

THIS MONTH'S GUEST SPEAKER

Richard Felger

Director, Drylands Institute,
PMB 405, 2509 North Campbell Avenue
Tucson, AZ.

Ethnobiology and Conservation of Sea Turtles in the Gulf of California

7:15 PM

Tuesday, March 16th

Arizona Game and Fish Department Office
555 North Greasewood Road

(between Speedway and Anklam, west of Pima Community College.)

Since we lived by the sea in southern California I was first a marine biologist but had been growing cactus and succulents by age 10. My first and long-anticipated field trip to the Sonoran Desert was to Organ Pipe Cactus National Monument, even though someone at the Auto Club said there's nothing there. We went on to tidepools at Puerto Peñasco and saw more wonders I knew only from books and specimens at the Los Angeles County Museum of Natural History where I would volunteer in the collections. I had worn out my first copy of Rickett's part of the Sea of Cortez. A later trip to Alamos, traveling across the Sonoran Desert with my beloved high school biology teacher Nancy Thomas Neely and her husband Peter further fueled the desert connection. Peter introduced me to the renowned Professor Raymond Cowles at U.C.L.A. who included me on field trips to the desert with his students. Because of these significant experiences I went to the University of

Arizona, eventually completing a study of the vegetation of Gulf of California islands and the Sonoran coast for my dissertation. My work was greatly facilitated by travels with Alexander "Ike" Russell and Jean Russell, who introduced me to Mary Beck and Edward Moser that led to our studies of ethnobiology among the Seris.

I had returned to the Natural History Museum in Los Angeles to be Senior Curator of botany but in a few years I was back in Tucson and established the Research Department at the Arizona-Sonora Desert Museum and became associated with the Environmental Research Laboratory, University of Arizona where I am Adjunct Senior Research Scientist. In the early 1990s I founded Drylands Institute in Tucson. Continuing work on desert plants, sea turtles, and conservation provided study opportunities in deserts around the world but the Sonoran Desert is home where Silke and I live in a mesquite bosque with various animals.

It gives me great pleasure to again discuss my experiences with sea turtles of the Gulf of California with Southern Arizona herpetologists. I will recap my work with the Comcáac (Seris), Kino Bay fishermen, and some sea turtle biologists, heroes, and villains I have known. How I learned about Seri knowledge of sea turtles including overwintering green turtles. The discovery and destruction of overwintering sea turtle rookeries on the midriff islands in the Gulf of California and international conservation efforts twenty-five years ago. Some of my work is in the following works:

Felger, R.S., K. Clifton & P.J. Regal. 1976. Winter Dormancy in Sea Turtles:



NEXT MONTH'S GUEST SPEAKER

Randy Babb

Arizona Game and Fish Department

Geckos and selected other herpetofauna of Southwestern Africa

Tuesday, April 20th

Tucson Herpetological Society meetings are open to the public and are held on the third Tuesday of each month starting at 7:15PM

- Independent Discovery and Exploitation in the Gulf of California by Two Local Cultures. *Science* 191: 283-285.
- Clifton, K., D.O. Cornejo & R.S. Felger. 1982. Sea turtles of the Pacific coast of Mexico. pp. 199-209. *In*: K. Bjørndal, ed. *Biological conservation of sea turtles*. Smithsonian Institution Press, Washington, D.C.
- Felger, R.S. & M.B. Moser. 1985. *People of the Desert and Sea: Ethnobotany of the Seri Indians*. University of Arizona Press, Tucson. (reprinted 1991).
- Felger, R.S. & M.B. Moser. 1987. Sea turtles in Seri Indian Culture. *Environment Southwest*. San Diego Museum of Natural History no. 519:18-21.
- Felger, R.S. 1990. The Seri Indians and their herpetofauna. *Sonoran Herpetologist* 3(5):41-44.
- Felger, R.S. 1990. Los Indios Seri, Caguamas y el Desierto. *Noticias del CEDO* (Centro Intercultural de Estudios de Desiertos y Océanos) 3(1):21-24; Los Indios Seri, el Mar y el Desierto. 3(2):20-23.
- Felger, R. S. 2000. The Seris and the Guy Who Cuts the Tops Off Plants. "Seri Hands, a special issue," *Journal of the Southwest* 42: 521-543.
- Felger, R.S. 2003. Sea turtles in northwestern Mexico: conservation, ethnobiology, and desperation. Pages 82-83 in J.A. Seminoff (ed.), *Proceedings of the Twenty-Second Annual Symposium on Sea Turtle Biology and Conservation*. NOAA Technical Memorandum. National Marine Fisheries Service-SEFSC-503, 308 p.

Sea Turtles in Northwest Mexico: Conservation, Ethnobiology and Desperation.

In press. **R.S. Felger, W.J. Nichols, & J. A. Seminoff.** In: *Biodiversity, Ecosystems, and Conservation in Northern Mexico*, **J.-L. Cartron, G. Ceballos, and R. Felger**, editors. Oxford University Press, New York.

