



The Arizona Riparian Council Newsletter

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Summer 1989

President's Column

It is hard to believe that the Arizona Riparian Council has been in existence for nearly four years and has had three annual meetings. We have grown up in this short period of time and now are a group that must be recognized.

The Council has been quite visible throughout the State. Members played an active role in helping develop SCORP guidelines. They have also been responsible for drafting biological criteria for instream flow rights. The Commission on the Arizona Environment and the Arizona Nature Conservancy "Streams of Life" campaign have also had active participation by Council members. We have been everywhere and will continue to lend our support and knowledge to programs encouraging preservation and education of riparian areas in Arizona.

We are pleased to see that the Department of Water Resources is beginning to grant instream flow rights again and that the Governor has recommended awareness of riparian areas by all State agencies and has established a riparian task force (unfortunately, we're not well enough established to be included). This is all progress but we can't be complacent. The Council must

continue to be active and vocal in bringing awareness and scientific reasons for protection of riparian habitat to the public.

I have enjoyed being an integral part of the early years of the Council. I do not, however, take credit for its origin; that goes to Chuck Hunter who we all wish was still in Arizona to give us impetus to take on new challenges. I also give credit for the forward momentum of the Council to the Committee Chairs. We are a Council of members and committees and should continue to function in this manner. It helps create broad participation.

I ask of all members, do not let your enthusiastic support for the Council or riparian protection, management, and education wane between meetings. The State, and especially wild creatures and plants that cannot speak for themselves, need your support. Let us hope that by the fifth anniversary of the Arizona Riparian Council we can say that riparian habitat throughout the State is on a come back. I will relish looking on and thinking I was, and still will be, part of the cause.

Duncan Patten

Governor Honors a Pledge

Executive Order on Streams and Wetlands Promulgated

Late last year the State Parks Board completed a major revision of a portion of the State Comprehensive Outdoor Recreation Plan (SCORP). This revision titled "Arizona Rivers, Streams, and Wetlands Study" presented in its executive summary some very specific recommendations for legislative and administrative action to preserve and enhance Arizona's wetlands. Based partly on this study the Commission on the Arizona Environment recommended legislative action in the form of a legislative resolution to establish a State policy on riparian. The resolution was introduced early in the legislative session and died in committee. It was later tacked onto water transfer legislation (HB 2666), and you all know the miserable conclusion of that effort.

The second part of the Commission's recommendation dealt with the development of a statewide interagency plan for the management of riparian areas. With no action on the part of the legislature, Governor Mofford, to her everlasting credit, fulfilled a promise to the Commission on the Arizona Environment, and promulgated on June 10, 1989 Executive Order No. 89-16. The order directs State agencies to review their own policies on riparian management and mandates the formation of a riparian task force of agency representatives.

We have reprinted that executive order in its entirety on page 6.

Ed.

Take a cool country weekend break by attending the Arizona Riparian Council 4th Annual Meeting. It will be held on September 22, 23 at Sunrise Ski Resort, State Highway 273, Fort Apache Indian Reservation.

Models for Instream Flow and Fish Habitat

Some second thoughts!

Measuring Instream Flow Needs

In December 1986 the Arizona Department of Water Resources (ADWR) established an Instream Flow Task Force to help that agency develop guidelines for methods which would be acceptable for quantifying instream flow needs. The Task Force formed Biology and Hydrology subgroups to look at more specific issues. In April 1987 the Biology subgroup submitted its recommendations on quantification methods to ADWR, but has yet to hear back from them. The subgroup recommended a three-level ranking to quantify instream flow needs. For high priority stream use, they recommended the *Instream Flow Incremental Methodology* (IFIM), a modeling technique which combines stream hydrology and fish habitat needs. For medium priority streams they recommended use of *multiple transect methods*, and for low priority streams, use of single transect or *desktop* methods. I was a member of the Biology subgroup and supported these recommendations.

Today I would not *require* that IFIM be used to quantify flows for high priority streams. The two years that have passed since we first made our recommendations have given me more experience in using IFIM and other methods, more time to examine how other states quantify instream flows, and a chance to review past and current literature discussing the pros and cons of various methods. My 20/20 hindsight has been sharpened by all of these factors. In fact, I would recommend that Arizona follow the lead of the nine Western states that have legislation designed to protect instream flow values. The recommended method in all of these states is the *standard setting method* and in six of the nine states either the standard setting or IFIM methods *may* be used (McKinney, M.J. and J.G. Taylor. 1988. Western state in-

stream flow programs: a comparative assessment. Instream Flow Info. Paper #18. USF&WS Biol. Rep. 89(2), 78pp.). The *Tenant and Great Plains Methods* are classed as standard-setting methods and are based on existing stream flow data. The *R2-Cross Method* is also a standard-setting method, but uses stream transect measurements. In short, standard-setting methods encompass a wide range of methods and differ greatly in the amount of time, expense, and expertise needed to conduct them.

