montana employs both standard setting and incremental methods to quantify instream flow needs. Standard setting methods identify minimum flow standards required to protect the instream flow value in question. Incremental methods, by contrast, specify trade-offs between various instream flow levels and the protection of instream flow values. Montana uses only standard setting methods.

In all statutory instream flow programs, the decision making process for setting instream flows consists of four basic steps: (1) instream flow quantification; (2) technical review; (3) public review and comment; and (4) agency decision. In certain programs, the decision-making process also includes other state agencies, boards and commissions, and the legislature.

In six of the states, instream uses are granted an appropriative right with the same legal status as any other water use under the prior appropriation doctrine. In Alaska and Montana, instream flow rights must be reviewed at least once every ten years to determine if there are other, more valuable uses to which the water should be reallocated. Hawaiian water law is fundamentally different from that of other western states, where land and water rights are granted by the King of Hawaii rather than through the prior appropriation doctrine.

In Colorado, Montana, and Washington, the priority date for instream flow rights is not established until the instream flow applications have been approved. In the other five states the priority date is established when the application is filed. Finally, the ability to monitor and enforce instream flows, once established, varies dramatically across the nine states.

The implementation of the statutory instream flow programs has been remarkable given the controversial nature of the programs in most states. Colorado has protected over 1,000 stream reaches, while Oregon and Washington have both protected over 400 stream segments. Montana has protected 94 stream reaches, Idaho has protected 35 stream segments, and Alaska and Wyoming have each protected fewer than 10 stream reaches. Hawaii has 13 streams under interim standards, while Utah has yet to implement its program.

While statutory instream flow programs have been relatively successful in appropriating unappropriated water for instream uses, these efforts can only maintain existing streamflow conditions in the best of years given the junior status of the instream flow rights. In many cases, however, the resource management problem is how to increase flows in regularly or periodically dewatered streams. Several strategies are available to resolve this problem, including transferring existing (senior) water rights, coordinating reservoir releases and water uses, pursuing Indian and non-Indian reserved water rights, and asserting the Public Trust Doctrine (McKinney 1989). While many western states possess these mechanisms or are considering

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Mitigation Proposal May Protect Unique Riparian Area

The Cook's Lake Acquisition

There is a very good possibility that another important and unique riparian and wetland habitat could come under Federal protection and management in the near future. Cook's Lake, located about 1 mile north of the Aravaipa road and near Highway 77, is a 50 acre wetland that is one of the few know examples of wooded swamp habitat in Arizona. Although it is within the 100 year flood plain of the lower San Pedro River, the lake is spring fed and is rated at a 51.3 acre foot capacity.

The perimeter of the swamp is vegetated with hackberry, acacia, and mesquite. Cottonwoods, ash, and willows form an almost closed canopy over most of the marshy areas. Water fern (*Azolla filiculoides*), uncommon in southern Arizona, was found within a very well developed emergent and aquatic vegetation.

The Bureau of Reclamation (BR) has recommended that this site be included within a proposed mitigation plan as a replacement for wetland values lost when portions of lower Lake Pleasant are eventually flooded by the New Waddell Dam. BR has invited the Bureau of Land Management to support the mitigation proposal and accept management of the site for its vegetation, wildlife, educational, recreational, and historic values. If the mitigation plan were to be accepted as proposed, BR would attempt to purchase 145 acres of habitat surrounding and including Cook's Lake. They would then turn over management of the site to the BLM. BR would buy the area, fence it, and pay for the initial costs of habitat restoration. BLM would then manage the property for its riparian and wetland values, bearing any future costs of further improvement.

If this plan can come to fruition, Cook's Lake would become yet another link in an ecological preserve that could eventually encompass almost the entire length of the San Pedro River. Most of the riparian areas in the upper reaches of the river are already being managed by BLM; Bingham Cienega, upstream from Cooks's Lake, has been acquired by the Pima County Flood Control District and is being managed as a natural area under a cooperative agreement with the Nature Conservancy.