ABSTRACT—The world's seven sea turtle species are all listed as Endangered or Critically Endangered by the World Conservation Union (IUCN). The waters of northwestern Mexico have been important feeding and developmental grounds for five of these species: the green turtle (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), olive ridley (*Lepidochelys olivacea*), leatherback (*Dermochelys coriacea*), and loggerhead (*Caretta caretta*). Most depend on shallow coastal habitats for the abundant food resources, but the leatherback, a pelagic species, instead cruises offshore. Due to exploitation of eggs and turtles as food, degradation of marine and nesting habitats and incidental mortality relating to marine fisheries, most sea turtle populations have declined throughout the region. Industrial-scale exploitation of sea turtles in the region began in the early twentieth century, and hunting was focused primarily on the green turtle. By the 1960s the harvests reached a production peak, primarily for domestic consumption. At the same time, large-scale harvest of nesting females and eggs at nesting beaches, as well as individuals of both sexes

from nearshore waters, occurred farther south on the Pacific Coast. Like earlier in other parts of the world, the demand for green turtles, as well as other species, outstripped the ability of these slow-growing animals to regenerate. Management techniques were initiated in Mexico in 1966 and took many forms in the decades to follow. In 1990 a total ban on all sea turtle exploitation was declared by presidential decree. Although this legislation set the legal framework for the protection of sea turtles, it has done little to stem the illegal hunting and accidental bycatch. Moreover, the phylogenetically incorrect classification of sea turtles by the Catholic Church results in continued large-scale consumption of sea turtles during Lent, a practice that is accelerating the extirpation of remaining green turtle populations. Loss of sea turtles in northwestern Mexico represents far more than a threat to a single commercial species or loss of biological diversity; it is the end of a tradition among local peoples. Sea turtles have been important to both modern and indigenous cultures, none more so than the Seris of Sonora. Sea turtles feature prominently in traditional Seri culture including food and non-food uses and a vast knowledge of hunting techniques and sea turtle behavior and ecology. The Seris distinguished 16 kinds or variants of sea turtles: 10 green turtles, 2 loggerheads, 2 hawksbills, the olive ridley, and the leatherback. The green turtle was their single most important food resource. However, accelerated exploitation by local European-derived cultures has drastically impacted sea turtles in northwestern Mexico such that the Seris can no longer rely on sea turtles as they once did. Sea turtle populations in the region continue to plummet, even as research and conservation efforts escalate. Strong conservation practices have led to partial restoration of some olive ridley stocks further south on the Pacific Coast of Mexico, but otherwise the outlook is grim and although restoration may still be possible the opportunities are rapidly running out. The leatherback in particular teeters at the edge of extinction in the Pacific Ocean and immediate and drastic conservation measures are required at remaining nesting sites, feeding areas, and migratory corridors. Rather than rely solely on difficult to enforce laws, many researchers and conservationists in Mexico are embracing education and other alternative conservation strategies.

From the text:

CULTURAL CONTEXT OF SEA TURTLE EXPLOITATION—The use of sea turtles is associated with neither poverty nor hunger. Turtles are eaten by fishermen, government employees, teachers, military personnel, and virtually anyone who grew up with the tradition of turtle feasts. Sea turtle meat remains the premier plato tradicional at special events, holiday celebrations, and to honor visiting dignitaries. The cultural use of turtle meat, the deep traditions surrounding its use, and its perceived benefits, completely

override adherence to laws protecting endangered sea turtles. Although some have tried, there is no culinary replacement—a turtle feast is among the highest honors and displays of trust.

Sea turtle consumption peaks during Holy Week, or *semana santa*—the week prior to Easter. During this holiday Catholics consume vast quantities of sea turtle due to an errant belief that it qualifies as fish under Lenten rules. Recently a group of conservationists and spiritual leaders have petitioned the Vatican to correct this phylogenetic error and save the lives of many thousands of endangered sea turtles (Carleton 2002, Nichols et al. 2002b).

RECOMMENDATIONS AND POTENTIAL SOLUTIONS—Many researchers in Mexico have embraced education and bringing people together rather than enforcement by itself (Tennesen 1999). Since 1999 the Sea Turtle Conservation Network of the Californians, a grassroots organization comprised of fishermen, local residents, researchers, government resource managers and conservationists, has initiated programs designed to decrease local pressures on sea turtles (Grupo

Tortuguero de las Californias, see: www.wildcoast.net Instituto Nacional de Ecología 2000). Some of the goals and conservation efforts in northwest Mexico include:

Development of alternative income sources. NGOs, fishing cooperatives, ejidos, and government agencies are working together to create local

wildlife refuges and marine reserves, sustainable fisheries, and to develop community-based ecotourism, adventure tourism, and catch-release sport fishing businesses. Nascent sea turtle ecotourism is functioning in the Cape Region of Baja California Sur. In some areas aquaculture is promoted as a viable option, although there are serious inherent problems.

Education. By sharing information on the status of marine resources, sea turtle life histories and current research results, local groups have made tremendous progress. Some residents unaware of the endangered status of sea turtles and the consequences of cumulative use have changed their habits and joined the recovery effort. Such efforts need to be extended and include

development of educational curricula describing sea turtle natural history and ecology.

Research. At the base of any recovery plan are studies of the resources and the community of users. Long-term efforts to monitor trends in sea turtle populations as well as the perspective of the human communities are underway. Application of social sciences to solutions of resource exploitation is particularly warranted (Piper 1992).

Community involvement in research. Involving fishermen in research is a form of education, for both the researcher and the fisher. For some it is an additional source of income. Moreover, because local residents typically have more intimate knowledge of local resources than do visiting researchers, projects that attempt to integrate locals into field activities are more likely to succeed with both research and conservation goals (Nichols et al. 2002a).

Enforcement. There is no substitute for strong enforcement.