Recommending that IFIM be used to quantify instream flows for high priority streams actually means that most of the instream flow requests must be based on IFIM. Why? Simply, because of their scarcity, almost all flowing streams in Arizona are high priority.

And now the second thoughts. The agency and/or organization that makes an instream flow request should not be required to use IFIM. This method has some serious shortcomings, even aside from its high cost, and labor and expertise requirements. Its validity is being seriously debated in the biological community; there is an increasing body of literature that points out that its predictiveness has not been validated with field studies and some of the method's basic assumptions are invalid. Where tests of the validity of the predictions have been examined, the correlations between predicted and measured values have been quite low. Perhaps more importantly, IFIM is a fisheries based technique and does not look at the needs of riparian vegetation, a critical component here in the Southwest. However, having thoroughly bashed IFIM, I must add that it is also the most advanced technique available for determining instream flow needs. Unfortunately, we have a long way to go before we develop the technique that gives us *The Answer*.

The next step. The ADWR guidelines for instream flow quantification are not final. I will consult with members of the ARC Water Resources Committee and suggest to them that the Committee recommend to ADWR that they reevaluate their draft guidelines and make them less stringent. I will then forward the Committee's recommendations to ADWR. We need to move forward on appropriating instream flows, but we also want to be sure that our movement is in the right direction.

Marty Jakle

Riparian and Fish Habitat Model

The Arizona Game and Fish Department and the Forest Service are joined in a cooperative effort to develop and implement a fisheries habitat management system. To initiate any fish habitat management the manager first of all needs information on the current status of the streams and riparian areas for which he/she is responsible. Secondly, he/she needs to know the potential of these areas to produce and sustain fish resources.

Biologists from the cooperating agencies are evaluating the use of the so-called "Fish Habitat Relationships" (FHR) system. This is a predictive model that assesses both present and optimal habitat capabilities of an area and the species carrying capacities. Much basic data, however, is needed before such a model can be applied. To create this database, surveys have now been conducted on 11 cold water streams and habitats in the Apache-Sitgreaves and 32 in the Coconino Na-

See FHR, page 3

FHR from page 2

tional Forests using standardized techniques.

The stream/riparian habitat data are being classified within homogeneous units to learn more about the natural variability that occurs within and among streams and their biological communities. Stream characteristics are naturally controlled by their watersheds and reflect the hydrology, geomorphology, and biology of their drainage basins. It is expected that this classification of habitats will greatly facilitate the identification of those natural or man-induced processes having the greatest influence on riparian habitat conditions and resulting fisheries.

The modelling portion of the FHR system will integrate these processes mathematically and predict the outcome of various candidate management activities and resultant habitat alterations on fish biomass and production. More specifically the model will:

1. Rate the suitability of existing habitat for fishes and the sensitivity of streams to alteration.
2. Measure the effect of current and past grazing practices on stream habitat and its carrying capacity for fishes.
3. Evaluate the effect of logging and road construction on those same habitats.
4. Measure indices to the condition of aquatic invertebrates.

In summary, the FHR system will evaluate how land and water uses are likely to affect a fishery. This should also provide a way to identify the best means of improving degraded streams and stream habitat. The system will identify those streams needing improved management, aid in obtaining compliance with water quality standards, and will reflect how well the uplands surrounding these streams are being managed.

*Rob Clarkson
Research Biologist
Arizona Game and Fish Department*

*A BLM Showcase***Bonita Creek**

In July 1988 the Western Division of the American Fisheries Society gave its "Excellence in Riparian Habitat Management" award to the Safford District of the Bureau of Land Management. This recognition was the result of a competition among 187 entrants and rewarded the implementation of an outstanding plan for riparian management on Bonita Creek, approximately 10 miles northeast of Safford. This update on the Bonita project was provided for us by Meg Jensen, Area Manager for the Gila Resource Area, BLM.

