



GILA MONSTER (*Heloderma suspectum*).—This non-aggressive resident of the Sweetwater area is our largest, most fabled, and only venomous lizard in the United States. Few people have had the good fortune to see one in the wild. These secretive reptiles have large home ranges that span a mile or more and are readily displaced by urban sprawl. They occasionally turn up in swimming pools.

The Sweetwater Strategy: Saving Habitat at the Grassroots Level

Thomas Wiewandt

Wild Horizons, Tucson, Arizona

Photographs by the author except where indicated.

Saving crucial habitat is by far the most effective means of conserving wildlife. Traditionally, conservationists have abdicated this responsibility to institutions, public or private — but sometimes individuals have to take the initiative into their own hands. Following is a step-by-step guide based on the successful establishment of the Sweetwater Reserve near Tucson, Arizona.

Step 1: Recognize the Opportunity — and Act!

Identifying a parcel of land of ecological importance is critical. Even experienced biologists, trained to recognize biological values that might be missed by the amateur, cannot do it alone. Ecologists may know to consider parcel size, its ecological diversity, and its connections with other protected natural areas. These are crucial attributes. Land lacking even one of these ele-

OUR GOAL:

Acquisition of Sweetwater Preserve by a public agency for conservation and open space purposes to help achieve the goals of the Sonoran Desert Conservation Plan.

ments probably doesn't warrant protection. Opposition to the proposal will quickly recognize and exploit such inherent weaknesses. However, biological significance isn't enough. An area's



SWEETWATER PRESERVE.—This view is to the northeast toward Tucson, as seen from the western end of the Sweetwater property. Tucson and the Santa Catalina Mountains appear on the distant horizon. Saguaro-studded hills in the foreground block views of homes along Camino del Cerro.

recreational potential and aesthetic appeal must be taken into account. Selling the idea of a sanctuary that would be “off-limits” to people is much more difficult than promoting one with some carefully managed recreational potential and visual appeal. To effectively integrate such varied concerns, a team that includes nature lovers such as birders, hikers, campers, artists, and ordinary citizens is necessary.

Once an area has been identified, act quickly! Determine who owns the land and investigate its potential for acquisition. Trying to stop a project after the property has been sold to a developer almost invariably proves futile.

Step 2: Organize

Like-minded citizens should meet to discuss the proposal and develop an action plan. An effective group should include scientists and the nature lovers to which we alluded above, but a consortium that effectively solicits support from individuals with a wide variety of skills will have a much higher probability of success. Involvement of persons such as attorneys, writers, photographers, real estate agents, graphic designers/publishers, and community members skilled in public speaking and political activism will dramatically enhance the likelihood of success.

Part of any effective action plan is the recruitment of an appropriate broker to negotiate the acquisition. Ideally, this would be a widely recognized and reputable conservation organization such as The Nature Conservancy, an Open Land Trust, the Trust for Public Lands (TPL), or comparable regional and

Sweetwater Preserve: Key Points

Size and Diversity

Proximity to Other Conservation Areas

Watershed and Riparian Habitat

Vertebrate Species of Concern

Cultural and Historic Resources

Viewsheds

Trails



FISHHOOK BARREL CACTUS (*Ferocactus wislizeni*).—Succulent surprises abound within the Sweetwater Preserve. Dense stands of young Saguaros (*Carnegiea gigantea*) and ancient barrel cacti of enormous proportion populate the land. Flowers of the barrel cacti open in July and August during the summer rainy season, providing nectar and pollen for native bees. In autumn, Mule Deer (*Odocoileus hemionus*), Antelope Ground Squirrels (*Ammospermophilus* sp.), and Curved-billed Thrashers (*Toxostoma curvirostre*) are among the animals that feast on the lemon-yellow fruit.