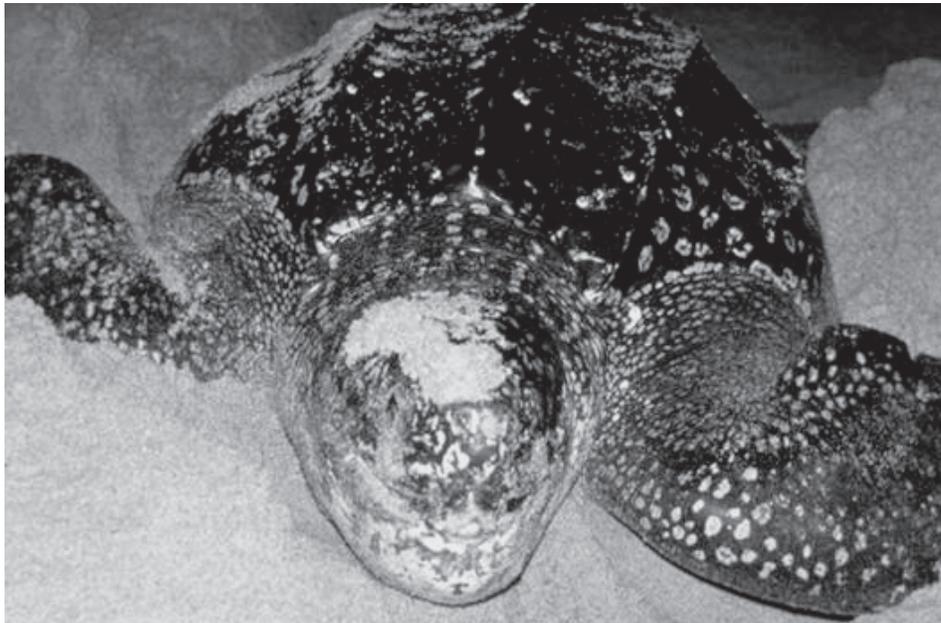


Figure 1.
Leatherback (*Dermochelys coriacea*)
Photo by: Jeffrey A. Seminoff

rn

Biomass Balance

**We
displace
the
animals**

**This planet
of
whales and turtles
and
billions
more people**

**balancing
all the animals
gone
since we came along**

**whales and turtles
took a lot of the slack**

-richard felger

Charles H. Lowe, Jr., Herpetology Research Fund

The Charles H. Lowe, Jr., Herpetology Research Fund was established to support research that contributes to the conservation of the herpetofauna of the Sonoran Desert, including the states of Arizona, southern California, Sonora and on the Baja California peninsula and gulf islands. Dr. Cecil R. Schwalbe spearheaded the fund in honor of the many contributions to our understanding of herpetology in the Sonoran Desert by Dr. Lowe. The fund was inaugurated at the Current Research on the Herpetofauna of the Sonoran Desert II Conference, April 2002.

APPLICATION PROCEEDURES

Eligibility

Any current THS member is eligible to receive awards from the C.H. Lowe Research Fund. Researchers need not be affiliated with an institution and need not have previous experience. Pre K-12 educational institutions and students are encouraged to apply. THS Board Members and Lowe Fund Committee Members are not eligible.

Funding

Beginning in 2003, proposals will be reviewed semiannually on 1 May and 1 November. Decisions to award will be made on the value of the research being proposed and not on the experience or status of the person making the request. No requests will be approved that involve collecting animals for personal collections or profit. Requests are not to exceed \$500. Although the fund is primarily for the purchase of equipment, requests can include personnel and travel costs. All awards are subject to THS board approval. Awards may not necessarily be granted every period and are subject to availability of funds. Funding may be awarded out of cycle under special circumstances.

Proposals

Requests should include a general description of the project, its objectives and methods, and time frame for both equipment use and project closure, (not to exceed 2 pages, single-spaced). A detailed budget should be included (not to exceed 1 page). The C.H. Lowe Research Fund Committee will review proposals blind (i.e., cover pages will be removed before proposals are distributed to reviewers so that reviewers will not be influenced by knowing who submitted a particular proposal). Proposals should be submitted to the C.H. Lowe Fund Committee Chair (Taylor Edwards) with a cover page including contact information, and four copies of the project description and budget. Project

descriptions should avoid reference to the applicant to maintain anonymity during the review process.

Proposals should emphasize research that:

- Focuses on herpetofauna of the Sonoran Desert;
- Contributes to conservation;
- Contributes to education;
- Is novel or unique;
- Is not supported by other means;
- Provides geographic distribution data;
- Allows equipment to be shared among multiple projects.

Deliverables:

All awardees are required to submit a project report for publication in the Sonoran Herpetologist's "Current Research News" within six months of the award. This report will include a description of the project and may consist of just a few lines to several paragraphs, dependent on the scope of the work. The committee may waive this requirement if the product of the research is not deemed suitable for publication. For appropriate projects, the committee may also encourage submission of a full-length article to the Sonoran Herpetologist.

Additional information:

Researchers must adhere to federal and state Fair Labor, Civil Rights and ADA Regulations. Awardees must be in accordance with all federal and state laws regarding wildlife, animal welfare, and land access. Awardees will be responsible for acquiring the proper permits for conducting such research (wherever that research may be conducted), which may be requested by the committee. Awards will be revoked immediately if compliance is not met. The THS holds no responsibility for research deliverables that may be required by other participating parties on the project.

All equipment purchased from the C.H. Lowe Fund is the property of the THS and can be withdrawn from a project at any time upon request of the committee. Expendable items awarded during a project may remain property of the awardee. It is understood that damage to and loss of field equipment can occur. Researchers are asked to treat THS equipment with care and respect. Equipment lost or damaged on a project will not necessarily be replaced.