BR has met with representatives of the Maricopa Audubon Society, the Arizona Riparian Council, and the Nature Conservancy and appears to have the support of these groups for the mitigation plan.

What is the future of Cook's Lake without Federal acquisition? According to BR officials, dismal at best. Current impacts from over-grazing, ground and surface water diversion, burning, and the potential impacts of housing and agricultural development are likely to permanently alter the nature of this unique Arizona wetland.

Ed.

Update on AV Production on Riparian

The Arizona Game and Fish Department through their Information and Education Division is cooperating with ARC in the production of a dual video and slide program on riparian habitat. The program will focus on human uses of and impacts on riparian areas and the consequences of man's use and abuse of these areas on wildlife.

The Game and Fish Department AV Branch personnel are concentrating right now on the video portion of the program; the slide show will follow. Both AG&F and ARC have agreed to the content of a final version of the script, which has been recorded. The video is now being matched to that script.

Both the video and slide shows will be distributed when available through the Game and Fish Department film library. All items in that library are available free of charge to schools, clubs, conservation groups, and individuals.

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their adoption, the challenge is to create a comprehensive instream flow program that effectively incorporates strategies to both main and enhance instream flows (McKinney 1989).

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Mathew J. McKinney

Reprinted from *Instream Flow Chronicle*, Vol. 6, No. 3, Colorado State University

Put this one on your "must reading" list

A Riparian Classification for Arizona and New Mexico

The University of Arizona through their Boyce Thompson Southwestern Arboretum has just published a lavishly illustrated, 138 page issue of *Desert Plants*, Volume 9, Nos. 3-4. This particular issue is titled *Riparian Forest and Scrubland Community Types of Arizona and New Mexico*, and is authored by Robert C. Szaro of the USDA Forest Service. The work described within this publication is a product of the Forestry Sciences Laboratory, Rocky Mountain Forest and Range Experiment Station, Tempe, Arizona.

This publication takes off where *Biotic Communities of the American Southwest* authored by David E. Brown in 1982 left off. The latter volume provided rather general descriptions of southwestern wetlands, but not a classification system for specific sites. The current work is based on a detailed description and analysis of 152 sites in the two-state area. The classification procedure and key includes 28 riparian community types. The classification system uses a concept of community that recognizes existing structure and composition as its basis and takes advantage of all floristic information available. Methods are described for the description of candidate sites and a dichotomous key is provided for their classification.

A complete description of each of the 28 community types follows the key. This description includes: common names of dominant overstory or understory species, floristic and structural characteristics of type species, exact locations of sample sites (including maps), altitudinal and areal distribution of the type in Arizona and New Mexico, vegetative composition of the type, relationship of species composition within a type to other community types, and finally, a listing of other studies describing other sites having the same community type.

Aside from the classification system itself, I found the introductory material most readable and valuable. Under one cover is a very scholarly discussion of the many factors affecting the initial development and history of a riparian community. The author examines the subjects of livestock grazing, natural flooding, flow regulation and dams, and recreation and their combined and individual effects on riparian habitat.

This publication can be obtained from the Boyce Thompson Southwestern Arboretum, P.O. Box AB, Superior, AZ 85273.

Ed.

A High Elevation Riparian Study - A Progress Report

A narrowleaf cottonwood community exists in the Willow Valley drainage near Happy Jack on the Coconino National Forest. This community has not successfully reproduced in more than 70 years. This is the site of a riparian study being conducted by Mike Hannemann as part of the Coconino's Coop graduate program with Northern Arizona University. The study area is under short duration, high intensity grazing, but also realizes heavy forage use by deer and elk.

The objectives of the study are: to describe the effect of this grazing system and the heavy deer and elk use on the riparian community, to describe the ecology of this narrowleaf cottonwood community, and to establish a long term baseline study on this site. To meet these objectives, Mike has built three sets of exclosures, each set containing a cattle exclosure, an all ungulate exclosure, and a control. Within each replicate set of exclosures, he is measuring production and utilization of cottonwood sprouts, grasses, and forbs, species frequency and percent of cover, total ground cover, bulk density, and water infiltration.