Sweetwater Timeline

June 2000	Tucson Mountains Committee (TMC) prepares report identifying Sweetwater as the largest remaining tract of undeveloped land in the eastern Tucson Mountains
March 2001	Community members meet with county supervisor and are directed to prepare a detailed report and to talk with the Trust for Public Land (TPL) to solicit their support in acquiring the property
July 2001	TPL meets with county supervisors, the county administrator, and the Tucson Mountains Association (TMA) and agrees to assist the county and community in efforts to secure Sweetwater
September 2001	TMA Sweetwater Preserve Committee completes report and presents it to county supervisors, the National Park Service, and the Arizona congressional delegation
October 2001	Began ongoing process of soliciting endorsements from diverse community, environmental, and governmental organizations; in all, 52 endorsements were secured, including: National Park Service, Arizona Sonoran Desert Museum, Coalition for Sonoran Desert Protection, Pima Trails Association, Southern Arizona Hiking Club, Neighborhood Coalition of Greater Tucson, Tucson Pima County Historical Commission, Sierra Club, Tucson Mountain Riders, Arizona Daily Star
November 2001	TPL begins negotiations with the landowners to secure an option for the potential acquisition of Sweetwater
August 2002	TPL completes negotiation of terms of option contract; TMA raises > \$30,000 for option payment contribution
November 2002	TPL and the landowners sign the option contract for the 620-acre Sweetwater parcel with the understanding that a bond election is planned for May 2003; property owners begin survey of property to plan development in the event the bond does not pass
December 2002	Supervisors delay bond vote until November 2003
July 2003	Supervisors delay bond vote until May 2004
December 2003	TPL/landowner option agreement expires; TPL negotiates a contract extension through mid-June 2004, requiring additional option payment and firm TPL purchase commitment by February 2004; additional 80 acres added to the project after consultation with county and community/environmental groups
February 2004	Purchase agreement completed; Pima County Board of Supervisors approve purchase of Sweetwater (with contingencies) by a 5–0 vote
May 2004	“Open Space” bond passes with Sweetwater as the first property listed; final appraisal provided by TPL to county for review and approval
October 2004	Sweetwater Nature Preserve becomes a Pima County Park

even international entities. In some cases, this organization eventually would become the owner/steward of the property; in others, they would act as an intermediary between the land owner(s) and the recipient organization, e.g., a city or county government. Representation by such an institution lends credibility to the effort. Not only does it remove the possibility of criticism that those involved seek to benefit personally in any way, but such entities do not become engaged in proposals that lack substance, and their participation provides a means of soliciting financial support via deductible contributions.

In the Sweetwater effort, the neighborhood group worked with the Tucson Mountains Association and TPL. TPL entered a prolonged and difficult three-year negotiation with the owners on behalf of Pima County, Arizona, and eventually purchased the land for the county government, a loan to be repaid with funds raised through a local bond election.

Step 3: Prepare a Report

A visually and intellectually enticing document is essential for moving the project forward — and the difficulty of doing this effectively should not be underestimated. Experience and expertise are critical. Seek outside help if the assembled team doesn't



DESERT SPADEFOOT TOAD (*Scaphiopus couchii*).—Awakened by vibrations from pounding raindrops during violent summer storms, spadefoot toads emerge to breed in temporary puddles in arroyos. Life in the water — from egg to tadpole to toadlet — can be completed in less than two weeks. By eating only one big meal of termites, adults can outwait fickle rains and make it through another year of sleep underground.

already include such persons. A poorly written and poorly executed report will waste everyone's time and will almost inevitably doom the project to failure.

BUYING TIME

Arizona Daily Star, 22 October 2002

Despite the pace of development on the West Side over the last 20 years, large portions of the desert landscape remain relatively undeveloped. One of the more pristine areas is a 615-acre tract in the foothills of the Tucson Mountains near the western extremity of Sweetwater Road. It's a remarkably scenic and peaceful slice of the Sonoran Desert, but in the absence of county action, it may one day be turned into another resort.

The land is now owned by Sweetwater Properties, Inc., a company partly controlled by local investors who evidently are willing to sell if the price is right. The Tucson Mountains Association wants to see the land turned into a nature preserve that would be open to the public for hiking, horseback riding and bicycling. A deal is in the works, but its success depends partly on public donations and partly on county action.

