

Wild Tracks

southwest wildlife rehabilitation & educational foundation, inc.

Summer 2007

Email Newsletter

We encourage you to visit Newsletters on our new website to sign up for our email newsletter. Email newsletters utilize *full-color photos!* In addition, email newsletters allow Southwest Wildlife to save the costs associated with printing and mailing. That means we can utilize a larger portion of our funds for the housing, feeding, and medical care of our wild friends. Help Southwest Wildlife's newsletter become more environmentally friendly—sign up for email newsletters today!

Check Out New Website

On our website, you can make secure online donations, view our calendar of educational programs and special wildlife and/or conservation events, and review volunteer opportunities. In addition, we have teacher/school resources and additional wildlife educational resources such as photos, wildlife facts articles, reading lists, book reviews, and articles on selected wildlife topics. Our website address is still the same: www.southwestwildlife.org.

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Riparian Habitats

Part I

by Jeff W. Egerton

Is it possible to save Arizona's riparian habitats?

Even before Arizona reached statehood, water has been scarce in the desert southwest. Back in the territorial days, however, there were very few people and supply exceeded demand. There was little use for water regulations or management. Still, in 1864, the First Legislative Assembly of the Territory of Arizona enacted the Howell Code. Basically, this code said whoever got to the water first had the right to divert the water over those who came later. The code provided the necessary regulation in an uncomplicated time. And, the code only addressed surface water; ground water could not yet be reached.

In 1933, when groundwater was more accessible, its use was further defined by judicial action in Arizona. Landowners were free to pump as much groundwater as they wanted, provided the water was put to a "beneficial use." A decade later, higher powered pumps became available and water that had been inaccessible with old pumping systems was now being brought to the surface. This meant greater amounts of water were being used. Soon, it became apparent that more effective ground water management was necessary to replace the antiquated patchwork of existing regulations.

Early regulations were drafted with limited (or no) understanding of geology and hydrology. When a better understanding of the dynamics of water became available, it also became clear that the interconnection between groundwater and surface was complex, to say the least. Some streams that

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The American Bald Eagle

by Jeff W. Egerton

A young nesting eaglet has a pretty easy life, being fed regularly and enjoying the parent's warmth and nurturing; until the parents decide it's time for the chick to leave the nest. Then the routine changes. The parent eagles won't spend nearly as much time at the nest. They'll fly close by, occasionally dropping a morsel of food, but the chick soon notices the closeness and reliable feeding are no more. The message is—It's time to leave the nest, junior, so you'd better get yourself in shape to hit the air.

Instinctively, the young eaglet becomes stronger, standing on the edge of the nest and flapping his wings, strengthening them in preparation for the big day. In doing this it also becomes lighter, losing its baby fat so the air under the wings will carry it far aloft with a minimum of effort—just like the big eagles!

Finally, the day arrives when the eaglet senses the time is right. It catches a light breeze and feels the incredible sensation of becoming completely airborne; sailing across the land on the wind. But, not being used to extended flight, our young bird quickly tires and looks for a landing spot. Right before landing the chick realizes it has never done this before. The chick takes a couple quick, desperate steps, trying to land, but it's still going too fast. Inertia takes over and our intrepid airman tumbles across the ground in a tangle of wings and talons, finally coming to a safe but ungraceful stop.

After the first flight, the eaglet's life gets progressively better as it learns to stay aloft longer while hunting, and to feed itself, much like the big eagles. However, it is also a time when the chick's life becomes more dangerous. It's entering a world where only one or two out of ten eagle chicks survive. The odds are clearly against it.

In some cases, the means people are using to help eagles thrive, is actually working against the magnificent birds. On the Kenai River Peninsula in Alaska, an artificial feeding site has been set up to attract eagles, which in turn will promote tourism when people come to see the birds. Feeding sites certainly

sound like a positive gesture, but naturalists in the area are solidly against artificial feeding. Their reasoning is; several generations of eagles that have relied on being fed regularly for many years, do not have the hunting skills to survive in the wild. According to the experts, if the unnatural feeding program ever comes to an end, several hundred eagles will perish.

In other situations, eagles can be their own worst enemy. Immature eagles have been known to defend a fishing spot to the death. When fishing, they've been seen hanging onto a prize salmon, too big to carry off, until they're dragged under water and drowned. Also, eagles are pirates and they don't hesitate to go after another bird's kill. Naturally, the rightful owner of the meal is going to protect his bounty. Often times the eagles pay the price for their thievery.