Cattle (780) were moved into the 350 acre Willow Valley paddock in June 1989 for two days. Elk and deer, however, had been using the area since February.

Mike is currently analyzing the first years data. You can contact him for more information at 779-1087 (home) or through the Coconino National Forest Supervisor's Office at 527-7400.

Ed.

Wetland Protection Guide

The National Wildlife Federation has recently published a new quide titled ***A Citizen's Guide to Protecting Wetlands***. It can be obtained for $10.25 from:

The National Wildlife Federation
1400 16th St., N.W.
Washington, D.C. 20036

A New Conservation Action Organization Breaks Ground

The Central Arizona Land Trust

It seems that the objectives, and particularly the techniques, developed so successfully by the Nature Conservancy for land acquisition have given rise to several relatively new private groups whose *modus operandi* closely mimics that of the Conservancy. The latest of these groups is the Central Arizona Land Trust (CALT), headquartered in Prescott.

Their objectives appear fairly broad and are focused on securing protective custody for important natural areas, or cultural resources in Yavapai County. Although they are not targeting riparian areas specifically, the fact that the riparian areas within that county are so scarce and so heavily impacted, the acquisition of these critical areas is high on their list of priorities.

CALT would typically attempt to assist private landowners in protecting or enhancing unique features on their property. Where significant natural, cultural, or historic values exist on a piece of property, the trust offers incentives to the landowner to protect that portions of the property. In cases where the resource has the potential for significant public use, they then negotiate with public and private agencies that have some interest in acquiring these properties for eventual placement into the public domain. If the public agency can forsee and plan for eventual acquisition of a particular site, then CALT attempts through a variety of means (e.g. purchase options) to temporarily hold the particular parcel until the public agency has time to actually purchase and take title to the property.

Public ownership, however, may not always be a suitable or possible means of preserving important cultural, historic, or natural values. Historic building, for example, are often kept in private ownership, but maintained for their historic values through deed restrictions or other agreements. Negotiating and acting as trustee for this kind of agreement is part of the role of CALT.

Another important function of CALT is in their role as trustee for the management of Conservation Easements. Under the terms of an easement contract they will typically monitor the conduct of the easement's terms.

For more information on the activites of this group, contact Nancy Currier, CALT President (445-3677).

Ed.

Editors Note

First of all, let me apologize for the lateness of this newsletter. I have moved to a new address with all the attendant problems of moving a household, small business, and my computer. To make matters worse, the computer crashed as I was preparing this copy.

I am already preparing some stories for the next issue, but must depend largely on what people will voluntarily send me. Send your copy to the address below or give me a call. If you are submitting fairly lengthy copy, please do so on computer 5.25" floppy disk in any MS-DOS compatible word processing format.

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Environmental Action

Two Forks Dam on the Platte River May be Vetoed

The following story has been excerpted from the National Wildlife Federation's Environmental Digest for the Resource Conservation Alliance.

In response to almost unprecedented public response in opposition to the construction of the Two Forks Dam on the Platte River in Colorado, EPA official Lee A. DeHihns III has announced his tentative proposal to veto that construction project. In justifying his action, he cited the significant loss of aquatic and recreational values along the Platte that would result from the dam's construction. His action constitutes the second in a three step process which began in March by EPA Administrator William K. Reilly to veto the permit issued by the Army Corps of Engineers.

According to the National Wildlife Federation, the EPA had received more than 7,000 letters concerning this project, running roughly 10 to 1 in opposition. The concerns center on the loss of a diverse ravine and its riparian, as well as upland habitat. This is habitat that contains the highest fish biomass of trout in the western United States. The opposition also cites "the availability of less damaging practical alternatives" that could still meet Denver's need for municipal water.

DeHihns will make a final recommendation to EPA Administrator Reilly by the end of the year.

