

**Chiricahua Leopard Frog Recovery Team  
Mogollon Rim Stakeholders Group Meeting  
Payson Ranger District, AZ  
November 6, 2008**

**Chiricahua Leopard Frog Recovery Update for Recovery Units (RUs) 5-7 (AZ portions)**

**Likely extant populations in RU5 and the AZ portions of RUs 6&7 as of October 2007: ~13**  
**Likely extant populations in RU5 and the AZ portions of RUs 6&7 as of October 2008: ~15**

**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](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>

**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*) into *chiricahuensis*.

**General Recovery Activities Needed in Mogollon Rim Region in 09**

In general we need help to: 1) monitor extant populations, 2) survey for additional extant populations, 3) survey for habitat; identify and assess potential reestablishment sites, 4) identify and implement habitat improvements in each management area (MA); 5) identify and establish refugium populations; and 6) enroll interested/willing partners into the Statewide Safe Harbor Agreement (SHA).

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 exhibit long-term persistence and stability”).

**Chiricahua Leopard frog Accomplishments in the Mogollon Rim Region (AZ) in 08**

**RU5: Mogollon Rim – Verde River**

**Participants: Tonto NF, Apache-Sitgreaves NF, AGFD, Phoenix Zoo, AGFD  
Bubbling Ponds Hatchery, USFWS**

**Review of 2008:**

**Captive Propagation and Headstarting**

Headstarting of egg masses occurred at both the Phoenix Zoo and the AGFD, Bubbling Ponds Hatchery. Captive propagation and production of egg masses occurred at the Phoenix Zoo.

On June 3, 2008, 509 tadpoles from The Phoenix Zoo were moved to the AGFD Bubbling Ponds fish hatchery. Tadpoles came from two separate egg masses, both collected from West Prong Gentry Creek on 21 April and 5 May 2008.

### **Coordination Meetings**

- ✓ A meeting was held 5 October at the Las Cienegas Ranch with 6 members of the public to discuss Safe Harbor Agreements and recovery opportunities in the Ellison Creek Estates and adjacent areas. Attendees expressed interest in assisting with recovery. Follow up meetings will be pursued.
- ✓ 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).
- ✓ A meeting was held 18 March 2008 with ranchers and other interested publics in Payson. AGFD, USFWS, Tonto NF, and Coconino NF staff participated.
- ✓ Local recovery group meetings occurred for the Gentry Creek area, Ellison Creek, and Buckskin Hills.

### **Surveys, Reestablishments, and Other Recovery Actions**

#### Gentry/Crouch/Cherry Ck – Tonto NF

- ✓ Pine Spring - Thirty eight tadpoles and 10 frogs and were released in several pools near the headwater of Pine Spring on 1 October 2008. Individuals released came from the 2 egg masses collected on 21 April and 5 May 2008 and reared at the Phoenix Zoo and Bubbling Ponds Hatchery.
- ✓ Bottle Spring – released 31 metamorphosed frogs into Bottle Springs on 16 July 2008. Animals were reared at the Bubbling Ponds Hatchery. Prior to the release, ~9 tadpoles and 7 juvenile Chiricahua leopard frogs were observed.
- ✓ Carroll Springs – 45 tadpoles were released to Carroll Springs on 16 July 2008. Fourteen were released into the upper pool, 21 in the second pool, and 10 downstream 20-25 meters. Animals were reared at the Bubbling Ponds Hatchery. Prior to release, about 10 tadpoles were observed in 3 different pools.
- ✓ H-Y Tank – 90 tadpoles were released into H-Y Tank on 16 July 2008. Animals were reared at the Bubbling Ponds Hatchery. No frogs were confirmed there prior to release. Crayfish trapping was conducted – no crayfish were caught, however, a crayfish claw was found on the shore of the tank after the 16 July release..
- ✓ On 15 October, 2008, 2 females held in captivity at the Phoenix Zoo were released to H-Y Tank.
- ✓ Cherry Creek – A total of 119 tadpoles and 17 metamorph frogs were released to Cherry Creek on 16 July 2008. Animals were reared at the Bubbling Ponds Hatchery. Surveys conducted by Tonto National Forest detected frogs a mile or more upstream from the release site.
- ✓ Crouch Creek – A total of 45 tadpoles and 11 metamorph frogs were released to Crouch Creek on 16 July 2008. Animals were reared at the Bubbling Ponds Hatchery.

#### Ellison Creek

- ✓ Second year in a row that no frogs were observed in the area.
- ✓ AGFD provided funding to build fences around two release sites (Lewis Spring and Trib 3)
- ✓ Fence around Lewis Spring completed.