Equipment already owned by the THS can be requested at any time (email or snail mail acceptable) from the C.H. Lowe Fund Committee Chair. Equipment may not be available if already in use, and equipment already in use may need to be shared among multiple projects. Committee members can authorize the use of equipment without board approval and will balance multiple requests to the best of their ability.



The Utah Mountain Kingsnake (*Lampropeltis pyromelana* *infralabialis*) in Arizona (Tanner, 1953)¹

Hans F. Koenig

The Utah Mountain kingsnake is a handsome mountain dweller which occurs in Arizona, Utah and extreme southeastern Nevada, where it is confined to a few canyons in the Egan, Snake and Shell Creek Ranges (Stebbins, 2003). Distribution is spotty throughout its range (K. Crowther, pers. comm.)

In Arizona, the Utah Mountain kingsnake is restricted to north of the Colorado River on the Arizona Strip District in Coconino and Mohave Counties. There are several

records from the North Rim Grand Canyon National Park. (A.T. Holycross, pers. comm) Wright & Wright (1957) have a photo of a specimen reportedly from Jacob's Lake on the north end of the Kaibab Plateau. It is probable that this specimen was collected not at Jacob Lake but at the north rim of the Grand Canyon. Jacob Lake is the only outpost on the Kaibab Plateau and consequently, a significant landmark. Records of this subspecies outside the Kaibab Plateau were previously limited to two specimens from Mt. Trumbull collected by W.C. Sherbrooke (UAZ 14653, UAZ 14654). The author has two records from northeastern Mohave Co. which extends the known range of this subspecies in northern Arizona (Stebbins, 2003).

Field Notes

August 1, 1992. Black Rock Mountain. Mohave Co., AZ. Elevation: 7,200'. The Bureau of Land Management dispatch phoned me today. She said that the fire crew had a mountain kingsnake for me. I left the house thinking that they probably had a *Rhinocheilus*. I found my friend Tom Lund and 2 other firefighters waiting for me at the cabin. They had stored their find in an empty water cooler. I pulled off the lid and to my surprise, there was a juvenile *infralabialis* less than 2' in length. It was gorgeous with rich orange bands. It did not attempt to bite when handled and made an excellent

captive, readily taking newborn mice. I retained the specimen long enough to obtain a cast skin. Our State Herpetologist requested the specimen be sent to Phoenix to be preserved and deposited in the University of Arizona collection. I mailed him the cast skin and released the mountain kingsnake near where it was captured. The habitat is Ponderosa pine. Photo voucher UAZ 19840.

April 19, 2001. Poverty Mountain, Mohave Co., AZ. Elevation: 6,040. I was assisting Dan Carpenter, a graduate student from Brigham Young University to look for Great Basin rattlesnakes *Crotalus viridis lutosus* on Poverty Mountain. In addition to aiding Carpenter to obtain blood samples from Arizona Strip populations of *lutosus*, I was hoping to find a *Crotalus molossus*. By



1:30 PM, the temperatures had fallen into the low 70's and a cool wind was starting to pick up. We still had not found a *lutosus*. I worked my way up to the top of the rim of a nearly vertical rock face. A slight movement in a rock fissure caught my eye, a movement that I first took for grass swaying in the breeze. I lifted a piece of cap rock and

to my amazement, loosely coiled underneath was an adult *Lampropeltis pyromelana infralabialis*, approximately 30" in length. It made a feeble effort to escape. Had it made a more serious dash for the stack of boulders below, it would have been impossible to extricate. It has numerous red bands obscured by black. All interest in Crotalids ceased at this point and Dan and I turned our attention to locating more *infralabialis*, although no more were seen that day. The specimen was photographed and released beneath the rock where it was discovered. The habitat is pinyon-juniper. There are no nearby sources of natural water. Photo voucher UAZ 25161.

Figure 1.
Utah Mountain kingsnake
(*Lampropeltis pyromelana*
infralabialis)
Photo by:
Breck Bartholomew

¹A description of the subspecies *Lampropeltis pyromelana infralabialis* was first published by Tanner in 1953. Tanner recognized 4 color patterns or subspecies:

L. pyromelana infralabialis, *L. pyromelana knoblochi*, *L. pyromelana pyromelana* and *L. pyromelana woodini*. (Wright & Wright, 1957). Tanner based the classification of the Utah Mountain kingsnake on the 9 lower labial scales in *infralabialis* compared to 10 in *p. pyromelana* and the 50 percent or more white rings extending unbroken across the belly (*infralabialis*) versus 50 percent or less of the white rings extending unbroken across the belly (*p. pyromelana*). Recently, Crowther (unpublished data) examined several Utah specimens and reported that nearly all had the distinctive labial scale count. A taxonomic review of *Lampropeltis pyromelana*

may determine the subspecies *infralabialis* to be invalid. Until then, this subspecies is still recognized as per Crother, et al. (2000).

Bibliography

- Crother, B.I. (Chair) 2000. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding. Herpetological Circular No. 29. Society For the Study of Amphibians and Reptiles.
- Stebbins, Robert C. 2003. Western Reptiles and Amphibians. Houghton Mifflin. N.Y.
- Wright, A.H. and Wright A.A. 1957. Handbook of Snakes of the United States and Canada. Comstock. Ithaca.

a few photos my lantern fell over into the scene startling the snakes. The Nightsnake released the Sandsnake and they crawled off in different directions. The Sandsnake was bleeding from wounds on its head and neck.