A multi-faceted plan has been put in motion to protect and enhance the Bonita Creek riparian area and its watershed. Fencing now protects the most critical areas from grazing. To offset this loss of access, BLM has designed a pasture grazing system and has built a pipeline to transport water to pastures on tablelands above the creek. Other aspects of the management plan include an application in April to the Arizona Department of Water Resources for classification of this river system to "unique water status." If granted, BLM will gain a stronger legal means of assuring that water quality standards are maintained. These standards are particularly critical because Bonita Creek is the principal source of drinking water for Safford residents.

To assure the integrity of that water supply a cooperative management agreement for water development projects is being negotiated with the San Carlos Indian Tribe. Tribal lands constitute the upper 30 percent of the Bonita Creek watershed.

Within its Resource Management Plan, BLM is proposing Bonita Creek as an "area of critical concern." This stream has perhaps the highest fish biomass of any creek in Arizona. It provides habitat to five species of native fishes, including the threatened Gila chub.

*Ed**Riparian Recovery in Action***Tonto Creek Riparian Unit**

Sometime after 1995 the rising lake levels behind a reconstructed Roosevelt Dam and the new Waddell Dam will flood about 460 acres of riparian vegetation at the mouth of Tonto Creek, the Salt River, and the upper end of Lake Pleasant where the Aqua Fria enters. In order to mitigate for these habitat losses, the Bureau of Reclamation (BR) is funding the largest share of an improvement project on about 6,000 acres of riparian habitat along 15 miles of lower Tonto Creek.

The plan for this work is being designed cooperatively by the Tonto National Forest, Arizona Game and Fish Department, Fish and Wildlife Service, and the principal funding agency, the Bureau of Reclamation. The riparian management portion of the overall mitigation plan will focus on the "Tonto Creek Riparian Unit."

This unit will be intensively managed and monitored to reverse a long history of habitat degradation within the riparian types. The primary goal will be to diversify the age composition of the riparian canopy. Under many decades of holding cattle within very large rotation pastures, the limited riparian areas within these pastures have been heavily grazed. The result has been an over-mature canopy of decadent cottonwoods and sycamores. There is virtually no regeneration of young native trees along the lower reaches of Tonto Creek.

To promote regeneration of new trees, the riparian areas need protection from grazing for critical portions of the year. The plan for the Tonto Creek Riparian Unit requires the creation of a number of riparian pastures. These fenced pastures would be grazed by cattle only during February and March, when seedling production is least susceptible to damage. Browse would be monitored and limited to percentage guidelines established within the Tonto

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TONTO, from page 3

National Forest Plan (20%). The long term monitoring plan is being developed. If control plots indicate that the new grazing plan is still having an adverse impact on riparian vegetation, then grazing will be excluded.

To offset the loss of cattle watering areas, BR has provided funding for construction of pipelines to transport water to tanks outside of the riparian pastures.

Despite the quality of the overall planning effort, the interagency team will face some real challenges in its implementation. There are some private lands within the riparian zones along lower Tonto Creek. These are possible sources of sand and gravel for the dam construction project. These areas if commercially developed, are a threat to the integrity of the riparian unit because of attendant loss of habitat, access road construction, and disruption of the continuity of this habitat type. BR is currently investigating the possibility of buying some of these private lands so that they could be managed within the riparian unit.

For more information about this riparian unit, contact Dave Walker, AG&F (981-9400) or Henry Messing, BR (870-6774).

Editor's Note

As the new editor of your Newsletter and a relative new member of ARC, I look forward to working with you all to serve the needs of riparian management. Most of all I need your help as active managers and advocates to make the best use of this publication. So, please keep me posted on items of interest.

Send your copy to me at the address below or give me a call. If you are submitting fairly lengthy copy, please do so on personal computer 5.25" floppy disk in any of the popular MS-DOS word processing formats.

Ron Smith, ARC Editor
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Peregrine City

The Grand Canyon Peregrine Survey

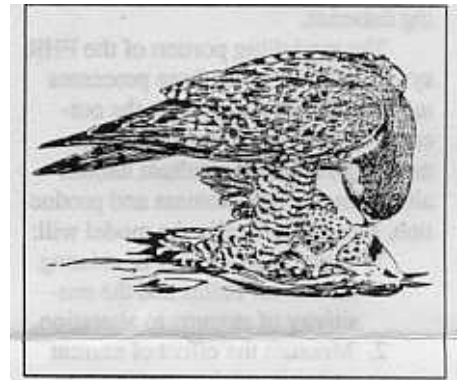
Where can you go in Arizona to find peregrine falcons as common as red-tailed hawks, with pairs occupying territories as little as two miles apart? The 300 mile-long riparian corridor of the Colorado River of Grand Canyon National Park is such a place.