The owners of the tract say they'll take the land off the market for a year if somebody comes up with the \$40,000 property tax payment due on November 15.

The Tucson Mountains Association has raised approximately \$18,000 and the Trust for Public Lands, a national conservation organization, has agreed to put up \$20,000. This is a cause worth supporting. It potentially will have long-range benefits for the entire community, both in terms of outdoor recreation opportunities and the preservation of plants and animals native to the Sonoran Desert.

Success or failure hinges to a large extent on whether the Pima County Board of Supervisors votes to include the Sweetwater property in a bond election that will be held next year. The board's vote is expected early next month. A spokesman for the Tucson Mountains Association says it will not cash any of the donations it has received until it knows for certain that the property will be included in the bond election that will be held next May.

The land in question is a stone's throw from the eastern boundary of Saguaro National Park. The University of Arizona's entomological research station is about a quarter mile to the south. The county's extraordinary Tucson Mountain Park is also nearby. This is an area that is populated but not densely developed. It should be kept that way.

The proposed Sweetwater Preserve is a rare opportunity for the community. The property would make an excellent regional park that could be managed to protect wildlife corridors and the rare vegetation native to the Sonoran Desert.

At present, the fate of this project is precarious. The land has not yet been appraised and no one knows beyond a doubt what its market value is. The owners — so far the names of those involved in Sweetwater Properties Inc. have not been disclosed — are willing to delay any sale if somebody else pays the property taxes until the matter is settled. For the public, this remains a risky investment but one with potentially great rewards.

The document should be concise, yet filled with compelling facts and a sense of urgency. This will require the engagement of specialists to make surveys and assessments to broaden the appeal of the project and strengthen its case. If possible, include critical habitat for rare or endangered species, but keep the focus broad. The Endangered Species Act offers tremendous legal clout, but emphasizing the integrity of the whole endeavor will help build wider community support for a conservation project and alleviate possible fear of excessive governmental interference on the part of those who own property adjacent to the focal parcel.

Prepare the report so that it is easy to digest. Assume that important decision-makers, whose support (or lack of opposition) is crucial, won't take the time to study in detail every document that comes their way. Use engaging photographs with descriptive captions, an "Executive Summary," and sidebars or pullouts to emphasize key points. Ask yourself, "Would someone completely unfamiliar with this project come away with a full grasp of its significance by just reading the Executive Summary, the photo captions, and the highlighted bits of text?" If the answer is "yes," the report will most likely serve its purpose.

Have the document professionally designed and printed. Local designers and printers who identify with your cause will often do the job at cost or even offer their services for free. In the Sweetwater project, the designer discounted her services; and one printer handled the color pages while another did the black-and-white printing, collating, and binding — all at their cost. A supporter paid for the design and printing services, channeled through a non-profit organization (TPL) to make this a tax-deductible contribution.

Step 4: Form Alliances

With a convincing report in hand, circulate copies to important individuals and community organizations for support. Seek written endorsements from a broad base, including such groups as neighborhood associations, newspapers, women's organizations, experts on natural resources, hiking clubs, and conservation societies. The more, the better — keeping in mind that support from persons and groups with disparate agendas will strengthen dramatically the appeal of the proposal to decision-makers. Add such letters of support to the document.

continued on p. 22

Dense stands of the saguaro cactus populate Sweetwater Preserve, and young plants are numerous. . . . During the early summer dry season, when food and water are often critically scarce, the saguaro provides the desert's only source of moist fruit; and the multitude of animals that feed on it are as diverse as wasps, bats, javelinas, and woodpeckers.

