

Tarahumara Frog (*Rana tarahumarae*) release report: 6 May 2005

On the morning of 6 May 2005, Abigail Dinsmore, Michael Sredl, Suzanne Rester (AGFD), Jim Rorabaugh, Marit Alanen (USFWS), and James King (Volunteer) hiked 57 *Rana tarahumarae* into Big Casa Blanca Canyon. All frogs had been previously treated with itraconazole for chytridiomycosis and given a 2005 cohort mark on the right forefoot. For juveniles, toe #1600 was clipped and for adults, toe #2400 was clipped (according to Martof 1953 numbering system for frog toe clipping).

We divided into 2 groups. Group 1 (Mike, Suzanne, and Abigail) transported 12 frogs into String of Pools. Group 2 (Jim, Marit, and Jim) transported 45 frogs to the Bathtubs. Prior to releasing frogs, we surveyed habitats for frogs from previous releases.

Note: Because the focus of this trip was to release the frogs and to transport them to their release sites in a timely fashion, any surveying (herp observations, site conditions) was incidental.

UPPER REACH

String of Pools:

Habitat/Herp Observations: There was no evidence of recent rains. Water at Site 1 was extremely clear, lotic width 0-2 m, and riparian width was approximately 4-7 m (Photo 1). Aquatic habitat was somewhat limited, but not as restricted as it was during the 26 June 2004 release. There were just a few very small pools above Site 1. We walked upstream to 0519800E, 3505098N, NAD27. We did not observe *R. tarahumarae* from previous releases (Table 1) or other herps.

Site Conditions:

Air Temp: 23°C

Water Temp: 16°C

pH: 6.9

RH: 25%

TDS: 130 µS

Release Notes: 0800-0836, at Site 1 of String of Pools. Released 3 *R. tarahumarae* (2A, 1J); started acclimation (Photo 2) at 0808 in core body of water and released the 3 individuals at 0836 (Photo 3) (Table 2). Frogs were allowed to acclimate by floating the Gladware containers in the release pool for several minutes and slowly introducing the site water into the container.

MIDDLE REACH

Long Pool:

Habitat/Herp Observations: Water at Long Pool was extremely clear, lotic width 0-2 m, and riparian width approximately 4-7 m (Photo 4). Aquatic habitat was somewhat limited but not as restricted as it was during the 26 June 2004 release. One *Kinosternon sonoriense* was observed in Long Pool as well as 2 very large *R. tarahumarae* egg masses, and 3 very large *Rana tarahumarae* tadpoles (Table 1). Three medium sized tadpoles were also observed in this pool but were not positively identified

as *R. tarahumarae* tadpoles. Larvae had hatched from the 2 large egg masses and lay underneath the egg mass (Photo 5), appeared to have hatched 5-7 days ago. One egg mass and 1 adult *R. tarahumarae* were seen in the pool just below Long Pool. The adult had a juvenile cohort mark from the 2004 release. We observed belostomatids in some pools, but they were far less abundant than they were during the 26 June 2004 release.

Site Conditions:

Air Temp: 24°C

Water Temp: 17.5°C

pH: 7.4

RH: 28%

TDS: 130 µS

Release Notes: 0945-1012, at Site 3 (0520289E, 3504484N, NAD27) at Long Pool. Released 5 *R. tarahumarae* (3A, 2J); started acclimation at 0945 and released the 5 individuals at 1012 (Photo 6) (Table 2).

Ledge Pool:

Habitat/Herp Observations: Approximately 5 *Hyla arenicolor* tadpoles were observed at Ledge Pool, as well as 1 large *R. tarahumarae* tadpole and 1 adult (Table 1). One dead *Thamnophis cyrtopsis* was observed at the edge of the pool. Two *T. cyrtopsis* were observed in 2 different pools between Ledge Pool and the Bathtubs.

Release Notes: 1000-1047, at Ledge Pool. Released 4 *R. tarahumarae* adults; started acclimation at 1000 and the 4 individuals were released at 1047 (Table 2).

LOWER REACH

Bathtubs:

Habitat/Herp Observations: Water was flowing from Pool 1 through 20, it was dry for about 100 m below Pool 20, and then was flowing again to and beyond Kinosternon Pool (the lower end of the Bathtubs Reach). Aquatic habitat was extensive, with habitat and flows significantly greater than what was present during the 26 June 2004 release. We observed belostomatids in some pools, but they appeared far less abundant than they were during the 26 June 2004 release. Single *Kinosternon sonoriense* were observed at Kinosternon Pool and Yucca Pool. A *T. cyrtopsis* was observed in Pool #1. *Hyla arenicolor* were observed in Pool #8 (2 frogs and a mostly hatched egg mass), Pool 7 (2 frogs), Pool 6 (3 frogs), and in a small rock pool near Pool #1 (many tadpoles).

Site Conditions:

Air Temp: 32°C

Water Temp: 17°C

pH: 7.1

RH: 18%

TDS: 130 µS

Release Notes:

Releases were made as indicated in Table 2. Releases began at 0833 at Pool 20 and progressed upstream to Pool 1 at approximately 1205.