The American Peregrine Falcon Recovery Plan for the Rocky Mountain Southwest populations, approved in 1984, stated that "Information indicates that the Grand Canyon region of Arizona potentially harbors an as yet undocumented breeding population." The Plan strongly recommended that "It is imperative to initiate surveys in the Grand Canyon." In May and June 1988 and again in 1989, raptor biologists from throughout the western United States converged on the Grand Canyon to document what is likely the highest nesting density of this endangered species in the lower 48 states.

These surveys are funded by the National Park Service under a three year contract with Steve Carothers, SWCA, Inc., awarded in 1988. Dr. Bryan Brown and Steve Hoffman, principal investigators, coordinate the project. The project is administered by Peter Rowlands, chief resource manager for Grand Canyon National Park, and by John Ray, a resource management specialist for the Park.

The second year of field surveys has just been completed. The continued cooperation and volunteer efforts of many biologists from numerous agencies, consulting firms, universities, and the private sector have been critical to the success of this study. Surveys of about 25 percent of the Park, including portions of the North and South Rims of the Canyon and the entire river corridor, have documented approximately 65 pairs of peregrines. While this includes much of the best habitat for this species, it is likely that additional pairs occur in the remaining areas not surveyed.

I was fortunate to be able to participate in the river survey this past May for 18 days. I was dumped from a raft onto a different beach each afternoon with my spotting scope and enough food to last until noon the following day. By late morning of each second day on the beach I was picked up by another raft. The biologists recorded peregrines catching and eating bats on-the-wing to watching a pair of falcons land and drink 30 yards from the observer!



Peregrines are opportunistic in their feeding habits throughout their worldwide range. In the Canyon, we frequently observed them catch white-throated swifts and, at dusk, bats. One pair successfully pursued and killed a belted kingfisher that futilely tried to escape by repeatedly diving into the river. Prey remains from the few nests that we examined included shorebirds, ducks, doves, gulls, and other migratory and resident birds, including a white-faced ibis and an American kestrel. Kestrels, now uncommon in the Canyon, were apparently much more abundant in the 1970's. This has led some scientists familiar with the Grand Canyon ecosystem to speculate that the current high density of peregrines in the Canyon may be a recent phenomenon. It has further been speculated that insectivorous vertebrates such as swifts, swallows, and bats, which may make up an important portion of peregrine prey during the breed-

See PEREGRINE, page 5

PEREGRINE, *from page 4*

ing season, may have also recently increased in numbers. This could be due to the enormous increase in the biomass of flying insects that now emerge from the highly altered Colorado River, where cold, clear, regulated flows have replaced the warm, turbid, annual flood flows. It is, in many respects, more characteristic of a stream in northern Canada than one in the southwestern United States. If the current operation of the river below Glen Canyon Dam is now more favorable to higher populations of peregrines, then any changes in these operations should be evaluated carefully to ensure that this endangered species is not negatively impacted. Other questions that should be addressed are: (1) to what extent would the riparian habitat established since the completion of Glen Canyon Dam be affected by proposed changes in water releases; and (2) how dependent are the peregrines on the high densities of breeding birds (documented by Dr. Bryan Brown) now supported by this new habitat.

Biologists are also concerned about the much lower nesting success in 1989 compared to 1988. Perhaps this was due to the prolonged, cold, wet spell during a critical period of the nesting season in early May, when insect-eating birds and bats may have been unavailable to the peregrines. Some scientists further speculate that DDT, now banned in the U.S. but still legal in Mexico, may once again affect the peregrine's prey species that winter in Mexico. This could become a problem if Mexico's depressed economy recovers and the use of DDT resumes in pesticide application programs there.

The current study will continue through next season when biologists will again monitor known nesting territories. For additional information on this important study, contact Dr. Bryan T. Brown, P.O. Box 3741, Tucson, Arizona 85722.