Reptiles of the Tucson Mountains²

LIZARDS: Western Banded Gecko (*Coleonyx variegatus*), Mediterranean Gecko (*Hemidactylus turcicus*)*, Desert Iguana (*Dipsosaurus dorsalis*), Spiny-tailed Iguana (*Ctenosaura hemilopha*)*, Lesser Earless Lizard (*Holbrookia maculata*), Greater Earless Lizard (*Cophosaurus texanus*), Common Collared Lizard (*Crotaphytus collaris*), Long-nosed Leopard Lizard (*Gambelia wislizenii*), Desert Spiny Lizard (*Sceloporus magister*), Clark's Spiny Lizard (*Sceloporus clarkii*), Side-blotched Lizard (*Uta stansburiana*), Tree Lizard (*Urosaurus ornatus*), Regal Horned Lizard (*Phrynosoma solare*), Giant Spotted Whiptail (*Cnemidophorus burti stictogrammus*)**, Sonoran Spotted Whiptail (*Cnemidophorus sonorae*)**, Western Whiptail (*Cnemidophorus tigris*)**, Gila Monster (*Heloderma suspectum*).

SNAKES: Western Blind Snake (*Leptotyphlops humilis*), Spotted Leaf-nosed Snake (*Phyllorhynchus decurtatus*)***, Saddled Leaf-nosed Snake (*Phyllorhynchus browni*)***, Coachwhip (*Masticophis flagellum*), Sonoran Whipsnake (*Masticophis bilineatus*), Western Patch-nosed Snake (*Salvadora hexalepis*), Glossy Snake (*Arizona elegans*), Gopher Snake (*Pituophis melanoleucus*), Common Kingsnake (*Lampropeltis getula*), Long-nosed Snake (*Rhinocheilus lecontei*), Black-necked Garter Snake (*Thamnophis cyrtopsis*), Banded Sand Snake (*Chilomeniscus cinctus*)****, Southwestern Black-headed Snake (*Tantilla hobartsmithi*), Lyre Snake (*Trimorphodon biscutatus*), Night Snake (*Hypsiglena torquata*), Western Coral Snake (*Micruroides euryxanthus*), Western Diamondback Rattlesnake (*Crotalus atrox*), Sidewinder (*Crotalus cerastes*), Black-tailed Rattlesnake (*Crotalus molossus*), Tiger Rattlesnake (*Crotalus tigris*), Mojave Rattlesnake (*Crotalus scutulatus*).

TURTLE: Desert Tortoise (*Gopherus agassizii*).

* introduced

** North American lizards formerly assigned to *Cnemidophorus* are now placed in the genus *Aspidoscelis*

*** confirmation is needed nearer the mountains

**** Sand Snakes are now placed in the species *Chilomeniscus stramineus* (see *Iguana* 11(1), p. 7).

¹ This and all other boxed items were excerpted from the Sweetwater Preserve and Sonoran Desert Conservation Plan, prepared by the Tucson Mountains Association Sweetwater Preserve Committee, September 2001.

² Compiled by Cecil Schwalbe and Taylor Edwards. Note that not all species listed are found within the Sweetwater Preserve.



MOUNTAIN LION (*Puma concolor*).—Many of us who live in Tucson dream of the day when we can capture an image like this one in the wild. Symbol of the Arizona-Sonoran Desert Museum and photographed there, this magnificent cat still roams our desert mountain ranges. In recent years, Mountain Lions have been observed on several occasions in the Sweetwater area.



TIGER RATTLESNAKE (*Crotalus tigris*).—This attractive reptile lives only in the desert mountains of southern Arizona and northern México. Thirty years ago, this species was relatively common in Tucson Mountain Park near Gates Pass; today it is rare there. It is unprotected, prized by snake collectors, and, like many desert reptiles, suffers heavy mortality on paved roads. Paved roads trap heat, so heat-seeking pedestrians — reptiles and amphibians — often linger on these warm surfaces. Tiger Rattlesnakes still are seen regularly in the Sweetwater Preserve area.

SWEETWATER PURCHASE IS NEARING REALITY

Tony Davis (Arizona Daily Star, 16 June 2004)

The 700-acre Sweetwater Preserve in the Tucson Mountains is now on the verge of public ownership, after the Board of Supervisors took a crucial step Tuesday toward buying it.

The board approved the sale of \$11.7 million in bonds to cover Sweetwater's purchase. The vote came more than three years after neighbors of the parcel near Tortolita Road south of Camino de Oeste launched a campaign to save it. The sale, part of a larger sale of \$65 million in county bonds, gave the Trust for Public Land the assurance it needs to buy Sweetwater from its private owners, County Administrator Chuck Huckelberry said.