A Look at Some High Elevation Riparian

The ARC Annual Meeting Field Trip

Saturday's field trip to the nearby White Mountain riparian areas was quite a contrast to our last two meetings in desert settings. Our thanks to the organizers: U.S. Forest Service, Soil Conservation Service, Arizona Game and Fish Department, and assorted guests who led discussions at the various sites on riparian management issues. Special thanks to our bus drivers, courageous pair who proved convincingly that Arizona's school buses can go anywhere. An especially big thanks to everyone who attended, making it a successful trip.

The first stop was at the Coyote Creek Soil Conservation District, east of Springerville. This was the first project of its kind funded by the Arizona State Legislature on State Trust Lands to control gully erosion and headwater cutting. The 145 erosion-control structures, revegetation, and modification of some grazing practices have begun to check the degradation of this stream site. Some perennial flow has returned to the upper portion of this stream which empties into the Little Colorado River. The project, begun in 1984, may have aided the few coyote willows that established during the wet 1983 season. It was refreshing to see this type of improvement and restoration being attempted on our neglected State Trust Lands. However, the years since the project's inception have been dry; whether the erosion structures in the arroyo can make it through another year like 1983 remains to be seen.

Next, we visited Beaver Creek in the Apache-Sitgreaves National Forest, west of Hannagan Meadows. This area has had extremely heavy grazing pressure by cattle and elk, especially during the last several years of drought and low winter snowpack. A 300-400 acre cattle exclosure has been established along the creek, in an area that presently supports no woody vegetation. *Carex* is being reestablished along the creek bottom, and a mixture of native and non-native grasses is being reseeded in the meadow; willows and alders hopefully will come next. Besides discussions from the U.S. Forest Service and Arizona Game and Fish Department personnel, we heard from the Arizona Cattle Grower's Association. Some different perspectives concerning the current political concerns over elk grazing pressure on cattle-grazing allotments were heard (or is it cattle grazing pressure on elk grazing allotments?). Among the questions raised were: Do grassy openings in the forest have a higher water yield than litter-laden old-growth *closed canopy* forests, and if so, does that justify *managing* the forest to create them? Does clear-cutting as a management tool serve the same role that fire would have if fire had not been suppressed all these years? Differences of opinion aside, it was good to see the uplands included in the overall riparian picture.

Lunch found us wolfing down sandwiches among the willows at the Game and Fish Department's PS Ranch Wildlife Area along the west fork of the Black River. This historic site, which has been closed to grazing, is a relatively high quality riparian area and is important to raptors such as the osprey. Norris Dodd, AG&F Habitat Specialist, has found a correlation between Riparian Scorecard ratings for the area and the abundance of certain meadow animal species, especially the threatened (Arizona list) Mexican jumping mouse (*Zapus princeps*), with an r2 of 0.94. Possibly another tool to judge the quality of riparian areas? It was interesting to note that while there were considerable difference in the abundance of these species between grazed and ungrazed streamside vegetation, the grazed and ungrazed portions of meadows did not appear to show nearly as much difference.

The final site visited was along Wildcat Creek, designated as Critical Arizona Trout Habitat. Riparian management issues, streamside recovery efforts, revegetation of willows, livestock and riparian conflict resolution, and reintroduction of the Apache trout were discussed. Grazing and trampling of the streambanks by cattle have severely degraded this stream, causing arroyo cutting, elimination of streamside vegetation, morphological changes in stream structure (shallower and wider), and lowering of the water table. Sites like this suggest that there are some riparian areas in which allowing any grazing is tantamount to overgrazing. Agencies are considering 10 alternatives, some of which could cost up to $40,000 per acre, to restore this riparian area. At current grazing fees, how many years will it take for that lessee fee to pay for restoration?

It was a great trip and we especially like the part where the brakes went out on the bus. We got to take that nice little hike in the nice little drizzle. Sometimes we focus so much on our desert riparian corridors that we forget there are other streams out there that need help; it was good to see some of them.

Scott Wilkins and Julie Stromberg

Education

Report given at the 4th Annual Meeting

The Education Committee has accomplished many of its long-term goals this year and is actively working on a number of other projects. Major successes this year include:

Obtaining a full-time editor for the ARC quarterly newsletter. Ron Smith has taken over as managing editor.