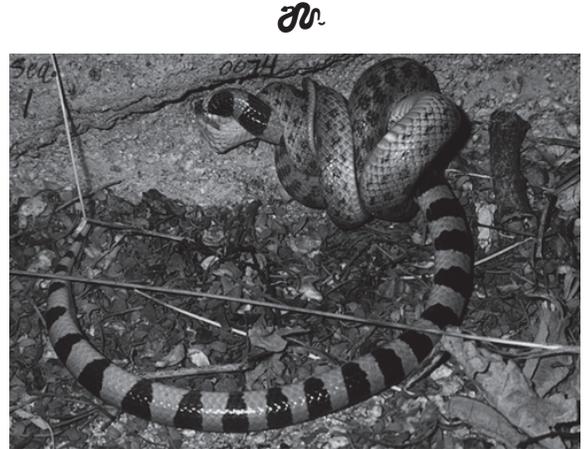
Nightsnakes feed primarily on lizards and squamate eggs, but occasionally prey on other snakes (Rodríguez-Robles *et al.* Copeia 1999:93-100). This is the first record of predation on Variable Sandsnake. Although neither snake was measured or weighed, figures 1 – 3 suggest that had the Sandsnake been eaten, relative prey mass would have exceeded the 0.50 maximum reported for Nightsnakes (Rodríguez-Robles *et al.* 1999. *op. cit.*).

sn.

HYP SIGLENA TORQUATA
(Nightsnake) DIET.

Thomas C. Brennan,
4520 E. Baseline Rd., Phoenix,
Arizona USA 85042.
E-mail: tbrennan@theriver.com

At 1845 h on 4 May 2000 near the summit of South Mountain (Maricopa County, Arizona) near National Trail (UTM 12 404295E 3690324N, 670 m elev.) I observed an adult Nightsnake attempting to prey upon an adult Variable Sandsnake (*Chilomeniscus stramineus*). I happened upon the snakes as they were writhing and struggling near the edge of a gravelly wash high on the mountain. The Nightsnake had a firm grasp on the Sandsnake's head. It appeared that the Nightsnake was attempting to bend the neck of, and constrict the Sandsnake. I propped my lantern near the scene so that I could take photos (Fig. 1-6). Unfortunately, after taking



Figures 2 and 3. Nightsnake (*H. torquata*) attempting predation of a Variable Sandsnake (*Chilomeniscus stramineus*)
Photo by Thomas Brennan

Figure 1. Nightsnake (*H. torquata*) attempting predation of a Variable Sandsnake (*Chilomeniscus stramineus*)
Photo by Thomas Brennan



LOCAL RESEARCH NEWS

Principal Investigator:

Matt Goode

Collaborators:

Cecil Schwalbe, Mike Rosenzweig, George Middendorf, Charlie Painter, Caren Goldberg, Taylor Edwards, Andy Holycross, and Lisa Harris

Project Coordinators:

Dave Prival, Jeff Smith, Kevin Baker, and Melissa Amarello

Field Biologists:

James Borgmeyer, Melissa Amarello, Josh Capps, Barry Stephenson, Dan Moen, Suzy Ehrets, Tyler Richins, Philippe Rosenfeld, Libby Landeen, Jesse Walker

Undergraduate Assistants:

Alejandro Diaz, Elizabeth Oakley, Christina Contreras, Lane Smith, Stevland

GIS Specialist:

Nancy Favour

Our research program is associated with the Desert Southwest Cooperative Ecosystem Studies Unit in the School of Renewable Natural Resources at the University of Arizona. We try to address issues in amphibian and reptile conservation primarily through applied ecology, behavioral ecology, and inventory and monitoring. Our work has been funded by a variety of sources, including the National Park Service, Arizona Game and Fish Department, United States Forest Service, New Mexico Department of Fish and Game, several non-governmental organizations.

Currently, we are busy with several projects, including herpetofaunal inventories of Chihuahuan Desert national parks, effects of urban development on herpetofauna, ecology and conservation genetics of tiger rattlesnakes, effects of fire on rock rattlesnakes and mountain spiny lizards in the Chiricahua Mountains, effects of golf courses on herpetofauna, effects of fire on New Mexico ridge-nosed rattlesnakes in the Peloncillo Mountains of southeastern Arizona and southwestern New Mexico, effects of fire and grazing on hog-nosed snakes and prairie rattlesnakes in southwestern New Mexico grasslands, effects of fire on the herpetofaunal community of mid-elevation oak woodlands in the Peloncillo Mountains, and denning ecology of prairie rattlesnakes in northern New Mexico.

Our research into the effects of urban development on herpetofauna, with an emphasis on the tiger rattlesnake, has been going on since 1997. We have marked nearly 300 tiger rattlesnakes from several sites throughout the Tucson Basin, including Saguaro National Park, foothills of the Santa Catalina Mountains, and the Tortolita Mountains. We have implanted radiotelemeters into approximately 60 individual tiger rattlesnakes, some of which we have followed for up to five years. We are also using DNA microsatellite markers to ask questions, which would be

difficult or even impossible using traditional demographic methods, about how tiger rattlesnakes deal with habitat fragmentation due to urban development. We have also conducted time-area constrained searches and road cruising to investigate effects of urban development on amphibian and reptile communities. In addition, we have conducted mark-recapture of common diurnal lizards, and breeding site surveys for desert anurans. We now have an excellent baseline to which to compare post-development data in the future.