There is, however, good news in the world of the bald eagle. In many places the number of nesting pairs is as high as ever and eagles are being seen in places they haven't been spotted in years, such as Oklahoma and southern California. In Florida the eagle population is almost up to that of World War II.

This is largely due to the work of Charles Broley, an amateur ornithologist, who conducted an extensive twenty year survey of eagle nesting and reproduction pairs. He discovered a drop in immature eagles and a rise in failed nests. Joseph Howell a zoologist from Florida confirmed the findings and confirmed DDT introduced during World War II was accumulating in the fatty tissues of females, thereby preventing the calcium release needed to produce strong eggshells.



The scourge had made it into everything the eagles ate, thereby destroying the eagle's ability to procreate. Had Broley and Howell not conducted their studies, we might not have any eagles at all today.

Next, in 1961, the National Audubon Society

conducted a national wide survey to determine the degree of devastation on the eagle population. The results were predictable and in 1967, eagles were declared an endangered species in all areas south of the fortieth parallel. DDT would finally be banned in 1972. In 1982, the United States Fish and Wild Life Service launched a program called, The Year of the Eagle. Today, the population stands at five thousand nesting pairs in the contiguous forty eight states and an estimated forty thousand eagles in Alaska.

American bald eagles have found their place in lore, legend and myth throughout recorded time. Most Indian tribes have creation myths that tell of an eagle enabling the creation of life itself. There is reason to believe the myths and the birds will endure. You see, somewhere an eagle chick is standing bravely on the edge of its nest, flapping its wings, getting ready for the big day.

Wildlife Education: Classes, Day Camps, & Special Events

Our Education Department has geared up for fall! They have developed a full schedule, including:

- preschool programs
- home schools programs
- girl scout badge activities, and
- wildlife day camps.

Check out available classes, programs, and camps on our website: www.southwestwildlife.org.

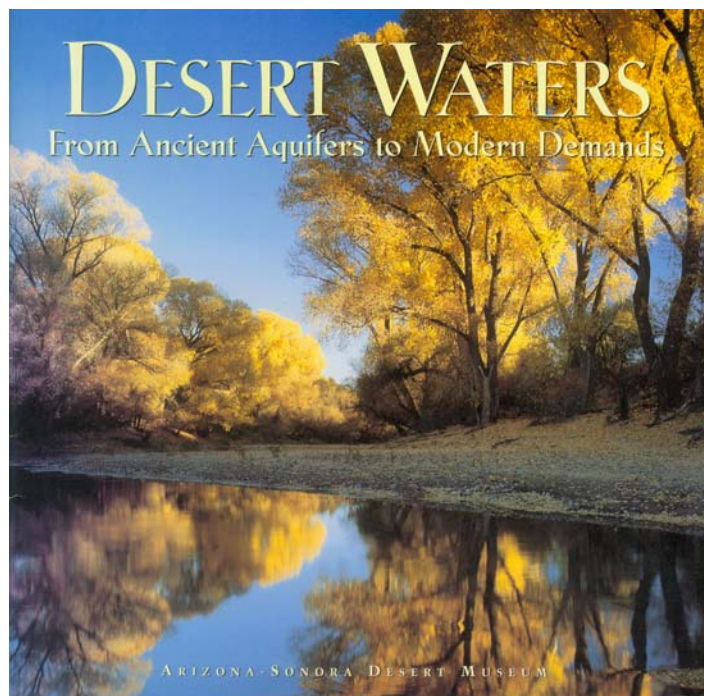
Occasionally, Southwest Wildlife will host special wildlife/conservation events at our Nature Center, so keep an eye on our online Calendar! Currently scheduled:

- Wild Desert Nights, see online calendar for dates
- The Climate Crisis: Awakening to Our Greatness, Saturday, October 6
- Children's Wildlife Book, author Jennifer Ward to read and sign her new book, Saturday, Nov. 10

All scheduled programs require reservations, which may be made online or through the Education Department at sweducation@gorvw.net or 480-471-3621 .

As always, the Education Department will also be available for off-site wildlife education presentations, school field trips, and educational tours of the Nature Center. To make arrangements, contact our Education Department.