### Buckskin Hills

- ✓ 26 Chiricahua leopard frogs from the Buckskin Tank stock at the Phoenix Zoo were released at Middle Tank on 10 April 2008. Since the release, about 10-23 frogs have been observed on surveys.
- ✓ On 15 October 2008, 18 metamorph frogs, one of the original Buckskin Hills males (collected from Sycamore Basin Tank in 2005), and 48 tadpoles were released at Middle Tank. The metamorph frogs and tadpoles were the result of the Bucksin/Gentry crosses, which were captively propagated and reared at the Phoenix Zoo.
- ✓ 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. Buckskin Tank needs to be cleaned out (it is not very drought resistant) and Sycamore Basin Tank has a tiger salamander population, which may limit recovery opportunities.
- ✓ One male of the original 4 Buckskin Hills males, collected in 2005, remains at the Phoenix Zoo. The status of the Buckskin Hills female (from Sycamore Basin Tank) at the Arizona-Sonora Desert Museum is uncertain. There are 5 captively propagated, pure Buckskin Hills frogs at the Phoenix Zoo.

### **Specific Activities Proposed or to be Discussed for 2009:**

#### Gentry/Crouch/Cherry Cks – Tonto NF

1. Crayfish removal at H-Y Tank: continue mechanical removal and other possible means of control.
2. Possible tank renovation project: removal of non-native predators from several tanks.
3. Possible SHA with landowners adjacent to Frog Pond.
4. Possible pond and pump construction at Cunningham Spring.
5. Possible sediment removal at Crouch Creek.
6. Possible habitat improvement at Rock Spring: deepen, install liner, build elk fence.
7. Monitor releases and assess habitats

#### Ellison Creek

- ✓ Pursue reestablishment in suitable habitats at Ellison Creek with GentryXBuckskin or some other appropriate stock.
- ✓ Pursue SHA opportunities at Ellison Creek Estates

#### Bucksin Hills

- ✓ Rear and release Buckskin and Gentry/Buckskin stock at Walt's and/or Black tanks, and pursue improvements at Buckskin and Sycamore Basin tanks.
- ✓ Monitor the Middle Tank reestablished population, habitat at tanks in the Buckskin Hills, and any reestablishments that occur in 2009.
- ✓ Need to discuss Divide Tank (crayfish) and options for dealing with this threat.
- ✓ Planning to build frog fences at Middle, Black, Walts, Sycamore, and Buckskin tanks in spring 2009.

### **RU6: Mogollon Rim – Upper Gila**

**Participants: A-S NF, AGFD, USFWS, George Gann, Mike Ingraldi**

**Review of 2008:**

- ✓ Breeding colony of Three Forks frogs maintained at the AGFD Pinetop Office
- ✓ Released animals to Concho Bill and Sierra Blanca Lake
- ✓ Signed George Gann (property near Concho) onto the Safe Harbor Agreement
- ✓ Signed Mike Ingraldi (Concho) onto Safe Harbor Agreement
- ✓ Identified 4 new potential release sites (Unnamed Tank and Spring-Open Draw, Unnamed Pond SW of Open Draw, Prescribed Tank, and Firebox Lake)

**Specific Activities Proposed or to be Discussed for 2009:**

- Hold spring coordination meeting with partners to develop a detailed work plan for 2009 activities. Work plan will likely include:
  1. Monitor Concho Bill and Sierra Blanca Lake reestablished populations
  2. Release additional animals to Concho Bill and Sierra Blanca, as needed
  3. Survey Three Forks and other sites
  4. Complete compliance, conduct any needed habitat renovations, release and monitor frogs on Gann and Ingraldi properties.
  5. Further assess new potential release sites and identify others

**RU7: Upper Gila – Blue River**

**Participants: A-S NF, AGFD**

**Review of 2007:**

- ✓ Limited monitoring at likely extant localities on Clifton and Alpine RDs
- ✓ AGFD and A-S met to discuss needed recovery activities.

**Specific Activities Proposed or to be Discussed for 2009:**

- Set up spring coordination meeting with partners to develop a specific work plan for 2009 activities. Work plan will include field surveys, translocations, and habitat renovation.
- Pursue/plan for replication of populations through reestablishments.

**Overview of Activities outside the Mogollon Rim, AZ, Region**

A Statewide Safe Harbor Agreement between USFWS and AGFD, and a SHA between USFWS and Malpai Borderlands Group (SE AZ and SW NM) are in place. These agreements allow non-Federal partners to sign onto the SHAs with Certificates of Inclusion, and currently 8 landowners and 83,629 acres are signed onto the SHAs. 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. 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.

**RU1 – Bullfrog control** continued at Buenos Aires National Wildlife Refuge and Sycamore Canyon. Bullfrogs have nearly been eliminated at the latter site, but reinvasion will probably be a continuing problem. Peña Blanca Lake is being drained to remove contaminated sediments. This presents an opportunity to eliminate bullfrogs from the primary source habitat in the region. Plans have been developed to conduct bullfrog control, but as yet funding is lacking to

implement control. Fifty Chiricahua leopard frogs were moved from State Tank to Carpenter Tank on Buenos Aires NWR when it appeared that the former tank would dry out. Limited monitoring has occurred; mostly at Buenos Aires NWR; however, populations appear to be stable. Two land owners have signed onto the SHA. Frogs are thought to be extant at about 29 sites in RU1, a few of these represent dispersing individuals rather than breeding populations. The most robust metapopulation known for the species occurs at Buenos Aires NWR, but is threatened by bullfrogs. Frogs in RU1 persist despite the presence of *Bd*.