A relatively new area of research is fire ecology. This is probably not surprising given the recent proliferation of large, sometimes catastrophic wildfires, which have resulted in increased funding for fire-related research. Very little is known about how fire affects wildlife in general and herpetofauna in particular. Land and wildlife managers have an urgent need to better understand ecological effects of fire, because the dramatic increases in wildfires, and the pressure to use prescribed burns, are realities of modern natural resources management. We currently have several fire-related projects that deal primarily with effects of fire on snakes. We have recently obtained pre-fire data on banded rock rattlesnakes and mountain spiny lizards at Chiricahua National Monument. A prescribed burn took place last October in our treatment site, so we will now be able to conduct post-fire sampling this coming summer.

We have recently embarked on a research program to investigate effects of fire on herpetofauna in the Malpai Borderlands area. We will begin fieldwork on three new projects in 2004. One project, headed up by University of Arizona graduate student, Kevin Baker, who is advised by Dr. Cecil Schwalbe, deals with the effects of fire and cattle grazing on hog-nosed snakes on the Gray Ranch in southwestern New Mexico. Kevin plans to use radiotelemetry to track snakes in an area that has been set up to experimentally test the effects of grazing, fire and grazing and fire in combination may affect plants and vertebrates.

We hope this brief review of our research program has been of interest, and we welcome your input and encourage your collaboration. Feel free to contact one of us to get an update on what we're up to. We often encourage volunteers to join in with us as we try to better understand the incredible diversity of herpetofauna that we enjoy here in Arizona.

BOARD MEETING SYNOPSIS

27 January 2004

Robert L. Bezy, Secretary

Directors Present: Roy Averill-Murray, Bob Bezy, Young Cage, Taylor Edwards, Cristina Jones, Hans Koenig, Ed Moll, Roger Repp, Eric Stitt, Marty Tuegel.

Directors Absent: Don Swann.

Members Present: Dennis Caldwell.

Treasurer's Report - Tuegel

31 December 2003

Beginning Balance	\$11,559.79
Deposits.	0
Expenses	931.94
Ending Balance	\$10,627.85

Speakers Bureau	\$ 1,054.42
Jarchow Award	30.00
FTHL Fund	130.00
C.H.Lowe Research Fund	3,038.00
General Fund	\$ 6,375.43
CRHSDIII (CD)	\$ 7,081.93

Itemized Deposits: CRHSDIII (CD) Interest \$20.31.

Itemized Expenses: Bank Charge \$11.41, C. H. Lowe Research \$500.00, Reimbursement \$90.29, S. H. Printing (2 months) \$330.24.

25 January 2004

Beginning Balance	\$10,627.85
Deposits.	895.20
Expenses	539.31
Ending Balance	\$10,983.74

Speakers Bureau	\$ 1,054.42
Jarchow Award	85.00
FTHL Fund	156.00
C.H.Lowe Research Fund	3,073.00
General Fund	\$ 6,615.32
CRHSDIII (CD)	\$ 7,102.99

Itemized Deposits: CRHSDIII CD Interest \$21.06, C. H. Lowe Research \$35.00, FTHL \$26.00, Jarchow Award \$55.00, Membership \$719.20, Raffle \$60.00.

Itemized Expenses: P.O. Box \$76.00, S.H. Postage (Foreign & Domestic, Oct.-Jan.) \$299.42, S. H. Printing \$163.89.

Committee Reports

Web Site - Edwards for Enderson. The site has been completely revised thanks to outstanding work by Erik Enderson. The Collected Papers of the Sonoran Herpetologist are now posted and are available for downloading.

Conservation - Caldwell. The Second Meeting of the Chiricahua Leopard Frog Recovery Team - Southeastern Arizona Stakeholders Subgroup met in Sierra Vista on 13 Jan. 2004, with ca 20 individuals present. Dennis Caldwell attended the meeting as a representative from the THS. He is preparing a brief article for the Sonoran Herpetologist.

Speakers Bureau - Edwards and Moll.

5 Dec. - Taylor Edwards gave two presentations at Gallego Basic Elementary School 2nd - 5th grades with ca 35 students each

11 Jan. - Ed Moll represented the THS at the Family Arts Festival held at the Tucson Convention Center. Ed tended a table with Society publications and gave two presentations using local snakes. Approximately 200 people attended.

12 Jan. - Roger Repp gave talk to the Audubon Society entitled "What it's like to be a herp in the Sonoran Desert" with ca 100 people in attendance.

13 Jan. - Ed Moll, using slides and live animals, talked about desert amphibians and reptiles to three classes of 60 children ranging from kindergarten to fifth grade at Civano Community School.

Program - Roy Averill-Murray. The lineup of speakers includes:

17 Feb. - Leslie Boyer

16 Mar. - Richard Felger

20 April - Open

18 May - Bob Applegate

15 June - Eric Stitt

Old Business

PARC - Roy Averill-Murray. The position of States Co-ordinator has been filled by Luke Fedewa. PARC is grateful to the THS for helping to fund the position. The revised draft of the desert southwest habitat guidelines will be posted for review on the publications section of the Arizona PARC website late Feb. through March. A second Arizona PARC meeting is being planned for May.

Board Party - Edwards. The Board is grateful to Cheryl and Young Cage for hosting a most enjoyable celebration of another great year of THS service.

Digital Projector - Stitt. The Board has authorized the expenditure of up to \$2,500 to purchase a digital projector for THS presentations. The selection of the unit will be undertaken by a committee composed of Stitt, Caldwell, Cage, and Joe Beals.

