

**Chiricahua Leopard Frog Recovery Team
SE AZ/SW NM Stakeholders Group Meeting
Douglas, Arizona
16 December 2008**

Chiricahua Leopard Frog Recovery Update: Recovery Units (RUs) 1-4

Number of localities where frogs were observed in 07 or in recent years and were likely still present in RU1-4 as of October 2007: 37 (7 of which were Ramsey Cyn leopard frog)

Number of localities where frogs were observed in 08 or in recent years and are likely still present in RU1 as of December 2008: ~27

Number of localities where frogs were observed in 08 or in recent years and are likely still present in RU2 as of December 2008: ~17 plus 8 Ramsey Cyn leopard frog sites

Number of localities where frogs were observed in 08 or in recent years and are likely still present in RU3 as of December 2008: ~6-8

Number of localities where frogs were observed in 08 or in recent years and are likely still present in RU4 as of December 2008: ~7-8

Total in RUs 1-4 as of December 2008: ~57-60* plus 7 Ramsey Cyn leopard frog sites

*The apparent increases are due to discovery of new occupied sites - especially on the eastern slope of the Santa Rita Mountains (frogs observed at ~14 new sites – RU2), rediscovery of frogs in the Galiuro Mountains (5 sites – RU4), and a newly established population on the Magoffin Ranch (RU3). The number of sites that will support breeding populations is unclear, especially in regard to newly discovered occupied sites in the Santa Rita Mountains.

Recovery Plan – The Recovery plan is available at:

<http://www.fws.gov/southwest/es/arizona/CLF.htm>.

Information on the Recovery Program is available at:

http://www.fws.gov/southwest/es/arizona/CLF_Recovery_Home.html

The Chiricahua leopard frog is featured in a Year of the Frog website:

<http://www.fws.gov/home/feature/2008/Frog/Features/FeaturedFrog.html>

A Chiricahua leopard frog listserv has just been established. To subscribe to the list go to:

<https://www.fws.gov/lists/listinfo/chiricahuensis>. Postings can be made by sending an email to: chiricahuensis@lists.fws.gov.

USFWS Contact in NM: Melissa Kreutzian has moved on to another position at the NM Field Office. Michelle Christman is now the USFWS lead for the frog in New Mexico.

Changes in Taxonomy and Nomenclature: The taxonomy of the frog has been revised. Crother (2008: Scientific and Common Names for Amphibians and Reptiles of North America North of México. Society for the Study of Amphibians and Reptiles, Herpetological Circular No. 37:1-84) uses the name *Lithobates chiricahuensis*; that publication also subsumes the Ramsey Canyon leopard frog (*L. subaquavocalis*) from the Huachuca Mountains in southeastern Arizona into *chiricahuensis*. USFWS does not officially recognize “*L. subaquavocalis*” as part of the listed *L. chiricahuensis*; however, that change could come in 2009.

General Recovery Activities Needed in SE AZ and SW NM in 09

In general we need help to: 1) monitor extant populations, 2) survey for additional extant populations, 3) survey for habitat; identify potential reestablishment sites, 4) identify and implement habitat improvements and non-native predator control as needed; 5) augment, establish, and reestablish populations and refugia; and 6) continue to search for additional partners, including enrolling interested landowners in the Safe Harbor Agreements (Malpai and AGFD Statewide) in the area.

These actions need to occur in all Recovery Units to help meet the recovery criteria (e.g. “at least two metapopulations in different drainages plus at least one isolated and robust population in each RU that exhibit long-term persistence and stability”). Recovery units 3 and 4 are in the greatest need of additional work, due to small numbers of populations and metapopulations in those units.

Chiricahua Leopard frog Accomplishments in SE AZ/SW NM in 08

RU1: Participants: Coronado NF, USFWS (AZ Ecological Services Field Office – AZESFO, and Buenos Aires NWR), Arizona Game and Fish Department (AGFD), University of Arizona/USGS (C. Schwalbe and others), Sky Island Alliance, Private landowners and ranchers.

Review of 2008:

Buenos Aires NWR: There are 17 sites (stock tanks) at which Chiricahua leopard frogs have occurred on the refuge in recent years. At least 4-5 of those are breeding sites. Bullfrogs are a continuing threat, and UoA/USGS continues to conduct bullfrog control to maintain the integrity of this metapopulation. In June it appeared that State Tank (a breeding site with abundant frogs) would dry out before the onset of the monsoons. Fifty frogs were moved from State Tank to Carpenter Tank. However, State Tank did not dry out and frogs persist there.