**RU2** – Lots of recovery work in this RU. The number of known occupied sites in the Santa Rita Mountains went from one in 2007 to 12 in late 2008; surveys in 2009 will investigate which sites are breeding populations and which were “stepping stones” for dispersing frogs. Tadpoles were collected from Louisiana Gulch (Santa Rita Mtns) and are being reared for propagation at the Arizona-Sonora Desert Museum. A major effort was made to eliminate bullfrogs from Scotia Canyon in the Huachuca Mountains. Although additional monitoring is needed, the effort appears to have been successful. This and the habitat work done in 2007 lay the groundwork for reestablishment of Chiricahua leopard frogs and other sensitive species. Planning is underway for a major restoration project in Redrock Canyon in the Canelo Hills, which should benefit frogs. The Ramsey Canyon Leopard Frog Team remains very active. Sites were monitored and the enclosure fence in Ramsey Canyon was removed, allowing dispersal of frogs throughout the creek system. An in-situ headstarting facility at Las Cienegas NCA is producing frogs for Cienega Creek. A large pond on the San Rafael Ranch (Pasture 9 Tank), which is fed by a well, was frog fenced to exclude bullfrogs. Establishment of Chiricahua leopard frogs at that site is planned for Spring of 09. Frogs are known to be extant at roughly 13 sites in RU2, although one of those is probably better described as a complex of sites (metapopulations), and at least some of the Santa Rita Mountains sites do not represent breeding populations. If “Ramsey Canyon” leopard frog populations are added in, that raises the RU2 total to about 22.

**RU3** – The Malpai HCP is completed, and the Barboot/99 Bar Ranch SHA (Arizona) has been signed. In New Mexico, frogs are likely present at 3 to 5 sites. Two of these sites are highly unstable or extirpated, one site (confined concrete tank) is robust but susceptible, and the remaining 2 have not been surveyed, but likely have frogs. An additional 5 sites are thought to be ephemeral dispersal sites dependant on climate and status of source sites. Sky Island Alliance is implementing a grant to restore the Cloverdale Cienega. In Arizona, arrangements are being made to establish frogs at the Southwest Research Station in Portal. The Station will also be rearing tadpoles in aquaria. Another pond on private lands in the Portal area, which was renovated in 2006, is ready for frogs. A headstarting/rearing facility has been completed at the Douglas High School and is ready for frogs. The facility will hopefully be populated with tadpoles from Lesley Canyon NWR in late 2008. Progeny from the facility will be used for ponds in the Portal area, and potentially elsewhere. An Amphibian Survey, Monitoring, and Conservation Workshop, taught in Spanish for Mexican biologists and students, was held at Rancho Los Fresnos, Sonora to build capacity for amphibian work in northwestern Mexico. Naturalia is pursuing a NFWF grant to begin recovery activities in the San Pedro basin of northeastern Sonora. Limited monitoring has occurred in this RU. Known breeding sites for Chiricahua leopard frogs in RU3 number about 6 to 8.

**RU4 – Galiuro Mountains:** Chiricahua leopard frogs were rediscovered in the Deer Creek area of the Galiuro Mountains, and portions of 2 egg masses were collected and reared at the Phoenix Zoo. In October, 271 Chiricahua leopard frog tadpoles and 70 frogs were released to augment one population and establish another population. Frogs are now present at 5 localities in the Deer Creek area. **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 known to be extant at 8 sites in RU4.

**RU6 (NM) – Deep Creek Divide MA:** Frogs remain in 2 tanks and 1 or 2 riverine sites. In May 2008, 32 mixed cohort tadpoles and ¼ of an egg mass were removed from 1 of the tanks (Long Mesa Tank) for head starting 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 RU 8. 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* gets in the remaining sites. A mesh cage was build around the tank and secured to minimize the possibility of escape. A variety of sizes of frogs were place at both locations to maximize genetic diversity from a single site. One of the 2 riverine sites may be extirpated since CLF have not been observed since 2006, and the 2008 survey only found abundant bullfrogs. The second riverine site is highly unstable—observations were made of diseased CLF and tiger salamanders (potentially a ranavirus) in 2008. **Tularosa Apache Creek MA:** Frogs remain at 3 known sites, 1 riverine, 1 tank, and one spring/riverine. Frogs at the tank are doing well with high reproduction. Frogs at the spring are unstable with only a few individuals observed, and the riverine site is highly unstable with very low numbers and abundant bullfrogs. **West-Middle Fork MA:** Just one frog was seen at the mouth of Cub Creek along the West Fork of the Gila River. **East Fork MA:** One incidental individual observation was made on the E. Fork Gila in 2008. Two previously known riverine sites were surveyed in 2008, but no CLF were observed. One population, thought to be robust, still needs to be monitored in 2008. Frogs are thought to be extant at 11-13 sites in RU6 (9-11 in NM and 2 in AZ).

**RU7 (NM):** No reproductive sites are presently known in this RU in NM; however, one dispersal site is known--only individual juveniles have been observed, indicating the likely presence of a source population nearby.

**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 Dallas Ft. 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 larvae 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.