New Business

Arizona Game and Fish Department - Edwards. An important part of the mission of the THS is to promote the conservation of Arizona amphibians and reptiles. Recruiting and retaining highly qualified individuals in the Wildlife Series of the AZGF is crucial to this mission. The Board approved (7 yes; Roy Averill-Murray and Hans Koenig abstaining) a motion to authorize President Edwards to send a letter to District 28 of the Arizona Legislature supporting the approval of the AZGF's proposed budget which includes a rate adjustment for state employees in the Wildlife Series.

2004 Goals - Edwards. Each person at the meeting discussed his/her goals for the THS this year. These included producing articles for the Sonoran Herpetologist, giving talks, informing members of our activities, and contributing to other educational and conservation efforts.

24 February 2004

Robert L. Bezy, Secretary

Directors Present: Roy Averill-Murray, Bob Bezy, Young Cage, Cristina Jones, Hans Koenig, Ed Moll, Eric Stitt.

Directors Absent: Taylor Edwards, Roger Repp, Don Swann, Marty Tuegel.

Members Present: Dennis Caldwell, Bill Savary.

Treasurer's Report - Tuegel (email report)

Beginning Balance	\$10,983.74
Deposits.	362.00
Expenses	172.47
Ending Balance	\$11,173.27

Speakers Bureau	\$ 1,054.42
Jarchow Award	85.00
FTHL Fund	176.00
C.H.Lowe Research Fund	3,173.00
General Fund	\$ 6,684.85
CRHSDIII (CD)	\$ 7,124.10

Itemized Deposits: CRHSDIII (CD) Interest \$21.11, FTHL \$20.00, Lowe Research Fund \$100.00, Membership \$242.00.

Itemized Expenses: Bank Charge \$8.58, S. H. Printing \$163.89.

Committee Reports

Conservation - Caldwell. In collaboration with the Speakers Bureau, Caldwell, Edwards, and Moll will be participating in the 27 March Pioneer Day festival held by the Cienega Corridor Conservation and Colossal Cave Mountain Park. The day-long event will highlight the biological significance of the Cienega Corridor and what is being done to preserve it. Caldwell will also be representing the Society at the meeting of the Chiricahua Leopard Frog Recovery Team to be held 30-31 March in Silver City, New Mexico.

Speakers Bureau - Edwards (email report)

31 Jan. – Robert Villa talked at the Triangle Y-Ranch in Oracle to 42 youngsters and 8 adults. The event was sponsored by the Boys and Girls Clubs and the Tucson Audubon Society.

Program - Roy Averill-Murray. The lineup of speakers includes:

16 Mar. - Richard Felger

20 April – Randy Babb

18 May - Bob Applegate

15 June - Eric Stitt

20 July – Round-table on Reptile Relocation

Old Business

PARC - Roy Averill-Murray. The second Arizona PARC meeting is being planned for 20 May at the Arizona Sonora Desert Museum. Details can be found on the Arizona PARC website. Registration is free and should be done by notifying Kim Field (kfield@gf.state.az.us).

Digital Projector - Stitt. The committee (Stitt, Caldwell, Cage, and Joe Beals) has selected and purchased the projector for use at THS functions. The cost was \$2250. The Society is especially indebted to Joe Beals for providing expertise that saved many hours of work. The Society is in need of a laptop computer for easy interfacing with the projector.

New Business

Fund Raising –Koenig and Stitt. The Board is considering additional ways to raise funds for the Society including holding book auctions at each Jarchow Award ceremony.

Desert Tortoise Council – Stitt (for Tuegel). The Desert Tortoise Council made a gift of \$500.00 to the Charles Lowe Research Fund. Tucson Herpetological Society is very appreciative and will send a letter of thanks.

Desert Tortoise Council – Jones. The next meeting of the Council is scheduled for February 2005 in Tucson and the Society will be looking for volunteers and assistance for the meeting.

Book Reviews – Stitt. The Board reviewed the procedures for publishing book reviews in *Sonoran Herpetologist* and approved a motion to appoint a book review editor who will solicit and edit the reviews.

Earth Day – Stitt. The Society will be participating in the event on 22 April at the University of Arizona (Caldwell, Edwards, Stitt) and Agua Caliente Park (Moll).



Cienega Corridor Pioneer Day is March 27th, 2004!

Please join the Cienega Corridor Conservation Council and Colossal Cave Mountain Park in celebrating our community's heritage and its future with Cienega Corridor Pioneer Day, Saturday March 27th from 9:30 am to 5 pm! The purpose of this first annual spring event is to share the cultural, biological, and historical significance of the Cienega Corridor and what is being done to protect it.

Festivities begin at 9:30 am with historical, biological, and archaeological talks, demonstrations, and excursions ongoing throughout the day. Great music, hearty food, and horse rides will also be available. The afternoon's activities will end with dedication of the new Civilian Conservation Corps museum, from 4-5 pm.

Up-to-date information on the Cienega Corridor Pioneer Day is available at www.sonoran.org under Southeast Arizona, Cienega Creek Watershed, or by calling Emily at the Sonoran Institute (520-290-0828) or Pam at Colossal Cave Mountain Park (520-647-7121).

The Cienega Corridor Conservation Council is an ad hoc organization of concerned citizens and agency representatives whose shared goal is to protect, steward, and enhance the cultural and natural resources of the Rincon and Vail Valleys.



2nd Annual AZ PARC Meeting Scheduled for 20 May 2004

Arizona Partners in Amphibian and Reptile Conservation (AZ PARC) will hold its 2nd annual meeting in the Ironwood Gallery at the Arizona-Sonora Desert Museum on 20 May 2004 beginning at 9 a.m. (0900 hrs).