Sycamore Canyon: Bullfrog control continued at Sycamore Canyon. After several years of control activities by UoA/USGS and others, bullfrogs are eliminated or nearly eliminated. Additional follow up is needed in 09 and reinvasion will continue to be a threat.

Peña Blanca Lake and vicinity: Peña Blanca Lake has long been considered as a source of bullfrogs for the Pajarito/Atascosa area. A project to drain the Lake and remove contaminated sediments presented an opportunity to potentially eliminate bullfrogs from this area. A team has been assembled to work with the Forest Service (project lead) to eliminate bullfrogs at the Lake and in stock tanks and other waters within 5 miles of the Lake. No dedicated funding is available; however, at least two funding sources (Border Patrol and CAP) may become available in late spring or early summer. Ideally, control should be complete or nearly complete before the monsoons begin in 09.

Safe Harbor Agreement: Two properties are enrolled in RU1. No populations have been established or reestablished as yet on these properties.

RU2: Participants: Coronado NF, USFWS (AZ Ecological Services Field Office – AZESFO, Bureau of Land Management (Las Cienegas), AGFD, University of Arizona/USGS (C. Schwalbe and others), Sky Island Alliance, Ramsey Canyon Leopard Frog Conservation Team, The Nature Conservancy, Arizona-Sonora Desert Museum, Ross Humphreys, and Naturalia.

Review of 2008:

Santa Rita Mountains: At the end of 2007, only one population was known from the Santa Rita Mountains, and that population existed in a 6' diameter steel tank on the eastern slope of the range on the Coronado National Forest (Louisiana Gulch). To conserve this stock, 17 Louisiana Gulch tadpoles were captured and are now being held as frogs at the Arizona-Sonora Desert Museum for captive propagation. They should be large enough to breed in the Spring of 09. In the meantime, frogs were found at an additional 14 or more sites on the northeastern and northwestern sides of the Santa Rita Mountains (the precise number of sites is being determined). At least some of these appear to be well established with large numbers of frogs; however others almost certainly represent dispersing frogs at locations that do not support breeding. Additional work will be conducted in 09 to determine the breeding status at these sites and to look for additional occupied sites.

Las Cienegas: Numbers of metamorph frogs and tadpoles observed at Empire Gulch was unusually high this year, and due to good summer rains (20 or more inches at some sites) dispersal was probably higher than usual, as well. The in-situ head starting ponds did not receive the typical late season flush of small frogs probably due to heavy brush around the ponds that may have inhibited frog movements. Frogs were observed at Cinco Ponds for the first time in several years.

East Side of the Huachuca Mountains ("Ramsey Canyon" leopard frogs): The frogs continue to thrive at Beatty's Guest Ranch in Miller Canyon. The fence around the Meadow Ponds in Ramsey was modified to allow frogs to disperse to Ramsey Creek, and frogs were in abundance at the Meadow Ponds and the Trout Pond. However, dead frogs were found in July and again in November. The situation is being monitored; *Bd* test results are not yet completed. There were >100 frogs at each of the two Barchas Ranch ponds; however, a die off associated with chytridiomycosis was observed in October and November. The current status of these populations is unknown. Three bullfrogs were found for the first time at Carr Barn Pond – control activities were conducted.

San Rafael Valley: A Habitat Conservation Plan and Safe Harbor Agreement are being pursued with Ross Humphreys (San Rafael Ranch). Pasture 9 Tank on the San Rafael Ranch was frog fenced and is ready to receive Chiricahua leopard frogs.

Scotia Canyon: An aggressive project to restore cienega conditions and eliminate bullfrogs is nearly complete. Bullfrogs have been eliminated or nearly eliminated – additional follow up is needed in 09. Chiricahua leopard frogs will be reestablished after renovations are completed.

Redrock Canyon Renovation: A fish barrier and control of non-native predators planned for this canyon is on hold due to a successful appeal of a Forest Service decision to move forward with the project.

Sonora: A 3-day Amphibian Survey, Monitoring, and Conservation Workshop was held at Rancho Los Fresnos, which is owned by Naturalia – a Mexican conservation NGO. The purpose of the workshop was to build capacity for Mexican biologists, students, and agencies to conduct amphibian work in northwestern Mexico. Naturalia, in collaboration with USFWS, is working on a grant proposal to the National Fish and Wildlife Foundation to begin Chiricahua leopard frog recovery in the Río San Pedro basin of Sonora. USFWS (AZ Ecological Services) has applied for funds for a Mexican University (Julio Lemos Espinal, UNAM) to conduct Chiricahua leopard frog surveys, and to assess threats and recovery opportunities, in Sonora.