The first Riparian Fact Sheet has been printed. Distribution to schools and other groups and organizations has begun. Thanks to all who offered comments and revision changes. A second fact sheet on wildlife and riparian is being drafted.

Third Annual Teachers' Workshop on Riparian Systems.

This workshop was a great success. These workshops are co-sponsored with the state environmental education association (AALE) and have been coordinated by Mary Gilbert and Tanna Thornburg. The first teachers' workshop was held April 1987 at the Nature Conservancy's Muleshoe Ranch, the second on April 1988 at the Conservancy's Hassayampa River Preserve, and the third workshop on May 1989 at Red Rock State Park near Sedona along Oak Creek. Many groups and agencies also co-sponsor these workshops and provide invaluable assistance and expertise. Teachers are an excellent investment in training time when you consider they directly reach about 30-150 children a year, who in turn share that knowledge and environmental awareness with their parents and friends.

First Riparian Systems Workshop for Resource Professionals.

This workshop was ARC's first venture into providing training for agency personnel and striving to become financially self-sufficient. This first session was coordinated by Richard Ockenfels and Tanna Thornburg. Again, many agencies and organizations contributed staff and equipment to pull off this session. Some participants felt the workshop was too elementary, others felt it included too much detail. When the next one is organized, the sessions will be planned tighter, with more advance notice for both instructors and participants. Everyone completed the workshop with more knowledge than they began with and the workshop resulted in over $1,700 in new deposits to the ARC account. A portion of this money will assist the Education Committee in the development and distribution of educational materials and programs.

There are preliminary plans for a series of advanced training workshops, each one organized and sponsored by participating agencies who would like to share information and methodologies with other agency personnel. The co-sponsors and format still need to be decided upon, but the idea has been well received by several agencies.

A riparian slide show and video are still being worked on jointly with the Arizona Game and Fish Department. Personnel changes have slowed progress a bit, but it is hoped great strides can be made this year.

The Education Committee has fielded a lot of inquiries about ARC and about Arizona's riparian areas in general, furthering the public's knowledge and awareness of the value of riparian systems.

What is in store for this coming year? Why don't you join the Education Committee and find out how you can be a part of it!

Tanna Thornburg, Chair

Water Resources Committee

The Biological Subgroup of the Instream Flow Task Force met at the offices of the Arizona Department of Water Resources (DWR) on October 5, 1989. This was the first time that this group had met since April, 1987. Although the long hiatus from now to the time we started has caused many of us to curse (mildly) and gnash our teeth, it looks like we are finally making progress. The purpose of the meeting was to determine what we needed to do to produce final recommendations as to how instream flow needs should be quantified. The goal of DWR is to have final recommendations completed in the near future.

However, the subgroup has a bigger job than just reviewing the recommendations we made two and one-half years ago. Since the time we made our first recommendations some new ways to quantify instream flow needs have been developed and we have learned more about the existing ones. In order to incorporate these new methods we asked several individuals who are knowledgeable in these areas to join the subgroup.

So, the ball is in our court again after a long delay. We must eventually come up with some sound recommendations so that DWR can move forward in the rule making process for instream flow appropriations.

Marty Jakle, Chair

ADEQ Announces Dates of Public Meetings on Water Quality Standards

The Arizona Department of Environmental Quality will be conducting a series of public meetings throughout the state to present and discuss the preliminary draft amendments to the State's Surface Water Quality Standards. The announced dates are listed here:

- December 21
  Water Quality Advisory Council Meeting
  Quality Inn, Vincent Rm., 2420 W. Thomas Rd., Phoenix.
  10:30 - 5:00 pm.
- January 8
  Public Meeting
  Yuma City and County Library Auditorium, 350 S. 3rd St., Yuma
  1:00 - 5:00 pm.
- January 10
  Public Meeting
  Pima Co. Board of Supervisors, 110 W. Congress, 1st Floor Hearing Rm., Tucson
  1:00 - 5:00 pm.
- January 12
  Public Meeting
  Coconino Co. Administrative Center, 219 E. Cherry, 1st Floor Meeting Rm., Flagstaff
  1:00 - 5:00 pm.
- January 16
  Public Meeting
  Industrial Comm. Auditorium, 800 W. Washington, Phoenix
  9:00 am. - 1:00 pm.
- January 18
  Water Quality Advisory Council Meeting
  Az. Dept. of Environmental Quality, 2005 N. Central, 1st Floor Meeting Rm., Phoenix
  9:00 am. - 5:00 pm.