*Tom Gatz
Bureau of Reclamation*

*Nonpoint Source Assessment***ADEQ Planning Pollution Controls**

In October 1988 the Arizona Department of Environmental Quality (ADEQ) drafted a "Nonpoint Source Assessment report." This assessment states that, due to Non-Point Source pollution, over 90 percent of the waters surveyed in the State are not meeting State quality standards. These standards are based on the potential and protected uses of that water (e.g. drinking water supply, fish and wildlife). In 1987, Congress amended the Clean Water Act to include provisions for the management of Nonpoint Source Pollution. Nonpoint Source (NPS) pollution is diverse and diffuse and includes agriculture, grazing, forestry, mining, urban runoff, construction, land disposal, recreation and hydrologic/habitat modification. The latter category was assessed as the second largest cause for the alteration and/or degradation of surface water quality, and is primarily the result of habitat loss from impoundments. A number of Arizona experts have indicated that only 5 to 15 percent of the wetlands and riparian areas that existed in Arizona prior to colonization in the early 1800's remain today. The degradation of our wetlands and riparian areas through development and land-use activities is also closely related to degradation of surface water quality.

ADEQ, as part of its responsibilities, issues water use permits, reviews and certifies Federal permits, and enforces water quality standards. All of these activities can control NPS pollution resulting from hydrologic and habitat modification. The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (COE) issue Federal Clean Water Act permits. ADEQ is responsible for ensuring that discharge limitations and other controls contained in these permits, if complied with, are sufficient to meet State surface water quality standards. Aquifer protection permits may also be needed.

Planning

A Nonpoint Source Management Program is also under development. The Environmental Quality Act requires that ADEQ develop rules to control NPS pollution. The next priority will be to plan and implement control of NPS resulting from agricultural activities. Following that, controls involving hydrologic and habitat modification were identified as the next priority program for development. A technical task force has been established and will recommend management practices for rangeland/grazing activities to protect riparian areas. In addition, management practices will be recommended for urban runoff, construction and hydrologic/habitat modification. An additional program alternative will be to ask EPA to give primary responsibility for issuing Clean Water Act permits to ADEQ.

Riparian Classification and Inventory

In addition to the regulatory aspects of our programs, ADEQ is working very closely with several other agencies to develop a classification system and mapping of riparian areas in Arizona. A study area near Safford and Mt. Graham has been selected. A modified version of the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) will be applied to map wetland and riparian habitats. The area was selected for the study because it coincided with an existing pilot project by the Resource Analysis Division of the Arizona State Land Department (SLD). This project is using digital mapping of hydrographic information in an area of diverse topography, vegetation, land ownership, and land use. ADEQ staff helped to select the SLD project area, and ADEQ has provided funding and staff time to the development of the hydrographic database and its incorporation in the Arizona Land and Resource Information System (ALRIS).

See ADEQ, page 6

ADEQ, from page 5

One of the objectives of the ad hoc ARC Committee on Riparian Classification and Inventory is to include information on wetlands and riparian areas into the ALRIS geographic information system. The intent is to support improved management and protection of these unique resources in Arizona.

ADEQ, through a \$20,000 grant from EPA, will begin the development of a statewide riparian/wetlands inventory from results of the pilot project.

The grant money, under provisions of a contract to the Arizona Game and Fish Department, will fund the initial work including the selection of aerial photos, photo interpretation of riparian areas, mapping of those areas, and incorporation of digitized map data into the ALRIS system. The Mt. Graham project area, the Verde River (with assistance from State Parks), portions of the Gila River (with assistance from BLM), and the Hassayampa River, in that order, will be given the highest priorities during the initial phase of this project. The contract will be awarded sometime early this fall.

Carol Russell

Department of Environmental Quality

An Expert System for Stream Classification

A recent note in the periodical "AI Applications in Natural Resource Management" lists an expert system for riparian. The system assists in stream type classification and provides management options for repair of riparian areas damaged by grazing.

This system is under development by:

David Lambert

Agricultural Economics Dept.

University of Nevada - Reno

Reno, NV 89557

EXECUTIVE ORDER NO. 89-16

STREAMS AND RIPARIAN RESOURCES

Whereas, trees, shrubs, and grasses that grow along Arizona's surface and sub-surface water courses form one of the State's most unique, rare, and endangered ecosystems: streams and riparian areas; and

Whereas, riparian resources are of substantial economic importance to the State of Arizona due to their numerous uses for grazing, mining, farming, timber harvesting, recreational and residential development; and

Whereas, stream and riparian areas in their natural condition can increase groundwater recharge, maintain or improve water quality, provide recreational opportunities and wildlife habitat, and offer open space with aesthetic and natural values; and

Whereas, Arizona's population growth will bring additional pressure to bear upon these rapidly diminishing resources; and

Whereas, to facilitate the accomplishment of statewide recognition, protection, and proper utilization of Arizona's stream and riparian resources, state and federal agencies and citizen groups have for the past fifteen months assessed the issues surrounding the management of riparian resources;

Now, Therefore, I Rose Mofford, Governor of the State of Arizona, do hereby direct:

1. All state agencies to determine whether current and proposed policies, actions, requirements, and funding impact on stream and riparian resources and, when appropriate, to implement changes that will allow for restoration of riparian resources; and

2. The formation of a riparian habitat task force composed of representatives from the State Land Department, State Parks Department, Department of Water Resources, Department of Environmental Quality, Game and Fish Department, Department of Commerce, Office of Tourism, Department of Transportation, and the State Geologic Survey which shall be chaired by a representative of the Commission on the Arizona Environment.