RU3: Participants: Coronado NF, Bureau of Land Management (Safford), USFWS (AZ Ecological Services Field Office and San Bernardino/Leslie Canyon NWRs), AGFD, New Mexico Department of Game and Fish, Malpai Borderlands Group, Sky Island Alliance, Douglas High School, Southwest Research Station, Magoffin Ranch, Diamond A (aka Gray) Ranch, Barboot and 99 Bar Ranches.

Review of 2008:

Safe Harbor Agreements and Habitat Conservation Plans: A ranch in the Mule Mountains (21,775 acres) signed onto the Statewide SHA. A SHA was signed with the Barboot/99 Bar Ranch upstream of Leslie Canyon NWR. A Habitat Conservation Plan was completed with the Malpai Borderlands Group. All these agreements/documents will facilitate recovery efforts for the frog in RU3.

Douglas High School: A rearing/captive propagation facility (2 ASDM-style units) is complete and ready for tadpoles/frogs. The source will be the Leslie Cyn NWR. Reared animals will be used to augment the Leslie Cyn population, as well as to establish new populations, such as at the Southwest Research Station (Portal) and other localities.

Portal Area: The Southwest Research Station has applied for permits and is getting ready to receive frogs at a pond they have near Cave Creek. They will also be rearing tadpoles in aquaria. Another pond in the Portal area on private lands was renovated recently and is ready for frogs.

Magoffin Ranch: Chiricahua leopard frogs from Rosewood Tank were moved to North Tank to establish a new population.

Cloverdale Cienega/Diamond A Ranch: Sky Island Alliance is implementing the Cloverdale Cienega restoration project.

RU4: Participants: Coronado NF, AGFD, Sonja Gasho, Arizona State Land Department, Bureau of Land Management (Safford), USFWS (AZ Ecological Services Field Office)

Review of 2008:

Galiuro Mountains: No frogs were found throughout most of 2007, and we thought the species might be extirpated from this MA. However, frogs were rediscovered by John Windes on 29 October 2007 in the Deer Creek area, and portions of 2 egg masses were collected from a tank on May 9 and reared at the Phoenix Zoo. In October, 271 Chiricahua leopard frog tadpoles and 70 frogs were released to augment two of the populations. Frogs are now present at 5 localities in the Deer Creek area. Surveys were conducted in adjacent areas, and several other potential release sites were identified. Additional reestablishments will be pursued in 2009.

Dragoon Mountains: In April, egg masses were moved from Middlemarch adit to augment the reestablished population at Shaw Tank and to reestablish frogs at Black Diamond Spring. Surveys at Shaw Tank have shown success from releases in 2006, 2007, and 2008. Frogs are now known to be present at 2 or possibly 3 sites in the Dragoon Mountains. Frogs released at Shaw Tank in 2006 bred this year for the first time.

Overview of Activities outside the SE AZ/SW NM Region

Outside of the SE AZ/SW NM region, two landowners (both in RU6) have signed onto the Statewide Safe Harbor Agreement. In total, 8 landowners and 83,629 acres are signed onto the three SHAs that are in place. Studies are underway by Melanie Culver's lab (USGS/University of Arizona, Tucson) to further define the rangewide population genetics of *L. chiricahuensis*,

including determining whether the Mogollon Rim frogs differ significantly from the southern populations, and whether there is genetic structuring elsewhere within the range of the species. A study to determine the toxicity of pesticides and metals to the Chiricahua leopard frog was completed by USGS in Columbia, Missouri (Little and Calfee 2008). The study found that copper was highly toxic and present in the environment at levels that would cause mortality. Frogs were more sensitive to rotenone (especially tadpoles) than antimycin. Survey Training Workshops were held in Young, Arizona and Silver City, New Mexico in 08. Headstarting and captive propagation facilities have been added at the USFWS Ecological Services Office in Albuquerque and at the Douglas High School in Cochise County, Arizona.