For additional about these meetings, please contact Lisa Hastings (257-2322).

A Note From the Secretary

To Bonnie Jakubos, Barry Long, and Dan McGlothlin, my apologies for not having your complete abstract in the program for the annual meeting. They were inadvertently cut off because they did not fit in the text box and it was not discovered until after the meeting. The missing information is as follows:

An Inventory Method for Establishing Riparian Management Objectives. By Bonnie Jakubos.

[...condition.

The Phoenix District is presently establishing management objectives for improvement of unsatisfactory riparian areas and maintenance of satisfactory areas. Riparian areas will be prioritized, further studies undertaken, and riparian improvement projects planned based on the results of the RACE inventory.]

An Integrated Approach for Assessing Instream Flows: Bill Williams River, Arizona. By Barry Long and Daniel McGlothlin

[...requested monthly flow regimen incorporated water requirements for riparian-obligate wildlife, fish, riparian vegetation, recreation, and channel and water table maintenance.]

Registration for the 4th Annual Meeting was 118. Of these, 112 actually attended the meeting; it was a very good turnout. Ten percent of the attendees were students. We currently have 488 names on our mailing list and 148 (only 30%) have paid their dues.

Due to some confusion at the meeting concerning dues, we have decided that anyone who paid dues at the meeting is paid-up for 1990. Dues are actually for a calendar year rather than from the time of one meeting to the next. In January I will send out an announcement as a reminder.

Cindy Zisner, Secretary-Treasurer

Calendar

- January 22
  Meeting of Governor's Riparian Habitat Task Force
  8th Floor, Capitol West Wing
  9:00 am.
- January 16-17
  Public Relations Workshop
  Sponsored by Arizona Chapter, The Wildlife Society
  BLM Training Center, 5050 N. 19th Av., Phoenix
  Dr. Gene Decker, Instructor; $150 Members, $175 Non-members
  Contact Sherri Barrett for details 629-5061
- February 1-3
  23rd Annual Meeting, Arizona Chapter, The Wildlife Society and American Fisheries Society
  Eastern Arizona College, Thatcher
  Jim Burton, Program Chairman 942-3000 (Off.) or 778-5233 (Home)
- February 27-March 1
  Workshop in Managing for Minimal Viable Populations
  Instructor is Dr. Peter Brussard, Univ. Nevada, Reno
  $250 TWS Members, $300 Non-members
  Contact Sheridan Stone (538-7340) or Bruce Palmer (942-3000) for details

Application for Membership in Arizona Riparian Council

Please accept this application for membership in the Arizona Riparian Council:

Name (First, M.I., Last): _____

Mailing Address: _____

City, State, Zipcode: _____

Affiliation: _____

Office Telephone: _____ Home Telephone: _____

☐ $5.00 Dues Enclosed ☐ Donation (amount) _____

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

The purpose of ARC 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 or are dependent on the existence of perennial, intermittent, or ephemeral surface or subsurface water drainage.

This newsletter is published quarterly to communicate current events, issues, problems, and progress that involves Arizona's riparian systems. It also serves to inform you the members of ARC about important items of Council business, and as a forum for you to express your views or news about riparian topics. To contribute articles or information for future issues, please send all materials to:

Ron Smith, ARC Editor
1712 Pine Woods Rd.
Prescott, AZ 86301

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. Dues are $5.00 annual; additional contributions are gratefully accepted.

ARIZONA RIPARIAN COUNCIL

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