The task force shall:

- a) develop a classification system for riparian habitat to be used by all State agencies;
- b) inventory existing riparian areas;
- c) identify key riparian areas;
- d) make recommendations for further State agency action, public awareness and education programs, and incentives for private landowner cooperation;
- e) consult with members of the public, Indian tribes, local government, federal agencies, and private groups;
- f) make legislative recommendations;
- g) report its findings and recommendations to the Governor no later than October 31 of each year.

In Witness Whereof, I have hereunto set my hand and caused to be affixed on the Great Seal of the State of Arizona.

Done at the Capitol in Phoenix this tenth day of June in the Year of Our Lord One Thousand Nine Hundred and Eighty-Nine and of the Independence of the United States of America the Two Hundred and Thirteenth.

Dues News

At the last annual meeting of ARC in Casa Grande, the membership overwhelmingly approved instituting a \$5 calendar year dues structure. The response, however, has been something less than spectacular. About 30 of the over 400 ARC members have actually submitted their 1989 dues. So, if you wish to continue your membership in the Arizona Riparian Council and receive this newsletter, please take a moment to clip and mail the Membership Application Form (p. 8). In this way you can tangibly help assure the continuance of this newsletter and other activities of ARC. **Registration fees for the September meeting will be reduced for paid up members, but not if dues are paid at the time of registration.**

\$5.00

is all it takes to make a difference!!

Election Of Officers

At the annual meeting of ARC in September the Nomination Committee must present to the members a slate of no more than two candidates for each of the offices of President and Vice President (Bylaws Article II, Sec. 6). Since the office of Secretary/Treasurer serves for three years, that position will not be on the slate this year.

If you would like to serve in one of these offices or know of someone who would, please send your nomination (with their permission!) to Cindy D. Zisner at the following address:

Cindy D. Zisner
Arizona Riparian Council
Center for Environmental Studies
Arizona State University
Tempe, AZ 85287-1201

Policy Committee Report

The Policy Committee continued to track important bills relating to riparian issues during the last session of the legislature. I represented ARC in testimony before a joint Senate-House committee hearing the water transfer bill. This was very early in the legislative session. Because the environmental interests expressed some serious concerns before the committee, some modest environmental protection provisions were placed in the water transfer bill. It remained, however, a bad bill and ultimately died. The publicity connected with hearings on the bill did serve a useful purpose. In this respect, we owe State Representative Herb Guenther, La Paz County a special thanks. Although his interests in improving the water transfer bill were those of La Paz County, he did a great job in bringing before the public, both through the print media and television, the importance of conserving and properly allocating the

water resources within our State's most crucial ground water basins.

Some good news. I also offered testimony on behalf of ARC at the June 9 field hearing in connection with the Arizona wilderness bill. ARC has submitted written testimony generally supporting the existing bill. The field hearing paid particular attention to the addition of several sites to the wilderness classification: upper Burro Creek, the Galiuro Mountains., the Gila Box, and Aravaipa Creek.

Even more. The Apache-Sitgreaves National Forest has published a recent *Record of Decision* that closes (the San Francisco River above the Martinez Ranch to the use of off-road vehicles. This was a significant riparian issue because this cottonwood-willow gallery forest is critical to the preservation of the endangered loach minnow and to breeding and nesting common black-hawks.

Andy Laurenzi, Chair

Classification and Inventory Committee

The information for this report was supplied by Denny Haywood and updates progress on a handbook titled "Standard Measures for Riparian Inventory in Arizona." The handbook is the work of a coalition of agency people working within an ARC subcommittee but representing the Forest Service, BLM, ADEQ, and the AG&FD. The work on the handbook is serving as one of the best models of the role of ARC in serving the interests of riparian management through coordination of interagency effort.

There is already basic agreement on a set of stream and stream habitat measurements that resource managers can use in common to describe riparian areas. Assessment of the quality of riparian areas can then be based on objective criteria.