Table 1. *Rana tarahumarae* observations in each reach of Big Casa Blanca Canyon, Santa Cruz County, Arizona on 6 May 2005.

Location	Observed (n)	Life Stage
Upper Reach		
String of Pools	0	None seen
Middle Reach		
Long Pool	2	Egg masses (large and hatched)
Long Pool	3	Very large tadpoles
Pool just below Long Pool	1	Egg mass
Pool just below Long Pool	1	Adult (had 2004 J cohort mark)
Ledge Pool	1	Large tadpole
Ledge Pool	1	Adult
Lower Reach		
Pool 20	15	Tadpoles
Pool 19	1	Juvenile
Pool 17	1	Juvenile
Pool below Yucca Pool	1	Dead adult (leg only)
Yucca Pool	4	Adults
Yucca Pool	2	Tadpoles
Pool immediately below Yucca Pool	1	Adult
Small Pool below Sycamore Pool	2	Juveniles
Sycamore Pool	2	Adults
Sycamore Pool	15	Tadpoles (various sizes)
Sycamore Pool	3	Egg masses (not hatched yet-fresh)
3 Pools up from Sycamore Pool	1	Juvenile
5 Pools up from Sycamore Pool	1	Juvenile
5 Pools up from Sycamore Pool	2	Tadpoles
5 Pools up from Sycamore Pool	1	Possible dead adult <i>R. tarahumarae</i>
Pool 5	1	Egg mass (very fresh)
Pool 4	6	Adults (2 frogs in amplexus)
Pool 4	1	Egg mass (very fresh)
Pool 4	6	Tadpoles
Pool 2	1	Egg mass (very fresh)
Pool 2	1	Juvenile
Pool 1	12	Tadpoles (various sizes)
Pool 1	2	Juvenile (one has 2004 J cohort mark)
Pool next to Pool 1	1	Juvenile (recently metamorphosed)
Other Pool next to Pool 1	1	Juvenile

Table 2. Location and number of *R. tarahumarae* released in each reach of Big Casa Blanca Canyon, Santa Cruz County, Arizona on 6 May 2005.

Site Name	Released (n)
Upper Reach	
String of Pools (Site 1)	3
Middle Reach	
Long Pool (Site 3)	5
Ledge Pool	4
Lower Reach	
Between Pool 18 and 19	2
Pool 19	4
Yucca Pool	5
Sycamore Pool	14
Pool 8	6
Pool 4	2
Pool 2	4
Pool 1	4
Total	53

Table 3. Total number of each life stage of *R. tarahumarae* observed in Big Casa Blanca Canyon, Santa Cruz County, Arizona on 6 May 2005.

Life Stage	Total (n)
Adult/Juvenile	26 (does not include 2 dead)
Tadpole	56
Egg Mass	9

Summary:

While we did not see large numbers of adults and juveniles during our surveys (Table 3), we made several important observations:

- 1) Based on observations of numerous, moderate-sized tadpoles, we confirmed that *R. tarahumarae* reproduced at the end of last summer (Table 1, see 10 October 2004 trip report).
- 2) Based on observations of recently metamorphosed frogs, we verified that frogs are being recruited to the population (Table 1).
- 3) Based on the large numbers of recent egg masses (Table 3) and amplexant frogs (Table 1), we are collecting additional information that supports the contention that the Big Casa Blanca frog population is well on its way to becoming self sustaining.
- 4) Nearly all of our observations of eggs, tadpoles, juveniles, and adults were made in the most permanent portions of each reach.

Photos:



Photo 1. String of Pools



Photo 2. Acclimation of *R. tarahumarae* at String of Pools



Photo 3. *R. tarahumarae* release at String of Pools

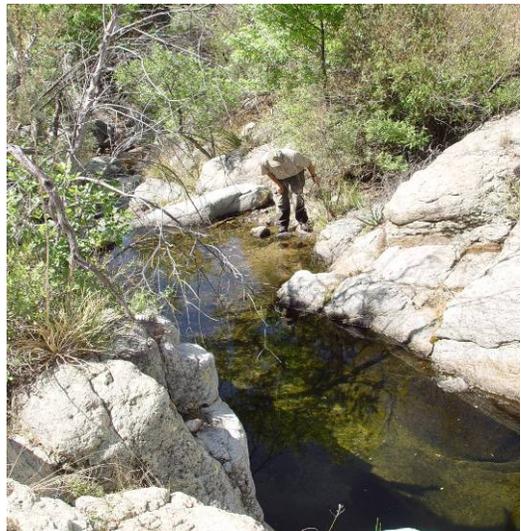


Photo 4. Michael Sredl (AGFD) observing *R. tarahumarae* egg mass at Long Pool



Photo 5. *R. tarahumarae* hatched egg mass at Long Pool



Photo 6. Suzanne Rester (AGFD) releasing *R. tarahumarae* at Long Pool



Photo 7. *R. tarahumarae* adult and egg mass, at Pool #2, Bathtubs



Photo 8. *R. tarahumarae* large juvenile released at Pool #4, Bathtubs