At our inaugural meeting (last spring), 60+ attendees (from agencies, academia, NGOs and private individuals) formed 5 working groups (Policy/Regulation/Trade, Research, Management, Education/Outreach, and Inventory/Monitoring). At this year's meeting AZ PARC will continue to address issues that affect southwestern herps such as: field collecting, habitat preservation, invasive species, disease, atlas building, public perception, public education, along with organization, structure, and scope of influence of AZ PARC. AZ PARC welcomes all persons and organizations interested in reptile and amphibian conservation.

To register for the meeting please email Kim Field at kfield@gf.state.az.us.

Please visit the AZ PARC Events page at <http://www.reptilesfaz.com/h-events.html> for future details on the meeting agenda.



Sonoran Herpetologist Book Review Policy

If one wishes to write a Book Review for submission to Sonoran Herpetologist, please inform the Editor of the book's title along with the publisher and their mailing address. The Editor will solicit the book and select a reviewer. If a reviewer solicits a book for review on their own, they should submit the accompanying correspondence along with an electronic version of the submission. Unsolicited Book Reviews are discouraged.



Sonoran Herpetologist Announcement Policy

Sonoran Herpetologist announcements are a free service of the Tucson Herpetological Society for its members. Items or events to be announced must fall within at least one of these three categories:

1. Conservation of native wildlife or wildlife habitat
2. Education about native wildlife or wildlife habitat
3. Research of native wildlife or wildlife habitat

Sonoran Herpetologist announcement items or events must not promote:
 - the destruction of native wildlife or habitat;
 - the commercialization (selling and/or trading) of wildlife, dead or alive.

Decisions about announcement qualification are made by the board-appointed editorial committee of the Sonoran Herpetologist. All inquiries should be directed through the editor.



Membership Information

Individual	\$20	Sustaining	\$30
Family	\$25	Contributing	\$50
Student	\$14	Life	\$500

To receive a membership form and recent issue of *Sonoran Herpetologist* call (520) 624-8879 or write:

Tucson Herpetological Society
 P. O. Box 709
 Tucson AZ 85702-0709

Time to Renew Your THS Membership?

I hope this is a helpful reminder to those of you whose membership renewal is due this month. Please call or email with corrections and errors. 624-8879 or dhardysr@theriver.com

Dave Hardy Sr.
 Membership Secretary

Due in March:

Sandy Anderson	Bayard Brattstrom
Terrence Cox	Brendan Cummings
Harry Greene & Kelly Zamudio	Brian Kimball
Bret Pasch	Dennis Pepe
Charles Rau	Michael Schroff
Gordon Schuett	Allison Titcomb & Chuck Fellows

Membership Update

As of 1 March 2004

Contributing

Philip & Barbara Brown	Tucson
Robert Brandner & Susan Basford	Tucson
Matt Goode	Tucson
Steve & Maxine Murray	Tucson

Sustaining Members

David Bertelsen	Tucson
Kevin Bonine & Angela Urbon-Bonine	Tucson
Phil Pugliese	Tucson
Christine Wolner	Tucson

New Members

Leah Rae Jongsma	Tucson
Kelly Lasater	Albuquerque, NM

Jarchow Conservation Award

Philip & Barbara Brown	Tucson
Jerrold & Martin Feldner	Tempe, AZ

Speakers Bureau

none

Horned Lizard Fund

none

Charles H. Lowe Herpetological Research Fund

Philip & Barbara Brown	Tucson
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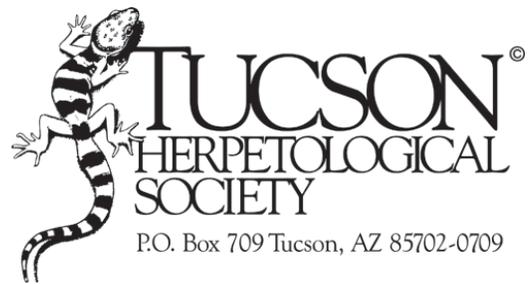
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Information for Contributors

Authors should submit original articles, notes, book reviews to the Editor, either via email using an attached word processed manuscript or by mail to the Society's address. The manuscript style should follow that of *Journal of Herpetology* and *Herpetological Review*, publications of the Society for the Study of Amphibians and Reptiles. For further information, please contact Erik Enderson at eenderson@cox.net

**Deadline for SonHerp 17 (04)
April 1**



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Society Activities

Monthly Members Meeting

Roy Averill-Murray, Program Chairperson

3rd Tuesday, 7:15 PM

Board of Directors Meeting

March 30, 7:00 PM

Arizona Game and Fish Department Office

555 North Greasewood Road

Speakers Bureau (Scheduled presentations)

Taylor Edwards, Director

Ed Moll, Director

Conservation Committee Director

Dennis Caldwell

Herpetological Information Hotline

Bob Brandner 760-0574

Jarchow Conservation Award

Taylor Edwards, Chairperson

Publications:

Sonoran Herpetologist

Living with Rattlesnakes

Living with Gila monsters

THS Herp Coloring Book

THS Collected Papers, 1988-1991 (out of print)

THS Internet World Wide Webpage

<http://tucsonherpsociety.org>

Erik Enderson eenderson@cox.net

*The Tucson
Herpetological
Society is
dedicated to
conservation,
education, and
research
concerning the
amphibians and
reptiles of
Arizona and
Mexico.*

Tucson Herpetological Society
is a registered non-profit
organization.

For more information about the THS and the reptiles and amphibians of the Tucson area visit **tucsonherpsociety.org**

Your membership has expired.
This is your only reminder.
Please renew!



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