The handbook will describe very specific measurements and classifica-

tion criteria for biotic and abiotic stream and channel components. These include vegetation type, channel gradient and sinuosity, flow characteristics, streambank stability, bank material, and other channel characteristics.

The handbook subcommittee will meet again probably within the next few months and revise its April draft.

On a separate, but closely related item, an ARC ad hoc group is working closely with USF&WS people responsible for the National Wetlands Inventory (NWI). The ad hoc group is exploring NWI procedures and their application to the inventory of Arizona riparian areas. Apparently, NWI personnel are willing to map both wetland and non-wetland riparian areas for any cooperating agency. ARC will coordinate this effort.

Ed.

Water Resources Committee

Last year was not a good year in Arizona from an instream flow perspective. No new permits were granted to appropriate instream flows, in fact, no new permits had been granted since 1983. The new number of applications, which increases annually, stood at 45 in December 1988. But that was last year. Hopefully, in 1989 we have turned the corner because there is some good news to report. In March of this year the Arizona Department of Water Resources (ADWR) granted a permit to appropriate instream flows to the Bureau of Land Management (BLM) for Aravaipa Creek. The amount of instream flow appropriated fluctuates monthly to meet seasonal demands. Flows range from a low of 9 cubic feet per second (cfs) in June, to a 25 cfs in February.

In short, this is great news -- finally it appears as if ADWR has moved off dead center. Due to the efforts of many people working together some yardage has been gained. The question remains: can this drive be kept alive? Time will tell.

As soon as the dust settles from summer field work and vacation schedules, I plan to ask members of this committee about instream flow quantitative methods. A set of recommendations for instream flow quantitative methods were compiled by an ADWR task force and submitted to that agency in draft form in April 1987. Even though I was a member of that task force, I now feel that these recommendations are too stringent. I would like to determine how the other members of our ARC committee feel and then act on their recommendations (see article *Instream Flow Methods*).

Marty Jakle, Chair

Education Committee

The Education Committee has concentrated its efforts on a few priority items this summer. Number one was expanding and improving the newsletter. Ron Smith, formerly with the Arizona Game and Fish Department, has assumed editorship of the newsletter and I think you will see immediate content expansion. Please continue to support the efforts of the Education Committee by promptly sending in reports, articles, and timely information.

On May 6-7, the 3rd Annual Riparian Ecosystem Teacher Workshop was held at Red Rock State Park with about 25 people attending. Mary Gilbert and I coordinated the workshop and, as usual, leaned on the shoulders of the ARC membership who served as instructors for the weekend training session. Steve Andrews (AG&F), Sandy Lane (ASP), Roger Clark (Resource Center), and members of the Northern Arizona Audubon Society provided participants with a lot of information, hands-on activities, and expertise.

On August 14-16, the Arizona Riparian Council is sponsoring a professional level training workshop on riparian systems at Red Rock State Park (see announcement in this newsletter). Richard Ockenfels and I are coordinating the training workshop and several other agencies and organizations are co-sponsoring the session by providing instructors, facilities, and materials. It promises to be an excellent workshop with a lot of practical field sessions. Spread the word to those you think might benefit from such a program.

The first educational fact sheet has been completed and is available for distribution. The committee is working on additional topics such as wildlife and impacts. If you would like to assist in any educational endeavor, please call me at 542-1996.

Tanna Thornburg, Chair

Protection and Enhancement Committee

The annotated riparian bibliography being assembled under activities of this committee is currently being reviewed by Drs. Bertin Anderson, Duncan Patten, and Robert Ohmart. It should be completed sometime in September. This will be a state-of-the-art publication containing approximately 130 summaries in 13 categories. It will be published and then distributed to ARC members and other groups and individuals having an interest in riparian management.

Kniffy Hamilton, Chair

Newsletter Needs

Artwork

You have probably noticed the lack of artwork in this issue of your newsletter. That's simply because I do not have much. If any of you have access to public domain line art, at your convenience, I would appreciate your sending me good quality copies.

In particular, I need subjects relating to the business of this newsletter:

- Riparian vegetation
- Riverine landscapes
- Riparian birds
- Reptiles and amphibians
- Small mammals
- People and riparian

Thanks to friendly connections at Game and Fish, I do have a good collection of large mammal line art. Send copies to me at my address listed on page 10. Thanks for your help.

Ed.