RU5 - Gentry/Crouch/Cherry Ck – Tonto NF. Lots of recovery work in this RU. Headstarting of egg masses occurred at both the Phoenix Zoo and the AGFD, Bubbling Ponds Hatchery. Captive propagation and production of egg masses are also occurred at the Phoenix Zoo. Frogs and/or tadpoles were released at 6 sites (Pine Spring, Bottle Spring, Carroll Spring, H Y Tank, Cherry Creek, and Crouch Creek) to augment existing populations or establish new populations. A total of 337 tadpoles and 71 frogs were released in July and October. The Local Working Group met to discuss recovery actions and set priorities for 2008. A meeting was held 18 March 2008 with ranchers and other interested publics in Payson. AGFD, USFWS, Tonto NF, and Coconino NF staff participated. Ellison Creek. Second year in a row that no frogs were observed in the area. AGFD provided funding to build fences around two potential release sites (Lewis Spring and Trib 3). Buckskin Hills. A total of 45 Chiricahua leopard frogs and 48 tadpoles from the Buckskin Tank stock and Bucksin/Gentry crosses at the Phoenix Zoo were released at Middle Tank in April and October 2008. The frogs appear to be doing well there. No other frogs were observed at tanks in the Buckskin Hills; however, the habitat at Walt's and Black tanks look good and are ready to receive frogs. For 2009, a variety of habitat renovations are planned, frogs will hopefully be released to additional sites in the Buckskin Hills, reestablishment in the Ellison Creek area will be pursued, and SHAs with landowners in the Ellison Creek and the Gentry/Crouch/Cherry Ck areas will be investigated. Frogs are known to be extant at 8 sites in RU5.

RU6 - (AZ) – A breeding colony of Three Forks frogs is being maintained at the AGFD Pinetop Office. Progeny from that facility were released to Concho Bill and Sierra Blanca Lake in 2008. Despite multiple years of releases, the frogs are either not persisting at Sierra Blanca or are very difficult to detect. Two property owners George Gann (property near Concho) and Mike Ingraldi (also near Concho) signed onto the Safe Harbor Agreement. Four new potential release sites were identified (Unnamed Tank and Spring-Open Draw, Unnamed Pond SW of Open Draw, Prescribed Tank, and Firebox Lake). A meeting was held 5 March 2008 among A-S, AGFD, and USFWS staff in Springerville to discuss recovery progress and opportunities on the A-S (RUs 6 and 7). In 2009, a Spring coordination meeting will be held, occupied sites will be monitored, additional releases will be made as needed to Concho Bill and Sierra Blanca Lake, additional new release sites will be evaluated, and compliance and needed habitat work will be completed, and then frogs released at the Gann Property and potentially other sites. Frogs are only known to be extant at 1-2 sites in RU6 in AZ. (NM) - In May 2008, 32 mixed cohort tadpoles and ¼ of an egg mass were removed from Long Mesa Tank (Gila NF) for headstarting at NMESFO. In October, 33 frogs from this collection were released to a nearby tank (Sheep Basin) where frogs were last observed in 2003 and 77 frogs were released to a confined steel rim

tank in RU8. The rationale for placement in a different RU was that we wanted to “back up” frogs from the Deep Creek divide MA in case *Bd* decimates the remaining sites. A mesh cage was built around the tank and secured to minimize the possibility of escape. A variety of sizes of frogs were placed at both locations to maximize genetic diversity from a single site.

RU7 - (AZ) - Limited monitoring occurred in 2008. AGFD and the Apache-Sitgreaves NF met to discuss recovery opportunities. A Spring 2008 coordination meeting will be held to develop a work plan and begin recovery activities. Frogs are thought to be extant at 4-7 sites in RU7 (AZ portion). (NM) - No reproductive sites are presently known in this RU in NM; however, one dispersal site is known--only individual juveniles have been periodically observed, indicating the likely presence of a source breeding population nearby (likely on private lands).

RU8: Sites that have frogs in this RU include all localities on the Ladder Ranch, the Rio Mimbres, and 4 spring sites. Many of the sites in RU 8 persist with *Bd* infections. Ladder Ranch: The last individuals from Cave Creek (on Ladder Ranch) were collected in 2005 (?) and sent to the Fort Worth Zoo. Unfortunately, the specimens died in captivity. In 2008, samples were collected for testing and monitoring of *Bd* at the Ladder. The Ladder Ranch is anticipating a Private Lands Agreement with FWS Partner’s Program to begin construction on their Ranarium. The Ranarium will have 8 outdoor pens with pools, an indoor larval rearing facility, and quarantine capabilities initially for use for CLF but may also be used for other species in need in the future. Pitchfork Ranch: Sixteen metamorphs (tadpoles obtained from Ash Spring) were translocated into a steel rim tank on the Pitchfork (formerly Burro Cienega) Ranch after treatment for 10 weeks with 20 ppm chloramphenicol. Translocation success is being monitored. Chino Mines: Additional propagules will be removed from Ash Spring (determined to be *Bd* positive after April 2007 die-off) as available. Any such propagules will be treated in chloramphenicol for future release.