BOOK REVIEW



Desert Waters: From Ancient Aquifers to Modern Demands

by Nancy R. Laney

for the Arizona-Sonora
Desert Museum

This book explores the natural rhythms of the desert, as dictated by seasons of drought and rain. It explains what water aquifers are, how they were formed, and the long-term consequences of disrupting the natural state of approximate equilibrium within an aquifer by removing more groundwater than can be replaced.

Desert Waters describes how native peoples lived with the desert and its water cycles. It contrasts that lifestyle with how our relatively easy access to water in modern times has changed the very face of the desert.

Water must now be imported to meet our demands for it. Because our water supply is not unlimited, however, this book offers suggestions about how each of us can utilize this precious resource more responsibly.



Eagle Facts

Appropriately, the American bald eagle is found only in North America. Its range runs from northern Alaska and Canada down to northern Mexico, and east to the coast from Maine to the Everglades. The American bald eagle is a fishing hawk that almost always lives near a body of water.

Bald eagles stand about three feet high, with a wing span of up to eight feet and weigh in around 10 – 14 pounds, with northern birds being significantly larger than their southern relatives. Male bald eagles are about 30 % smaller than the females. Eagles have a lightweight body frame made up of hollow air-filled bones.

Most eagles have about 7,000 feathers. Eagle's wings are long and broad for efficient soaring. The primaries, which are the feathers at the ends of the wings, are tapered so when the eagle fully extends its wings, the tips are widely separated. Tapered wings reduce turbulence as the air passes over the wings. In a dive, with its wings drawn in, the eagle can reach speeds of one hundred and fifty miles an hour. The tail feathers act as a rudder and help stabilize the bird in flight. White tail feathers and a white head are signs of a

mature bald eagle.

Juvenile bald eagles are a mixture of brown and white, and are often mistaken for a golden eagle. The very young chicks have a black bill. Adult plumage is usually coincidental with sexual maturity, which is 4 – 5 years of age. Wild eagles average a lifespan of 15 to 20 years, with some surviving as long as thirty years.

American bald eagle's eyesight is four times better than a human's eyesight. Although they cannot turn their eyes very far, they can rotate their neck three-quarters of a turn. Eagles have a second eyelid, called a nictitating membrane, which protects and cleans the eye. Whenever they are feeding their young, fighting or diving for fish, they close the second eyelid for protection. The eagle's hearing is about the same as humans.

An eagle's body temperature is 102 degrees. Their skin is protected by feathers lined with down. Their feet are cold resistant because they are mostly tendon. The adult eagle's bill is a yellow non-living material.

Eagle nests vary in structure and size; most are two to three feet wide and a foot or two deep. The largest one ever found in St. Petersburg, FL, was ten feet wide by twenty feet high. Eagles will keep a nest for several generations, often adding to it, as long as the supporting structure is strong enough to bear the weight. If one mate dies, the surviving mate will find another mate and bring them back to the nest. In treeless areas such as the Aleutian Islands, eagles will build their nests, consisting only of a mound of seaweed, on the ground.

There are about 65 sub-species of eagles throughout the world that fall into four categories. Of the 65, 9 sub-species are considered vulnerable, 2 are critical and 1 is endangered.

The Sea or fish eagles have 11 sub-species, of which 3 are vulnerable. Serpent or snake eagles have 15 sub-species, 1 is critical. Booted eagles have 33 sub-species, of these 4 are vulnerable and 1 is endangered. Harpy eagles have 6 sub-species with 2 being vulnerable and 1 critical.

Eagles' eggs are buff colored or off-white and sometimes speckled. The incubation period is forty to fifty days during which both the male and female share the duties of tending the eggs. Eagles reach sexual maturity around four to five years of age. From this point on, their only objective is to find a mate and raise their offspring.

Most eagle species lay their eggs over a period of time rather than all at once. This leads to a behavior that has become known as "Cain and Able". For reasons unknown, the first-born eagle chick, which soon has a size advantage, will often attack and kill its younger nest mates. In some species, such as the lesser spotted eagle, their declining numbers have led scientists to remove younger eagles and move them to other nests to be raised by "foster parents."



Bear Cub Enclosure

Thanks to all who participated in our special matching fund raising campaign for a new bear cub enclosure! YOU made it possible!

The enclosure complex was recently completed, and is now the temporary home of several bear cubs. This enclosure has been specially designed to prepare bear cubs for their eventual release back into the wild.

Two black bear cubs practice their climbing and balancing skills on the bear gym, constructed from old telephone poles donated by SRP, in the new bear cub enclosure.