Calendar

August 14-16
Riparian Systems Workshop
Ecology of a Mid-Elevation Stream
Red Rock State Park (near Sedona).
Contact Richard Ockenfels for details (942-3000, off., 486-8022, home).

September 7
Environmental Contaminants Workshop.
Embassy Suites, 2333 E. Thomas, Phoenix, AZ.
Contact Bill Kepner 261-4720, or Kathy Groschupf 392-4046

September 12-16
Biennial Convention of the National Audubon Society.
Doubletree Hotel, Tucson, AZ (303) 499-3622.

September 16
Annual Meeting of the Arizona Nature Conservancy.
Summer Opera House, Trail Dust Town, 6541 E. Tanque Verde Rd., Tucson, AZ.

September 22-23
Annual meeting of the Arizona Riparian Council.
Sunrise Ski Resort, Fort Apache Indian Reservation, State Hwy 273.
Contact Cindy Zisner, 965-2490.

November 16-18
21st Annual Symposium, Desert Fishes Council.
Albuquerque Hilton, Albuquerque, NM.
Contact Steve Platania (505) 277-0304, 883-3897, or Phil Pister (619) 872 1171.

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
3219 W. Dailey St.
Phoenix, AZ 85023

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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Andy Laurenzi 622-3861 .
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Arizona Riparian Council
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**Arizona Riparian Council
Riparian Systems Workshop
Ecology of a Mid-Elevation Stream**



A professional training workshop, limited to 30 participants, will be held August 14-16, 1989 at Red Rock State Park near Sedona. The session will start at noon on Monday, continue all day Tuesday, and conclude around noon on Wednesday. Many agencies/organizations are cooperating to put on this needed workshop (U.S. Forest Service, U.S. Fish & Wildlife Service, Bureau of Reclamation, AZ Game & Fish Dept., AZ Dept. of Environmental Quality, AZ State Parks, Museum of Northern Arizona, and The Nature Conservancy).

The workshop will be oriented to professional-level agency or consulting personnel with some resource background, but will not exclude public interest groups. The workshop will be a field oriented, hands-on, rustic campout. Attendees will provide their own camping equipment and ingredients for *quick* meals for breakfast and lunch and a somewhat more leisurely dinner. There are *limited* indoor facilities for cooking and throw down sleeping (please call ahead if this is a necessity). Restrooms and showers will be available.

Handouts, materials, travel, and equipment needed for the course will be provided. Be prepared for working **in and around** the water. Most sessions will be in the field. Tennis shoes are a good idea. This is an excellent opportunity to see and learn about an undisturbed riparian area along Oak Creek.

Agenda

Monday, August 14 — 12 noon to ???

- | | |
|-------------------------------------------|-------------------|
| • Southwest Riparian Systems | Russell Lafayette |
| • Riparian Vegetation Communities | Peter Warren |
| • Threatened & Endangered Riparian Plants | Barbara Phillips |
| • Evening Program | Jeffrey Cooper |

Tuesday, August 15 — 8:00 am to ???

- | | |
|-----------------------------------------------|-------------------|
| • Geology and Hydrology of Riparian Systems | Russell Lafayette |
| • Water Quality Impacts and Monitoring | Carol Russell |
| • Assessing Amphibian and Reptile Populations | |
| • Assessing Raptor Breeding Status | |
| • Assessing Bat and Small Mammal Populations | |

Wednesday, August 16 — 7:00 am to noon

- | | |
|---------------------------------------|--------------------------|
| • Fish and Invertebrate Inventories | Marty Jakle, Bill Kepner |
| • Water Quality and Flow Measurements | Bill Kepner, Marty Jakle |
| • Impacts and Management — Monitoring | Judy Hohman |

REGISTRATION

Arizona Riparian Council
Education Committee

Riparian System Workshop
Ecology of a Mid-Elevation Stream

Name _____

Phone _____

Agency _____

Address _____

Cost: \$75.00

Check payable to : Arizona Riparian Council

Please register by August 7, 1989

Mail to:

Richard Ockenfels (o): 942-3000 (h): 486-8022
11312 N 82nd Ave., Peoria, AZ 85345

MEETING INFORMATION

To clarify the last meeting announcement with preregistration forms, the technical papers will begin at 1 PM on Friday, September 22. Registration at the door will be from noon until 1 PM.

On the registration form fees are designated as Members (dues paid) and Nonmembers (dues not paid). That is exactly what it means, although you may be on our mailing list **if you have not paid your dues you need to remit the Nonmembers fee.**

See you at Sunrise!!!