The county will in turn buy the land from the trust.

By the end of June, the county will buy the Sweetwater preserve area, lying in the shadow of Saguaro National Park West and Tucson Mountain Park. This will be the first major purchase with the county's new, \$174 million open-space bonds voters approved in May.

On Tuesday, the private, nonprofit trust sent a title company the money for the land. Formal closing will occur in a week, said Michael Patrick, the trust's Sweetwater project manager.

The parcel's size, its classically Sonoran mix of saguaro, ocotillo, prickly pear, creosote, palo verde and the scenic mountain views it affords have long made it a priority for its neighbors and many other Tucson environmentalist to buy.

In February, supervisors unanimously agreed to its purchase if three other conditions were met: voter approval of the open-space bonds, county approval of a property appraisal and a recommendation for the purchase by the Conservation Acquisition Commission.

But partly because of the parcel's high cost and because the board approved it before the open-space bond vote in May, the purchase has had critics.

Last week, five acquisition commission members abstained on the recommendation. Three members supported it. But nobody spoke against the Sweetwater purchase Tuesday.

Debbie Hecht, co-chairwoman of the Sweetwater Nature Preserve Committee, told the board that Tucson Mountain residents had put in countless volunteer hours and raised tens of thousands of dollars to help keep an option alive to buy the property.



XERORIPARIAN HABITAT AND THE 700-ACRE SWEETWATER PRESERVE.—Habitats with intermittent water supplies are vital to the welfare of more than toads, they help sustain most wildlife in the Tucson Mountains. Besides providing opportunities to drink, desert streambeds offer food and shelter that is unavailable or less desirable elsewhere. For many large mammals, arroyos serve as roadways, making travel across desert terrain quick and easy. Four major washes on Sweetwater Preserve have been identified by Pima County as important Xeroriparian "A" habitat; i.e., that of greatest value to wildlife. Sweetwater Drive and adjacent areas with low-density private dwellings is on the left, two major tributaries of Sweetwater Wash join as they intersect with Blue Bonnet Road in the lower left, and hiking/equestrian trails can be seen to the north (right) of these important natural watercourses. *Photograph taken from an ultralight aircraft by Adriel Heisey.*

SWEETWATER NATURE PRESERVE BECOMES A PIMA COUNTY PARK

Celebration planned for October 17, 2004 at the Tortolita (north) side of the property
www.TucsonMountainsAssoc.org

The County's Open Space Bond was approved in a landslide victory on May 18, 2004, with the voters of Pima County approving \$174 million to acquire lands for protecting biologically important habitat, providing additional open space for the community and preventing urban encroachment of Davis-Monthan Air Force Base.

Pima County announced on June 11, 2004 that it completed the purchase of the Sweetwater Preserve, 695-acres of important biological habitat and open space land in the Tucson Mountains, with assistance from the Trust for Public Land. The property will be set aside for permanent use as a recreational and natural resource area and as an addition to the County's Tucson Mountain Park. This acquisition is the first land protected using funds from the County's open space bond funds.

TMA expressed their gratitude to Supervisor Richard Elias, Supervisor Sharon Bronson, Pima County Administrator Chuck Huckelberry, Congressman Raul Grijalva and Michael Patrick from the Trust for Public Land, who have supported this effort for the past four years. "Saving Sweetwater required a tremendous commitment in grassroots volunteer efforts from the people of the Tucson Mountains, including a major effort to get out the vote in support of the May open space bond measure. The best is yet to come as our children and grandchildren enjoy this pristine land for years to come. We look forward to working with Pima County Parks and Natural Resource staff in the park planning process for Sweetwater," said Debbie Hecht, who along with Paula Chronister co-chaired the Sweetwater Nature Preserve Committee.