A Recent Release: Two Bear Cubs

In fact, 2 bear cubs were released earlier this summer! These photos show the preparations for their release. After being sedated to ease the stress associated with being transported to their new home, each cub was given a final medical examination by volunteer veterinarian Mark Soderstrom.



Dr. Soderstrom applied an ear tag to ear bear cub. Both cubs were placed into the bear trap for transport, blissfully asleep and comfortably snuggled into straw bedding. Because the trip to their new home would take several hours, they traveled at night in order to keep the cubs as cool as possible. Once they reached the release site, the rear panel of the bear trap would have been raised so that the cubs could exit.



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flow year around are usually connected to the aquifer. Part time streams, which result from precipitation, are not normally connected to the aquifer. Other streams flow in some areas, but are dry in others; normally the flowing section is connected to the aquifer. And, under changing conditions, the characteristics of a stream or river may change.

In many cases, the stream or river flows until the aquifer is depleted so it falls below the level of the river. Then, rather than being replenished by the aquifer, the river loses water to the shrinking aquifer.

Thus, the diminished flow of a river or stream can be brought about by many factors; pumping, damming, diversion, etc., and the damage might or might not be irreversible. Also, there may be a time lag of several decades before the damage becomes apparent, and by then it's too late. In Arizona, the damage—the loss of many streams and rivers, and the riparian habitat they had supported—appears to have been irreversible. Can any of it be saved?

H.G. Wells said, "History is a race between education and catastrophe." In the case of our rivers, we've suffered the catastrophe. The question is, do we have the education and resources to save or restore the riparian habitats? The good news is, there are several dedicated groups of people who are constantly and tirelessly working toward that end.

Certainly, the complexity of the problem doesn't lend itself to speedy resolutions. The Arizona courts have been holding statutory proceedings to determine the relative rights on the Little Colorado and Gila River watersheds. A Maricopa Superior Court judge established a formula to define when groundwater pumping draws on surface water reserves, but it was overturned by the Arizona Supreme Court as being too arbitrary.

Concerns about the effects of pumping on the San Pedro River surfaced in the late seventies when residents of Hereford/Palominas requested well monitoring because river flows appeared to be diminishing. Critical attention was then focused on Sierra Vista's growth; it was becoming apparent that increased pumping could adversely affect or even destroy the San Pedro River riparian habitat.

Momentum built toward a water use strategy among

all interests. Fortunately, enough people realized that for any strategy to be successful, it must come from a broad slice of the water users. A Water Interests Group was formed and it called for legislation establishing an appropriate form of water management for the Sierra Vista sub-basin. Management strategies to achieve the group's goals are decided locally, but subject to the concurrence of the Director of Arizona Department of Water Resources.

In 1992 the Arizona legislature initiated a study to collect information on the ground-water, surface-water relationship and its effect on riparian habitats. Arizona Game and Fish was directed to map perennial and intermittent streams and the Arizona Department of Environmental Quality moved to evaluate human impacts on riparian areas. A Riparian Area Advisory Committee (RAAC) was formed to conduct a study, as well as to review the agencies' work.

The RAAC performed its tasks and made recommendations to the 1995 legislature. Among these recommendations was that local communities should be empowered to formulate plans appropriate to their specific areas. This strategy was deemed more effective than changes to state laws, but agreement was not reached on protective measures to be used in the absence of local incentives.

So, we've got committees, studies, groups, and courts involved in our water rights and riparian conservation. The question remains: have they been effective enough to save or restore our rich and diverse riparian habitats. In our next issue we'll explore this in detail.

Wild About Wildlife XI
dinner and auction

6pm • Saturday
March 15, 2008

Four Seasons Resort
Scottsdale at Troon North

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From Inconvenience to Engagement
The Climate Crisis:
Awakening to Our Greatness



7:00 p.m. • Saturday, October 6, 2007

Southwest Wildlife

\$30 per person* • Reservations required

Climate Presentation by:

M. Scott Johnson

Senior Outreach Representative, Defenders of Wildlife

Event also Features:

- Southwest Wildlife's Nature Center
- Wildlife Exhibits by
Wild at Heart (raptors)
Phoenix Herpetological Society (reptiles)
- Refreshments

To make Reservations:

Visit our website at

www.southwestwildlife.org

or call our Education Department at

480-471-3621.

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