The Sweetwater Preserve Committee wrote the Sweetwater Report starting the process in June 2000. TMA was advised during meetings with Supervisor Raul Grijalva (who was District 5 Supervisor at the time) and Chuck

Huckelberry, Pima County Administrator to ask for help from the Trust for Public Lands. TMA raised over \$30,000, which was used as part of the money to secure the option on the property. TMA volunteers worked many hours with the Friends of the Sonoran Desert to pass the 2004 Open Space Bond.

Sweetwater Preserve is the largest remaining undeveloped property in the eastern portion of the Tucson Mountains, located south of Camino del Cerro, north of Sweetwater and west of Camino de Oeste, just three miles outside of Tucson's city limits. In addition to providing for outstanding recreational uses by County residents, the property provides habitat for a number of vanishing species, for example the cactus ferruginous pygmy owl, desert tortoise, gila monster, lesser long nosed bat, grey fox, tiger rattlesnakes and mountain lions. It also contains many thousands of young and mature saguaro cacti. Because of the diverse geology of the Tucson Mountains and uneven distribution of plants and vegetative communities in this area, the Sweetwater Preserve will provide additional protection for the estimated 30% of the botanical diversity in the Tucson Mountains that falls outside the boundaries of the Saguaro National Park West.

The preserved area contains Sweetwater Wash, a major watershed for the Tucson Mountains and a major wildlife connector between the National Park and the Santa Cruz River. Acquisition of the property has received endorsements from over fifty organizations, including National Park Service, U.S. Fish and Wildlife Service, the Arizona Sonoran Desert Museum, Tucson Audubon Society, the Coalition for the Sonoran Desert Protection, Arizona Open Land Institute, The Nature Conservancy, Southern Arizona Hiking Association, Pima Trails and the Sonoran Institute, among others.

Today, the Gila monster is celebrated for what he is: a unique, native Southwesterner whose infrequent appearances bestow a special blessing on the land and brighten any day afield. The animal's venomous nature is considered fascinating rather than sinister, and his bizarre reputation is regarded more as charming regional folklore than the product of Gothic nightmares. As one of the most brilliantly colored, yet least seen and understood inhabitants of the Sonoran Desert, the lizard has come to symbolize the desert's beauty and mystery. Let us hope the Gila monster will remain a source of such inspiration and be with us always.

— from Brown & Carmony, 1991

Gila Monster: Facts and Folklore of America's Aztec Lizard



DESERT TORTOISE (*Gopherus agassizii*).—This charismatic reptile is especially vulnerable to habitat disturbance, illegal collecting, and disease. Alien grasses that take root and spread from roadsides and housing developments foster desert fires. Fires injure and kill tortoises and degrade their habitat. Because females mature slowly and produce few young, the loss of just one animal per year can be catastrophic to a declining population. In Arizona, killing or collecting Desert Tortoises is illegal, but they are not federally protected at this time. Adults and juveniles are regularly seen within the Sweetwater Preserve.

ing team members experienced in political activism who have already established contacts). Many such meetings are required to keep the project in constant view (politicians, especially, often have short attention spans). Be certain that all public hearings are well attended by knowledgeable and well-spoken persons who support the project. Detractors must be out-voiced, and the best way of achieving this is to present overwhelming quantities of supportive evidence, which almost always wins over even the most loudly voiced opinions.

Step 5: Persevere

Challenging those who would rather see wildlife habitat turned into a resort or a housing project is never easy. Don't assume victory until the papers are signed. The hurdles are numerous and will sometimes seem insurmountable. However, with a well-designed and effectively implemented strategy and perseverance, grassroots conservation projects can succeed.

The Tucson Mountains support a surprising botanical richness.... No other desert range of similar size has such a large flora. One reason for the great richness is its topographical diversity ranging from the Santa Cruz River through valley floors and bajadas, rocky slopes, deep canyons, and a summit that is just above the desert in relict oak-grassland vegetation. The equal summer and winter rainy seasons contribute further to the number of plants; numerous species respond mainly to one or the other season. Lastly, because of its position on the wet eastern edge of the Sonoran Desert there are numerous elements coming in from the grasslands to the east.

— Mark Dimmitt